SOUNDTRACS
SOLITAIRE

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Issue A

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Congratulations on your purchase of a Soundtracs SOLITAIRE console. The SOLITAIRE is one of the latest breed of production consoles which provides high quality audio with a full compliment of features in a compact size.

To get the most from your SOLITAIRE you should read all of this manual prior to any recording session, particularly with paying clients. If you are an experienced sound engineer you can probably ignore the introductory section "Principles of Sound Recording" and simply read the technical descriptions.

Before you continue please check that you have received all of the following items:

The mixing console
The power supply
The mains cable
The power supply cable
The operating manual
(There should be an additional power supply, mains cable and power supply cable if the console is fitted with the optional Moving Fader Automation)

In the plastic bag with the manual there should be a guarantee card. Remove this from the bag, fill it in and post it to Soundtracs PLC at the next possible opportunity.

The following pages will give you an outline of how a mixing console is used in typical small studio and also describes the basic operation of the SOLITAIRE. If you are familiar with recording studios and mixing consoles then you can skip this section and go straight to the hook up and console description pages later in the manual.

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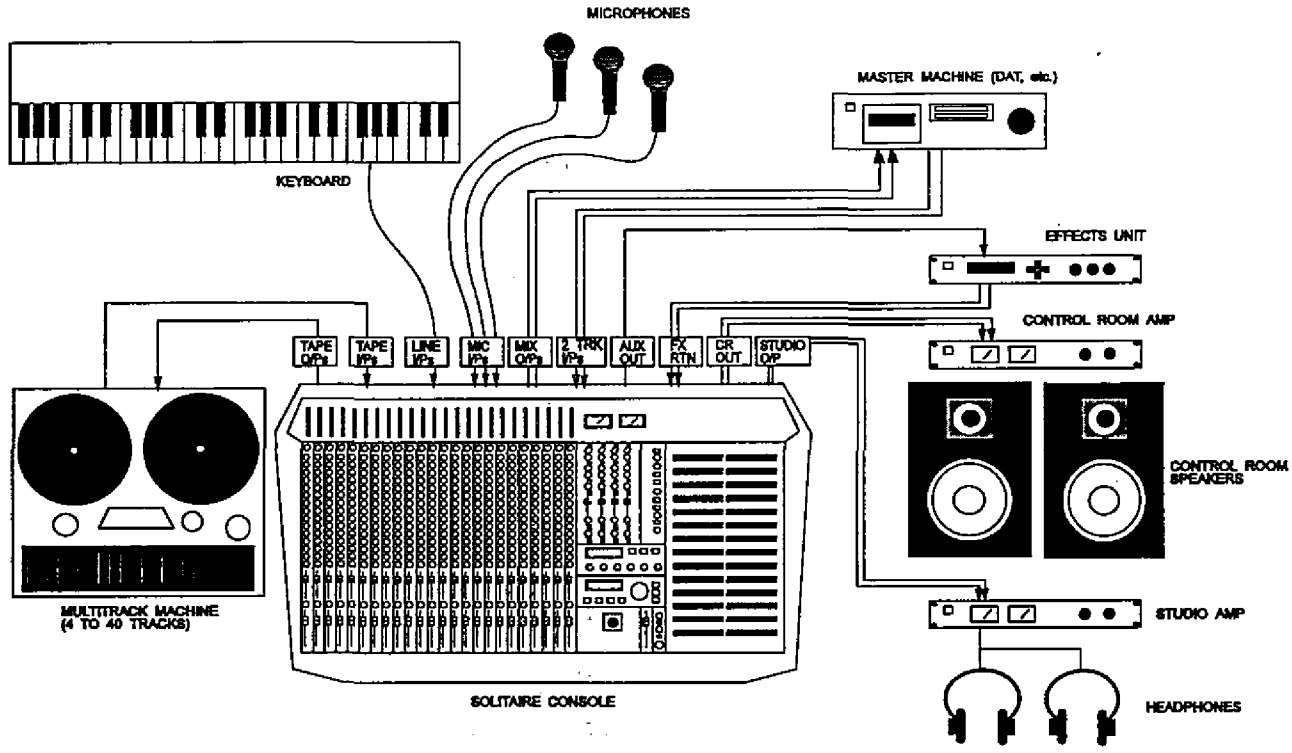
Conventional multitrack studios

A conventional studio normally has a mixing console, a multitrack machine, an effects rack, monitor speakers and several microphones. These studios are used for making recordings of live bands, musicians and orchestras. The block diagram of the conventional studio is shown below.



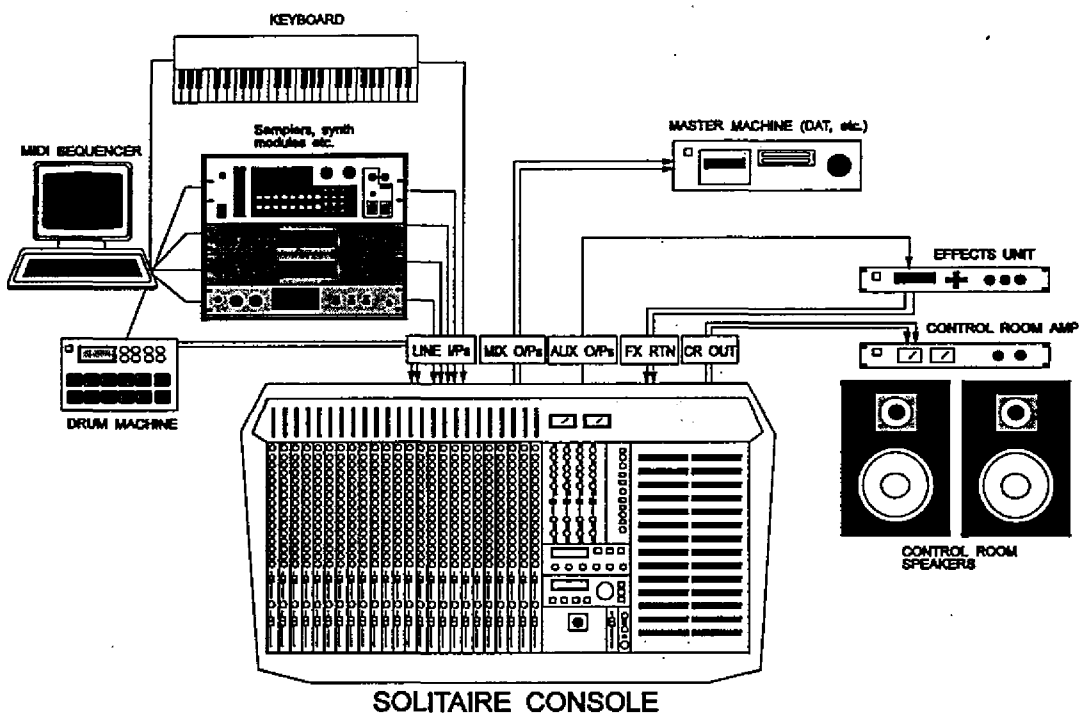
In a conventional studio there are normally two modes of operation: RECORDING and MIXING.

Recording - first the musicians arrive, set up their instruments and are recorded via microphones or DI (direct inject) onto a multitrack machine. Normally a track is used for each instrument, for example track 1 = bass, track 2 = vocal, track 3 = piano, and so on. If the studio is large the musicians may be recorded simultaneously, but it is more common to record the drums and bass first, followed by the guitar, then the vocal, and so on. This recording of new tracks is called overdubbing. After all of the musicians and performers have been recorded the microphones are put away and the mix process begins.

Mix - during the mix or mix down process the tracks are played back through the mixer and balanced so that the volume of each instrument is exactly right. At the same time the sound of each individual instrument will be improved by adjusting the tone controls on the console and by adding effects. This "mix" is then recorded onto a stereo machine (e.g. a DAT machine). The finished stereo recording is called the master or master tape.

Tapeless studios

It is now common to find studios which do not use multitrack machines. Instead they use a sequencer to record the music and they use keyboards, sound modules, samplers and drum machines as the sound sources. A block diagram of a tapeless studio is shown below:

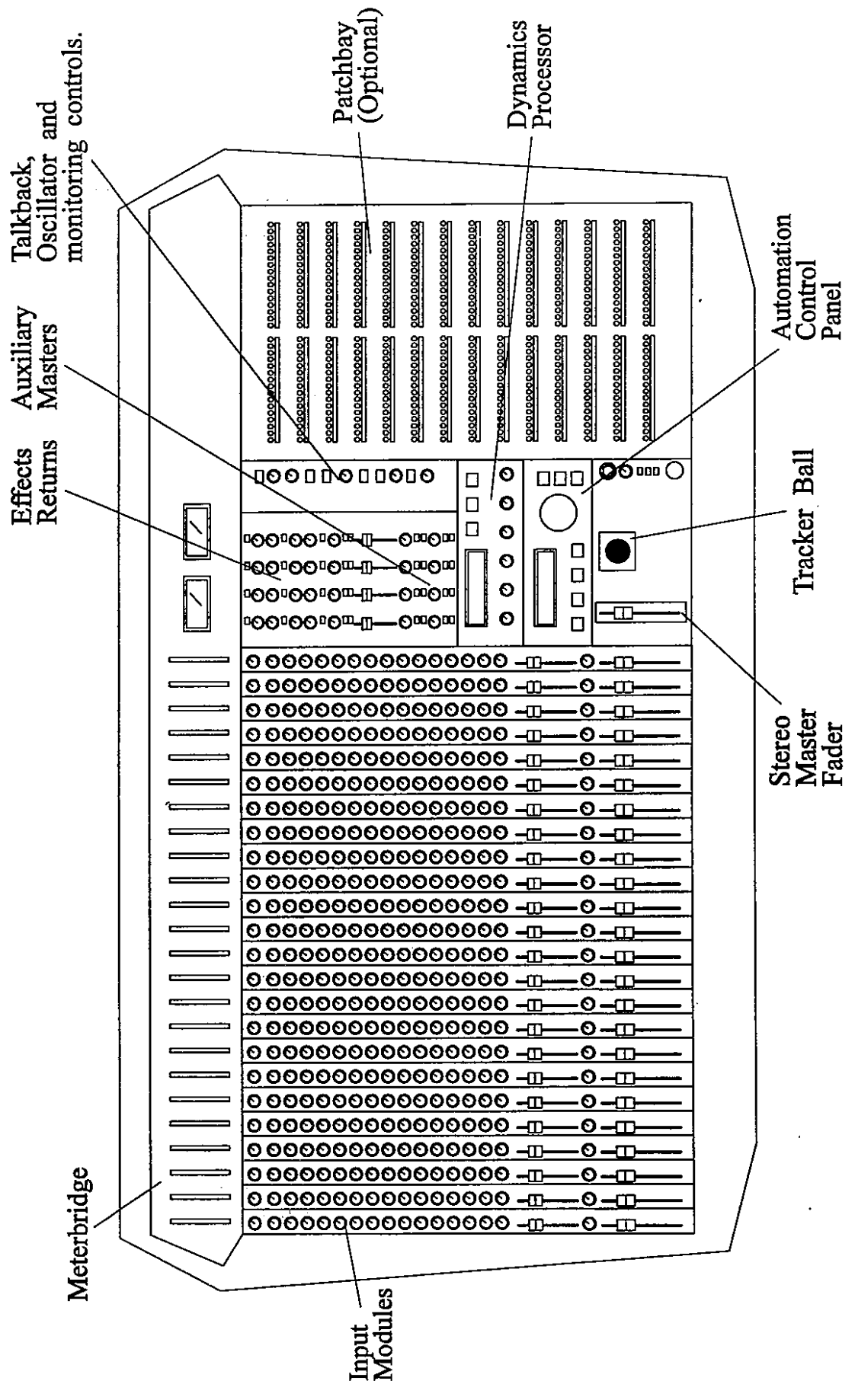


In the tapeless studio there is no record mode and mix mode. Instead there is the programming stage, where the song is programmed into the sequencer and the mix stage when the sequenced sounds are recorded down onto a master tape.

Multi format studios

Studios which combine multitrack machines with sequencers are referred to as multi-format studios. This type of studio will use record mode for recording live instruments onto multitrack tape and programming sounds into the sequencer. When it comes to mix down, both the multitrack sounds and the sequenced sounds will be mixed and recorded onto the master tape.

SOLITAIRE PRODUCTION CONSOLE



The channels

Each module strip has an input called the channel which is normally accessed by the mic or line in sockets. This channel consists of: an input amplifier to boost the signal, an equaliser to modify the tone and auxiliary sends to send some of the signal to effects units and to headphones. The routing buttons are used with the pan control to route the channel signal to the tape outputs (and hence the multitrack machine) or to the master DAT machine. The fader is used to control the level of the signal as it leaves the channel and the mute button cuts the signal in the channel. The solo button is used to listen to the channel individually.

The monitors

The monitor is the second input to the module strip and is normally accessed by the tape in socket. Each monitor has an equaliser, auxiliary sends, a fader to adjust the volume, a mute button to cut the monitor signal, a solo button to listen to each monitor individually and a pan control to position the signal in the stereo image. In addition, some of the facilities of the channel can be shared with the monitor.

The effects returns

The SOLITAIRE has 4 stereo effects return inputs so that effects units can be connected to the console. By effects units we mean reverb or echo devices. The effects return inputs have an equaliser, auxiliary sends, a balance control, solo and mute buttons, and a fader to control level.

The master outputs

The master section has 4 different stereo outputs: the master outputs, which feed the master stereo machines such as DAT and cassette machines, the control room outputs A and B which feed the amplifiers/speakers in the control room, and the studio output which normally feeds an amplifier for the musician's headphones. The master section also has 3 stereo tape machine inputs (2 track A, B and C) so that you can playback a mix from a cassette or DAT. The talkback system allows the engineer to talk to the musicians in the studio or to record messages onto tape .

The auxiliary masters

The auxiliary master controls are simply overall level controls for the outputs to effects and headphones. Each one has an AFL button so that you can listen to the auxiliary signal on its own, and a mute button so that you can cut the signal to the auxiliary output.

The metering

The SOLITAIRE has a 10 segment LED bargraph meter for each channel. These display the level of the signal sent to or returning from tape, and can be individually switched to display channel input level instead. There are also two mechanical VU meters to display the signal level of the mix. Correct operation of the meters is explained later.

Signal flow

The SOLITAIRE is an in line console which means that it has a tape input and tape output on each module strip. Each tape output is connected to the input of the tape machine and each output of the tape machine is connected to the tape input of the console. If you do not have a multitrack machine then you may not need to use these sockets.

The line inputs on each module strip are normally used for your synth expanders, samplers, drum machines or just about any electronic instrument. The output of the instrument is connected to the line input. The microphone inputs are used for microphones when you are recording live instruments but they are also used for guitars when you have a DI box.

The SOLITAIRE is a very flexible console which can change the way the tape, mic and line signals are routed through the console. The MIX button determines whether the console is in record or mix mode.

MIX button up - record mode

Record mode is used for recording onto the multitrack. In record mode the line or mic signal is sent to the channel input where it is equalised and then sent to the multitrack machine via the routing buttons, channel pan control and channel fader. The tape return signal is sent to the monitor input so you can listen to the signal as it is being recorded using the monitor controls. If you are not using a multitrack machine then the channel should be routed to L/R and the tape input can be used as an extra input.

MIX button down - mix mode

Mix mode is used for mixing down from the multitrack. In mix mode the tape return signal is connected to the channel where it can be equalised before being routed to the left and right outputs. The line or mic signal is connected to the monitor input and is simply an extra input for electronic instruments or effects. If you have a tapeless studio you may not need to press the mix button and you will use record mode instead.

Routing to tape

The line and mic signals are routed from the channel inputs to the various tape outputs using the channel pan control and the routing buttons. An individual channel signal can be sent to the tape output, or several channels can be mixed together to appear at the same output if desired. A full description of the routing procedure is included in the Input Module section of this manual.

Sending to effects

During recording and mixing you will use reverb and delays to enhance the sound. Signals are normally sent to these effects using auxiliary sends 3, 4, 5 and 6 on each module strip. Signals return back to the console from the effect and are connected to the effects return inputs.

Pre fade and post fade

The terms pre fade and post fade are used a lot by sound engineers, particularly when they are talking about auxiliary sends. When a signal is pre fade it means that it comes from before the fader and is therefore totally independent of the fader. Pre fade signals are particularly useful for headphone sends because the musicians need a dedicated mix which is different to the sound engineers mix.

Post fade signals come from after the fader (or level control) and follow the level of the fader. These signals are normally used as effects sends because effects levels are normally required to change with the fader. For example if a signal is faded out then it's reverb should fade out too.

Sending to headphones

The musicians in the studio will want to listen to themselves on headphones during recording. The studio output is used for this purpose. You can set up a stereo headphone mix using auxiliary sends 1-2 and/or 3-4 and send either or both of these to the studio output. You can also send whichever source is selected for the control speakers to the studio outputs. The studio level control is in the master module of the console along with the buttons to select the source of the studio mix.

Control room speakers

The control room outputs feed the control room amplifiers and speakers. There are two pairs of control room outputs, "A" and "B"; each pair of outputs feeds an amplifier and speakers. The ALT button switches between the A and B speakers. The level control for the speakers is in the master section of the console labelled "control room". The control room source buttons are used to select the source signal for the control room outputs, allowing you to choose any combination of the master mix, the three 2 track inputs, and auxiliary sends 1-2 and 3-4 as the control room source. There is also a mono button for checking mono compatibility.

Solo

The solo function allows the engineer to listen to the signal in individual channels or monitors. There are two solo modes available on the SOLITAIRE: IPS (in place solo) and PFL (pre fader listen).

When PFL mode is selected, pressing a solo button on an input channel or monitor sends the signal in that channel or monitor to the control room speakers and headphones so that the engineer can hear it on its own. The PFL is mono so the left and right signals are combined before they are sent to the headphones and speakers. Everything else on the console is unaffected.

(The AFL buttons perform the same function for the auxiliary masters. The AFL button sends the signal from the associated auxiliary master, post the level control (hence After Fader Listen) to the headphones and control room speakers.)

When IPS mode is selected, pressing a solo button anywhere on the console mutes all non-soloed channels and monitors.Effects returns are not muted on IPS solo. The soloed signal can now be listened to individually, in stereo, with the chosen effects and at it's current level in the mix.

The following section shows you how to hook up the SOLITAIRE console for normal sound recording applications and is not intended as a complete installation manual. The connectors and cabling differ significantly between the patchbay and non patchbay versions of the console. Please refer to the pages within this section appropriate to your version of the console. For a full description of wiring practices you are referred to "Audio Systems Design and Installation" written by Phillip Giddings and published by Sams. If you are in any doubt about how to hook up your SOLITAIRE console you should seek technical advice from an authorised Soundtracs agent.

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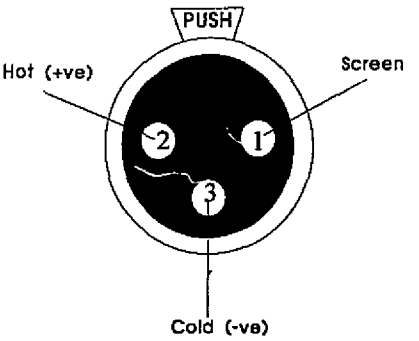
Connectors

The non patchbay version of the SOLITAIRE uses 2 different types of connector: 3 pin XLR and 0.25 inch jacks. Some of these are balanced, some unbalanced, some are stereo and some have dual functions. These connectors are used in numerous ways as shown in the following diagrams.

Microphone and talkback inputs

All of the microphone inputs are balanced on female XLR connectors and connected as shown. Cables connected to any microphone socket should be wired with pin 1 ground, pin 2 hot (+ve) and pin 3 to cold (-ve). Use high quality screened pair cable or multicore with individually screened pairs.

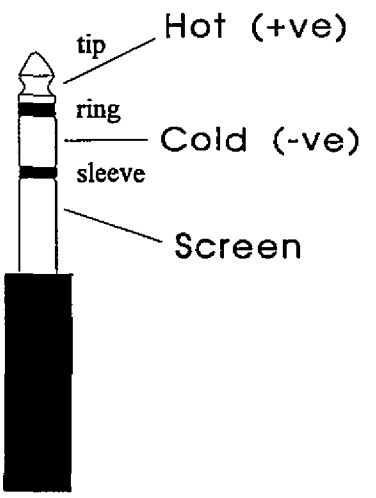
Microphone input connector



Line, tape, effects and 2 track return inputs

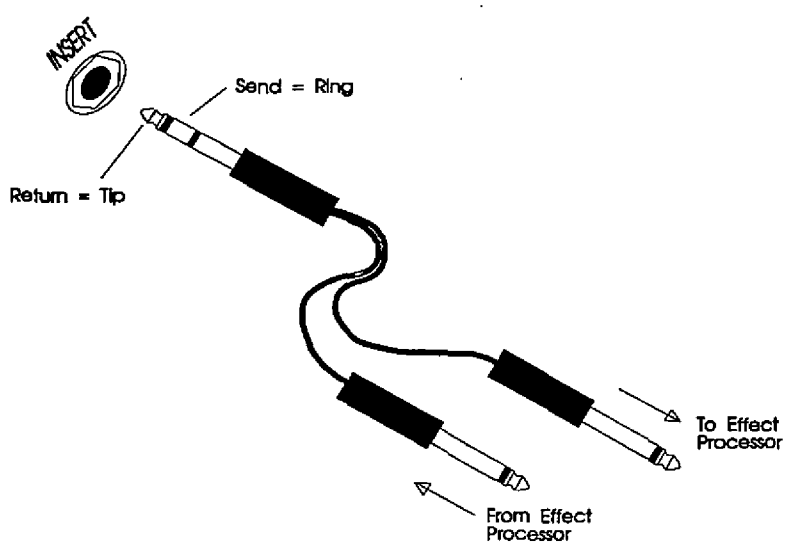
All of these inputs are balanced on 0.25 inch stereo jacks. Cables connected to any of these inputs should use a stereo jack wired with TIP hot, RING cold and SLEEVE to ground. Use high quality screened pair cable or multicore with individually screened pairs.

Line input connector

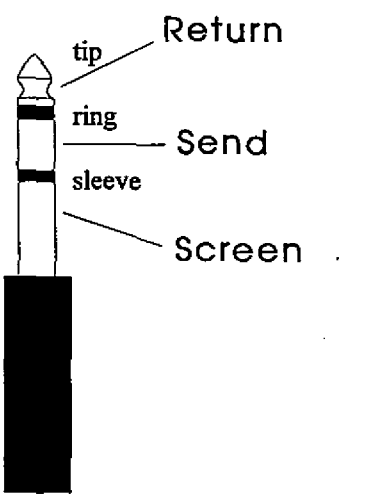


Insert points

All of the insert points have both SEND and RETURN signals on a single 0.25 inch stereo jack. Cables connected to any insert point should use a stereo jack wired with TIP return, RING send and SLEEVE to ground. Use individually screened cable for both send and return or twin cable with individual screening on each core (e.g. figure of 8 cable).



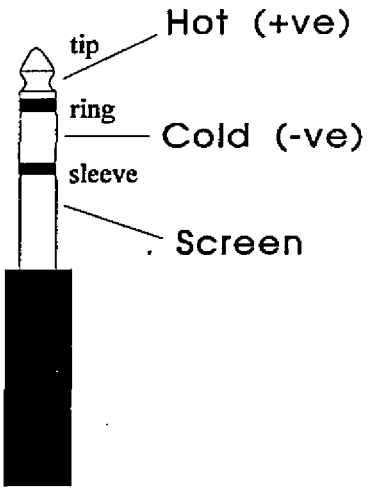
Insert point connector



Tape outputs

All of the tape outputs are balanced on 0.25 inch jacks. Cables connected to any of these inputs should use a stereo jack wired with TIP hot, RING cold and SLEEVE to ground. Use high quality screened pair cable or multicore with individually screened pairs.

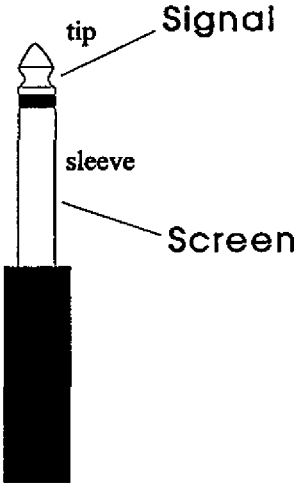
Tape output connector



Auxiliary, oscillator, talk, studio and control room outputs.

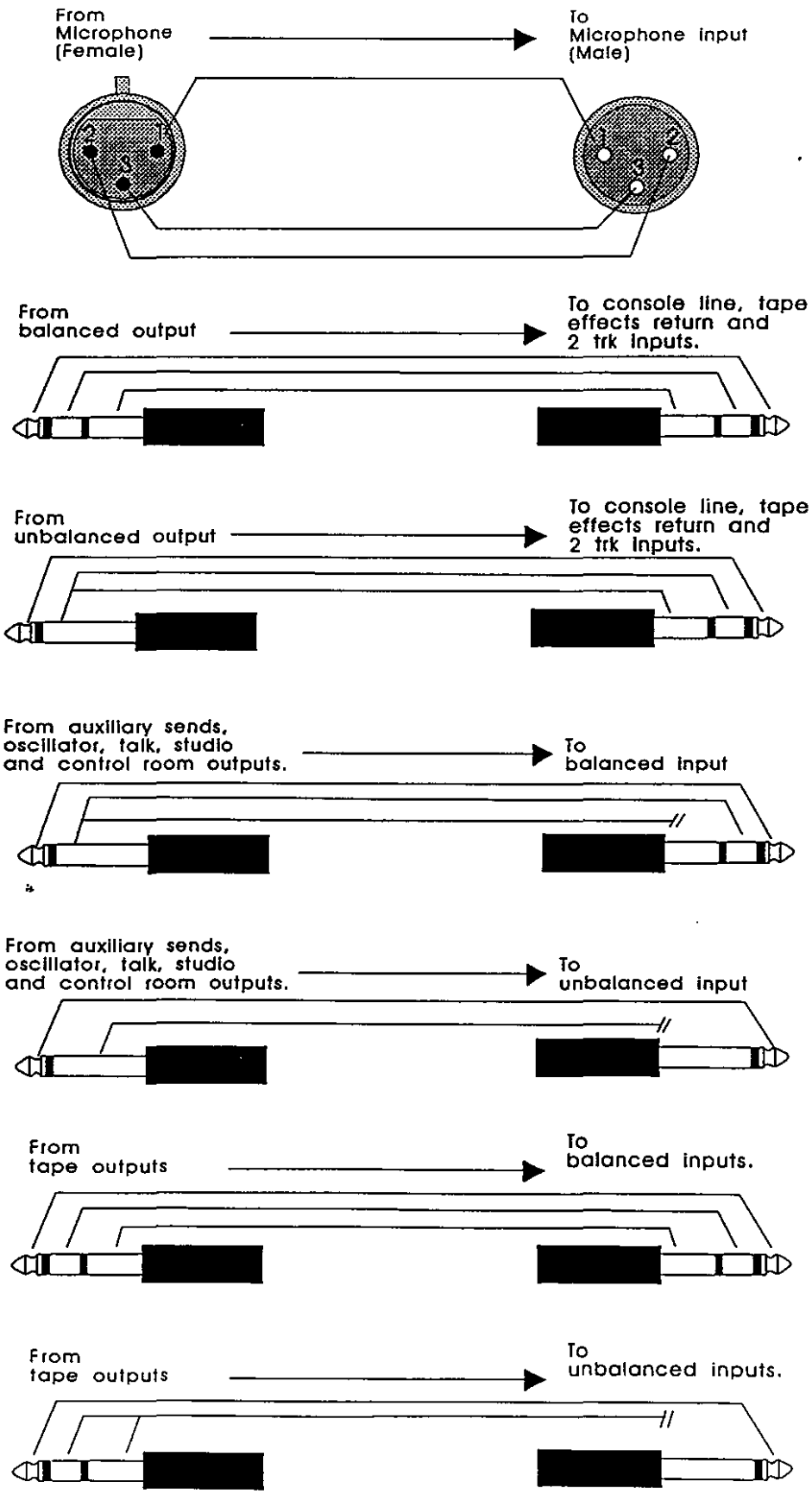
All of these are unbalanced on 0.25 inch jacks. Cables connected to any of these outputs should use a mono jack wired with TIP signal and SLEEVE to ground. Use individually screened cable.

Aux, oscillator, talk, studio and control room output connectors



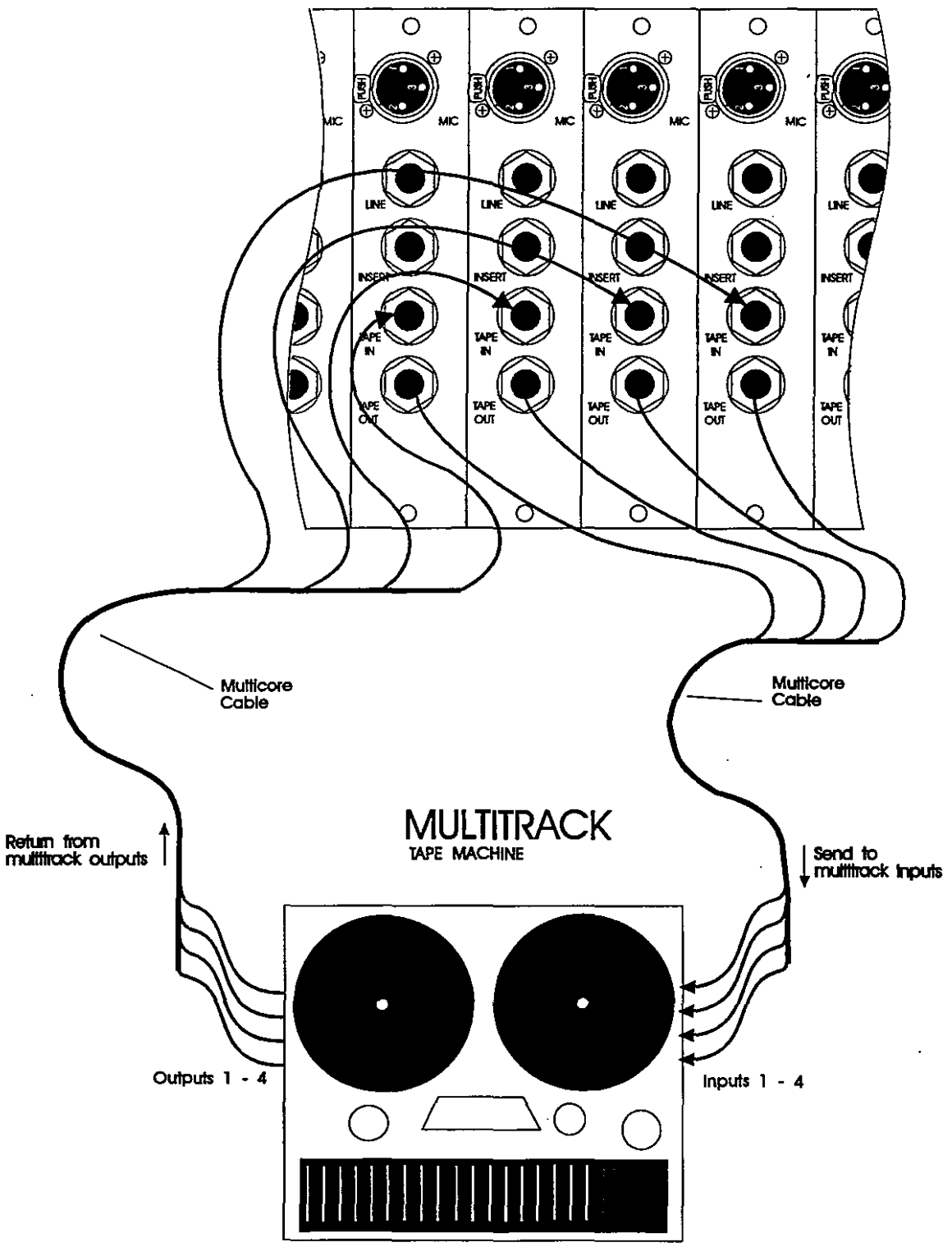
Cables

The following diagrams illustrate the correct cables for making the connections described above:



Connecting the multitrack tape machine

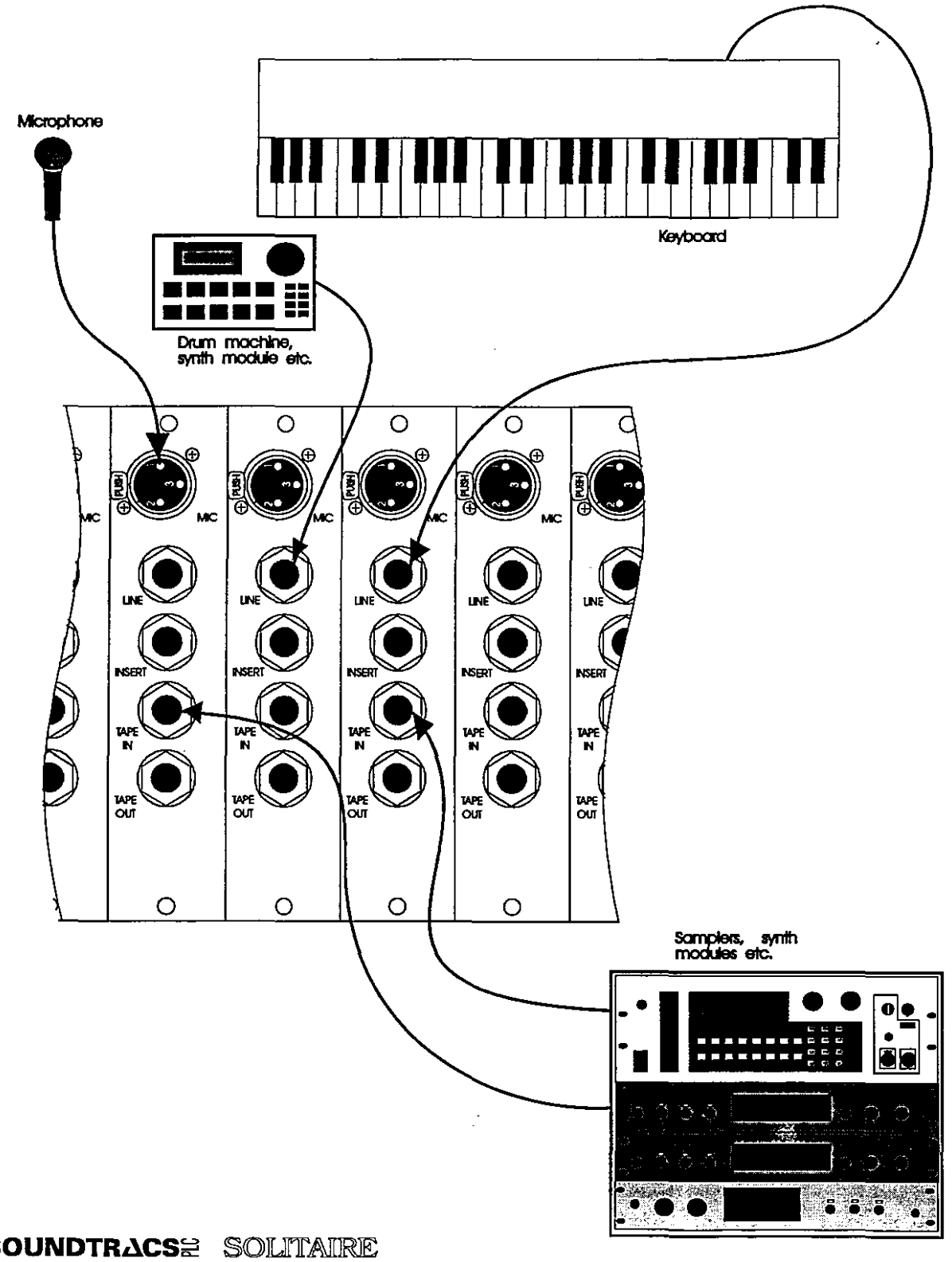
The following diagram illustrates the correct connection of the multitrack tape machine to the non patchbay version of the console. The line outputs of the 8, 16, or 24 track tape machine should be connected to the corresponding tape inputs on the rear panel of the console. The tape outputs on the console should be connected to the corresponding line inputs on the tape machine.



22 Hooking up (non patchbay version)

Connecting microphones and line inputs

The following diagram illustrates the correct connection of microphone and line level signal sources to the non patchbay version of the console. Microphones are connected to the mic inputs on the rear panel via balanced XLR connectors. Line level sources such as drum machines, samplers, synth modules etc. are connected to the line inputs. Additional line level sources may be connected to those tape inputs not being used for the multitrack. In the case of a 'tapeless' studio, all of the tape inputs may be used as line inputs. The tape and mic/line inputs in each channel follow separate signal paths and may therefore be used simultaneously. A full description of the controls for the signal path is given in the module strips section of this manual.

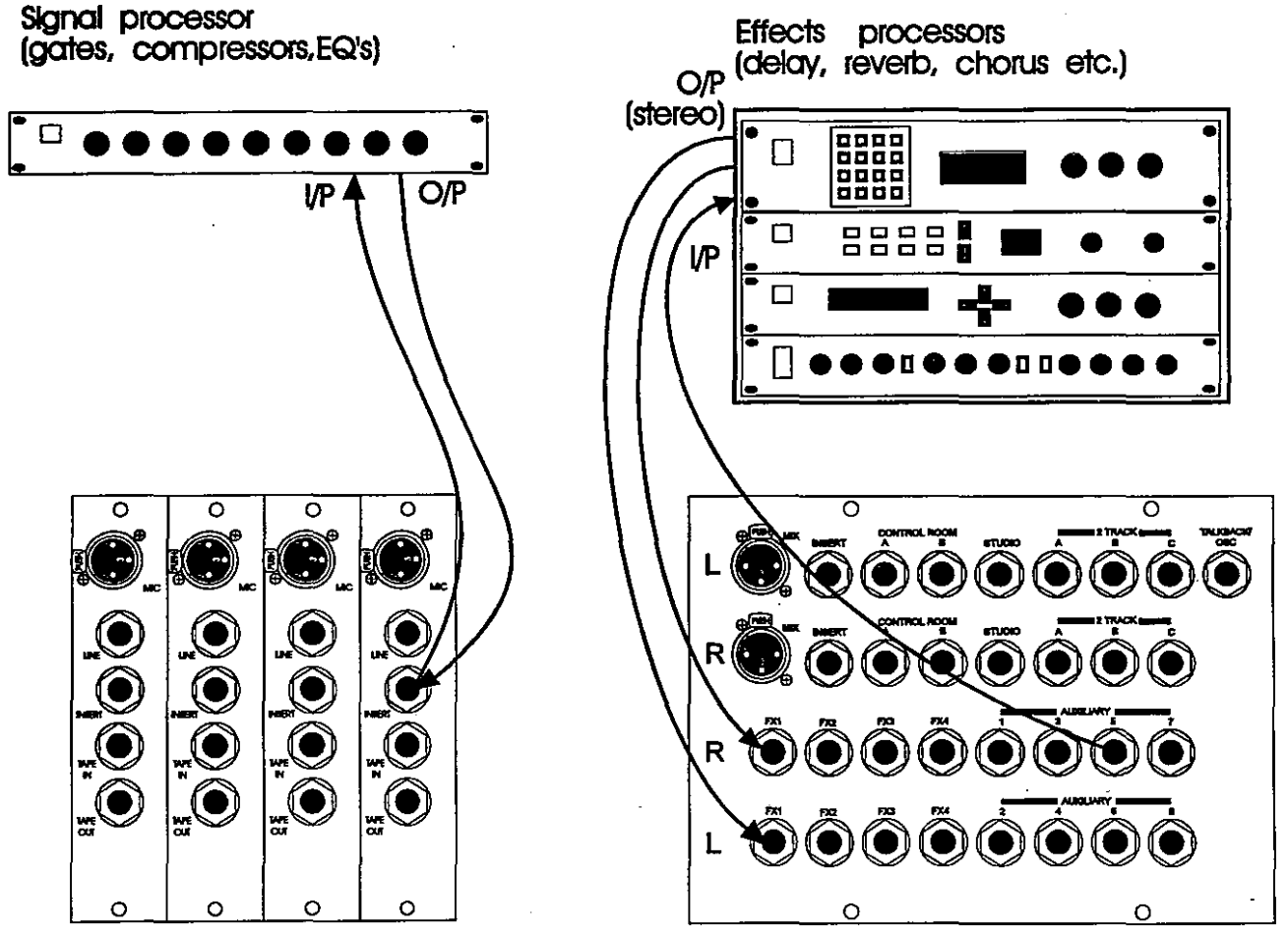


Connecting effects processors and signal processors

The following diagram illustrates the correct connection of effects processors (reverb, delay, chorus etc.) and signal processors (EQ's, compressors, gates etc.) to the non patchbay version of the console.

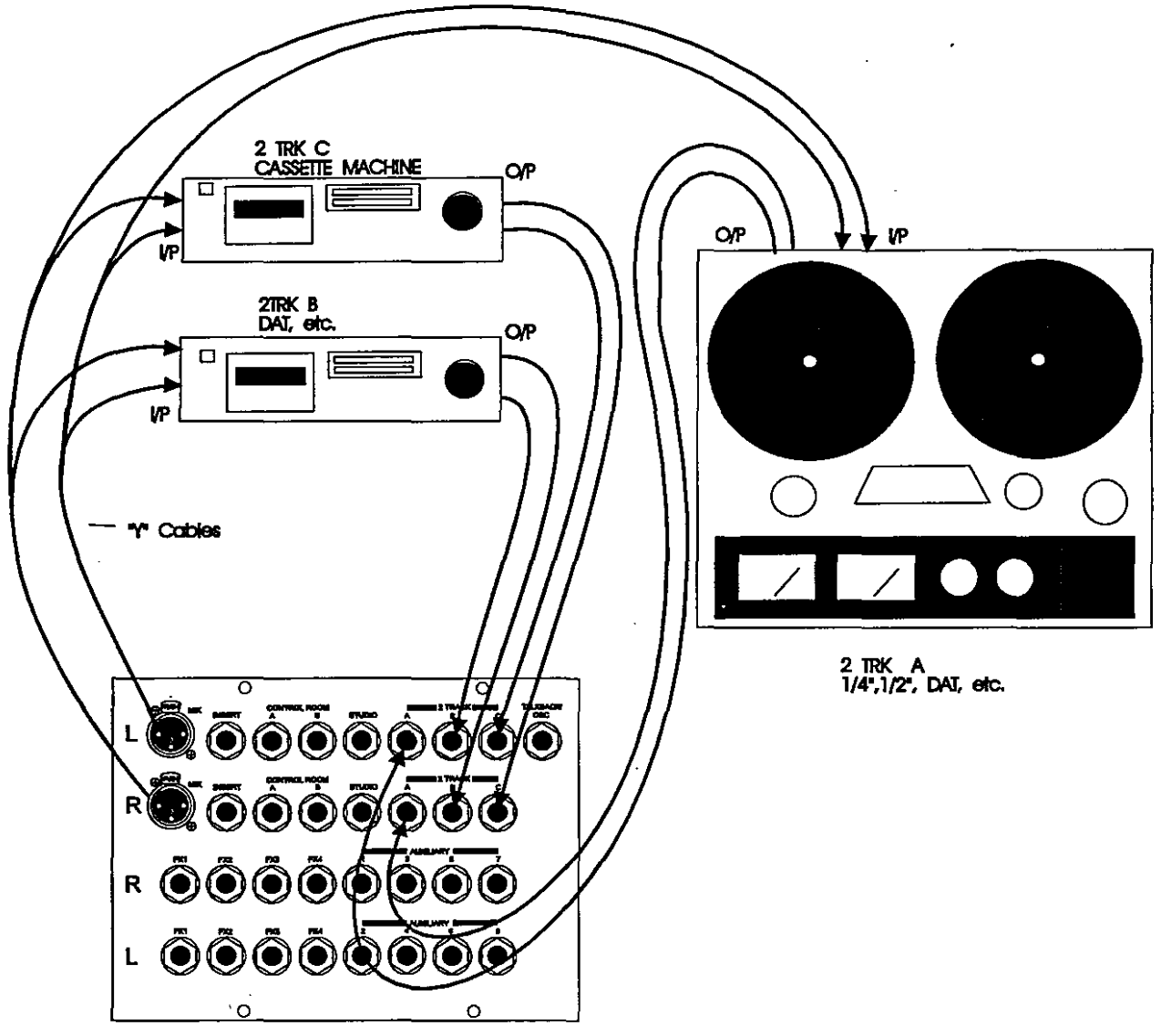
Normally, auxiliary outputs 5-8 are connected to the inputs of effects processors (aux 1-2 and 3-4 are intended primarily as cue sends via the studio output, but may be used as additional effects sends when required). The outputs of the effects processors are connected to stereo FX returns 1 - 4. There is a description of the correct cabling for the stereo FX returns earlier in this section.

The insert sockets on the rear panel are used to connect signal processors directly in the signal path. There are inserts for each channel, each group and the left and right channels of Mix A. There is a description of the correct cabling for the inserts earlier in this section.



Connecting the 2 tracks

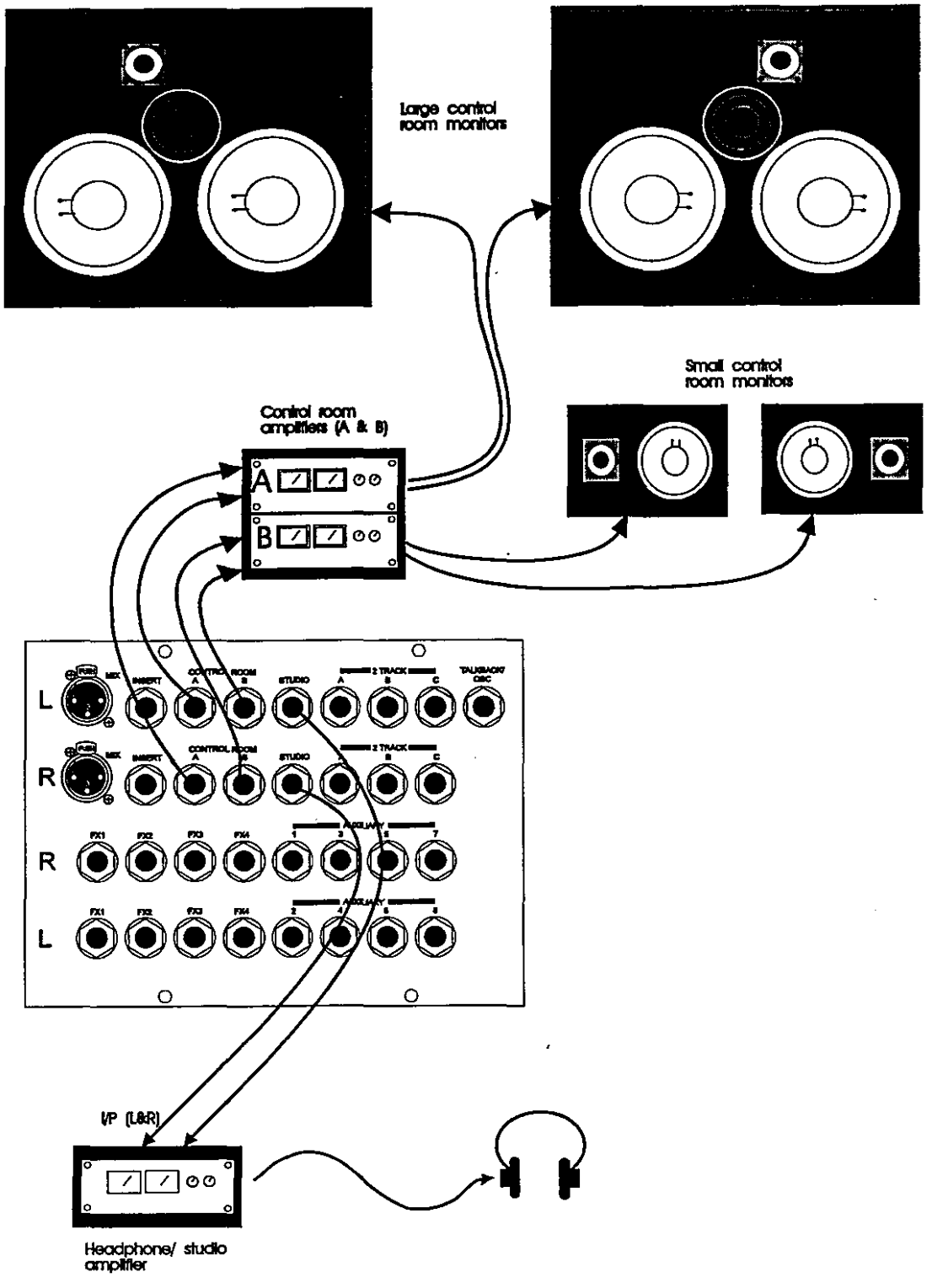
The following diagram illustrates the correct connection of the 2 track tape machines to the non patchbay version of the console. The outputs of three 2 track machines (reel to reel, DAT, cassette etc.) can be connected to the console via the 2TA, 2TB and 2TC inputs. The stereo master mix is fed to the 2 track machines via the 2TA, 2TB and 2TC outputs.



Connecting the control room speakers and studio headphones

The following diagram illustrates the correct connection of the control room amplifiers and speakers, and the studio amplifier and headphones. The CR A (L and R) and CR B (L and R) outputs should be connected to the inputs of amplifiers for the large and small control room speakers.

The studio (L and R) outputs should be connected to the inputs of the studio amplifier. The studio outputs are normally used to drive headphone amplifiers for musician's cues.

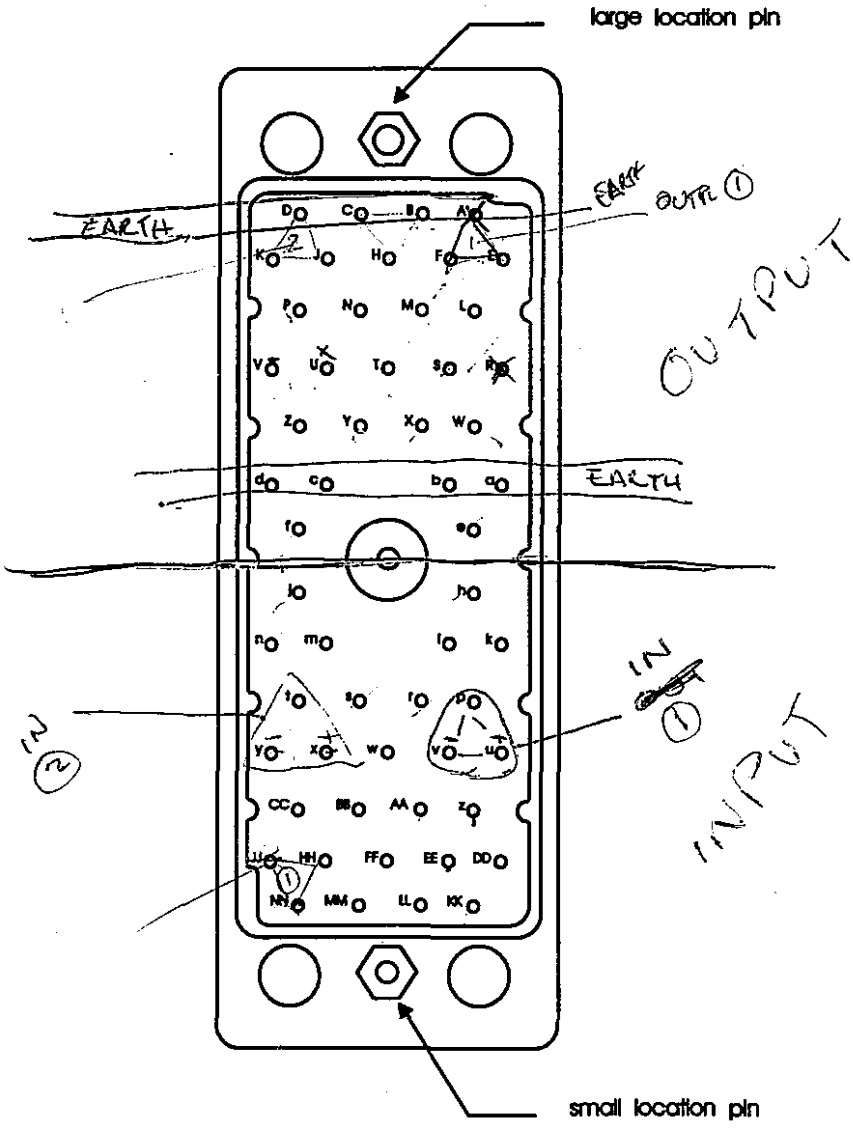


EDAC Connectors

The patchbay version of the SOLITAIRE uses 56 pin gold contact EDAC (also known as VARELCO or ELCO) connectors for connecting all inputs and outputs, except the microphone inputs which are on XLR connectors on the rear panel. The pin configuration of the EDACs used on the Solitaire are shown in the diagram below. (Please refer to the section on HOOK-UP of the non-patchbay version for details of connecting the microphones.)

EDAC Plug

(as viewed from front of connector)

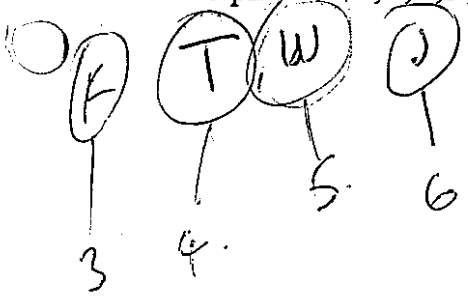


EDAC Pin Connections

The tables below list the specific designations for each pin of the rear panel EDAC connectors. Pins A, B, C, D, p,r,s and t are ground pins on all of these connectors. The auxiliary, oscillator, talk, control room and studio outputs are unbalanced: when connecting these outputs, the - signal pin should be connected to ground.

PIN NO +SIG	-SIG	TAPE 1-8 connector	TAPE 9-16 connector	TAPE 17-24 connector	TAPE 25-32 connector	TAPE 33-40 connector
E	F	TO TAPE 1	TO TAPE 9	TO TAPE 17	TO TAPE 25	TO TAPE 33
J	K	TO TAPE 2	TO TAPE 10	TO TAPE 18	TO TAPE 26	TO TAPE 34
L	M	TO TAPE 3	TO TAPE 11	TO TAPE 19	TO TAPE 27	TO TAPE 35
N	P	TO TAPE 4	TO TAPE 12	TO TAPE 20	TO TAPE 28	TO TAPE 36
R	S	TO TAPE 5	TO TAPE 13	TO TAPE 21	TO TAPE 29	TO TAPE 37
U	V	TO TAPE 6	TO TAPE 14	TO TAPE 22	TO TAPE 30	TO TAPE 38
W	X	TO TAPE 7	TO TAPE 15	TO TAPE 23	TO TAPE 31	TO TAPE 39
Y	Z	TO TAPE 8	TO TAPE 16	TO TAPE 24	TO TAPE 32	TO TAPE 40
u	v	FROM TAPE 1	FROM TAPE 9	FROM TAPE 17	FROM TAPE 25	FROM TAPE 33
x	y	FROM TAPE 2	FROM TAPE 10	FROM TAPE 18	FROM TAPE 26	FROM TAPE 34
z	AA	FROM TAPE 3	FROM TAPE 11	FROM TAPE 19	FROM TAPE 27	FROM TAPE 35
BB	CC	FROM TAPE 4	FROM TAPE 12	FROM TAPE 20	FROM TAPE 28	FROM TAPE 36
DD	EE	FROM TAPE 5	FROM TAPE 13	FROM TAPE 21	FROM TAPE 29	FROM TAPE 37
HH	JJ	FROM TAPE 6	FROM TAPE 14	FROM TAPE 22	FROM TAPE 30	FROM TAPE 38
KK	LL	FROM TAPE 7	FROM TAPE 15	FROM TAPE 23	FROM TAPE 31	FROM TAPE 39
MM	NN	FROM TAPE 8	FROM TAPE 16	FROM TAPE 24	FROM TAPE 32	FROM TAPE 40

Ground pins are A,B,C,D, p,r,s,t



I-28 Hooking up (patchbay version)

PIN NO +SIG	-SIG	LINE I/P 1-16	LINE I/P 17-32	LINE I/P 33-40 & FX	AMP FEEDS	2 TRACKS
E	F	LINE 1	LINE 17	LINE 33	CONT RM A L	FROM 2TA L
J	K	LINE 2	LINE 18	LINE 34	CONT RM A R	FROM 2TA R
L	M	LINE 3	LINE 19	LINE 35	CONT RM B L	FROM 2TB L
N	P	LINE 4	LINE 20	LINE 36	CONT RM B R	FROM 2TB R
R	S	LINE 5	LINE 21	LINE 37	STUDIO L	FROM 2TC L
U	V	LINE 6	LINE 22	LINE 38	STUDIO R	FROM 2TC R
W	X	LINE 7	LINE 23	LINE 39	-	FROM 2TD L
Y	Z	LINE 8	LINE 24	LINE 40	-	FROM 2TD R
u	v	LINE 9	LINE 25	FX RET 1 L	AUX 1	TO 2TA L
x	y	LINE 10	LINE 26	FX RET 1 R	AUX 2	TO 2TA R
z	AA	LINE 11	LINE 27	FX RET 2 L	AUX 3	TO 2TB L
BB	CC	LINE 12	LINE 28	FX RET 2 R	AUX 4	TO 2TB R
DD	EE	LINE 13	LINE 29	FX RET 3 L	AUX 5	TO 2TC L
HH	JJ	LINE 14	LINE 30	FX RET 3 R	AUX 6	TO 2TC R
KK	LL	LINE 15	LINE 31	FX RET 4 L	AUX 7	TO 2TD L
MM	NN	LINE 16	LINE 32	FX RET 4 R	AUX 8	TO 2TD R

Ground pins are A,B,C,D, p,r,s,t

PIN NO +SIG	-SIG	TIE LINES 1-16	TIE LINES 17-32	TIE LINES 33-48
E	F	1	17	33
J	K	2	18	34
L	M	3	19	35
N	P	4	20	36
R	S	5	21	37
U	V	6	22	38
W	X	7	23	39
Y	Z	8	24	40
u	v	9	25	41
x	y	10	26	42
z	AA	11	27	43
BB	CC	12	28	44
DD	EE	13	29	45
HH	JJ	14	30	46
KK	LL	15	31	47
MM	NN	16	32	48

Ground pins are A,B,C,D, p,r,s,t

The Patchbay

The connectors used on the patchbay are miniature three-pole bantam jacks. The patchbay includes bantam jack sockets for all inputs and outputs, as well as 96 tie line points. The patchbay is expandible to include patch points for 24, 32 or 40 track machines and up to 288 tie lines.

The patchbay is half normalled: inserting a bantam jack plug into an input breaks the normaling to the EDAC, inserting a bantam jack plug into an output does not break the normalling to the EDAC.

All of the connections on the patchbay are balanced, and wired as follows:

Tip = hot (+ signal)
Ring = cold (- signal)
Sleeve = ground

Bantam to bantam patchbay lead.

LINE IN - The balanced line input socket is used to send a line level signal to the input stage of the input/output module. When the console is in record mode (MIX button up) the LINE IN feeds the channel signal path; when the console is in mix mode (MIX button depressed) the LINE IN feeds the monitor signal path. A full description of the controls for the signal path is given in the Input/ Output Module section of this manual. Inserting a bantam jack plug into this socket breaks the normaling from the corresponding input on the rear panel EDAC connectors.

MON IN - The balanced monitor input socket is used to send a line level signal to tape input of the input/output module. This allows the tape inputs to be used as additional line inputs when the corresponding tape channel is not in use. When the console is in record mode (MIX button up) the MON IN feeds the monitor signal path; when the console is in mix mode (MIX button depressed) the MON IN feeds the channel signal path. A full description of the controls for the signal path is given in the Input/Output Module section of this manual. The outputs of the multitrack tape machine are usually connected to the FROM TAPE inputs of the rear panel EDACs. These are normalled to the TAPE inputs. Inserting a bantam jack plug into this socket breaks the normaling from the corresponding input on the rear panel EDAC connectors.

SND and RET- The unbalanced send and balanced return sockets form the insert point; they allow external signal processing devices to be patched into the channel signal path. The send is normalled to the return.

Inserting a bantam jack plug into the send socket does not break the normalled connection; therefore the send can be used in two ways. Usually, the signal is taken from the send, fed to a signal processor and the output of the processor is patched into the return. Inserting a bantam jack plug into the return socket does break the normaling, so this places the signal processor in the signal path.

Alternatively, the signal from the send can be fed to other inputs on the patchbay, without breaking the normaling.

GRP - The balanced group output socket provides access to the signal at the tape output. The group signal is normalled to the corresponding TO TAPE output on the rear panel EDAC connector. Inserting a bantam jack plug into the group socket does not break the normalled connection.

TAPE SND - The balanced tape send socket is used to send line level signal directly to the TO TAPE output on the rear panel EDAC connector. The group output is normalled to the tape send: inserting a bantam jack plug into this socket breaks the normaling.

TAPE RET - The balanced tape return socket is used to access the signal returning from the multitrack tape via the FROM TAPE input on the rear panel EDAC connector. The tape return is normalled to the monitor input: inserting a bantam jack plug into this socket breaks the normaling.

AUXILIARY OUTPUTS 1-8 - The unbalanced auxiliary output sockets are used to send the signal from the auxiliary masters to effects processors other than those connected to the AUX 1-8 outputs on the rear panel EDAC connectors. Inserting a bantam jack plug into one of these sockets breaks the normaling for the corresponding auxiliary output.

AUXILIARY NORMALS 1-8 - The balanced auxiliary normals sockets are used to access the inputs of the outboard equipment connected to the AUX 1-8 outputs on the rear panel EDAC connectors. Inserting a bantam jack plug into one of these sockets breaks the normaling and allows an alternative signal to be sent to the corresponding auxiliary output.

LEFT and RIGHT SND and RET- The balanced left and right send and return sockets form the insert point for the master mix outputs. They allow external signal processing devices to be patched into the signal path of the left and right channels of the stereo master mix. The sends are normalled to the returns.

Inserting a bantam jack plug into the send socket does not break the normalled connection; inserting a bantam jack plug into the return socket does break the normaling.

L and R MIX - The balanced left and right mix outputs provide access to the stereo master mix signal. These are normalled to the TO 2TA, B and C outputs on the rear panel EDAC connectors.

Inserting a bantam jack plug into the send socket does not break the normalled connection.

OSC - The oscillator socket provides a direct output from the oscillator.

TB - The talkback socket provides a direct output from the talkback section.

TIE LINES - 96 balanced tie line sockets are provided (expandible up to 288). These are connected to the rear panel EDAC connectors. The tie lines can be connected to various signal and effects processors, and line level sources such as keyboards, drum machines and samples so that these can be conveniently patched into the console. Balanced tie lines can also be run to live rooms, vocal booths, etc. so that line level sources from these areas can be patched into the console.

PARALLELS - The two groups of four parallel sockets allow a signal to be split to feed up to three destinations. When the signal from any output on the patchbay is patched into any one of the sockets in a group, the signal appears on the other three. The parallels should not be used to combine different source signals to a single output.

2 TRACK RETURNS - The three sets of left and right 2 track returns provide access to the output signal of the two track machines connected to the FROM 2 TRACK inputs on the rear panel EDAC connectors.

2 TRACK SENDS - The three sets of left and right 2 track sends provide access to the inputs of the two track machines connected to the TO 2 TRACK outputs on the rear panel EDAC connectors. Inserting bantam jack plugs into the 2 track send sockets breaks the normal of the stereo mix to the TO 2 TRACK outputs.

STUDIO L and R - The STUDIO L and R sockets are the outputs for the studio monitors. These are normalled to the STUDIO L and R outputs on the rear panel EDAC connectors. Inserting bantam jack plugs into these sockets does not break the normaling.

STUDIO NORMALS - The left and right STUDIO NORMALS sockets provide access to the inputs of the studio speaker/headphones amplifier. Inserting bantam jack plugs into these sockets breaks the normaling from the studio monitor section of the console.

Grounding and screening

To ensure that noise and interference is kept out of the audio system all of the cables must be correctly screened and grounded. In general this means that the screen must be connected at one end of the cable only as described below to prevent earth loops:

Balanced out to balanced in - connect the screen to destination only

Balanced out to unbalanced in - connect the screen at the source only. Link the cold output to ground at the output connector.

Unbalanced out to balanced in - connect the screen at the destination only. Connect the cold input to ground at the input

The exceptions to this are snakes, mic cables, multicore cables and ground isolated equipment. The following pages show typical cable wiring.

Balanced and unbalanced

As you can see from the last pages, most of the inputs and outputs to the SOLITAIRE console are balanced. To make use of this type of connection the cables must be wired correctly. The wiring depends not only on the balanced/unbalanced condition but also the sensitivity of the equipment. The following pages show typical cable wiring.

Level matching

It is common to find level matching problems when connecting different types of equipment. This is because there are two signal level standards in common use:

-10dBV at 0 VU (approx. 0.3 V r.m.s. or -8dBu)
+4dBu at 0 VU (approx. 1.2 V r.m.s. or +2dBV)

The SOLITAIRE has jumper links inside (see page I-87) for the tape inputs, tape outputs and 2 track inputs so that -10 or +4 equipment can be connected to the console. Check the equipment manual and use these jumper links to match the console correctly.

Amplifiers connected to the outputs can bring the same problem. The control room and studio outputs of the SOLITAIRE operate on the +4dBu standard. Some amplifiers have a low sensitivity and some have a high sensitivity. If you are suffering from too much level or too much noise then the problem is almost certainly the level matching of the console to the amplifier. Either the sensitivity of the amplifier must be altered or in line attenuators added.

The SOLITAIRE has 24 input/output (I/O) module strips on the left hand side of the console, and up to 16 (depending on the total number of input channels) on the right hand side of the console. Each module has two inputs (the channel and the monitor) which accept signals from microphones, electronic instruments or tape machines depending on the mode of operation. The output normally feeds a multitrack machine.

This section covers:

The channel input stage 36
The 48v button 36
The LINE button 36
The MIC/LINE GAIN control 36
The channel equaliser 36
The HF frequency and level controls 36
The MF1 frequency and level controls 37
The MF2 frequency and level controls 37
The LF frequency and level controls 37
The roll off filter 37
The EQ IN button 37
The monitor equaliser 38
The HF and LF controls 38
The Mids button 38
The EQ IN button 38
FdB Equalisation 39
The auxiliary sends 40
The AUX 1-2 PAN and level controls 40
The POST buttons 40
The AUX 3-4 PAN and level controls 40
The AUX 5 and AUX 6 level controls 41
The MON buttons 41
The AUX 7 and AUX 8 level controls 41
The 24T button 41
The monitor input 42
The 24T button 42
The monitor pan control 42
The monitor fader 42
The monitor L-R button 42
The monitor SOLO and MUTE buttons 43
The VCA, REC and PLAY buttons 43
The GRP button 43
The Tape button 43
The channel input controls 44
The MIX button 44
The MTR button 44
The PHASE button 44
The channel SOLO and MUTE buttons 44
The channel pan and routing 45
TheVCA, REC and PLAY buttons 46
The peak indicator 46
The channel fader ..... **SOUNDTRACS** ... SOLITAIRE

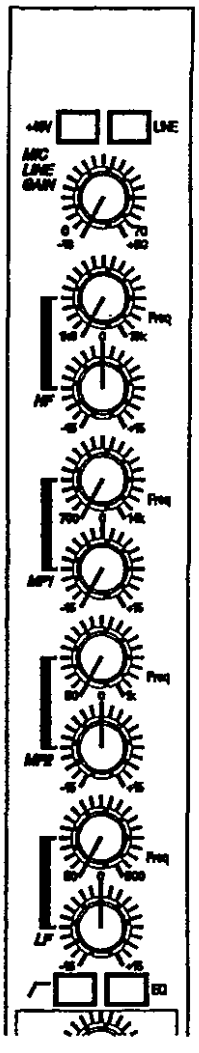
The Channel Input Stage

The channel is the main input on the module strip. The input stage consists of an ultra low noise preamplifier which is used to match the incoming signal with the console. There are two inputs: the balanced microphone input and the balanced line input. For information on connections see the hook up section.

The +48v button - Pressing this switch applies 48 volt phantom power to the microphone input. This is necessary for most types of condenser microphone. Phantom power should be turned off when not required, and must never be used with an unbalanced microphone. Do not operate this switch with the fader up, as a loud click will result.

The LINE button - The LINE button is used to select the signal source for the input stage. When the switch is in the raised position the microphone signal is fed to the input stage; when the switch is in the depressed position the line signal is fed to the input stage.

The MIC/LINE GAIN control - This control is used to adjust the gain of the Mic/Line input in order to match the input signal to the operating level of the mixer channel. Careful matching of the input gain allows the optimum signal to noise ratio to be achieved. The Mic gain range is 0dB to +70dB and the line gain range is -10dB to +20dB.



The Channel Equaliser

The channel equaliser is a 4 band fully swept parametric equaliser which incorporates the Soundtracs Frequency Dependent Boost (FdB ™). Please refer to the description of FdB equalisation below for more information.

The HF FREQUENCY control - adjusts the operating frequency of the high frequency shelving filter, which may be swept between 1.8kHz and 18kHz.

The HF level control - adjusts the amount of boost or cut provided by the high frequency filter. The maximum boost or cut rises from 15dB to 20dB as the frequency is swept towards the upper end of it's range.

The MF 1 FREQUENCY control - adjusts the operating frequency of the mid frequency 1 peaking filter, which may be swept between 700Hz and 14kHz.

The MF 1 level control - adjusts the amount of boost or cut provided by the mid frequency 1 filter. The maximum boost or cut is 15dB.

The MF 2 FREQUENCY control - adjusts the operating frequency of the mid frequency 2 peaking filter, which may be swept between 50Hz and 1kHz.

The MF 2 level control - adjusts the amount of boost or cut provided by the mid frequency 2 filter. The maximum boost or cut is 15dB.

The LF FREQUENCY control - adjusts the operating frequency of the low frequency shelving filter, which may be swept between 50Hz and 500kHz.

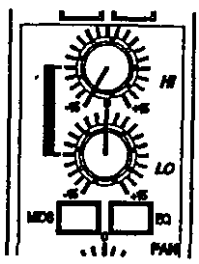
The LF level control - adjusts the amount of boost or cut provided by the low frequency filter. The maximum boost or cut rises from 15dB to 20dB as the frequency is swept toward the lower end of it's range.

The roll off filter - reduces bass frequencies below 63Hz at a rate of 12dB per octave.

The EQ button - switches the equaliser in and out of the signal path.

The Monitor Equaliser

The monitor equaliser is a two band shelving filter. The mid frequency filters can be switched from the channel to the monitor section to augment the basic monitor equaliser.



The HF control - boosts (clockwise) or cuts (anticlockwise) all frequencies above 10kHz. Up to 15dB of boost or cut may be selected and the filter has a shelving response.

The LF control - boosts (clockwise) or cuts (anticlockwise) all frequencies below 100Hz. Up to 15dB of boost or cut may be selected and the filter has a shelving response.

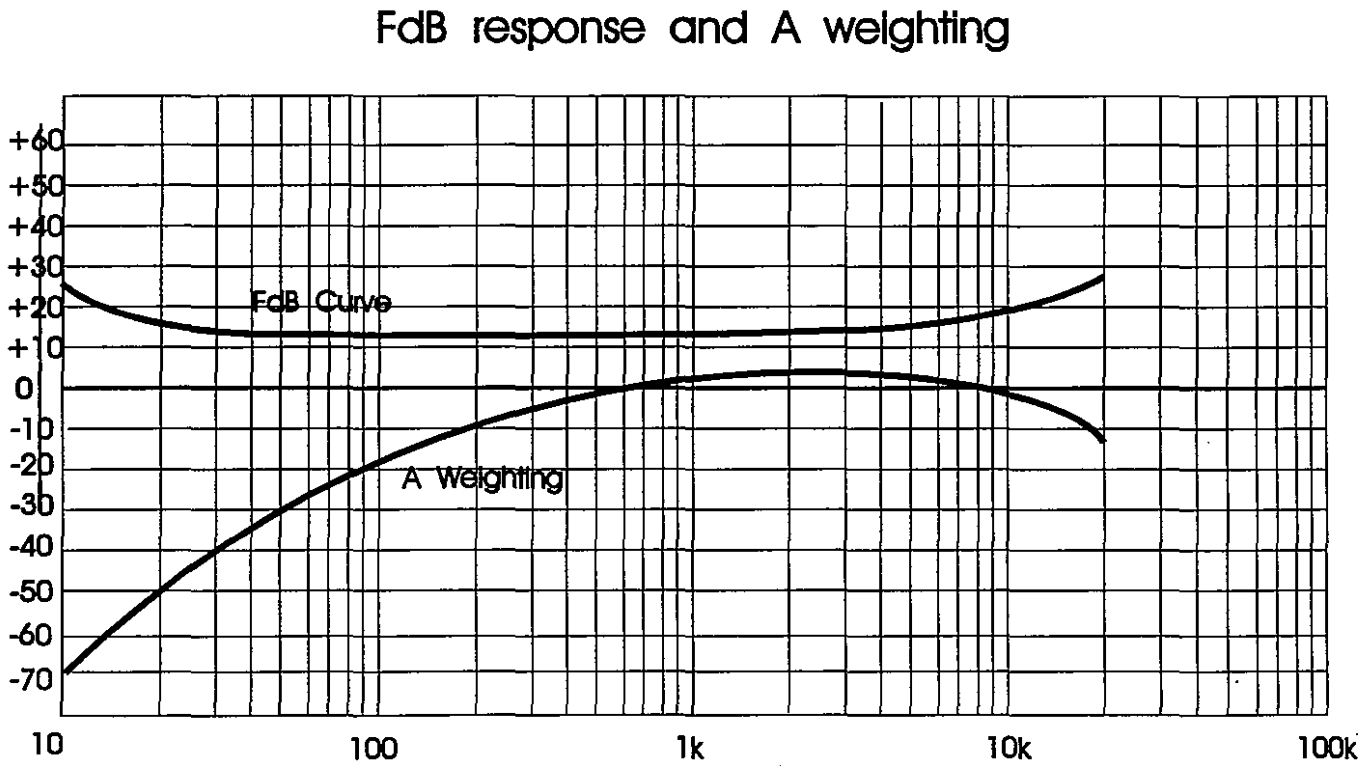
The MIDS button - switches the mid frequency filters from the channel equaliser into the monitor section.

The EQ button - switches the equaliser in and out of the signal path. When the MIDS button is depressed, the monitor EQ button also operates on the MF1 and MF2 filters from the channel EQ.

FdB Equalisation

Human hearing becomes progressively less sensitive at the high and low extremes of the audio frequency spectrum. Due to this, conventional equalisers, which provide a consistent amount of boost or cut across the whole frequency spectrum, will be perceived as having a less powerful effect on the extreme highs and lows than they have on the mid bands.

Manufacturers and test engineers have long been aware of this fact, and when measuring equipment specifications have made use of the A Weighting curve. The frequency response of this weighting function is the inverse of the response of the average human hearing. In designing the FdB equaliser Soundtracs have taken account of the non-linearity of the ear and built the equaliser to compensate for it. The result is an equaliser which, in it's high and low frequency bands, increases it's boost or cut progressively from 15dB to 20dB as the equaliser is swept towards the frequency extremes. The graph below illustrates the operation of the equaliser.



The Auxiliary Sends

The SOLITAIRE has eight auxiliary sends which are used for sending channel and monitor signals to effects units or to headphones.

Auxiliaries 1-2 are for the monitor and 3-4 are for the channel. Both are stereo and are used for 2 channel effects devices or 2 independent headphone cues. The 2 cues can be linked together at the master module to give one headphone cue mix which can be accessed by both the channel and monitor.

Auxiliaries 5, 6, 7 and 8 are all mono sends which can be switched in pairs to the monitor section. Auxiliaries 7 and 8 also include access to the 24 track routing, which provides 24 more sends on mix-down and makes broadcast operation possible.

The AUX 1-2 pan control - adjusts the relative level of signal sent to the two auxiliary buses. When the control is in the centre position, signal is sent to aux buses 1 and 2 equally. Rotating the control anticlockwise sends relatively more signal to aux bus 1; rotating the control clockwise sends relatively more signal to aux bus 2.

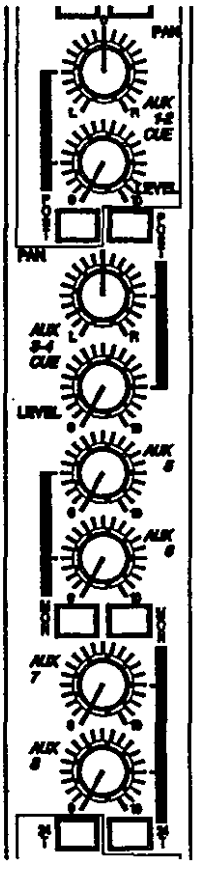
The AUX 1-2 level control - adjusts the level of signal sent from the monitor to auxiliary buses 1-2 via the AUX 1-2 pan control.

The AUX 1-2 POST button - switches the signal source for auxiliary sends 1-2 to post fader operation. When the button is in the raised position the signal source is pre fader; when the button is depressed the signal source is post fader.

The AUX 3-4 POST button - switches the signal source for auxiliary sends 3-4 to post fader operation. When the button is in the raised position the signal source is pre fader; when the button is depressed the signal source is post fader.

The AUX 3-4 pan control - adjusts the relative level of signal sent to the two auxiliary buses. When the control is in the centre position, signal is sent to aux buses 3 and 4 equally. Rotating the control anticlockwise sends relatively more signal to aux bus 3; rotating the control clockwise sends relatively more signal to aux bus 4.

The AUX 3-4 level control - adjusts the level of signal sent from the channel to auxiliary buses 3-4 via the AUX 3-4 pan control.



The AUX 5 control - adjusts the level of signal sent to auxiliary bus 5. The source signal is a post fade feed from the channel or monitor as selected by the MON button.

The AUX 6 control - adjusts the level of signal sent to auxiliary bus 6. The source signal is a post fade feed from the channel or monitor as selected by the MON button.

The AUX 5-6 MON button - selects the source for auxiliary sends 5 and 6; when the switch is in the raised position the source is the channel, when it is depressed the source is the monitor.

The AUX 7-8 MON button - selects the source for auxiliary sends 7 and 8; when the switch is in the raised position the source is the channel, when it is depressed the source is the monitor.

The AUX 7 control - adjusts the level of signal sent to auxiliary bus 7. The source signal is a post fade feed from the channel or monitor as selected by the MON button.

The AUX 8 control - adjusts the level of signal sent to auxiliary bus 8. The source signal is a post fade feed from the channel or monitor as selected by the MON button.

The 24T button - sends the signal from auxiliary buses 7 and 8 to the 24 track routing. Auxiliary 7 sends to the odd numbered buses and auxiliary 8 sends to the even numbered buses.

This facility has two functions: during studio recording it will normally be used only during remix when the channel signal is assigned to the left and right masters only, rather than to any of the individual buses. It allows the group buses to be used as an extra 24 auxiliary sends.

It also serves as a "broadcast" mode, where the individual channel signals have to be sent separately to a multitrack machine, and a live mix must also be created. In this instance aux 7 and 8 would be used in conjunction with the 24 T button to route signals to tape, with the live mix being carried out on the left and right masters using the channel faders.

Please note: routing the auxiliary sends from a monitor to itself when in 24T mode can result in feedback when the TAPE button is in the raised postion.

In cases where both the monitor and AUX 7/8 24T buttons are depressed, priority is given to the AUX 7/8 24T button.

The Monitor Section

The monitor input is the second input to the module strip. It is called the monitor input because during conventional multi-track recording it is used to "listen to" or "monitor" the signal being recorded onto tape. The input to the monitor depends on whether the module is in record mode or mix mode. When the module is in record mode (i.e. the MIX button is not pressed) the tape input is connected to the monitor. This means that the monitor can be used to listen to signals as they are recorded onto the multitrack machine. The TAPE button allows you to listen to signal going to tape (TAPE button raised) or coming from tape (TAPE button depressed). When the module is in mix mode (i.e. the MIX button is pressed) then the mic/line input is connected to the monitor. This means that the monitor can be used as an input for effects, keyboards, samplers, etc.

The 24T button - sends the post fader monitor signal to the 24 track routing buttons instead of the channel signal. This allows the signal in the monitor path to be recorded onto tape. (In cases where both the monitor 24T and AUX 7/8 24T buttons are depressed, priority is given to the AUX 7/8 24T button.)

Please note: routing a monitor to itself when in 24T mode can result in feedback when the TAPE button is in the raised postion.

The MON PAN control - positions the monitor signal in the stereo image. When the 24T button is depressed the MON PAN control is used in conjunction with the routing buttons to send the monitor signal to a given tape track.

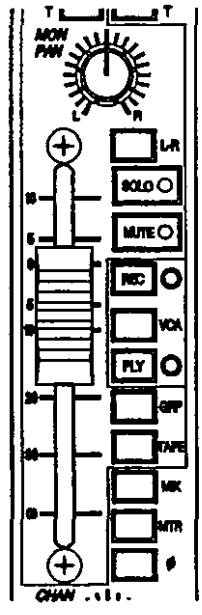
The monitor fader - adjusts the signal level from the monitor section sent to the left and right Mix outputs via the monitor pan control.

When the GRP button is depressed, the monitor fader is used to control the level of signal sent to tape via the group output.

When the 24T button is depressed, the monitor fader determines the level of the signal sent to the tape track/tracks selected by the routing buttons and MON PAN control.

The monitor fader is used to control record and trim functions when the automation system is in use and the VCA button is depressed.

The L-R button - routes the signal in the monitor path to the mix outputs via the monitor fader and MON PAN control.



The monitor SOLO button - allows the engineer to listen to the monitor individually. The solo may be either PFL or IPS, depending on the mode selected on the master module. When IPS mode is selected, pressing the SOLO button mutes all non-soloed channels and monitors.

When IPS mode is not selected, the console is in PFL mode: pressing the SOLO button in this mode sends pre-fader signal to the headphones/speaker outputs via the master monitor section of the console and disconnects all non-soloed signals from the speaker and headphones outputs. The LED in the switch cap lights when the solo button is pressed.

The monitor MUTE button - cuts the signal in the monitor path (post EQ, pre fader/auxiliary send). When the GRP button is depressed, the MUTE button cuts the signal being sent to the group output.

The red LED in the switch cap illuminates when the monitor is muted. The soft MUTE button can be controlled by the console automation system. Please see the Automation section for further details on mute automation.

The REC and PLAY buttons - are used to record and playback monitor fader moves. The adjacent red and green LEDs indicate the status of the monitor fader automation. For more information please refer to the Automation section of this manual.

The GRP button - routes the signal being sent to tape through the monitor EQ and fader controls to the group output selected by the routing buttons. This allows the monitor fader to control the group output level, and the monitor EQ, solo and mute functions to be applied to signal being sent to tape via the group output.

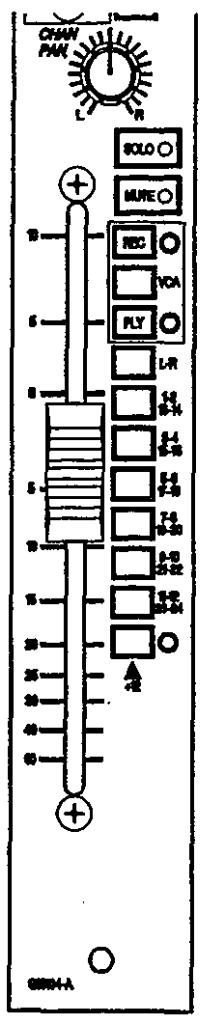
The VCA button - switches the VCA in and out of the monitor signal path. The VCA controls the level of the signal in the monitor path when the automation system is in use. When the button is in the raised position, the VCA is out of the signal path, when the button is depressed the VCA is in the signal path.

The TAPE button - selects the source of the monitor. When the button is in the raised position the source for the monitor is the signal being sent to the corresponding tape track (from the channel routing buttons). When the button is depressed the source for the monitor is the signal from tape.

The Channel Controls

The Channel controls are used to adjust the level of the channel input signal within the mix and to route the signal within the console.

The MIX button - flips the channel from record mode to mix mode. In record mode the line/mic input is sent through the channel and the tape returns through the monitor. In mix mode the line/mic input is sent through the monitor and the tape returns through the channel. When the button is in the raised position the channel is in record mode; when the button is depressed it is in mix mode.



The MTR button - switches the bargraph meter to display either the tape input/output level or the channel input level. When the button is in the raised position, and the TAPE button is also in the raised position, the bargraph meter for that channel will display the level being sent to tape. When the MTR button is in the raised position and the TAPE button is depressed, the meter will display the level returning from tape. When the MTR button is depressed the meter will display the channel input level.

The PHASE button - reverses the phase of the channel signal to cancel out of phase conditions.

The channel SOLO button - allows the engineer to listen to the channel individually. The solo may be either PFL or IPS, depending on the mode selected on the master module. When IPS mode is selected, pressing the SOLO button mutes all non-soloed channels and monitors.

When IPS mode is not selected, the console is in PFL mode: pressing the SOLO button in this mode sends pre-fader signal to the headphones/speaker outputs via the master monitor section of the console and disconnects all non-soloed signals from the speaker and headphones outputs.

The LED in the switch cap lights when the monitor solo button is pressed.

The channel MUTE button - cuts the signal in the channel path (post EQ, pre fader/auxiliary send). The red LED in the switch cap illuminates when the channel is muted. The soft MUTE button can be controlled by the console automation system. Please see the Automation section for further details on mute automation.

The channel PAN control - (in conjunction with the L-R button) positions the signal in the stereo image of the master mix and (in conjunction with the routing buttons) sends the channel signal to the various tape outputs.

The L-R and routing buttons - are used in conjunction with the channel PAN control to send the channel signal to the master mix and tape outputs as follows:

L-R routes signal in the channel to stereo mix outputs. The pan control adjusts the position between Left and Right.

1-2 routes signal in the channel to tape outputs 1-2. The pan control adjusts the position between outputs 1-2.

3-4 routes signal in the channel to tape outputs 3-4. The pan control adjusts the position between outputs 3-4.

5-6 routes signal in the channel to tape outputs 5-6. The pan control adjusts the position between outputs 5-6.

7-8 routes signal in the channel to tape outputs 7-8. The pan control adjusts the position between outputs 7-8.

9-10 routes signal in the channel to tape outputs 9-10. The pan control adjusts the position between outputs 9-10.

11-12 routes signal in the channel to tape outputs 11-12. The pan control adjusts the position between outputs 11-12.

+12 routes signal in the channel to tape outputs 13-24. The pan control adjusts the position of the signal between the odd and even numbered outputs of each pair in the same manner as above.

When the monitor 24T button is depressed, the routing buttons function in the same manner, except that the signal in the monitor path is sent to the selected outputs.

When the AUX 7-8 24T button is depressed, the routing buttons function as additional auxiliary sends and do not receive the channel signal directly.

The REC and PLAY buttons - are used to record and playback channel fader moves. The adjacent red and green LEDs indicate the status of the monitor fader automation. For more information please refer to the Automation section of this manual.

The VCA button - switches the VCA in and out of the channel signal path. The VCA controls the level of the signal in the channel path when the automation system is in use. When the button is in the raised position, the VCA is out of the signal path, when the button is depressed the VCA is in the signal path. (Please note, the channel VCA button has no function if the optional moving fader automation is fitted.)

The PEAK indicator - This red warning LED illuminates when a signal in the channel or monitor path exceeds 5dB below clip. The GAIN control should be adjusted so that this LED does not light or flash except on the highest peaks.

The channel fader - adjusts the signal level from the channel sent to the stereo masters, tape outputs (via the channel pan control and routing buttons) and post fader auxiliary sends.

The channel fader is used to control record and trim functions when the automation system is in use and the VCA button is depressed.

The master section contains the auxiliary masters, the stereo effects returns, the group output controls, the left and right output controls, the talkback controls, the 2 track controls, the control room and studio controls and the headphone control.

This section covers

The stereo effects returns 48
The -10dB button 48
The HF and LF controls 48
The EQ button 48
The AUX 1-2 pan and level controls 48
The AUX 3-4 button 48
The Balance control 48
The SOLO and MUTE buttons 49
The fader 49
The auxiliary masters 49
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The AFL button 49
The MUTE button 49
Input sensitivity 49
The SOLO system 50
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The AUX button 50
The GROUP button 50
The talkback section 51
The GROUP and STUDIO buttons 51
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The studio section 51
The studio output source buttons 51
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The control room section 52
The control room source buttons 52
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The level control 52
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The ALT button 53
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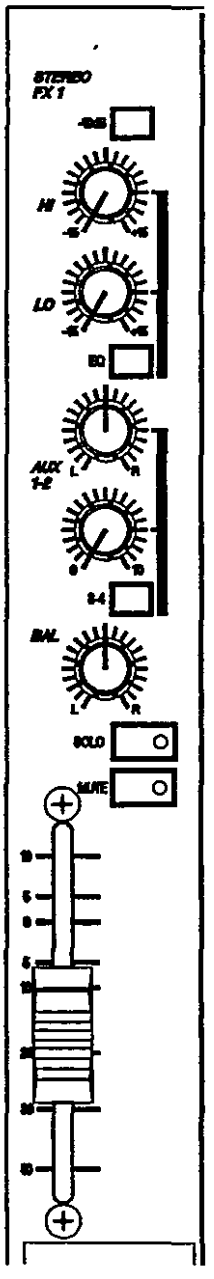
The Stereo Effects Returns

There are four stereo effects returns on the SOLITAIRE designed to accept signals from effects units such as reverb and echo devices. A two band equaliser and stereo auxiliary sends are included in each effects return. All effects return inputs are balanced.



The -10dB button - switches the input sensitivity from +4dBu in the raised position to -10dBV in the depressed position. This provides for connection of equipment conforming to either of the two common operating level standards. For the optimum signal to noise ratio the input sensitivity should be set to match the operating level of the effects processor connected to the input. Where a choice of operating levels is provided on the effects unit, +4dB should be selected, as this will provide the best signal to noise level.

The HF control - boosts (clockwise) or cuts (anticlockwise) all frequencies above 10kHz. Up to 15dB of boost or cut may be selected and the filter has a shelving response.

The LF control - boosts (clockwise) or cuts (anticlockwise) all frequencies below 100Hz. Up to 15dB of boost or cut may be selected and the filter has a shelving response.

The EQ button - switches the equaliser in and out of the signal path.

The auxiliary 1-2 pan control - positions the signal in the stereo image of the stereo auxiliary 1-2 sends.

The auxiliary 1-2 level control - adjusts the level of the signal in the auxiliary 1-2 sends.

The auxiliary 3-4 button - switches the signal to auxiliary sends 3-4 when the button is depressed.

The balance control - The balance control positions the effects return signal in the stereo image. Turning the balance anticlockwise shifts the stereo image left and turning the balance clockwise shifts the stereo image to the right.

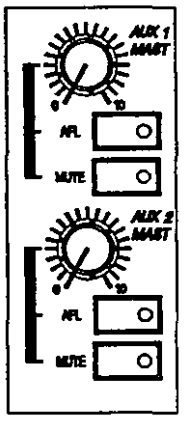
The SOLO button - is used to listen to an effects return individually. When the button is depressed the signal in the effects return is routed directly to the master monitor section, allowing the soloed signals to be heard in isolation on the headphones, studio and control room outputs. The LED in the switch cap illuminates to indicate that the solo is active.

The MUTE button - cuts the signal in the effects return. The soft mute button can be recorded into the console automation system. The LED in the switch cap illuminates when the mute is active.

The fader - adjusts the volume of the stereo effects return signal.

The Auxiliary Masters

The auxiliary masters control the overall level of the 8 auxiliary outputs. The controls for all auxiliary outputs are the same:



The Level control - adjusts the level of the auxiliary output signal leaving the console.

The AFL button - sends the auxiliary output signal to the headphones and monitor outputs so that it can be heard on its own. The AFL signal comes from after the aux level control (hence after fade listen, AFL). The red LED in the switch cap illuminates when the AFL button is pressed.

The MUTE button - cuts the signal to the auxiliary send. The soft mute button can be recorded into the console automation system. The LED in the switch cap illuminates when the mute is active.

Input Sensitivity - The operating level of an effects units can be either +4dBu or -10dBV depending on it's design. Please refer to the effect unit's user manual to determine the correct operating level of the unit. Some units allow the user to select -10dB or +4dB operation; where possible, +4dB operation should be selected to provide the best signal to noise ratio.

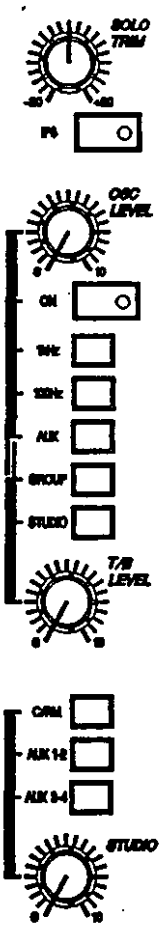
The SOLO system

The SOLO trim control - The SOLO trim control adjusts the level of solo signal on the control room speakers and headphones.

The IPS button - switches the console from PFL (pre fader level) to IPS (in place solo) mode. When the button is in the raised position, the console is in PFL mode so the individual pre fader signals can be heard in mono without affecting the mix outputs.

When the IPS button is depressed, the console is in IPS mode. Pressing a solo button will now mute all non-soloed inputs, allowing the engineer to listen to individual signals at their current level in stereo.

It should be noted that IPS mode *mutes* all non soloed inputs, and therefore does affect the mix outputs.



The Oscillator

The oscillator provides tones which may be routed to groups for slating tones to tape, and to the auxiliary master outputs for lining up external effects processors.

The OSC level control - adjusts the level of the oscillator signal sent to the groups and/or auxiliaries.

The ON button - turns the oscillator on. The LED in the switch cap illuminates when the oscillator is on. The oscillator should be switched off when not in use as it may otherwise bleed through to the audio buses at a very low level.

The 1kHz, 100Hz and 10kHz buttons - are used to determine the frequency of the oscillator signal as follows:

100Hz button depressed sets the oscillator frequency = 100Hz
1kHz button depressed sets the oscillator frequency = 1kHz
both buttons depressed sets the oscillator frequency = 10kHz

The AUX button - routes the oscillator signal to all auxiliary sends.

The GROUP button - routes the oscillator signal to all group outputs. (The GROUP button also functions as a part of the talkback system, as described below.)

The Talkback Section

The talkback section contains the controls for communication between the engineer in the control room and the musicians in the studio.

The GROUP button - routes the signal from the talkback microphone (if active) to the group output buses. (The GROUP button also functions as a part of the oscillator system, as described above.)

The STUDIO button - routes the signal from the talkback microphone (if active) to the studio output.

The TALKBACK level control - adjusts the output level of the signal from the talkback section.

The TALK MIC - is a built in microphone which allows the engineer to talk to the studio or groups.

The TALK button - is non latching and turns the talkback section on and off. Hold the switch down to activate the talkback microphone.

The Studio Section

The studio section contains the controls used to send the various mixes and 2 track sources to the studio headphones for musician's cues and playback.

The Studio output source buttons - The three studio output source buttons are used to select or combine the various sources for the studio output as follows:

CONTROL ROOM - Sends the mix selected in the control room monitor section to the studio outputs.
AUX 1-2 - Sends the stereo signal mix from auxiliary 1-2 to the studio outputs.
AUX 3-4 - Sends the stereo signal mix from auxiliary 3-4 to the studio outputs.

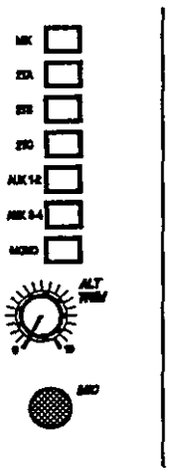
The STUDIO level control - The studio level control adjusts the level of signal sent to the studio outputs, which normally feed the musicians headphones.

The Control Room Section

The control room section is used to send the various mixes and 2 track sources to the control room speakers for monitoring purposes.

The Control Room source buttons

The control room source buttons are used to select or combine the various sources for the control room outputs as follows:



The MIX button - sends the mix signal to the Control Room outputs.

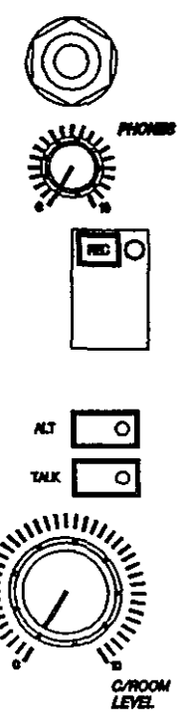
The 2TA button - sends the 2TA input signal to the Control Room outputs.

The 2TB button - sends the 2TB input signal to the Control Room outputs.

The 2TC button - sends the 2TC input signal to the Control Room outputs.

The AUX 1-2 and Aux 3-4 buttons - allow the engineer to monitor the output of these auxiliary sends in the control room so that headphone mixes can be set.

The MONO button - The Mono button sums the left and right signals of the selected control room source to mono. This allows the engineer to check mono compatibility.



The ALT TRIM control - adjusts the level of the speaker B outputs relative to the speaker A outputs. This allows the engineer to "match" the level of the two sets of control room speakers so that the volume of playback remains constant when switching between them.

The CONTROL ROOM level control - adjusts the volume of the signal sent to the control room amplifiers and speakers.

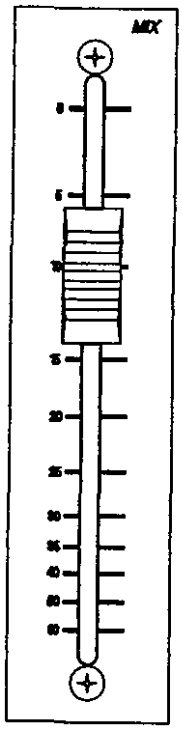
The PHONES control - The headphones level control adjusts the level of signal sent to the stereo headphone output. The headphone output appears on a 0.25" stereo jack on the front of the console. The signal source for the headphones output is the same as that for the Control Room monitor output.

The ALT button - The ALT button is used to switch between control room outputs A and B. In the "up" position the control room signal is sent to control room output A, in the "down" position the control room signal is sent to control room output B. The control room A and B outputs are normally used to drive the large and small speakers respectively.

The Masters

The L and R masters send the mix signal to the balanced left and right outputs via the stereo master fader and insert points. These outputs are normally used to feed the two track machines.

The Master Fader - The 100mm stereo master fader controls the level of the left and right outputs feeding the master tape machine.



The optional Stereo Input Module provides a single stereo pair of line inputs, closely following the operation of the Mono input module. It does not contain a Monitor section or any associated controls, but is very similar apart from that. The provision of automation and Assignable Dynamic Processing is identical except that the systems both address the stereo module as if it were a mono input module. Moving Fader automation is not possible with the Stereo Input Module.

This section covers:

The channel input stage 56
The MIC/LINE GAIN control 56
The LEFT and RIGHT buttons 56
The RIGHT Ø Button 56
The STEREO WIDTH Control 56
The channel equaliser 57
The HF level control 57
The MF1 frequency and level controls 57
The MF2 frequency and level controls 57
The LF level control 57
The roll off filter 57
The EQ IN button 57
The auxiliary sends 58
The AUX 1-2 PAN and level controls 58
The POST buttons 58
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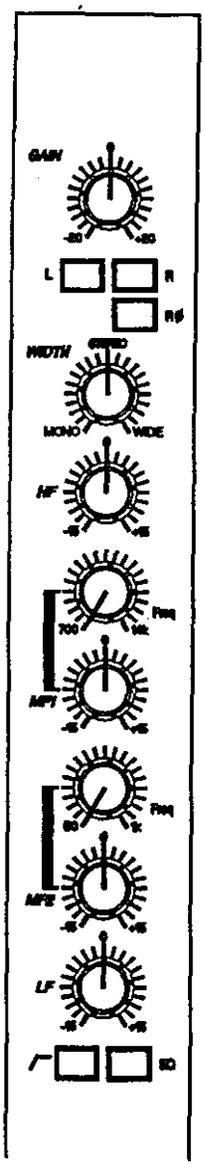
The AUX 5 and AUX 6 level controls 59
The STEREO buttons 59
The AUX 7 and AUX 8 level controls 59
The channel output controls 59
The channel SOLO and MUTE buttons 60
The BALANCE control 60
The channel pan and routing 60

The Stereo Input Stage

The stereo input stage consists of a pair of ultra low noise preamplifiers which are used to match the incoming signal with the console. There are two inputs: the balanced left line input and the balanced right line input. They are collectively referred to as the line input in the rest of this section. For information on connections see the hook up section.



The GAIN control - This control is used to adjust the gain of the Line input in order to match the input signal to the operating level of the mixer channel. Careful matching of the input gain allows the optimum signal to noise ratio to be achieved. The gain range is -20dB to +20dB.

The LEFT button - The LEFT button is used to select the left signal source from the input stage and to feed it into both sides of the stereo input. When the switch is in the raised position the left signal is fed to the left side. When the switch is in the depressed position the left signal is fed to both sides.

The RIGHT button - The RIGHT button is used to select the right signal source from the input stage and to feed it into both sides of the stereo input. When the switch is in the raised position the right signal is fed to the right side. When the switch is in the depressed position the right signal is fed to both sides.

The RIGHT Ø button - The RIGHT Ø button is used to reverse the phase of the right signal source at the input stage. When the button is raised the phase is unaffected.

The STEREO WIDTH Control - The Stereo Width control is used to vary the width of the stereo image. With the control in the fully anti-clockwise position, the signal is in mono, With the control in the fully clock-wise position, the signal is in super wide stereo.

The Equaliser

The equaliser is a 4 band equaliser with swept mid peaking, and fixed high and low shelving controls.

The HF level control - adjusts the amount of boost or cut provided by the high frequency filter. The maximum boost or cut is 15dB. The control operates at 12kHz

The MF 1 FREQUENCY control - adjusts the operating frequency of the mid frequency 1 peaking filter, which may be swept between 700Hz and 14kHz.

The MF 1 level control - adjusts the amount of boost or cut provided by the mid frequency 1 filter. The maximum boost or cut is 15dB.

The MF 2 FREQUENCY control - adjusts the operating frequency of the mid frequency 2 peaking filter, which may be swept between 50Hz and 1kHz.

The MF 2 level control - adjusts the amount of boost or cut provided by the mid frequency 2 filter. The maximum boost or cut is 15dB.

The LF level control - adjusts the amount of boost or cut provided by the low frequency filter. The maximum boost or cut is 15dB. The control operates at 80Hz.

The roll off filter - reduces bass frequencies below 100Hz at a rate of 12dB per octave.

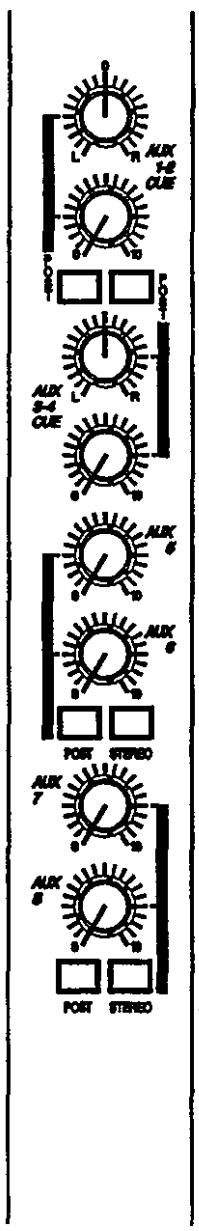
The EQ button - switches the equaliser in and out of the signal path.

The Auxiliary Sends

The SOLITAIRE has eight auxiliary sends which are used for sending channel and monitor signals to effects units or to headphones.

Auxiliaries 1-2 and 3-4 are stereo and are used for 2 channel effects devices or 2 independent headphone cues. The stereo input module always sends down these auxiliaries in stereo, i.e. the left signal is sent down busses 1 and 3, and the right signal is sent down busses 2 and 4. The 2 cues can be linked together at the master module to give one headphone cue mix which can be accessed by both the channel and monitor.

Auxiliaries 5, 6, 7 and 8 are all mono sends which can be switched in pairs to operate in stereo.



The AUX 1-2 pan control - adjusts the relative level of signal sent to the two auxiliary buses. When the control is in the centre position, signal is sent to aux buses 1 and 2 equally. Rotating the control anticlockwise sends relatively more signal to aux bus 1; rotating the control clockwise sends relatively more signal to aux bus 2.

The AUX 1-2 level control - adjusts the level of signal sent from the monitor to auxiliary buses 1-2 via the AUX 1-2 pan control.

The AUX 1-2 POST button - switches the signal source for auxiliary sends 1-2 to post fader operation. When the button is in the raised position the signal source is pre fader; when the button is depressed the signal source is post fader.

The AUX 3-4 POST button - switches the signal source for auxiliary sends 3-4 to post fader operation. When the button is in the raised position the signal source is pre fader; when the button is depressed the signal source is post fader.

The AUX 3-4 pan control - adjusts the relative level of signal sent to the two auxiliary buses. When the control is in the centre position, signal is sent to aux buses 3 and 4 equally. Rotating the control anticlockwise sends relatively more signal to aux bus 3; rotating the control clockwise sends relatively more signal to aux bus 4.

The AUX 3-4 level control - adjusts the level of signal sent from the channel to auxiliary buses 3-4 via the AUX 3-4 pan control.

The AUX 5 control - adjusts the level of signal sent to auxiliary bus 5. The source signal is a pre or post fade feed depending on the status of the POST button.

The AUX 6 control - adjusts the level of signal sent to auxiliary bus 6. The source signal is a pre or post fade feed depending on the status of the POST button.

The AUX 5-6 POST button - selects the source for auxiliary sends 5 and 6; when the switch is in the raised position the source is pre-fader, when it is depressed the source is post-fader.

The AUX 5-6 STEREO button - selects the mode for auxiliary sends 5 and 6; when the switch is in the raised position a mono signal comprising Left and Right input signals is sent down each, when it is depressed Left is sent down auxiliary 5 and Right is sent down auxiliary 6.

The AUX 7 control - adjusts the level of signal sent to auxiliary bus 7. The source signal is a pre or post fade feed depending on the status of the POST button.

The AUX 8 control - adjusts the level of signal sent to auxiliary bus 8. The source signal is a pre or post fade feed depending on the status of the POST button.

The AUX 7-8 POST button - selects the source for auxiliary sends 7 and 8; when the switch is in the raised position the source is pre-fader, when it is depressed the source is post-fader.

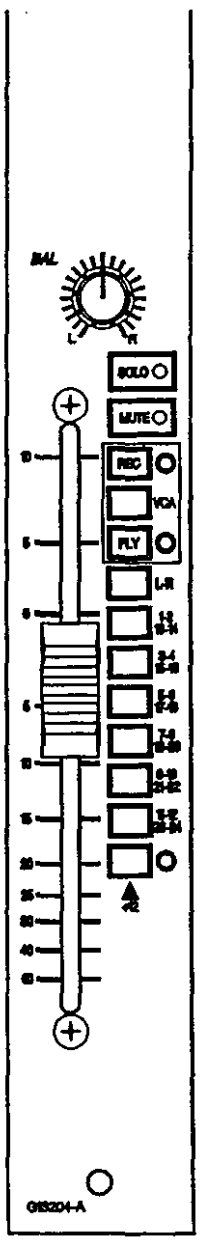
The AUX 7-8 STEREO button - selects the mode for auxiliary sends 7 and 7; when the switch is in the raised position a mono signal comprising Left and Right input signals is sent down each, when it is depressed Left is sent down auxiliary 7 and Right is sent down auxiliary 8.

The SOLO button - allows the engineer to listen to the channel individually. The solo may be either PFL or IPS, depending on the mode selected on the master module. When IPS mode is selected, pressing the SOLO button mutes all non-soloed channels and monitors.

When IPS mode is not selected, the console is in PFL mode: pressing the SOLO button in this mode sends pre-fader signal to the headphones/speaker outputs via the master monitor section of the console and disconnects all non-soloed signals from the speaker and headphones outputs.

The LED in the switch cap lights when the SOLO button is pressed.

The MUTE button - cuts the signal in the channel path (post EQ, pre fader/auxiliary send). The red LED in the switch cap illuminates when the channel is muted. The soft MUTE button can be controlled by the console automation system. Please see the Automation section for further details on mute automation.



The BALANCE control - determines the relative level of the Left and Right signals. When the control is turned anit-clockwise there is proportionally more Left signal and less Right signal. When the control is turned clockwise, there is proportionally more Right signal and less left signal.

The L-R and routing buttons - are used to send the channel signal to the master mix and tape outputs as follows:

L-R routes signal in the channel to stereo mix outputs.

1-2 routes signal in the channel to tape outputs 1-2.

3-4 routes signal in the channel to tape outputs 3-4.

5-6 routes signal in the channel to tape outputs 5-6.

7-8 routes signal in the channel to tape outputs 7-8.

9-10 routes signal in the channel to tape outputs 9-10.

11-12 routes signal in the channel to tape outputs 11-12.

+12 routes signal in the channel to tape outputs 13-24.

The optional Assignable Dynamics Processor provides compression, gating and modulation on all channel and monitor inputs.

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Selecting an effect 63
Linking and Keying 63
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The Gate 65
The Expander 66
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The Optional Dynamics Processor

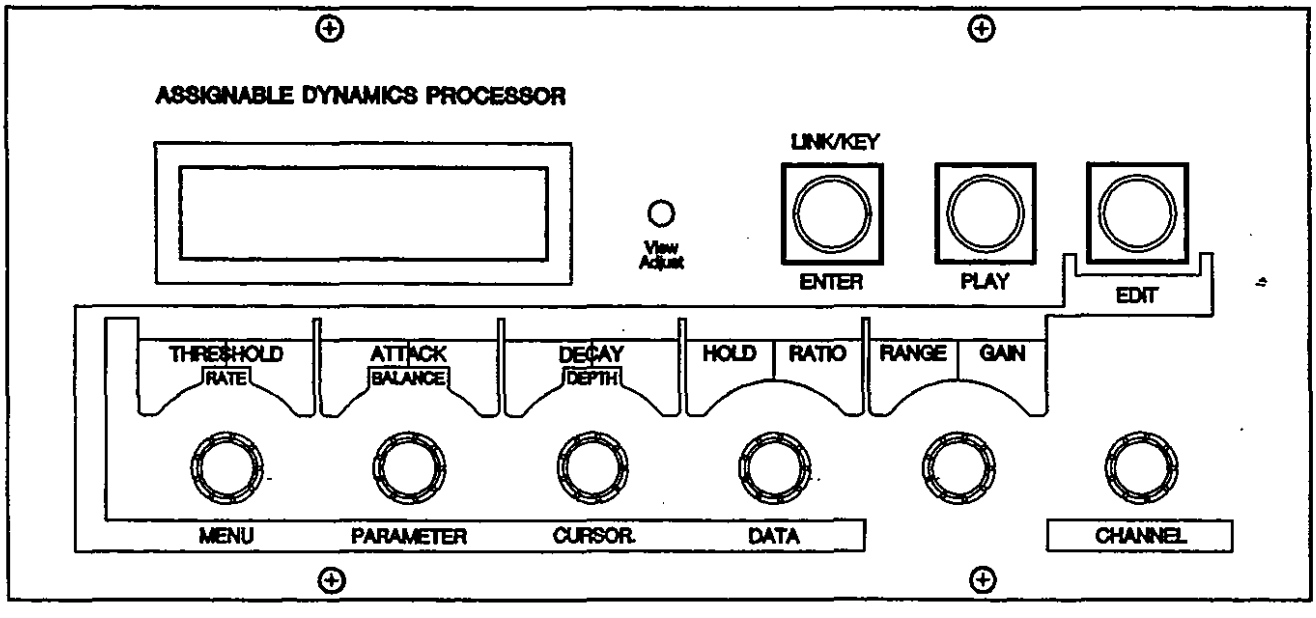
The optional Assignable Dynamics Processor uses DSPs to provide fully assignable and resettable dynamics processing on every channel . The system integrates with the optional automation computer so that complete dynamics snapshots may be saved to disk along with automated mutes and fader moves.

The Dynamics Processor provides two simultaneous processes: the first is always a compressor, while the second can be either a gate, an expander or a modulator/panner. Linking and keying functions between any two channels are provided.

The user may create a dynamic process suitable for a specific application which can be named and saved as a single channel snapshot to one of 112 user memory locations. There are also 16 factory presets available.

The control panel on the master module allows the user to select and edit dynamics settings. The LCD in the control panel displays the settings of the various parameters and functions as a meter displaying gain reduction, range and input level.

The PC display provides a user friendly interface which provides a graphic representation of the dynamics or effect, as well as gain reduction meters and familiar panel controls.



OPERATION - PLAY MODE

Selecting an effect for adjustment

First, use the channel control to select the channel for adjustment. As previously mentioned, each channel can have two simultaneous effects assigned to it. The first of these is always a Compressor, while the second is either a Gate, Expander or Modulator/Panner. The first or second effect may be selected for adjustment by pressing the PLAY key, which simply toggles the control wheels between the two effects. If the second function is a Gate, for example, pressing PLAY once selects Compressor, pressing PLAY a second time selects Gate, pressing PLAY again returns to Compressor and so on. The functions of the five rotary controls depend on which effect is being adjusted.

Linking and Keying

The compressors, gates or expanders of any channel may be linked to those of any other channel to create a 'stereo' pair; the gates or expanders may be keyed from any channel in the system. The LINK key is used to select the Compressor linking, Gate linking or Gate keying.

Press the LINK key once to select the Compressor link. The LCD displays:

Link Comp' Ch x
with channel ---

where x is the currently selected channel. Use the CHANNEL control to select the channel to be linked with. (A channel number followed by "?" will appear after "with channel".) Press the LINK key again to make the link. (The "?" disappears to indicate that the displayed link is active. Where there is no active link, "with channel" is followed by "---".)

The GATE link setup functions in much the same way as the compressor. Press the LINK key twice from PLAY mode to select GATE link. The LCD displays:

Link Gate Ch x
with channel ---

where x is the currently selected channel. Use the CHANNEL control to select the channel to be linked with. (A channel number followed by "?" will appear after "with channel".) Press the LINK key again to make the link. (The "?" disappears to indicate that the displayed link is active. Where there is no active link, "with channel" is followed by "---".)

When two channels are linked together as a stereo pair, the appropriate link display for each half of the pair shows the channel number of the other half. For example, if gate channel 16 is linked to channel 20, the gate link display for channel 20 will indicate that it is linked to channel 16. If this link channel is changed to another channel, the channel that *was* linked to it is reset; the link is broken.

Pressing the LINK key again selects the KEY setup. Selecting a KEY channel is much the same as selecting a link. The LCD displays:

Key Gate Ch x
with channel x

where x is the currently selected channel. (This indicates that the channel is being keyed to itself, i.e. the gate trigger signal is derived from that channel's input signal.) Use the CHANNEL control to select the channel to be keyed to. (A channel number followed by "?" will appear after "with channel".) Press the LINK key again to make the link. (The "?" disappears to indicate that the displayed link is active.)

When two channels are linked together as a stereo pair, the appropriate link display for each half of the pair shows the channel number of the other half. For example, if gate channel 16 is linked to channel 20, the gate link display for channel 20 will indicate that it is linked to channel 16. If this link channel is changed to another channel, the channel that *was* linked to it is reset; the link is broken.

The Compressor

The compressor provides control for Threshold, Attack, Release, Ratio and Gain. When the compressor function is selected, the five controls are assigned to the following parameters:

Threshold ..... variable from -40dB to +15dB
Attack ..... variable from 50us to 100ms
Release ..... variable from 5ms to 5.00sec
Ratio ..... variable from 1:1 to 30:1
Gain ..... variable from 0dB to +20dB

The compressor also incorporates soft knee and Limiting features which are available in the compressor edit menu. If the compressor function is selected and the EDIT key is pressed, the parameter control may be used to select the following:

Compressor On/Off..... toggle with LINK/ENTER key

Limiter threshold ..... variable from -10dB to +20dB
width variable from 0dB (hard)..... to 24dB (soft)

Undo Compressor Links ? ..... press enter twice to clear all links.

The Gate

The gate provides control for Threshold, Attack, Decay, Hold and Range. When the gate function is selected, the five controls are assigned to the following parameters:

Threshold ..... variable from -50dB to +20dB
Attack ..... variable from 5us to 100ms
Decay ..... variable from 5ms to 5.00sec
Hold ..... variable from 5ms to 5.00sec
Range ..... variable from 0dB to +20dB

The gate also incorporates variable hysteresis which is available in the gate edit menu. If the gate function is selected and the EDIT key is pressed, the parameter control may be used to select the following:

Gate On/Off ..... toggle with LINK/ENTER key

Hysteresis ..... variable from 0dB to +12dB
Undo Gate/Expander Links ? press enter twice to clear all links.
Reset Gate/Expander Keys ? . press enter twice to clear all links.

The Expander

The expander function is very similar to the gate: the main difference is that the expander incorporates RATIO rather than HYSTERESIS. The expander provides control for Threshold, Attack, Decay, Ratio and Range. When the expander function is selected, the five controls are assigned to the following parameters:

Threshold ..... variable from -50dB to +20dB
Attack ..... variable from 1ms to 150ms
Decay ..... variable from 5ms to 5.00sec
Ratio ..... variable from 1:1 to 1:100
Range ..... variable from 0dB to 90dB

The expander also incorporates a variable hold which is available in the expander edit menu. If the expander function is selected and the EDIT key is pressed, the parameter control may be used to select the following:

Expander On/Off ..... toggle with LINK/ENTER key
Expander Hold ..... variable from 5ms to 5.00sec
Undo Gate/Expander Links ? press enter twice to clear all links.
Reset Gate/Expander Keys ? . press enter twice to clear all links.

The Auto-Modulation

The Auto-Modulation effect provides control for Rate, Depth and Balance, which effectively controls the duty cycle of the modulating triangle wave. When the expander function is selected, the first three controls are assigned to the following parameters:

Mod Rate ..... variable from 0.1Hz to 12Hz
Mod Balance .... variable from 1% to 99%
(It sets the relative times spent in the upswing vs. the down swing.)
Mod Depth ..... sets the amount of attenuation from 0dB to 90dB

The last two controls have no function.

The Auto-Panner

The Auto-Modulator can also be configured as an Auto-Panner. This is achieved by linking one channel configured as an Auto-Modulator to another channel. The second channel becomes a 'Slave', where the gain reduction is working in the opposite direction to the Auto-Modulator (or 'master'). As the gain on the master channel increases, the gain on the slave channel decreases and vice versa. The modulation depth controls both the master and the slave, and hence the pan depth. Any channel may be utilised as a Slave by using the LINK key setup:

Press the LINK key twice from PLAY mode to select Modulation link. The LCD displays:

Modulation Ch x
Slave Chan —

where x is the currently selected channel. Use the CHANNEL control to select the Slave channel. (A channel number followed by "?" will appear after "Slave Chan".) Press the LINK key again to activate the Slave. (The "?" disappears to indicate that the displayed Slave is active.) If a Slave is already active, and you with to use different channel as Slave, the channel currently configured as the Slave will be reset, as only one Slave can be active at a time.

OPERATION - EDIT MODE

The Edit Menu pages

Edit mode has already been referred to with regard to the Compressor/Gate On/Off and extra parameters. The Edit Menu pages are selected by the Menu control. The Edit Menu pages are:

1) **Compressor**
2) **Gate/Exp/Mod**
3) **2nd function**
4) **Copy to channel**
5) **Copy to all channels**
6) **Channel name**
7) **Save channel to memory**
8) **Load channel from memory**
9) **Load all channels from memory**
10) **Meter display mode**
11) **Parameter Link mode**

Entering Edit Mode

Press the EDIT key once to enter Edit mode. The menu will be pointing to either 1) or 2), depending on whether the compressor or gate was selected in PLAY mode. Turn the DATA control to select various Edit Menu pages from the list above. The editable parameters are described below.

ON/OFF

The first parameter in Edit mode is the On/Off switch. The selected effect can be toggled on and off using the LINK/ENTER key.

2nd function

Turn the DATA control to select the second function (the first function is always the compressor). Choose from Gate, Expander, Auto-Modulator or Off. (The LCD will display a function name followed by a '?'.) Press the LINK/ENTER key twice to activate the selected function. (The function parameters are set to their default values, and all links and/or key sources are reset.)

Copy to channel

This parameter allows the settings for the currently selected channel
to be copied to any other channel. The LCD displays:

Edit Chan x
Copy to Chan y ?

where x is the currently selected channel, and y is the number of the channel you wish to copy the settings of channel x to. The current channel selection can be changed *without* returning to PLAY mode by turning the CHANNEL control. The channel being copied to is selected using the DATA control. Once the channel selection is made, press the ENTER key twice to complete the copy.

If the channel being copied is linked to another channel, the link is *not* copied. All links and keys of the copied channel are reset to off.

Copy to all channel

This parameter allows the ADP system to be setup in and instant; if one channel is setup as desired, it can be copied to all other channels simultaneously. The LCD displays:

Edit Chan x
Copy all chans ?

where x is the currently selected channel. The current channel selection can be changed *without* returning to PLAY mode by turning the CHANNEL control. The channel being copied to is selected using the DATA control. Once the channel selection is made, press the ENTER key twice to copy the settings of the selected channel to all other channels.

If the channel being copied is linked to another channel, the link is *not* copied. All links and keys of the copied channel are reset to off.

Channel Name

This parameter allows the user to name the selected channel. The name can be up to 12 characters long, and is copied, saved or loaded along with the other channel data. The LCD displays:

Name Chan x

Use the CURSOR control to select the character to be edited, and the DATA control to select the desired character. The first 128 ascii characters are available.

Save channel to memory

The ADP has 112 user memories, each of which can store a complete channel setup, including compressor and gate parameters, and a name. The LCD displays:

Save Chan x
Save to y

where x is the channel to be saved and y is the user memory number to be saved to. Use the CHANNEL control to select the channel to be saved, and the DATA control to select the user memory number. Press the ENTER key twice to save.

Load memory to channel

The ADP has 16 factory presets numbered 113 to 128 in addition to the 112 user memories. Any one of these memories may be loaded into the currently selected channel. The LCD displays:

Load Chan x
From memory *name* y

where x is the selected channel, *name* is the program name and y is the user memory number to be loaded. Use the CHANNEL control to select the channel into which the memory wall be loaded, and the DATA control to select the user memory number. Press the ENTER key twice to load. When a memory is loaded, any links or keys for that channel are reset.

Load all channels from memory

This function is similar to the copy to all channels function. The LCD displays:

Load all channels
From memory *name* y

where *name* is the program name and y is the user memory number to be loaded. Use the DATA control to select the user memory to be loaded. Press the ENTER key twice to load. When a memory is loaded, any links or keys for that channel are reset.

Meter Display Mode

The ADP offers 4 metering modes on the LCD. Use the DATA control to select the desired mode. These are as follows:

Gate trigger and Compressor gain reduction

The gate activity is displayed on the left hand meter, while the compressor gain reduction is displayed on the right hand meter. The compressor gain reduction displays 2dB per character and has a range of 20dB going from right to left with increasing gain reduction.

Gate attenuation and Compressor gain reduction

The actual gate attenuation (including the effect of the Range control) is displayed on the left hand meter, while the compressor gain reduction is displayed on the right hand meter.

Input and Compressor gain reduction

The left hand meter now displays the signal input level, which has a dynamic range from -50dB to +20dB.

Depth-Pan-Compressor

This provides a better graphical representation for the modulation or panner display. If the selected channel is not set up as a modulator or panner, the metering reverts to Gate attenuation and Compressor gain reduction mode. The pan meter display is broken into 3 bargraph meters: the left hand displays the amount of gain reduction in the pan cycle, the centre meter moves from left to right and back again to indicate the pan cycle, and the right hand meter displays the compressor gain reduction.

Parameter Link mode

When two channels are linked together, (as a stereo compressor, for example) the two channels combine the two gain reduction control signals so that both channels always have the same amount of gain reduction, so as to maintain the stereo image. In this type of application, both channels should also have the same threshold, attack, release, ratio and gain settings to achieve accurate balance. Sometimes channels are linked in order to perform effects such as ducking etc. In these instances it is not necessary for a pair of channels to have the same parameter settings. For example, if two gates are linked, it may not be necessary to have as much range on one channel as another.

The ADP provides two link modes to cater for these conditions. When the Parameter link is ON, the adjustment of a parameter on a selected channel will also affect any channel linked to it. Use the ENTER key to toggle the Parameter Link mode on and off.

Global Bypass

In certain situations, it may be desirable to bypass all of the dynamics at a single stroke. The ADP performs a complete software and hardware bypass when the PLAY and LINK keys are pressed simultaneously. The LCD displays:

FULL BYPASS
L/P/E to undo...

indicating that the entire system is in bypass mode. The bypass can be cleared by pressing LINK, PLAY or EDIT, whereupon the ADP resumes normal operation and only channels that were originally in bypass remain in bypass.

The ACTIVE and DYN ON LEDs

There are two LED indicators associated with the ADP for each channel. These LEDs are located on the meter bridge beneath the bargraph meter for the corresponding input module. The DYN ON LED lights when the dynamics are switched in. The ACTIVE LED flashes to indicate that the gate is open or the compressor is active.

The Meter Bridge contains a 10 segment bargraph meter for each input module and two mechanical VU meters to display the level of the Master outputs. There are also power supply indicators, SOLO and IPS indicators, and Dynamics ON and ACTIVE indicators on the Meter Bridge. The Soundtracs GRID external power supply provides all of the necessary voltages for the console. (A second MOTOR power supply is included with consoles fitted with the optional Moving Fader Automation. This supply provides power to the fader motors.)

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The Meters

Every input module on the console has a 10 segment bargraph meter to indicate levels. Two mechanical VU meters are included to indicate the level of the left and right masters. There are also power supply indicators for the +/-17v (Power), +5v (Logic) and 48v (Phantom Power) supplies, as well as SOLO and IPS indicators. The ON and ACTIVE dynamics LEDs for the channels are located beneath the bargraph meters.

The Bargraph Meters - display the signal levels to and from the multitrack tape. They can be individually switched to display channel input levels by pressing the MTR button on each input module. Each meter consists of 10 LED's: 3 red and 7 green. They are calibrated from -21dB to +6dB in 3dB steps (0dB = +4dBu).

The meters have a peak reading response and so, unlike VU meters, all signals should be running into the red occasionally. If any of the meters are low down throughout the song then the input gain should be increased, otherwise the signal to noise ratio will be down-graded. Some experimentation may be necessary to ensure that you have the maximum signal to noise ratio without distortion.

The VU meters - display signal levels of the master mix. In general, the mix levels should be set so that the VU meters 'hover' around the 0dB mark. However, VU meters have a slower response than peak reading meters, and may not display fast transients in the music. When the music includes sharp percussive sounds, it may be necessary to set the mix levels so that the VU meters display a level well below the 0dB mark to avoid distortion.

The POWER SUPPLY indicators - The three red power supply LED's indicate that the +/-17v(Power), +5v (Logic) and +48v (Phantom Power) power supply lines are operational.

The DYN ON and ACTIVE indicators - for each channel are located beneath the bargraph meter for the module. The DYN ON LED lights when the dynamics are switched on at the dynamics control panel. The ACTIVE LED if the gate is open or the compressor is active. If the dynamics option is not fitted these indicators will not light.

The Power Supply

All SOLITAIRE consoles are supplied with an external power supply called the Soundtracs GRID. It is 2U high, fits into a 19 inch rack and provides all of the necessary voltages for the SOLITAIRE console.

Mains supply

The mains input to the power supply is via an IEC type mains connector which is supplied with the unit. The mains cable does not a have a mains plug connected and the user must fit the correct plug as required in their country. The mains cable should be wired as follows:

Brown wire - live
Blue - neutral
Green/Yellow - earth

The mains voltage of the power supply can be adjusted to either 230 volts or 115 volts to suit the requirements of individual countries. This voltage is normally set at the factory for the country concerned but it is important that you check the voltage before switching on. To change the mains voltage remove the fuse holder below the IEC socket on the rear of the power supply. You should use a small flat head screwdriver to lever out the fuse holder. Turn it through 180 degrees (see drawing). The voltage setting is shown at the top of the fuse holder. The 230v setting covers all voltages between 220 and 240 volts. The 115v setting covers all voltages between 100 and 120 volts.

The mains power supply fuse is rated at T3.15 Amps when 230v has been selected. When 115v has been selected the fuse should be a T4A.

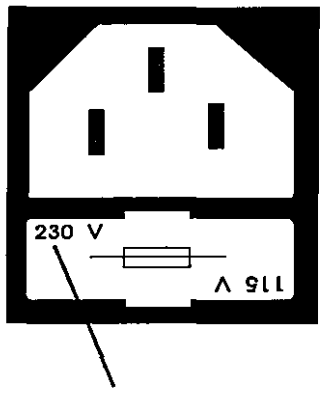
DC voltages

The power supply provides +48 volts for phantom powered microphones, +17volts and -17volts for the circuitry in the console and +5 volts for logic circuits. A 3 metre power supply cable with bayonet type multi connectors is provided with each console.

Earth lift switch

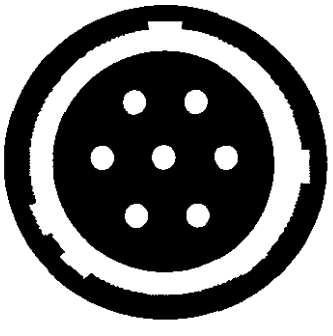
On the rear of the power supply is an earth lift switch which, when pressed, separates the 0 volts line from the mains earth. This is used to prevent earth loops. If you are suffering from hum or buzz then it may be removed by pressing the earth lift switch. Care should be taken not to use the audio system for mains earth because lifting the earth may make the system unsafe.

To change the voltage setting remove the fuse holder and rotate it by 180 degrees.



The voltage selected is shown here.

Power supply connector



Pin1 = +48 volts
Pin2 = +17 volts
Pin3 = -17 volts
Pin4 = +5 volts
Pin5 = logic ground
Pin6 = ground
Pin7 = ground

The Motor Power Supply

All **SOLITAIRE** consoles with moving faders are supplied with a second power supply called the Soundtracs MOTOR. It is 2U high, fits into a 19 inch rack and provides all the necessary voltages for the moving fader motors.

Mains Supply

The mains supply input to the power supply is via a IEC type mains connector which is supplied with the unit. The mains cable does not have a mains plug connected and the user must fit the correct plug as required in their country. The mains cable should be wired as follows:

Brown wire - live
Blue wire - neutral
Green/Yellow wire - earth

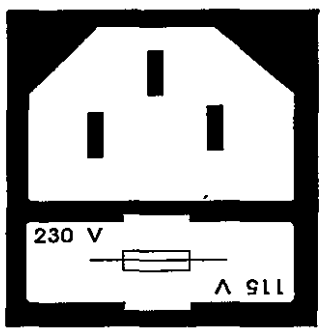
The mains voltage of the power supply can be adjusted to either 230 or 115 volts to suit the requirements of individual countries. This voltage is normally set at the factory to 230 volts. It is important that you check the voltage before switching on. To change the mains voltage remove the fuse holder below the IEC socket on the rear of the power supply. You should use a small flat bladed screwdriver to lever out the fuse holder. Turn it through 180 degrees (see drawing). The voltage setting is shown at the top of the fuse holder. The 230v setting covers all voltages between 220 and 240 volts. The 115 volt setting covers all voltages between 100 and 120 volts.

The mains power supply fuse is rated at T3.15 Amps when 230 volts has been selected. When 115 volts has been selected the fuse should be a T4 Amp. Ensure when changing voltage taps that the correct fuse is fitted.

DC Voltages

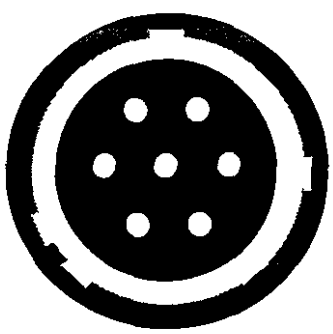
The power supply provides +VE and -VE supplies for the fader motors. A 3 metre power supply with bayonet type multi connectors is provided with each supply. In the case of the motor supply this

To change the voltage setting remove the fuse holder and rotate it by 180 degrees.



The voltage selected is shown here.

Power supply connector



Pin1 = +9 volts
Pin2 = +9 volts
Pin3 = -9 volts
Pin4 = unused
Pin5 = -9 volts
Pin6 = ground
Pin7 = ground

cable has a 7 pin male connector one end (Power Supply) and a 10 pin female on the other end (console).

Earth Lift Switch

On the rear of the power supply is an earth lift switch which, when pressed, separates the 0 volts line from the mains safety earth. This is used to prevent earth loops. If you are suffering from hum or buzz then it may be removed by pressing the earth lift switch. Care should be taken not to use the audio system for mains earth because lifting the earth may make the system unsafe. Under all circumstances always connect the green/yellow wire in the mains lead to a safety ground.

1. Jumper Links

Input Module

Note: Under most circumstances the only jumper option links that will require resetting by the user are those relating to the tape input and output levels. All others are factory set and may require adjusting only if a module is moved or replaced.

There are two PCB's per input module: P12759 and P12760.

Input/Output Levels

P12759 has jumper links for setting tape input and output levels between +4dBu and -10dBv.

They are located near the rear of the module behind the rear panel and are marked LK25 and LK33.

LK25 sets the tape output (group) level.

Link A-1,2 for +4dBu
Link B-1,2 for -10dBv (-8dBu)

LK33 sets the tape input level.

Link A-1,2 and B-1,2 for +4dBu
Link A-2,3 and B-2,3 for -10dBv (-8dBu)

The console is factory set for +4dBu operation.

All other links related to the input module are located on PCB P12760 (right hand card).

Dynamics Operation

When the dynamics option is fitted, a pair of links have to be set at position LK1.

Link A-1,2 and B-1,2 for dynamics fitted
Link A-2,3 and B-2,3 for no dynamics fitted

Moving Fader Option

When moving faders are fitted two jumper links have to be set. These are LK16 and LK39.

Link 1-A,B on both for VCA automation
Link 2-A,B on both for MOVING fader automation

Local/Bus Selection

As the group summing amp is located on its associated module, each module has to be programmed to select the required group. Modules above channels 24 do not have a group summing amp.

Link settings for channels 1 to 24:

LK35 located in between the two main bus connectors. This selects whether the module has a group summing amp or not. For channels 1 to 24 the link setting will be:

2-A,B (BUS)

LK38 (located under the main channel fader) selects which bus is connected to the summing amp. The link connector has 24 positions with the bus numbers printed underneath. Only one jumper link should be made per channel.

The link is numbered from left to right as follows:

1, 13, 14, 2, 3, 15, 16, 4, 5, 17, 18, 6, 7, 19, 20, 8, 9 ,21, 22, 10, 11, 23, 24, 12

Note: The function and jumper settings of all the above are printed on the circuit board.

Auxiliary/Effects Returns PCB's (P12878)

All jumper settings on these boards are factory preset and should not require resetting unless a board is moved or replaced. For simplicity, all jumper link positions have the numbers 1 to 4 printed next to them so that the first card (FX1, AUX 1,2) has jumper links fitted in all positions marked "1". On card 2 (FX2, AUX 3,4) all jumper position "2" are fitted etc.

Master PCB (P12877)

LK1 is the only jumper link on this PCB. Its purpose is to select whether VCA or MOVING fader automation is used. In most circumstances this should not require changing. It is a 4 position link with two jumpers. The PCB is printed with the two positions "MOV" and "VCA".

Dynamics DSP PCB (P13158)

These boards (up to three) are located in the base of the mixer under the master section.

Each board has three jumper link locations marked LK2, LK3 and LK4

LK2: This 2 by 8 way link sets which channels (in blocks of 16) the board controls . Only one jumper link is required per board. The links are marked on the board DSP1 through to DSP8. DSP1 position sets the board to control channels 1 to 16, DSP2 for channels 17 to 32 and so on.

LK3 and LK4 select whether 8 or 16 channels of dynamics are used.

LK3: This is always set to position B-1,2.

LK4: For consoles with 24 or 40 channels is set to position:

A-1,2

and for consoles with 16 or 32 channels it is set to:

B-1,2

MIDI Mute Processor (P13109)

This board is only used on consoles without fader automation. It has only one link setting (LK1) and should not be changed.

Fader Automation PCB (P12924)

These boards (2 in 24 channel consoles and 3 in 32 and 40 channel consoles) are located in the base of the console on top of the P13089 automation interface PCB's. There are two versions in all consoles called either "MASTER" or "SLAVE". There is only one master and it is located just to the left of the master section. The slave (s) are designated slave 1 and slave 2. Slave 1 is always located at the

left hand side of the console and slave 2 is always located to the right of the master section.

Each board has six sets of jumper positions marked: LK1, LK2, LK3, LK4, LK7 and LK8.

LK1 is used to enable a Watchdog timer on the processor and is normally left open.

LK2 is a local processor reset pin and again is left open.

LK3 and **LK4**. These determine (along with the software in EPROM) whether the board is a master or slave.

For the master the positions on both are:

LK3 A-1,2
LK4 B-1,2

For the slave the positions on both are:

LK3 A-2,3
LK4 B-2,3

LK7 determines the size of EPROM used on the board (256 or 512 kBytes). All consoles are set to the 512 position:

LK7 B-1,2

LK8 determines the size of the RAM used on the board (128 or 512 kBytes). All consoles are set to the 128 position:

LK8 B-1,2

Stereo PCB (P13170) Right Hand Board

LK4 is the only jumper link on the stereo module. Its purpose is to select which dynamics channel it communciates with.

LK4 is a 2 by 16 way header. Each module should have 4 jumper links on them. Stereo channels are arranged in blocks of four. The most left hand one has links fitted in positions 1,5,9,13. The next channel to the right has links in positions 2,6,10,14 and so on.

2. Presets

AL presets located on the pcb's within the console are factory set and should never under normal circumstances require changing. However it is always useful to give a brief description as to their functions.

Input PCB (Right) P12760

Two presets P1 and P2 null the distortion of the channel land monitor vca's. P1 is for the monitor and P2 is for the channel.

Fader Automation Interface PCB (P13089)

There are two presets P1 and P2. P2 sets the reference voltage (5.00v DC) for the vca's and A to D converter. P2 sets the gain of the D to A converter (5.00v DC full scale).

Dynamics VCA PCB's (P13159)

These PCB's are located along the front of the console behind the armrest. Each board has sixteen presets, eight are for adjusting the distortion of the dynamics vca's and the others are for nulling the control voltage feed through on the vca's. the presets are located in pairs from left to right, the left hand pair are for channel 1 the right for channel 8 etc.

	Distortion	Feed Through
Channel 1	16	15
Channel 2	14	13
Channel 3	12	11
Channel 4	10	9
Channel 5	8	7
Channel 6	6	5
Channel 7	4	3
Channel 8	2	1

Stereo PCB

Six presets are provided:

PCB P13173

P1	Right Dynamic Distortion Null
P2	Right Dynamic Feed Through Null
P3	Left Dynamic Distortion Null
P4	Left Dynamic Feed Through Null

PCB P13174

P1	Left Fader VCA Distortion Null
P2	Right Fader VCA Distortion Null

MIDI Machine control (MMC)

The software has basic MMC control functions which are always output from MIDI port 2 when the tape transport buttons are pressed. The functions available are: Fast forward, Rewind, Play, Stop, Record

Also: Holding record and pressing play will put machine into record. Holding down play and pressing record will drop machine out of record.

The MIDI commands sent out in response to tape transport buttons are of the following structure:

F0 SYSEX
7F UNIVERSAL
00 channel
06 MMC,
..... data
F7 END SYSEX

Data codes are as follows:

Play	07	MMC REC EXIT
	02	MMC PLAY
Stop	01	MMC STOP
Rewind	05	MMC REW
Forward	04	MMC F FOR
Record	06	MMC REC STROBE

ADAT control

The basic transport functions of the ADAT digital recorder can be controlled from the SOLITAIRE console. The functions a available are: Fast forward, Rewind, Play, Stop and Record. The SOLITAIRE can be connected directly to the ADAT using a 2 core cable wired as follows:

SOLITAIRE	ADAT
MIDI OUT 2	9 PIN D TYPE (SYNC IN)
PIN 4	PIN 5
PIN 5	PIN 9

ADAT is a registered trademark of the Alesis Corporation

Dimensions

24 Input	893(d) x 1064(h) x 1242mm(w)
24 PB	893(d) x 1064(h) x 1526mm(w)
32 Input	893(d) x 1064(h) x 1526mm(w)
32 PB	893(d) x 1064(h) x 1811mm(w)
40 Input	893(d) x 1064(h) x 1811mm(w)
40 PB	893(d) x 1064(h) x 2095mm(w)

Weights

24 channel (unpacked) ..... 45 kgs
32 channel (unpacked) ..... 53 kgs
40 channel (unpacked) ..... 53 kgs
GRID power supply 5kgs

Removing the module strips:

1) Pull off the front rubbing strip.

2) Remove the screws on the rubbing strip retention brackets covering the module(s) to be removed.

3) Remove the retaining screws on the rop land bottom rear of the console for the module(s) to be removed.

4) Lift the front of the module approximately 100mm and pull towards the armrest; the module will come unclipped from the bracket beneath the top rubbing strip.

5) Rest the module on the exposed part of the bracket; lift the module higher to gain access to the flat ribbon cables attatched to the circuit boards on the underside of the module.

6) Unclip the 3 exposed ribbon cables at the front of the module.

7) Carefully lift the module out.

8) Unclip the single remaining flat ribbon cable at the rear of the module.

9) The module can now be removed from the console.

To replace the module, reverse the above proceedure.

Operating levels

The tape inputs and outputs of on the SOLITAIRE console can be individually set to +4dBu or -10dBV operating levels. These are factory set to +4dBu. The operating levels should be set to match the operating level of the tape machine or other signal source. If the equipment to be connected to the tape inputs and outputs provides for both +4dBu and -10dBV operation, +4dBu operation should be selected.

To change the operating levels of a module it must first be removed from the console, allowing access to the jumper links on the PCB at the rear connectors of the module. Please follow the instructions above when removing modules from the console.

There are two sets of jumper links used to select +4dBu or -10dBV operation:

LINK 25	TAPE (GROUP) OUTPUT
LINK 33	TAPE INPUT

Locate the jumper links numbered LK 25 and LK 33 on the PCB near the rear connector of the module and place the jumper links for +4dBu or -10dBV as required. See the Jumper Links and Presets section of this manual for further information on User Settings.

Microphone noise

Mic input at max gain
Terminated with 150 Ohms
Measured with 22Hz to 22kHz filter
Average responding meter ..... -128dBu

Line input noise

Line input at unity gain
Terminated with 50 Ohms
Measured with 22Hz to 22kHz filter
Average responding meter ..... -93dBu

Mix bus noise

Master faders at unity
Input faders at infinity
Pans to centre
Measured with 22Hz to 22kHz filter
Average responding meter
24 channels routed to L/R ..... -82dBr
32 channels routed to L/R ..... -80dBr

Group bus noise

Group faders at unity
Input faders at infinity
Pans to centre
Measured with 22Hz to 22kHz filter
Average responding meter
24 channels routed to group ..... -82dBr
32 channels routed to group ..... -80dBr

Aux bus noise

Aux masters at unity (2 o'clock position)
All aux sends to infinity
Measured with 22Hz to 22kHz filter
Average responding meter
24 channel console ..... -82dBr
32 channel console ..... -80dBr

Frequency Response

Mic or line input to any output, 20Hz to 20kHz+0dB/-0.5dB

Mute Crosstalk

Input signal 0dBr at 1kHz
Input signal to line input, line gain to zero
Channel muted
Measurement taken from mix output ..... >100dB

Fader Crosstalk

Input signal 0dBr at 1kHz
Input signal to line input, line gain to zero
Fader at infinity
Measurement taken from mix output ..... >95dB

Routing Crosstalk

Input signal 0dBr at 1kHz
Input signal to line input
Fader at unity
Channel not routed
Group faders to unity
Measurement taken from any group output ..... >90dB

Auxiliary Crosstalk

Input signal 0dBr at 1kHz
Input signal to line input
Aux sends to infinity
Channel not routed
Aux masters to unity
Measurement taken from any aux output ..... >80dB

Adjacent Channel Crosstalk

Input signal 0dBr at 1kHz
Input signal to line input
Fader to unity
Channel routed to L/R
Adjacent channel line in selected
Adjacent channel line in terminated with 50 Ohms
Adjacent channel fader to unity
Measurement taken from adjacent channel direct output ..... >90dB

Harmonic distortion

Measured at +10dBu
80kHz low pass filter
Mic/line to mix out - 1kHz (VCA in) ..... <0.015%
Mic/line to mix out - 1kHz (VCA out) 0.008%
.....

Reference level ..... 0dBr = +4dBu = 0VU

Power consumption ..... 300 watts

The Automation System

II - 2 Introduction

What is automation?

Whether you're making music for demo tapes, records, CDs, film or television you will always record your work onto a stereo master tape ready for the record company or film dubbing studio. At this point you will add reverb, adjust EQ, move faders and switch mutes on and off so that the music has just the right sound and right dynamic. This process is called mixing or remix.

If the mix is very simple then one or two people can mix down by moving faders and pushing buttons manually. But as the mix becomes more complicated you need the help of a computer which will "push buttons" and "move faders" for you. This computer is known as an "automation system".

The automation system inside the JADE - S revolves around a very sophisticated, high speed computer which will record the movement of the channel and monitor faders and the pressing of mute buttons on the channels, monitors, effects returns, and auxiliary masters. The automation also has tape machine control buttons for remote control of tape machines or sequencers.

Mute automation is the most basic fitting for the JADE - S console. This allows you to automate muting of channel, monitor, effects return, and auxiliary master mutes, by creating mute 'scenes' - snapshots of the status of all the mutes on the console - and recalling them by sending the console a MIDI control change message. The console can also output these messages, making it easy to record a sequence of scene changes on a MIDI sequencer. In addition, the console can act as a control change master, sending messages under the user's control to other MIDI devices in the studio. A separate section of this manual is devoted to this system. This begins on page 33. Owners of a MIDI muting only automated console can skip all the other automation sections of this manual.

Two types of fader automation (VCA and Moving Fader) are possible on the fader automated versions of the JADE - S console. VCA automation uses the channel/monitor faders to control the level of a voltage controlled amplifier (VCA) during the fader recording. The automation computer records the levels and fader moves, and controls the level of the VCA on playback of the mix. The correlation between fader position and level will be discussed in the tutorial and reference sections of this manual. Any

or all of the levels recorded by the computer can be altered during subsequent passes by trimming or re-recording. With Moving Faders, the movements of the faders during the mix are exactly repeated by the motor on playback. This has the advantage of being easier to understand and use, and giving immediate feedback on where the mix levels are at any given time. The Moving Faders on the JADE - S are also touch sensitive, which makes them even easier to use, as they can be primed to go to record as soon as they are touched. This means that very little interaction with the onboard computer is necessary after the initial setup is complete.

The fader auotmated versions of the JADE - S also feature *dynamic* mute automation. This means that you can record individual mutes being switched on and off against timecode as you mix. On playback these mutes will switch at the same timecode positions and can be edited and updated individually.

Note: The operation of the VCA fader and Moving Fader versions of the JADE - S is almost identical. Where differences do exist the operation is explained separately. Each case contains a clear reference to either VCA faders or Moving Faders. Owners of a VCA fader automated JADE - S can ignore any references to Moving Faders. Owners of a Moving Fader automated should read both sections as the VCA fader explanations apply to the Monitor faders on these consoles.

Some examples of uses of the automation system are:

Tracking Vocals - during the course of a song you will find that the level of the vocal needs to be faded up and down to ensure that the vocals are always heard and not drowned by the backing track.

Pushes - a technique used by many producers is to push the level of instruments just prior to the chorus, for example. This occurs naturally when musicians play together and can add extra life to sequenced music.

Gating - the simplest way to keep noise out of the mix is to switch channels off when they are not needed by means of the automated mutes. If this is done to a lot of channels the improvement in the quality of the mix can be dramatic. It also saves on the cost of gates in the studio.

Over recording - in many professional studios the musicians are often encouraged to play much more than is necessary and then, during the mix, the producer will select the best bits using the automation system.

Composite vocals - as with musicians, the vocalist is also encouraged to sing more than is necessary, often recording 10 or 15 tracks of the same lead vocal. The producer then uses the automation system to piece together the best bits into one vocal take.

Special effects - with an automation system you can do much more than just record fades. It is simple to create modulation and tremolo effects and, by using 2 channels, you can create your own auto panning effects.

Seamless compression - many professionals do not use compressors when they have an automation system. Instead they use the faders to drop levels when signals get too hot. When the automation is played back you have programmable compression without the "squashing" of conventional compressors.

This gives you some idea of what console automation can be used for .... once you've learnt how to use it.

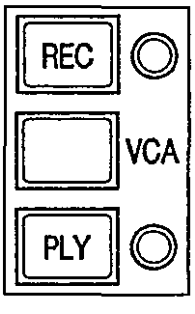
The Automation Controls and Connections

The automation controls consist of the faders and fader controls, the control panel and the mute buttons. The rear panel MIDI ports and 9 pin "D" connectors are used to interface the automation system with external equipment. The basic functions of these controls and connectors are described below. Illustrations are provided to aid in identifying the controls.

Many of the controls have more than one function. A basic explanation of the functions of the controls is given in the tutorial section of this manual, and a complete description of the use of each control is given in the reference section.

Fader Controls

Alongside each channel and monitor fader are three buttons and two LEDs as shown opposite. The faders are used in conjunction with these buttons to record information into the automation computer, and to play back the recorded levels and/or fader moves. The adjacent LEDs display the current mode of the corresponding channel or monitor. The fader controls are:



1. **Fader RECORD LED** - lights when fader is in record mode.

2. **Fader RECORD button** - puts fader into record mode.

4. **Fader PLAY button** - drops fader into play mode.

5. **Fader PLAY LED** - lights when channel is in play mode.

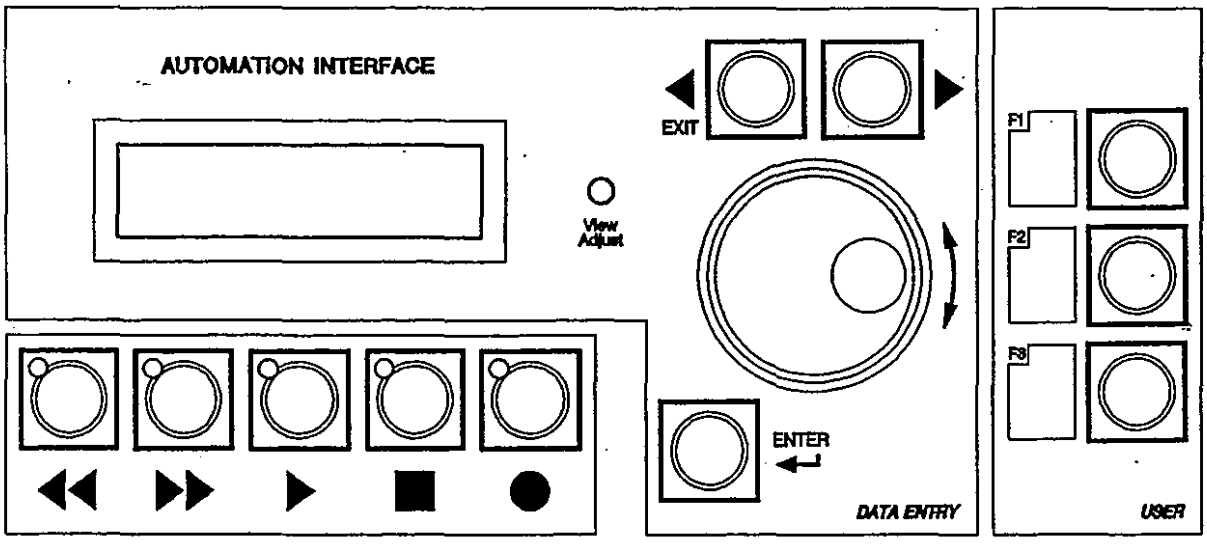
6. **Fader VCA button** - switches the fader VCA in circuit

This last switch has no function on Moving Faders.

These buttons and LEDs also provide a number of other functions as explained in the tutorial.

The control panel

The main automation controls are on the control panel on the right hand side of the console. An illustration of the control panel is shown below, and a basic description of the functions of the controls is given across the page.



The control panel includes:

1. **The LCD display** - provides prompts and information on the status of the automation computer.

2. **Left and right keys** - move the LCD cursor to the left or to the right. The left button is also an EXIT button for exiting menus.

3. **Rotary dial** - selects options from the menus and is used to enter text.

4. **ENTER button** - used to enter menus and to confirm choices.

5. **Rewind** - used to rewind the automation and tape machine/ sequencer.

6. **Fast forward** - used to fast forward the automation and tape machine/sequencer.

7. **Play** - used to play the automation and tape machine/sequencer.

8. **Stop** - used to stop the automation and tape machine/sequencer. Pressing stop twice resets the automation and tape machine to zero.

9. **Record** - used to drop the tape machine into record.

10. **Viewing angle** - used to alter the viewing angle of the LCD display. Adjustment is via a small flat head screwdriver.

11. **User Function Keys** - used for quick access to any menu item. The user can assign a menu item to each.

Mutes

All of the mute buttons on the console can be controlled by the automation computer. These include the **channel mutes**, the **monitor mutes**, the **effects return mutes**, and the **auxiliary master mutes.**

The positions of all of the mutes on the console are recorded by the automation computer along with the faders in the first pass. The mutes are in record mode during the first pass, but begin each subsequent pass in update mode. When the mix is played back, pressing an mute automatically drops that button into record mode and changes the state of the button. To stop recording, simply stop the mix. If you keep the mix, only the section of the mix you have updated will be overwritten.

All of the mutes on the console include a red LED in the switch cap to indicate the status of the button. These LEDs operate in the same way during an automated mix as they do while under manual control. When the LED is illuminated, the channel is muted. When the LED is not illuminated. the channel is not muted.

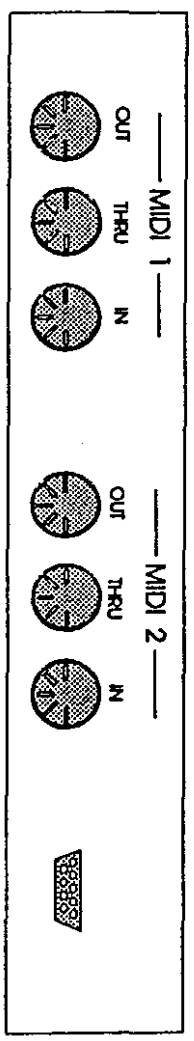
There are also four "global" modes of mute operation which can be selected from the control panel. These will be discussed in the tutorial and reference sections of this manual. The optional PC display provides a full display of all mute automation function, and also makes off-line editing of mute events possible.

Other features of the mute automation are discussed in the tutorial and reference sections of this manual.

MIDI PORTS

On the rear of the console are two MIDI ports: MIDI 1 and MIDI 2 as shown below:

The JADE - S has been designed so that MIDI 1 connects to the sequencer and MIDI 2 connects to a tape machine. Both of the MIDI ports send and receive MIDI Time Code (MTC), but only MDI 2 sends MIDI Machine Control (MMC). The automation lets you configure them in software as you will see later.



The 9 pin D type connector on the rear panel is a serial port from the internal computer which allows it to interface with a PC, providing a full display of all automation functions, including VCA levels, muting and timecode. The mix can be saved to disk via the PC for long term storage.

First switch on

When the console is first switched on the computer runs through a calibration routine. This only occurs if the calibration is necessary and will not be repeated unless the internal battery discharges or needs replacing. (The calibration procedure can be manually selected in the SET UP menu described late in this manual) The LCD displays **MOVE ALL FADERS TO THE BOTTOM** followed by **PRESS ANY KEY TO CONTINUE.** Move all of the channel faders to the bottom an then press the ENTER button. The fader ranges have now been calibrated and you are ready to use the automation system.

Tutorial

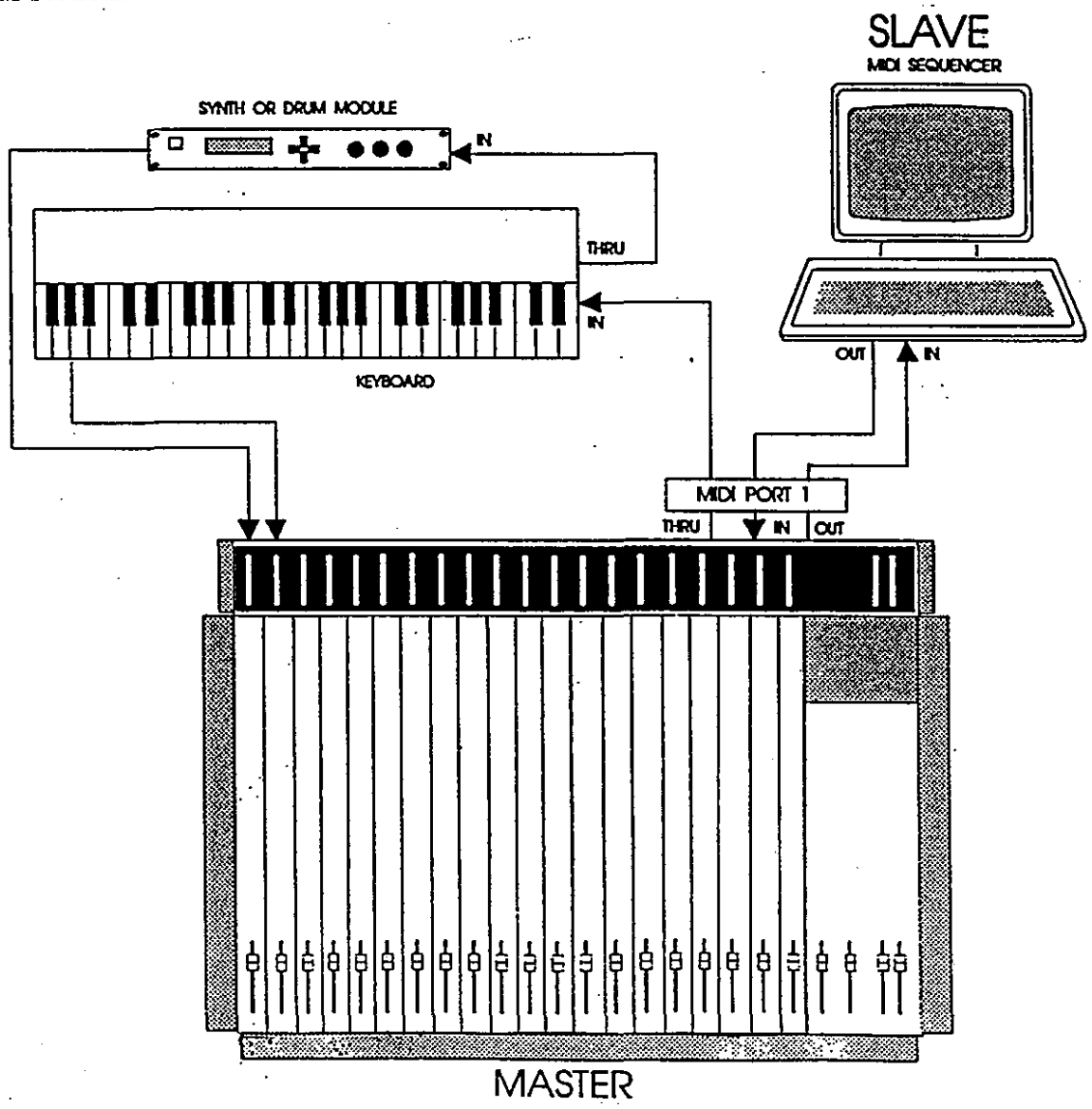
The following section is designed to give you a hands on introduction to the automation system. If you are familiar with automation systems then you can ignore these pages and go straight to the reference section.

Hook up 57
Turning the automation on 58
Synchronisation 58
The first recording 58
Replaying the mix 59
Trimming the faders 60
Re-recording 60
Isolate mode 61
Global fader modes 62
Recording on off buttons 62
Saving a mix 63
Grouping 64
Screen display 65
Slave mode 65

Learning to use the automation system

The simplest way to learn the automation system is to do a mix. The following pages will run you through a simple mix and the basic functions of the automation system. Once you are familiar with the automation you will be able to read the reference section for a complete description.

For this tutorial you will need a MIDI sequencer which reads MTC and some MIDI instruments such as keyboards and drum machines. You should record a simple song into the sequencer using a keyboard and drum machine which you can then mix down during this tutorial. The diagram below shows how your console should be connected. (For more sophisticated studio connections see 'Hook ups'.) If you are unsure how to connect the audio signals then read the previous sections of this manual.



Hook-up for the tutorial

1. Connect the audio outputs of keyboards, drum machines, samplers etc. to the channel/ monitor inputs of the SOLITAIRE as described in the hook-up section of this manual.

2. Connect the MIDI THRU from MIDI PORT 1 on the rear panel of the console to the MIDI IN ports of the sound sources.

3. Connect the MIDI OUT from MIDI PORT 1 on the rear panel of the console to the MIDI IN of your sequencer/computer.

4. Connect the MIDI OUT from your sequencer/computer to the MIDI IN of MIDI PORT 1 on the rear panel of the console.

5. Set your MIDI sequencer or computer to receive MIDI Time Code (MTC). See the user's manual for your particular sequencer/computer for information on how to do this.

6. Set your MIDI sequencer so that THRU is off on the console's MIDI channel. This will stop the console from receiving MIDI messages from itself.

For further information on hooking up MIDI sound sources to the console, please see the hook-up section of this manual.

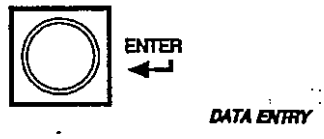
Starting a mix

Set up a rough balance of the keyboard instruments and drum machine. When you are happy with the basic mix, turn the automation on by pressing the ENTER button.

When the console is first switched on there is no mix in the memory, and the LCD will display the main page (see opposite) and all of the RED LEDs alongside the fader REC buttons will illuminate which indicates that all of the faders are in record mode.

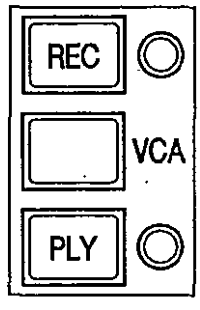
On subsequent playback of the mix, the VCA fader position is irrelevant to the actual signal level. The correlation between VCA fader position and level will be discussed in the tutorial and reference sections of this manual. Moving Faders will exactly replay the levels as they were set in the mix. To return a fader to manual control, simply press the button next to the LED which is lit. The LED will go out and the fader will be put into ISOLATE mode. (A full description of ISOLATE mode will be given later in this manual.) Moving Faders will become motionless in ISOLATE mode.

Press ENTER to start mixing



Screen displays the main page as follows.

The fader is automatically put into record mode for the first pass.



The REC LED lights to indicate that the fader is in RECORD mode.

Synchronisation

The first thing we must do before we can start recording a mix is to synchronise the console and sequencer together. Even if we are using a tape machine instead of a sequencer we must still synchronise them together. To do this we use a type of clock called MIDI Timecode or MTC. This is a special signal which is sent out over MIDI cables specifically for locking machines together and is similar to SMPTE code. The JADE - S will generate and read MTC, as will most modern sequencers. The timecode is displayed at the top right hand side of the LCD display in the following format:

HOURS: MINUTES :SECONDS :FRAMES

The SOLITAIRE should be set up to generate MTC and send it out from MIDI OUT 1, on MIDI channel 1. Sending MTC to MIDI OUTs 1 and 2 is set in the MTC TO MIDI 1 and 2 pages (*menu\set up\timecode\MTC to midi 1/2*). The MIDI channel is selected in the CHANNEL NUMBER page (*menu\set up\midi\channel number).*

For this example we will use the JADE - S to generate MTC and the sequencer to receive it. In this configuration the console is the master and the sequencer is the slave. The console is set to generate or receive MTC in the Source page (*menu\set up\timecode\source).*

MIDI OUT 1 should be connected to the MIDI IN of the sequencer. The sequencer must be set up to receive MTC on the correct MIDI channel; please refer to the synchronisation section of the sequencer manual for the correct settings.

For this example, the SLAVE parameter should be set to OFF (*menu\set up\midi\slave*), the SEND parameter should be set to OFF (*menu\set up\midi\send*) and the REFRESH parameter should be set to OFF (*menu\set up\midi\refresh*).

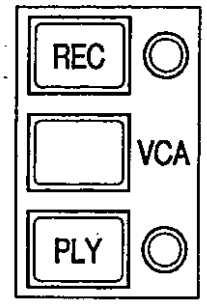
Should you wish to alter the settings of the MTC generator or MIDI OUTs, please refer to the SET UP section of this manual.

The initial recording

Now that the automation is turned on and the console is synchronised to the sequencer we can start to record the mix. You should have already set up a rough balance for those channels you wish to put under computer control. The purpose of the initial recording (or first pass as it is sometimes called) is to record this rough mix into the computer. The faders are automatically put into record mode for the first pass, and the red LEDs beside the faders are lit to indicate this. (The mutes are also in record mode.)

All of the faders are automatically put into record mode for the first pass.

Press **PLAY** on the control panel and you will see timecode start to count up on the LCD display. Immediately after this the sequencer should start and the music will be heard. As the song plays, any movement of faders and any changes of the status of mutes will be recorded. When the song ends press **STOP** on the control panel.



The red REC LEDs light to indicate RECORD mode.

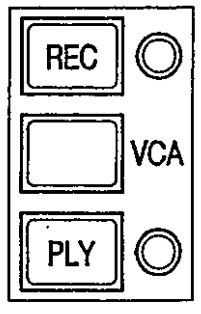
The LCD display now says "ENTER keeps, EXIT aborts" (as shown opposite). Press **ENTER** to keep the mix. The display returns to the main page and all of the green LEDs alongside the faders will be lit, indicating that all of the faders are now in play mode and ready to be played back. When the mix is kept, the faders default to PLAY mode and the mutes default to UPDATE mode.

After pressing stop, the screen displays the following:

Please note that the FADERS menu item always displays the last selected *global* fader mode, not the current mode of the faders. The mode displayed in this menu page has no effect until it is reselected and confirmed.

We have now recorded all of the fader and mute positions for the duration of the mix.

The faders return to play mode after the first pass.

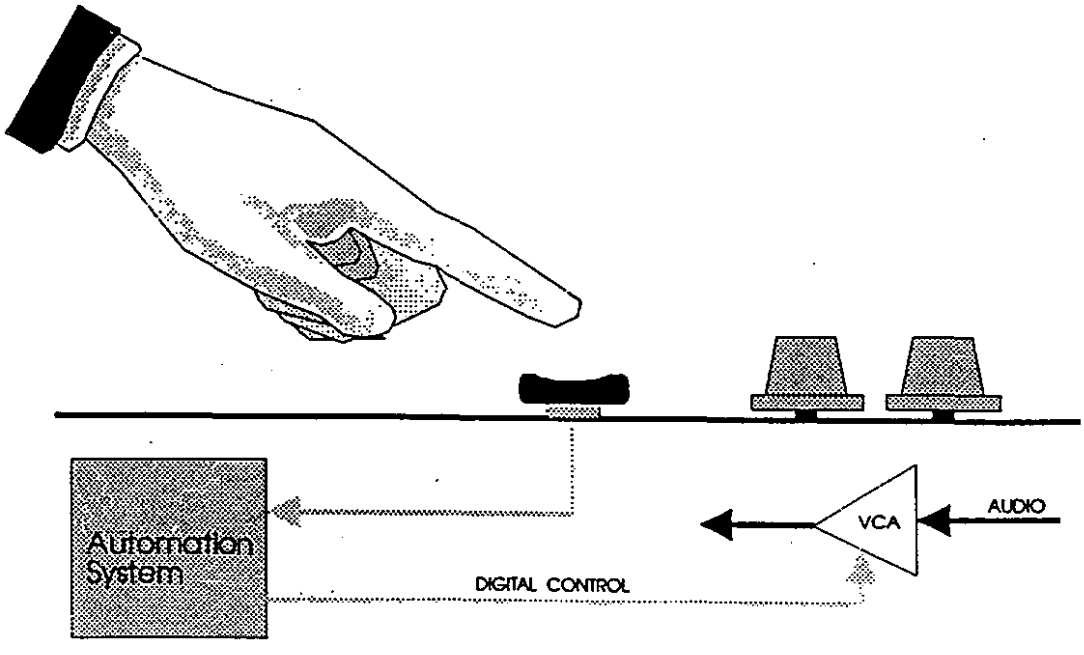


The green play LEDs light to indicate play mode.

Replaying the mix

Use the rewind button (or press the stop button again) to return the timecode to zero . Now press the play button on the control panel to play the mix back.

The automation computer is now controlling the mutes and Moving Faders, and the level of the channels and monitors whose VCA buttons are depressed.(It is not necessary to depress the VCA button next to a Moving Fader.) If you move a VCA fader you will notice that it no longer controls the level of the signal ..... instead the computer is controlling the level. So, in RECORD mode the faders control the level but in PLAY mode the computer controls the level. If you touch a Moving Fader it will stop replaying the mix, and automatically go into RECORD.



Snatching Moving Faders

As you noticed in the last section, touching a Moving Fader while playback is underway will put it into RECORD. This allows you to make changes at any point in the playback by simply moving the fader to its new position. The Moving Faders can be set to remain in RECORD after they have been touched, or to return to PLAY when they are released ('*Snatch*'). This is a global Moving Fader mode and is found on the main menu along with the other global mode options.

If you set SNATCH ON, the Moving Faders will return to play when you have released them. With SNATCH OFF, they remain in RECORD until the Timecode stops. When you stop the mix, you will be asked to either KEEP or DISCARD the changes you made in the last pass. The faders will return to PLAY if you select KEEP.

Note that it is also possible to put a Moving Fader into RECORD by pressing its REC button.

VCA faders are not touch sensitive and are not affected by SNATCH mode.

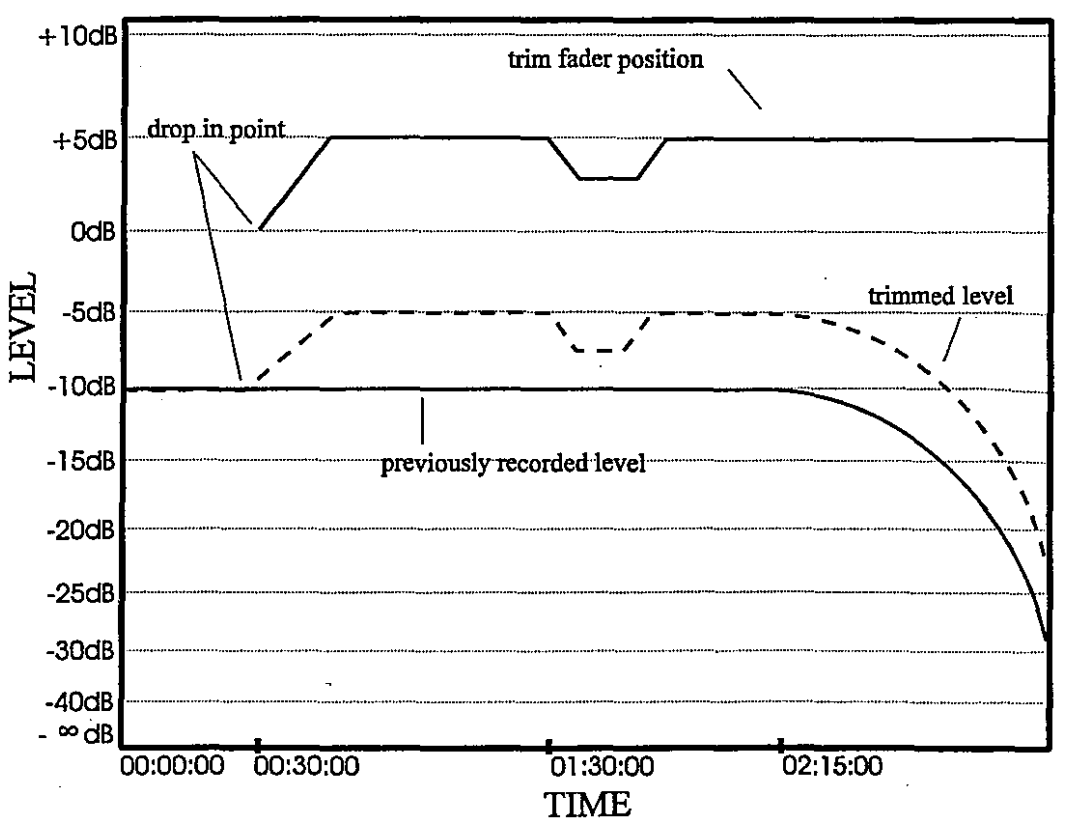
Trimming the VCA faders

The point of having automation is to add life and dynamics to the mix. TRIM mode is used to alter levels recorded in previous passes. "Trimming" a level differs from "recording" a level in that it allows you to build up a complex series of level changes over a number of passes. (On some automation systems this is referred to as updating.)

In TRIM mode, the VCA fader is used to add to or subtract from the previously recorded level. The position of the VCA fader no longer corresponds directly to the signal level, but to the amount of level being added to or subtracted from the cumulative level of all previous passes.

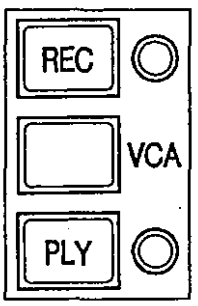
For example, if the fader is set to "0" when you drop into TRIM mode, "0" represents the level of the previous pass at any given time: moving the fader to +5 adds 5dB of level *relative to the previous pass.* (The fader can be set to any level when the you drop into TRIM mode, but "0" is recommended as it affords the greatest degree of control over the level.)

To drop out of TRIM mode, press the REC button again (the fader will return to PLAY mode) or simply stop the mix.



To demonstrate TRIM mode pick a steady instrument (such as strings or pad keyboard) for which a level has been recorded on the first pass. Set the VCA fader to "0" and select TRIM mode by pressing the fader REC button whilst holding down the fader PLY button. Both the RED and GREEN LEDs will light up to indicate TRIM mode.

To enter TRIM mode press the REC button whilst holding down the PLAY button.



Now rewind to zero and press play on the control panel so that the mix is playing back. Move the VCA fader up and down so that new fader moves are recorded into the automation system. There is no need to carry on to the end of the mix. In fact, after the first pass you can start and stop trimming faders at any point you choose.

After trimming the mix press stop and again the LCD will ask you if you want to keep the mix. Keep the mix by pressing ENTER. As before all of the GREEN LEDs will light to show that the faders are in play mode. **The faders always return to play mode after the mix has been kept.**

Both the REC and PLAY LEDs light to indicate that the fader is in TRIM mode.

If you want to TRIM other VCA faders simply hold the PLAY button and press the RECORD button on any fader at any time (even during playback) and overdub the fader moves as required.

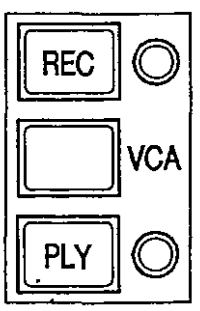
Trimming is not possible with Moving Faders. Modifications can be made using SNATCH mode or by **re-recording.**

Re-recording

In most cases a mix can be completed by using TRIM mode exclusively after the first pass. However, if the fader moves that have been recorded are completely wrong, or you want to over-write level changes done in TRIM mode, then they will need to be re-recorded. Any number of faders can be re-recorded at once, and re-recording can begin and end at any point in the mix.

Press the fader record button at any point during playback to enter record mode.

Re-recording is very straightforward. With the nulling option off (a full description of the nulling option is given later in this section), simply press a fader REC button at any time and the fader will be dropped into RECORD, recording over any of the previous fader moves. The red fader record LED will light to indicate record mode. This is similar to dropping in on a tape machine. To drop out of record mode, simply stop the mix or press the fader PLAY button. If the mix is kept, the new fader levels/moves overwrite the old ones only for the re-recorded section of the mix. This applies equally to Moving Faders and VCA faders, but Moving Faders can also be placed in RECORD by simply touching (see SNATCH).



The REC LED lights to indicate that the fader is in RECORD mode.

Fader nulling

If the level of the VCA is not the same as the level of the fader when the fader is dropped into or out of RECORD, it is possible to hear a jump in level at the in/out points on playback. If you want to prevent jumps in level then you must ensure that the fader level matches the VCA level before dropping into or out of RECORD mode. This process is called nulling. Nulling is not a problem with Moving Faders when you are dropping into RECORD (as the fader position is set by the computer) but can give level jumps when you return to PLAY. This is because the Moving Fader level at the end of the re-recorded or SNATCHed section may not match the level that had previously been stored in the mix.

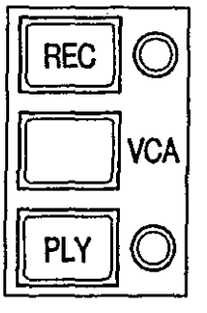
The nulling option must be turned on at the control panel as follows:

1. Select MENU with the rotary dial and press ENTER.
2. Select NULL with the rotary dial and press ENTER
3. Select MODE with the rotary dial
4. Press the right cursor button.
5. Select MANUAL with the rotary dial and press ENTER
6. Press EXIT three times

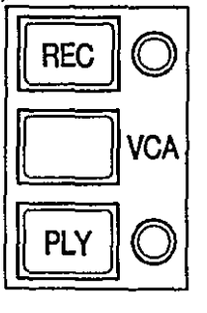
During the nulling process the red and green fader REC and PLY LEDs function as nulling indicators; the red LED flashes to indicate that the fader must be moved up to null, and the green LED flashes to indicate that the fader must be moved down to null. When nulling is achieved the flashing will stop, and the fader will change to the desired mode (RECORD, or PLAY). The LEDs will indicate the current mode.

To demonstrate the nulling indicators choose a VCA fader whose level in the mix is static. Move it to near the bottom. Press play on the control panel and then press the fader REC button. You will see that the RED LED flashes, indicating that the VCA fader needs to be moved upwards. If the fader needed to move downwards the green LED would have flashed. Move the fader slowly upwards and at the point where the fader level and the VCA level match the flashing will stop and the fader will drop into record. The red LED will remain lit to indicate that the fader is now in record mode. Move the fader and it will control the level of the VCA, recording the new levels.

When RED LED flashes move the fader up to null.



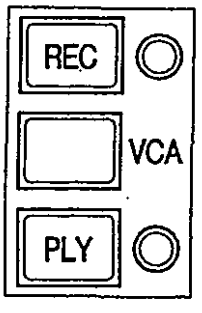
When GREEN LED flashes move fader down to null.



Now press the fader PLAY button, or if using a Moving Fader in SNATCH ON mode, release it. Either the red or green LED will flash, indicating which direction the fader should be moved to null. Move the fader in the direction indicated by the LEDs, until the LED stops flashing and the green LED remains lit, indicated that the fader is now in play mode. If a section of level is re-recorded and is not nulled before stopping the mix, there may be a jump in the level at that point on playback.

The nulling indicators operate when a VCA fader is dropped into record from play, or from trim into play. They also operate when a VCA fader or Moving Fader is dropped into play from record.

When the fader is in isolate mode neither LED is lit.



Isolate mode

Isolate mode is used to isolate a fader from the automation system so that the fader operates as normal. There are 3 cases where this is required:

- When you don't want to record fader moves on certain channels. For example, the level of the drums within the mix may not move at all and so the automation is not required on those faders.

- To keep the moves you have already recorded but want normal control of the fader to rehearse some fader moves.

- To revert to manual control if things start to get confusing.

In these cases it is good practice to put the relevant faders into isolate mode. To isolate a fader in record mode, press the fader REC button (this can only be done when timecode is not running); to isolate at fader in play mode press the fader PLY button; to isolate a VCA fader in trim mode first press the REC button to return to PLAY mode, and then press the PLY button to isolate the fader. When ISOLATE mode is selected neither of the fader LEDs is lit.

Global fader modes

It is possible to put all faders into record, play, trim or isolate mode simultaneously. This is done as follows:

1. Select FADERS with the rotary dial and press ENTER.
2. Press the right cursor, select the mode you want with the rotary dial and press ENTER.

All of the LED's on the faders will change to indicate the selected mode. Please note that the display does not indicate the current mode of the faders; when a pass has been recorded, the faders will revert to PLAY mode as indicated by the status LED's, but the display will continue to show the last selected mode (i.e. RECORD).

Updating mutes

So far we have only updated fader moves but this is only part of the mix process. If you want the mix to be dynamic and free from noise you will have to update the mutes too. The channels, monitors, groups, master effects sends and effects returns all have mutes that can be automated.

During the first pass, the mutes are recorded along with the faders. Updating these mutes is extremely simple. They default to "update mode" (in other words they are in play mode but with record ready) after the first pass, so if you press an mute during a mix it will be recorded. To stop recording press the stop button. If you keep the mix the previous button presses will be overwritten only for the section you have updated.

As with the faders there are global modes for all of the mutes. This allows you to drop all mutes into record simultaneously. Please see the reference section for a full description of these global modes.

Because the effects sends are automated we can use the automation system to add effects to the mix automatically. To do this connect an effects device such as a reverb unit to the console as shown below.

Now turn on aux output 1 and send some signal from one of the channels to the reverb unit. Press play on the control panel and turn the reverb send on and off by pressing the mute on aux output number 1. At the end of the mix press stop and keep the mix. Now if you replay the mix the reverb will be turned on and off automatically.

As with the faders, the mutes can be recorded at any time; it is not necessary to start at the beginning of the mix or run to the end of the mix.

FILE MENU
Name

Saving a mix

Your mix will always be kept in memory even if the console is switched off. But if you want to start a new mix you may want to save the mix more permanently. You can do this by sending the mix data to a sequencer or a MIDI data recorder as a System Exclusive (SYS EX) file (If you are unsure about SYS EX files consult your sequencer manual). Both the fader levels and ONs will be saved together as a file.

Press ENTER and the following is displayed.

Saving mix
0000

Name appears here

Save the mix to a sequencer as follows:

1. Select MENU using the rotary dial and press ENTER.
2. Select FILE using the rotary dial and press ENTER.
3. Select NAME and press ENTER. You can now enter a name of up to 8 characters in length for your mix: the cursors will take you left and right and the rotary dial will select the letter or number. When you have finished press ENTER.
4. Select SAVE using the rotary dial and press ENTER.
5. Put the sequencer into record on a free track. Press ENTER and the mix will be sent to the sequencer. You will see the LCD count down as it sends the mix to the sequencer.

It will take about 90 seconds to save the full memory as a SYS EX file: an average mix will take about 25 seconds, and a simple mix may take as little as 10 seconds to save. It can then be saved to disk by the sequencer or computer, and loaded back into the SOLITAIRE at a later date. To load the mix back into the console, please refer to the LOAD command *(menu\file\load)* in the reference section of this manual.

Screen display

The SOLITAIRE has been designed so that you do not need a video monitor or computer screen to operate the automation. However, because of the complexity of automation systems you may wish to display the fader levels on a screen.

There are two ways in which this can be achieved: via MIDI continuous controllers and any commercially available MIDI controller display package, and via the serial 9-pin protocol and the PC software supplied with the console.

MIDI Controllers

This function is not fully implemented.
The Midi Send should normally be switched off.
Set SEND = "OFF" under the SET UP menu.
(MENU \ SET UP \ MIDI \ SEND)

PC Software

The PC software supplied with the console will enable you display all the fader positions simultaneously, but also to perform off-line editing of automation events which would otherwise be difficult to reproduce.

The console connects to the PC via a 9-pin to 9-pin serial cable, or alternatively via the MIDI port on the console and an MPU 401 compatible MIDI card on the PC. You will need to tell the software which of these methods you are using. Full details are available in the software's on-line help facility.

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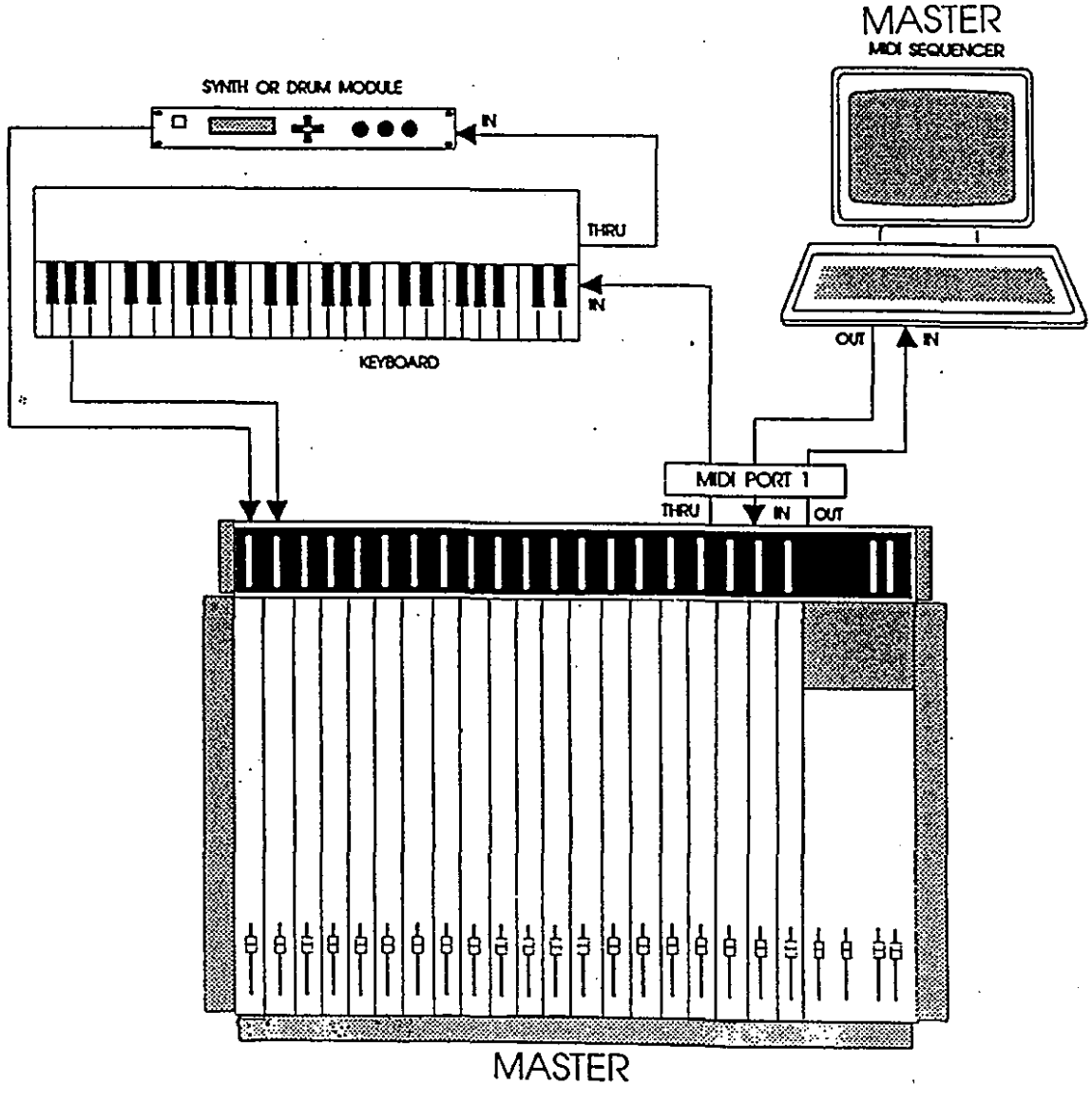
Hook ups

Tapeless studios .....
Conventional studios .....

The way in which the MIDI cables are connected will depend on whether you use just a sequencer or a tape machine and sequencer. The following drawings show how your MIDI equipment is normally connected in each case.

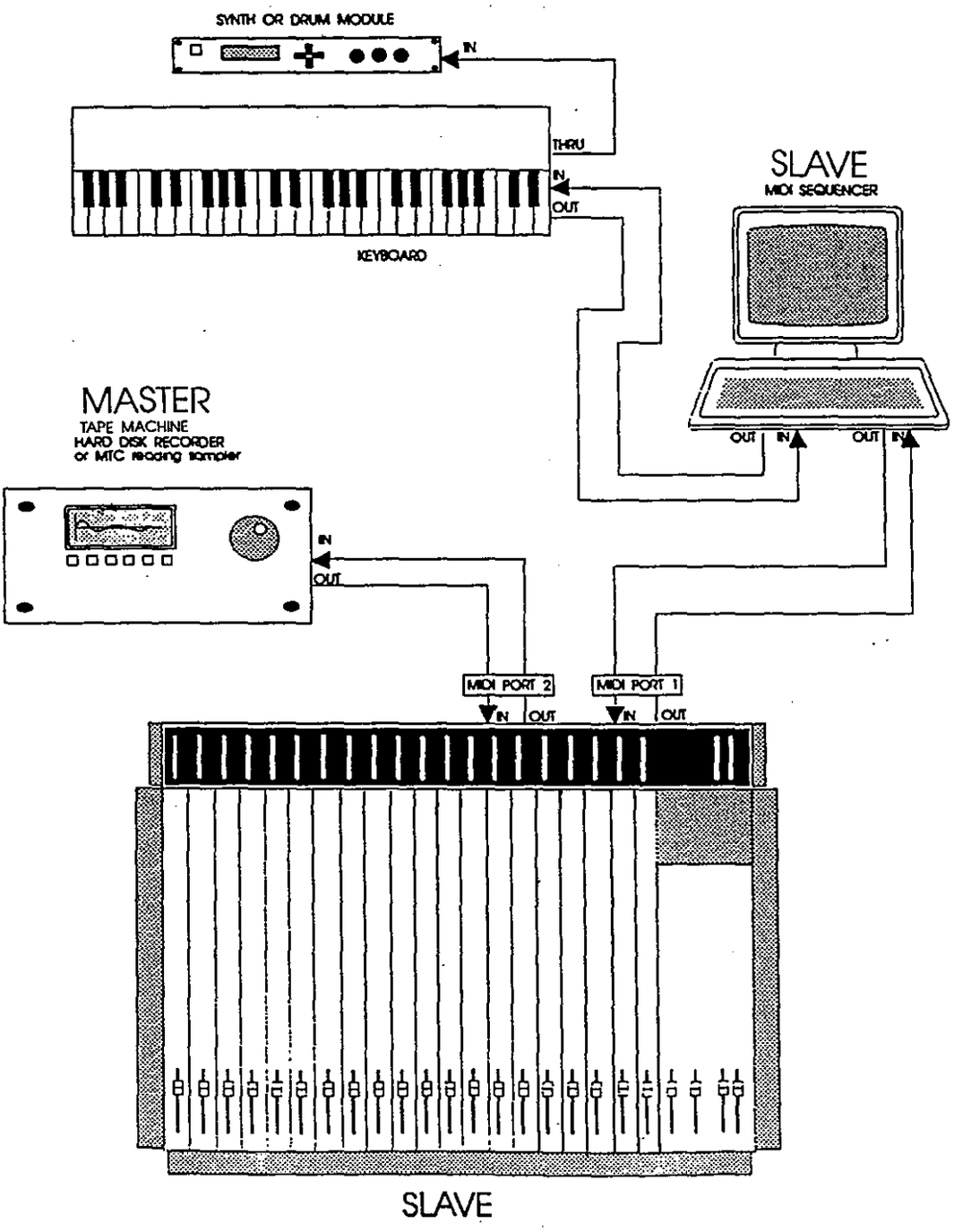
Tapeless studios

At the heart of the tapeless studio is the sequencer so normally the sequencer should be the master which generates MTC. In this case the console should be connected as shown below. You can see that the sequencer is the master and the hard disk recorders, samplers and console are all slaves. (If your sequencer can only read (and not generate) MTC or you want to control the sequencer from the console then the console should be the master, see the hook up in the tutorial section.) The console timecode source should be set to MIDI 1 (*menu\set up\timecode\MTC to midi 1)* and MTC should be sent to MIDI port 2 (*menu\set up\timecode\MTC to midi 2)* if you have a hard disk system which requires MTC.



Conventional studios

If you have a tape machine with a SMPTE to MTC converter box then it should be connected as shown below. In this case the tape machine is the master and the sequencer and console are slaves. At the console, the timecode source should be set to MIDI 2 (*menu\set up\timecode\MTC source)* and MTC should be sent out of MIDI 1 (*menu\set up\timecode\MTC to midi 1)*. If the tape machine responds to MIDI Machine Control (MMC) commands then the tape machine transport can be controlled from the console using this hook up.



MIDI Automation

The MIDI automation option of the console allows you to automate muting of channel, monitor, effects return, and auxiliary master mutes, by creating mute 'scenes' - snapshots of the status of all the mutes on the console - and recalling them by sending the console a MIDI control change message. 100 mute scenes can be stored and recalled. The console can also output these messages, making it easy to record a sequence of scene changes on a MIDI sequencer. In addition, the console can act as a control change master, sending messages under the user's control to other MIDI devices in the studio. This section of the manual is explains how to control the MIDI muting system. Since this system is completely different to the fader automated system, owners of fader automated consoles can skip this section.

Connection of the MIDI cables is described in the previous section, Hookups.

MIDI Automation Computer

Functions

The functions of the computer are as follows:

(i) To communicate with a MIDI sequencer, enabling recording and playback of Mute and Mute Patch data.
(ii) To communicate with other MIDI equipment over which the console has control (e.g. changing patches on a synthesizer or effects device).
(iii) To facilitate bulk data dumps using MIDI System Exclusive, allowing all data in the console computer to be backed up onto a sequencer.

Data Types

Three types of data may be transferred between the computer and the sequencer:

Mute Data: this is individual "button press" data, for individual mute switches on the console. It is transmitted as Note On and Note Off information.

Patch / Programme Change Data: This is data to recall a complete desk mute setup, but may also consist of data transmitted by the console in order to change the patch on a MIDI controlled keyboard or effects device. The data is transferred as MIDI Programme Change commands.

Dump Data: Memory dump information from the console is downloaded to a sequencer as MIDI System Exclusive data.
For information on the format of this data you are referred to the section titled MIDI Specification.

Modes

The computer has two modes of operation: internal and external.

Internal Mode: Internal mode allows the commands for individual mute operations and for complete desk mute setup (patch) changes to be recorded and played back by a MIDI sequencer. Internal mode operates on its own MIDI channel, which may be set from the console computer.

External Mode: In external mode patch change commands for external MIDI equipment (e.g. synthesizers and effects devices) may be sent from the console computer. These commands may also be stored and played back by a sequencer. External mode operates on its own MIDI channel, which may be set in the range 1 to 16.

Mix Automation

Automation is mostly used to achieve one of the following effects:

Gating - The turning on and muting of tape tracks, console channels and effects returns. This may be done to minimise noise or simply to mute signals when they are not required in the mix.

Pushes - Changing the levels of signals (e.g. to "push" an instrument up during a solo).

EQ - Changing of EQ settings, to accentuate a vocal during the chorus for example.

Vocal pre-mixes - vocalists are often encouraged to sing more takes than is necessary. The producer then uses the automation to piece together the best parts of 10 to 15 tracks into one vocal take. Changing the settings of effects devices.

There are obviously other processes which may be necessary during the course of a mix, but those listed above represent the majority. In a complex mix it is extremely difficult, if not impossible, for one person to carry out all these operations. Not only is it physically impractical, but a person cannot make these changes with the same degree of accuracy and repeatability as a computer. Although full level automation is not provided by the computer, simple level changes on main tracks may be effected by routing the signal to two separate input modules, and setting the inputs for the different levels required during the song. Changing from one level to another simply calls for one channel to be muted as the other is turned on. This method may also be used for EQ and pan position changes. Because it requires more than one channel for each signal it has to be used sparingly.

Synchronisation

Individual mutes, together with mute patch changes may, as previously mentioned, be recorded in a MIDI sequencer. Thus when the song is played back on the sequencer the playback of mute data on the console will be locked to the music.

When using a multitrack tape machine timecode (SMPTE) should be "striped" (recorded) onto the highest numbered track of the multitrack and used to synchronise the MIDI sequencer to the tape machine. Thus the console's automation system will also be synchronised to tape.

If you are not mixing down from tape, but are instead running all the instruments live under sequencer control, the console will automatically be synchronsised to the sequencer via MIDI time-code.

Operation

The Select (INT/EXT) Button - This switch is used to select the console's mode of operation. When pressed the switch toggles the console between internal and external modes. The console defaults to internal mode on power up. The mode of operation is displayed by one of the two status indicator LEDs (marked INT and EXT). In internal mode patch change data or ON / mute button-press data can be transmitted from the console to a MIDI sequencer, and played back from the sequencer.

When external mode is selected patch change commands may be sent from the console to control external MIDI equipment (e.g. synthesizers and effects). Patch / mute data stored on a sequencer may be played back, but control from the console of mute patches or button-press mutes is inhibited (external mode may be used as a safety device, to prevent the accidental operation of ON switches during mixdown).

The Select (MIDI/PATCH) Button - This switch sets the function of the SHIFT UP / DOWN keys, and also determines the data displayed on the MIDI CHANNEL numerical display. These keys may be used either to set the MIDI channel on which the console operates, or to set the patch number to which the next MIDI mute setup (patch) is to be stored. The indicator LEDs marked MIDI and PATCH show the current status.

When the MIDI LED is lit the display shows the MIDI channel on which the console is operating as a number from 1 to 16. The SHIFT UP and DOWN keys may be used to select a different channel.
When the PATCH LED is lit the display shows the patch number to which the next MIDI mute patch is to be stored. The SHIFT UP and DOWN keys are used to select the patch number by stepping up and down.

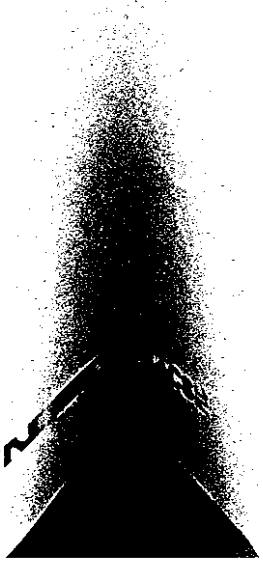
The Store Button - This is used to store the setup of mutes currently active on the console. Mute scenes can be set up on the channels, tape monitors, groups and auxiliary masters. Pressing these switches toggles them between muted (when the LED in the switch cap is illuminated) and unmuted. When the mute set up is stored (by pressing the STORE switch) it will be assigned the patch number displayed on the left-hand display. The patch number may be altered using the SHIFT UP and DOWN keys. NB. Storing a mute setup to a particular patch number overwrites any mute data already stored to that patch number.

The Dump Button - Pressing this switch sends all patch data in the console's memory to the MIDI outputs as MIDI System Exclusive data. This data may be recorded on a MIDI sequencer or data filer.

The Recall Up Button - Pressing this switch recalls the mute patch which is numerically immediately above the current patch. When the console is operating in external mode the operation of this switch is inhibited.

The Recall Down Button - Pressing this switch recalls the mute patch which is numerically immediately below the current patch. When the console is operating in external mode the operation of this switch is inhibited.

The Shift Up and Shift Down Buttons - The functions of these increment / decrement keys is explained in the paragraph describing the SELECT MIDI PATCH button.



Computer Setup

Patches

A patch is the term which describes any one complete combination of soft mute settings. The status of each of the mutes (fitted to channels, tape monitors and auxiliary masters) may be toggled between muted (channel off) and unmuted (channel on). The status of each switch is shown by the LED in the switch cap which illuminates if the mute is off (i.e. channel off).

Storing a Patch

Up to 100 patches may be stored in the console computer. The advantage of this is that an entire configuration of mutes may be recalled by one recall command from a sequencer or directly from the MIDI Control Keyboard on the console.

To store a patch:

1. Set the status of the mutes in the manner described above.
2. Use the MIDI PATCH SELECT switch to select Patch.
3. Use the SHIFT UP and DOWN keys to select the patch number to which you want to store your setup of mutes.
4. Press STORE.

The mute patch will now be stored in memory.

Recalling a Patch

To recall a mute patch:

1. Use the MIDI PATCH SELECT switch to select Patch.
2. Use the SHIFT UP and DOWN keys to select the number of the patch which you wish to recall.
3. Press RECALL UP or DOWN.

Patches may be recalled incrementally or decrementally from the current patch by pressing the RECALL UP or the RECALL DOWN respectively.

Automating Mutes

Individual mutes may be recorded into the sequencer as follows: (if the sequencer is to be locked to tape this section assumes that appropriate measures have been taken to synchronise the two).

1. Select "RECORD" on the MIDI sequencer.
2. If the sequencer is locked to tape, start the tape machine.
3. Mute channels, tape monitors and auxiliary masters as re quired, using the mute switches.
4. When "Play" is selected on the sequencer (and tape ma chine), the mutes recorded will be replayed.

It is unlikely that it will be possible to carry out all necessary mute operations in one pass off the tape, but further mutes may be overdubbed to update the mix. Depending on the design of the sequencer it may be possible to overdub onto the same track , or it may be necessary to record on a second track and merge the two tracks later. It is possible to carry on overdubbing (and merging if necessary) until the mix is complete or your sequencer runs out of memory.

If the sequencer has note editing facilities any errors made while writing mutes may be edited (e.g. deleted, moved forwards or backwards) just as if they were music notes.

Automated Patch Changes

It is easier and more efficient in terms of memory and speed to store patch change commands in your sequencer than to store individual "button press" mutes. Patch change commands may be recorded by the sequencer in a similar manner to individual mutes. Assuming the mutes for your song are numbered consecutively, proceed as follows:

1. Recall the first mute patch for the song.
2. Select "RECORD" on the sequencer and start the tape machine.
3. At the appropriate moment press the RECALL UP key to recall the next patch.
4. Repeat step 3 for as many patch changes are required in the song.

Further patch recalls may be overdubbed if necessary, in the same manner as that described for overdubbing individual "button press" mutes.

Operating Modes

Internal Mode

When the console is powered up it will default to internal mode. This allows mutes and patch changes to be written to a MIDI sequencer. Before proceeding it is necessary to set the MIDI channel number for the console and sequencer to the same value so that they may communicate with each other. This is done as follows:

1. Use the SELECT MIDI PATCH key to select MIDI CHAN NEL (i.e. MIDI LED illuminated.
2. Use the SHIFT UP and DOWN keys to select the desired MIDI channel on the console (1 to 16).
3. Set the MIDI channel on the sequencer to correspond with that selected on the console.

The system is now ready for recording mute and patch change commands.

External Mode

This mode of operation is used to control external MIDI equipment from the console. It may be used to change patches on MIDI keyboards or on MIDI effects devices. These control changes may be recorded to a sequencer to facilitate automatic control.

When external mode is selected any mutes or patch changes which have already been recorded to the sequencer will be replayed. The manual changing of patches from the console is, however, inhibited.

In external mode the RECALL UP and DOWN keys are used to recall programmes on the external device to be controlled. The procedure is as follows:

1. Select External mode.
2. Select the MIDI channel for external mode by selecting MIDI CHAN (MIDI LED illuminated) using the SELECT MIDI PATCH key. Use the SHIFT UP and DOWN keys to select the MIDI channel.
3. Set the operating MIDI channel of the external device to correspond with the MIDI channel of the console.

4. Select PATCH using the SELECT MIDI PATCH key.
5. Use the SHIFT UP and DOWN keys to select the number of the first patch / programme to be recalled, and press RECALL UP to select this programme.
7. Use the RECALL UP and DOWN keys to step through the programmes on the external MIDI device. These programme changes may be recorded on a sequencer in a similar manner to mute patch recalls on the console.

Reference section

The following section lists all of the operating modes, menus and options available on the automation system.

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Recording the mix 48
Replaying the mix 49
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The control panel

Access to all of the operating commands is through the use of the rotary dial, left and right keys and the ENTER key. These are described in the introduction and used as follows:

The rotary dial is used to select options from a menu. It also moves you in the up/down direction when selecting numbers or letters.

The left and right cursor buttons move the cursor in the left or right direction.

ENTER is used to step forwards to the next page and is also used to 'confirm an action' (in many cases the right cursor button can also be used to ENTER)

EXIT (the left cursor button) is used to step backwards to the previous page and is also used to 'abort an action'

When you leave the menu and return to the main page the software remembers where you were. This means that by simply pressing ENTER repeatedly you can quickly return to the page you were last using.

On most pages the timecode is displayed. These pages are 'mix active' pages and can be selected and edited even if a mix is being played back or recorded. Pages which do not display timecode do not allow the mix to be played back or recorded at the same time. If you try to select one of these pages when the mix is playing back or being recorded they will not appear on the menu.

Fader controls

The fader controls consist of three buttons and two LEDs alongside each of the faders. These buttons and LEDs are normally for RECORD (red) and PLAY (green) but they have many other functions as explained in the following pages.

Tape Machine controls

The tape machine controls are used to start, stop, rewind and fast forward the internal timecode generator (provided it is switched on). Pressing the stop button twice resets the timecode generator to zero.

The tape machine controls also send out MIDI Machine Control (MMC) messages out of MIDI port 2. The MMC messages are all standard tape transport shuttle messages.

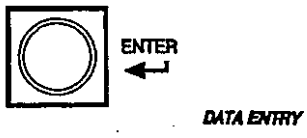
Switching on the automation system

When the console is first switched on the automation is off (disabled). This allows you to operate the console as normal. However, the tape machine control buttons operate regardless of whether the automation is on or off.

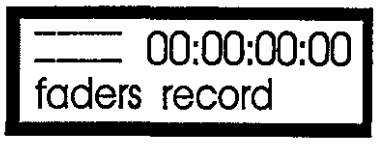
To turn on the SOLITAIRE automation press the ENTER button. Now the LCD display changes to show the memory usage (top left), timecode (top right) and the fader mode select on the bottom line. This is called the main page.

You will see that all of the RED fader LEDs are lit to show that the faders are in record mode. The mutes are also in record mode. You are now ready to start automating your mix.

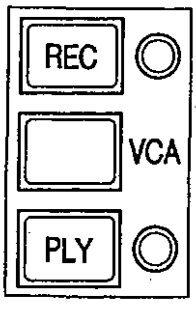
Press ENTER to start mixing



Screen displays the main page as follows.



All of the faders are automatically put into record mode for the first pass.

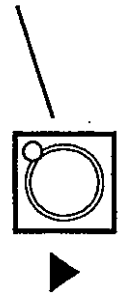


The red REC LEDs light to indicate RECORD mode.

Recording the mix.

Start timecode by pressing the PLAY button on the control panel. (If you are using a tape machine as the master then press play on the tape machine.) For more information about timecode see the set up menu.

Press the play button to start timecode



You will see the timecode on the LCD display begins to count upwards. The automation is now recording. Move faders and press mutes as required.

Because this is the first pass let the mix run to the end before pressing stop. After pressing stop the LCD display will ask if you want to keep the mix or abort. Press ENTER to keep the mix, press EXIT to abort the mix.

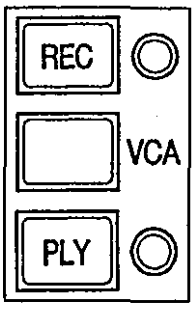
After pressing stop, the screen displays the following

Replaying the mix

If the mix is kept, all of the GREEN LEDs will be lit indicating that the faders are in PLAY mode and ready to be played back. The mutes will also be played back (in update mode).

If a mix is aborted the faders and mutes return to the mode they were in previously.

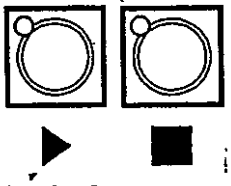
The faders return to play mode after the first pass.



The green play LEDs light to indicate play mode.

To replay the mix first rewind the automation to the beginning. You can reset the timecode to zero by pressing the stop button twice. (If you are using a tape machine as the master then rewind the tape machine instead.) Now press play on the control panel and the mix will be played back.

Press the stop button twice to return to zero



Press the play button to replay mix

Snatching Moving Faders

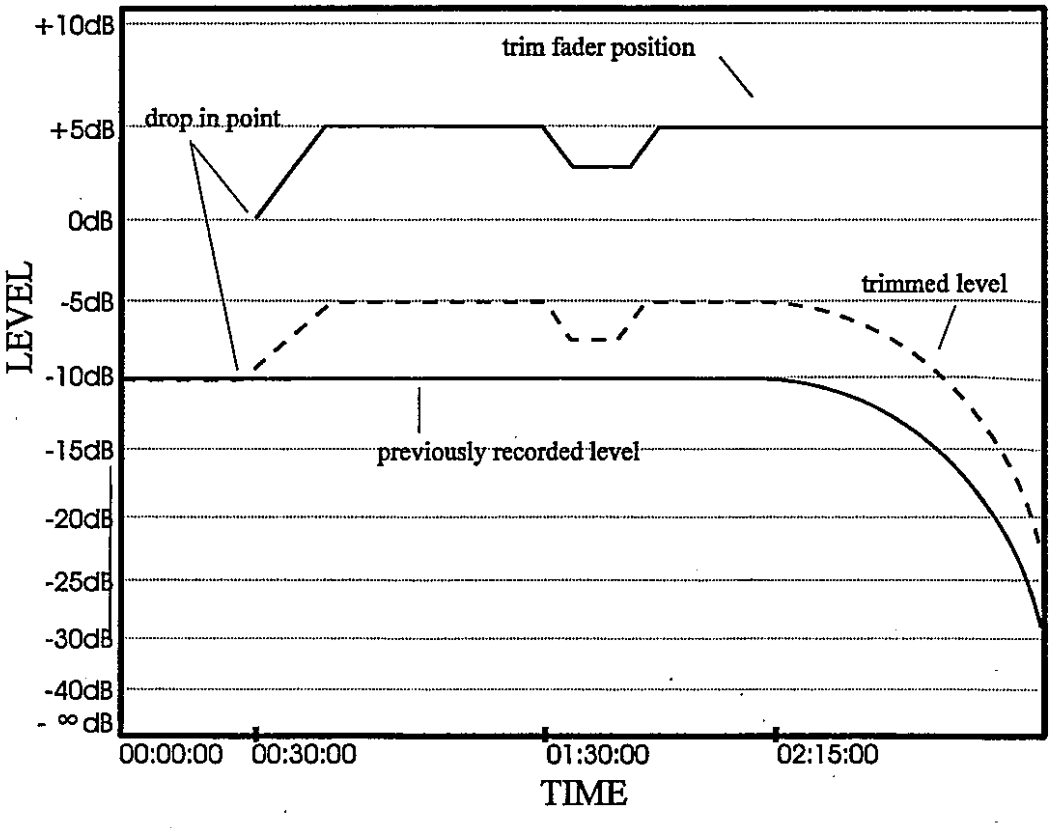
The Moving Faders are touch sensitive. If a Moving Fader is in play, touching it will place it into record mode. The status of the SNATCH global mode will determine how it behaves when it is released. If SNATCH is ON then Moving Faders will revert to play when they are released. This mode allows for very quick changes to the mix. A fader can be snatched on the fly and have new moves written for exactly as long as necessary before being allowed to continue with the mix as before. If SNATCH is OFF the fader will stay in record until the PLY button next to it is pushed or the automation system is stopped. This mode allows you to place several faders into record very quickly and write new levels until you decide to stop the mix. It is also a useful way to freeze Moving Faders at a certain point in a mix.

VCA Fader trim mode

After recording the first pass, any number of VCA faders can be trimmed. In TRIM mode, the fader is used to add to or subtract from the previously recorded level. The position of the fader no longer correspond directly to the signal level, but to the amount of level being added to or subtracted from the cumulative level of all previous passes.

For example, if the fader is set to "0" when you drop into TRIM mode, "0" represents the level of the previous pass at any given time: moving the fader to +5 adds 5dB of level *relative to the previous pass.* The fader can be set to any level when the you drop into TRIM mode, but "0" is recommended as it affords the greatest degree of control over the level. (When more than 10dB are to be added to the level of the previous pass, the fader should initially be set lower; for a smooth fade out, the fader should initially be set to the top of it's travel.)

The cumulative level of all VCA fader passes cannot exceed +10dB, as this is the maximum output of the VCA; if a fader is initially recorded at the top of it's travel, no additional level can be added in trim mode.



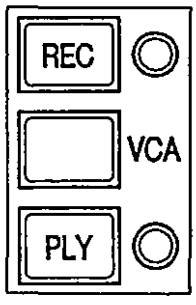
Trim mode is selected by pressing the REC button whilst holding down the PLAY button on the required VCA fader; a fader can be dropped into TRIM mode at any time before or during a mix pass or playback. Both RED and GREEN LEDs light to show trim mode is active. It is also possible to put all VCA faders into TRIM mode simultaneously using the control panel (see global fader modes).

To drop out of TRIM mode, press the REC button again (the fader will return to PLAY mode) or simply stop the mix.

After trimming the LCD will ask you if you want to keep the mix. Keep the mix by pressing ENTER. As before all of the GREEN LEDs will light to show that the faders are in play mode. **The faders always return to play mode after the mix has been kept.**

Trim mode can be used at any point within the mix, it is not necessary to return to the beginning or run through to the end of the mix. Any number of faders can be trimmed simultaneously. If a fader is put into trim mode but the fader is not moved then nothing is recorded.

To enter TRIM mode press the REC button whilst holding down the PLAY button.



Both the REC and PLAY LEDs light to indicate that the fader is in TRIM mode.

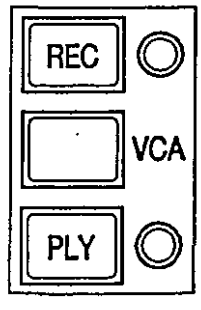
Re-recording faders

If you have recorded fader moves which are completely wrong it will be difficult to correct them using trim mode. In this case it is sensible to re-record the fader moves from scratch.

To re-record faders press the VCA fader REC button on the required channel, or simply touch a Moving Fader. The RED LED will light to show that the channel is in record mode. (If the fader nulling option is on, the VCA faders must be nulled before the channel will drop into record mode; for a full description of nulling, see the fader nulling section below.) To drop out of RECORD mode, press the PLAY button or simply stop the mix, or if SNATCH is ON, simply release the Moving Fader. If the mix is kept then the new fader moves overwrite the old ones for that period. If the mix is not kept then the new fader moves are discarded and the old ones kept.

Re-recording can begin at any point in the mix, it is not necessary to return to the beginning of the mix or run to the end of the mix. Any number of faders can be put into record mode at any time.

Press the fader record button at any point during playback to enter record mode.



The REC LED lights to indicate that the fader is in RECORD mode.

Fader nulling

If a VCA fader is dropped into record you might hear a jump in level because the level of the VCA and the level of the fader are not the same. The same can occur when a VCA fader or a Moving Fader is dropped back out of record into play. To prevent this there is a nulling option which indicates the null point (i.e. the point at which the VCA and the fader are the same level).

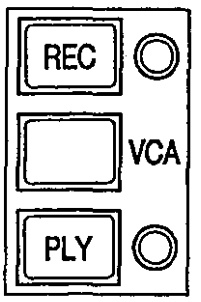
To use the nulling feature it must be switched on in the NULL menu *(menu\null\nulling mode)*. Three types of nulling are available: manual, automatic, and off.

Manual nulling: When a VCA fader goes from play to record or trim to play, or when a VCA fader or a Moving Fader goes from record to play, either the RED or GREEN LED will flash to show you which way to move the fader to reach the null point. Flashing RED means move the fader up, flashing GREEN means move the fader down. The rate of flashing indicates how far the fader is from the null point. If the LED flashes slowly, the fader is relatively distant form the nulling point. Move the fader slowly until the LED stops flashing and the relevant LED is permanently lit. This is now the null point. The fader will only change to the desired mode when it has been set to the null point.

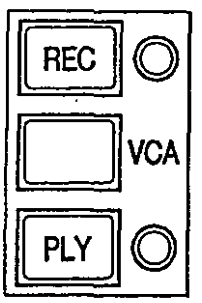
Automatic nulling: Automatic nulling only operates when you go from play to record, record to play or trim to play. The procedure is the same as the manual nulling above but there is no need to move the fader as the automation system will find the null point for you. When the automation has located the null point the flashing stops and the relevant LED will be permanently lit. The speed at which the automation locates the null point can be set up in the nulling menu *(menu\null\null time)* in the format of SECONDS: FRAMES. If automatic nulling is used on a VCA fader going from play to record, the automation data is altered until it matches the fader position. If its used on a VCA fader or a Moving Fader going from record to play (which is its only use with Moving Faders), the fader (or VCA data) is moved until it matches the automation.

Nulling off: With the nulling switched off, the fader mode changes instantaneously when you press a mode button. The LEDs indicate this by changing to the permanently lit state immediately. Dropping into record or play with the nulling off can produce sudden jumps in level, which can be useful in certain instances (i.e. scene changes). Remember that it is possible to put the entire console into record at once by using the global fader mode menu item.

When RED LED fashes move the fader up to null.



When GREEN LED flashes move fader down to null.

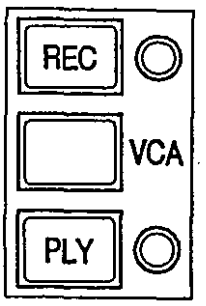


Fader isolate mode

If you want to use a fader as normal (without automation) then the fader can be put into isolate mode. A fader is in isolate when both channel LEDs are off. When timecode is running, press the play button to isolate a fader in play: if a fader is in record or trim you must first return to play, and then press play again to isolate the fader. When timecode is not running simply press whichever button has it's LED illuminated to isolate the fader.

When a fader is in isolate mode the automation system has no effect on that fader. Likewise, movements of the fader will not be recorded into the automation system. However, grouping will still operate as normal. Faders can be put into isolate at any time and any number of faders can be in isolate. All faders can be put into isolate using the faders global menu item.

When the fader is in isolate mode neither LED is lit.



Global fader mode control

Using the control panel it is possible to put all faders into one of the four fader modes: RECORD *(fader to record)*, PLAY (fader *to play)* TRIM *(fader to trim)*or ISOLATE *(fader to isolate)*. Turn the rotary dial until FADERS is displayed on the LCD display. Use the right cursor key to move the cursor to the right. Select the required fader mode with the rotary dial and press ENTER. The LEDs alongside the faders will light to show the mode:

RED ON = RECORD
GREEN ON= PLAY
BOTH ON = TRIM
BOTH OFF = ISOLATE

To put all channels into one of the four modes, select faders with the dial, press the right cursor key, select the required mode with the dial and press ENTER

Mute RECORD mode

The mutes default to record mode for the first pass and update mode for subsequent passes. After the first pass, it is possible to re-record all or some of the mutes by using the global MUTE modes (*mute modes)* and the SAFE editor (*menu\safe)*. (For more information on these features see below.) Pressing a mute in UPDATE mode drops the button into record mode and changes it's state.

Mute UPDATE mode

The mutes default to update mode after the first pass. Update mode for mutes is **not the same** as trim mode; it is a type of 'record ready'. In other words, when a mix is played back any new button presses will be recorded and the previous ones erased; channels with no new button presses will be completely unaffected.

When an mute is pressed in update mode, the button changes it's state and drops into record mode. When the mix is stopped before the end, the button drops out of record mode; on playback the mute will revert to it's previous state after the drop-out point.

Any number of mutes can be updated at one time. Updating can occur at any point within the mix, it is not necessary to return to the beginning or run through to the end of the mix.

Global MUTES (mute) modes

Using the control panel it is possible to change the status of all mutes to one of the four modes: RECORD, PLAY, UPDATE or ISOLATE. These modes are:

RECORD *(mutes to record)* - when the mutes are put into record mode new button presses are recorded for as long as timecode is running. If the mix is kept these new button presses will be kept and all previous data is overwritten.

UPDATE *(mutes to update)* - when the buttons are in update mode previous button presses will be played back but if a button is pressed then recording will begin on that button. Recording stops when timecode stops and if the mix is kept then the new button presses will overwrite the old for that period.

PLAY *(mutes to play)* - in play mode the mix is played back and pressing buttons has no effect. It is a type of safe facility for the mutes.

ISOLATE *(mutes to isolate)* - when the buttons are in isolate the automation no longer plays the button presses or records new button presses. Instead the buttons act as normal mutes.

To put all buttons into one of the four modes, turn the rotary dial until MUTES is displayed on the LCD display. Use the right key to move the cursor to the right. Select the required mode with the rotary dial and press ENTER.

Using the global functions in conjunction with the SAFE *(menu\safe)* option it is possible to drop an mute into record at any point in the mix without changing the state of the button. This is useful for extending an ON state, and for dropping out of RECORD mode.

If, for example, a channel turns on or off too early, one can 'SAFE' all of the other mutes, and use the global ON record *(mutes to record)* function to drop into record on the selected channel at an earlier point in the mix: the button will remain in the same state until it is pressed by the user. The mix can then be stopped (or dropped into UPDATE using the global MUTES menu *(mutes to update)* before the next change of state, and the subsequent button presses will be retained.

If the channel turns on or off too late, it can be dropped into record using UPDATE. If all other mutes are 'SAFE', the global mode can be used to drop the mute into PLAY mode *(ON modes\play)* from RECORD. Please see the SAFE mode section below for more information.

Memory

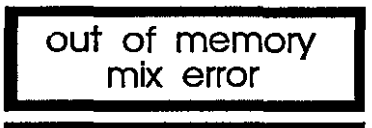
Depending on the exact configuration the SOLITAIRE has 512kB or 768kB of on board memory where the mix is stored. This memory is battery backed so that the mix is kept even if the console is switched off. When new, the battery will keep the mix in memory for about six weeks, after this the mix could be lost. So if you want to keep a mix in long term storage then the mix should be saved down to a sequencer or MIDI data recorder.

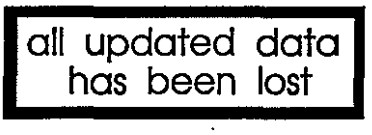
At the top left of the main page is the memory indicator. As you record more and more into the mix the indicator will fill up. It is rare that a mix will fill up the memory but if it does then the memory indicator will show MEM! This means that the memory is full and your last fader moves or button presses will not have been recorded.

When you stop the timecode the screen will warn you that the last updates to the mix have been lost. If is recommended that you save to a sequencer on a regular basis.

When memory is full MEM! is shown on the screen

After stopping timecode the following error messages are displayed.





Accessing the Menu

The menu is accessed by selecting MENU on the main page with the rotary dial and pressing ENTER. The following options are now available:

Group
Set up
Clear
Safe
File
Null

Use the rotary dial to select the item you require and then press ENTER. Press EXIT to return to the menu.

Some items in the menu have sub menus. Again select the item you require with the rotary dial and press ENTER or press EXIT to return to the previous menu.

Within each item there are a number of options. To change an option press the right key so that the cursor jumps to the right. Change the option using the rotary dial. Press ENTER to keep the change. Press EXIT to lose the change.

The menu structure is shown in a diagram at the end of this section.

For access to options and extra commands select MENU from the main display

Null

The null option allows you to select the nulling mode (i.e. off, manual or automatic), select the automatic nulling time, 'match' a mix and view a fader. (Nulling is explained in the tutorial and the nulling modes are explained in the 'Mix modes' section)

Null mode - To select the a null mode:

1. Select **null** from the menu and press **ENTER**
2. Select the **mode** option with the rotary dial.
3. Press the **right cursor.**
4. Select **AUTO, MANUAL or OFF**
5. To keep the setting press **ENTER,** to lose it press **EXIT**

Null modes are: OFF, AUTO or MANUAL.

Auto null time - the auto null time determines how long it takes for the computer to change from record to play, play to record and trim to play. The auto option *(menu\null\nulling mode\auto)* must be selected for this to work. The auto null time is set in seconds and frames as follows:

1. Select **null** from the menu and press **ENTER**
2. Select the **ss:ff** option with the rotary dial.
3. Press the **right cursor.**
4. Adjust the frames using the rotary dial. To adjust the seconds press the left cursor and use the rotary dial.
5. To keep the setting press **ENTER,** to lose press **EXIT.**

Auto null rate:
ss = seconds from 0 to 99
ff = frames from 0 to 30.
Auto mode must be selected.

Clear

Clear is used to delete the mix in memory. Once the mix has been cleared there is no way of retrieving it, so ensure you have saved your mix first if you want to keep it. Grouping and set up data is retained when the memory has been cleared.

Clear memory as follows:

1. Select **clear** from the menu and press **ENTER.**
2. LCD displays **'PRESS ENTER TO CLEAR MIX'**
3. Press **ENTER** if you wish to clear the memory. (If not press EXIT).
4. LCD displays **'MIX HAS BEEN CLEARED, PRESS ANY KEY TO CONTINUE'.**

Select clear from the menu and press ENTER.

Press ENTER to clear mix. The LCD will display "MIX HAS BEEN CLEARED, PRESS ANY KEY TO CONTINUE."

File

The file option allows you to name a mix, save it to a sequencer, MIDI data recorder, or external PC running the SOLITAIRE automation software, and load the mix back into the automation computer later.

Enter a mix name using the dial and cursor keys then press ENTER

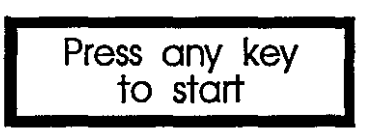
Name - The mix in memory can be given a name of up to 8 characters in length. This name will be saved and loaded along with the mix and enables you to keep track of your mixes.

To name a mix:

1. Select **file** from the menu and press **ENTER.**
2. Select the **name** option and press **ENTER.**
3. LCD displays **Name --------**
4. Press the **right cursor** to jump to the first character and use the dial to select the first letter or number.
5. Press the **right cursor** again to the next character and enter the next letter in the same way.
6. Repeat this for all characters in the name and then press **ENTER** to keep the name (or **EXIT** lose the name).

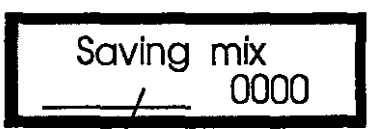
Save - The save function allows you to save the mix in memory onto a sequencer or MIDI data recorder, or a computer running the SOLITAIRE automation software and from there save it to disk for permanent storage. The MIDI data is transmitted as SYS EX data. (Refer to the sequencer manual for more information about recording SYS EX messages). The computer software saves the mix in a proprietary Soundtracs format. All mix data and group data is saved. Set up parameters are stored in nonvolatile RAM within the automation computer and are therefore not saved to disk with each mix.

Select save option and the screen displays the following:



Since the mix data is first recorded into the computer/sequencer's memory you must be sure that the computer/sequencer has sufficient memory to store the mix. If the mix is large and you already have a song in a sequencer's memory you may find that the sequencer RAM is too small. The ATARI 1040 computer has 1 meg of RAM as standard but if you have the sequencer loaded and a song in memory then there could be very little memory free.

Press ENTER and the following is displayed.



Name appears here

MIDI mix saving is via MIDI port 1 only. To save a mix:

1. First name the mix as described below
2. Select **file** from the menu and press **ENTER.**
3. Select the save option and press **ENTER.**
4. LCD displays **Save mix data.**
5. Ensure that the sequencer is in record and then press any key. You will see a count down on the LCD as the mix is saved.
6. If you press any key during the save then the process will be cancelled.

Load - this command will load in a previously saved MIDI file or computer file. The MIDI mix data is transferred as a SYS EX file. MIDI mix loading is via MIDI port 1 only. (Refer to sequencer manual for SYS EX recording and play back). SOLITAIRE Automation software data is transferred over the 9-pin to 9-pin connection via a proprietary Soundtracs serial protocol. When a mix is loaded into memory the current mix and group data in memory is overwritten and will be lost. It is essential to save your current mix before loading a new mix file.

Select load from the file menu and press ENTER

After selecting load the following warnings appears

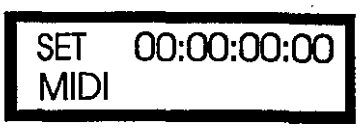
Loading is as follows:

1. Select **file** from the menu and press **ENTER**
2. Select **load** and press **ENTER.** The LCD will warn you that the mix in memory will be overwritten. Press **EXIT** at this point if you wish **to abort. To continue press any key.**
3. LCD displays **Loading data**: Send SYS EX data to the console now. When data is received the LCD will display the name of the mix (if it has one) and counts down as the mix is loaded.
4. After the mix has been loaded the LCD returns to the file option. If the mix data was not received then the display shows **Load error:xxxx** and **Press any key to continue.** If this occurs you should consult the sequencer manual regarding playback of SYS EX data and check the MIDI cable.

Set Up

The set up option allows the user to change the MIDI and timecode parameters of the automation system.

To change MIDI settings select MIDI from the set up menu



MIDI

This function is not fully implemented.
Use Soundtracs Windows™/PC software for remote display and control functions.

MIDI Channel - This function is not fully implemented.
Use Soundtracs Windows™/PC software for remote display and control functions.

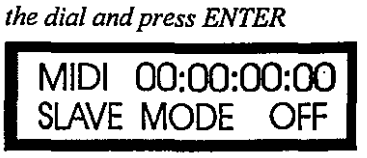
To change the MIDI channel number select CHANNEL, press right cursor, select number with rotary dial and press ENTER.

SEND - This function is not fully implemented.
Use Soundtracs Windows™/PC software for remote display and control functions.

Send mode outputs continuous controllers on MIDI port 1. To turn send on, select SEND, press right cursor, select ON with the dial and press ENTER

SLAVE This function is not fully implemented.
Use Soundtracs Windows™/PC software for remote display and control functions.

In slave mode VCAs and buttons respond to continuous controllers on MIDI port 1 instead of faders.
To turn slave on, select SLAVE, press right cursor, select ON with the dial and press ENTER

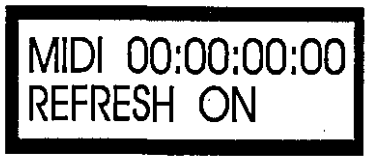


Refresh - The SOLITAIRE can output MIDI continuous controller messages so that a sequencer can be used to display fader positions and mutes. Due to the nature of MIDI sequencers it is possible that the sequencer screen can become temporarily out of step with the console. This means that the information on the screen does not match the status of the console.

To prevent this there is a refresh command which will sequentially output continuous controller messages from all faders and ensures that the sequencer is constantly updated. In some cases you may find that the use of refresh causes delays and if routed to a synth could alter all of its internal settings. It is therefore recommended that it is used when you are recording a mix and not during normal sequencer programming.

To turn on refresh:

1. Select MENU and press ENTER
2. Select SET UP and press ENTER
3. Select MIDI and press ENTER
4. Select Refresh
5. Press right cursor
6. Select ON with dial
7. Press ENTER
8. Press EXIT repeatedly to return to main page.



Press right cursor and select ON with rotary dial. Press ENTER.

Timecode

The SOLITAIRE uses MIDI Timecode (MTC) as the timing signal. MTC can be generated by the console or by some external device such as a sequencer or a tape machine with the correct interface box. If the SOLITAIRE is generating MTC it is the master. If external equipment is generating the MTC then the SOLITAIRE is the slave.

When the SOLITAIRE is the master, the timecode option *(menu\set up\timecode)* allows you to decide what type of code is generated and which MIDI outputs the timecode is to be sent to. When the SOLITAIRE is the slave you can choose which is the input MIDI port and also choose to send MTC to the other MIDI port.

Please note that MTC IS NOT THE SAME AS MIDI CLOCK. MIDI clock is a simple beat count and cannot be used with the SOLITAIRE.

The timecode options are as follows:

SOURCE - the source of the MTC can be either internal, MIDI port 1 or MIDI port 2. The source is selected as follows:

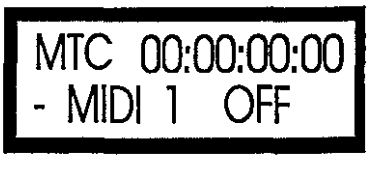
1. Select **Timecode** from the set up menu and press **ENTER.**
2. Select the **SOURCE** option using the rotary dial.
3. Press the **right cursor** key
4. Select **INTERN, MIDI 1 or MIDI 2** with the rotary dial.
5. Press **ENTER** to keep the setting or **EXIT** to lose the setting.

Select MIDI and press ENTER Select SOURCE and press ENTER Press right cursor and select timecode source.

MIDI 1 - this option allows you to send MTC to MIDI port 1 so as to feed a sequencer. MTC to MIDI port 1 is turned on as follows:

1. Select **Timecode** from the set up menu and press **ENTER.**
2. Select the **MIDI 1** option using the rotary dial.
3. Press the **right cursor** key
4. Select **ON** with the rotary dial.
5. Press **ENTER** to keep the setting.

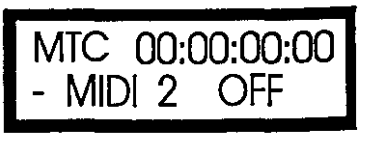
To send MTC out of MIDI port 1 select Timecode option and press ENTER. Select MIDI 1. Press right cursor and turn MIDI 1 on using rotary dial.



MIDI 2 - this option allows you to send MTC to MIDI port 2 so as to feed a sequencer. MTC to MIDI port 2 is turned on as follows:

1. Select **Timecode** from the set up menu and press **ENTER.**
2. Select the **MIDI 2** option using the rotary dial.
3. Press the **right cursor** key
4. Select **ON** with the rotary dial.
5. Press **ENTER** to keep the setting .

To send MTC out of MIDI port 2 select Timecode option and press ENTER. Select MIDI 2. Press right cursor and turn MIDI 1 on using rotary dial.



Standard - there are 4 different standard types of MTC. These are:

24 frames per second	Film standard
25 frames per second	European standard (TV)
30 frames per second	US (MONO)
30 frames drop frame	US (colour)

The SOLITAIRE's internal generator can be set to generate any of the four standards but the default setting is 25 fps, which is the most commonly used. If you are working with film or video you may be required to use another standard. The timecode standard always refers to the generator and has no effect on external code coming in.

A fifth rate known as 29.97 non-drop is pseudo-standard in some countries for video. It is 30 frames per second running slightly slower than normal. The SOLITAIRE will synchronise to incoming MTC at this rate.

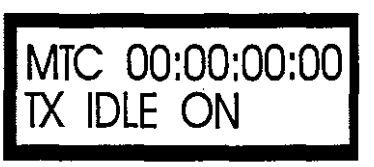
To change the timecode standard select timecode option and press ENTER. Select standard Press right cursor and select required standard with rotary dial

The standard is changed as follows.

1. Select **Timecode** from the set up menu and press **ENTER.**
2. Select the **Standard** option using the rotary dial.
3. Press the **right cursor** key
4. Select the required frame rate with the rotary dial.
5. Press **ENTER** to keep the setting or **EXIT** to lose the setting.

Idle - this facility allows MTC to be transmitted while the mix is shuttled forwards or backwards, or reset to zero. This enables tape connected in chase mode to track the automation in fast-forward and rewind. Some sequencers do not correctly interpret this signal, and will behave as if the timecode is running at normal speed. This prevents them from detecting the end of the mix. In these cases, the idle should be set to Off.

To turn IDLE on, select timecode option and press ENTER. Select TX IDLE using the rotary dial. Press right cursor and select ON with rotary dial. Press ENTER to keep the setting.



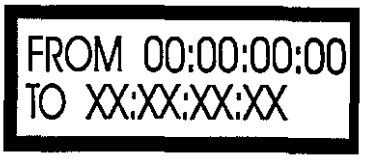
IDLE is turned on as follows:

1. Select **Timecode** from the set up menu and press **ENTER.**
2. Select the **TX IDLE** option using the rotary dial.
3. Press the **right cursor** key
4. Select **ON** with the rotary dial.
5. Press **ENTER** to keep the setting .

Mix statistics - The mix statistics option gives you details about the mix in memory. There are three pages which display the start and end time, the memory used and the memory free. Due to the way in which the automation computer allocates memory, it is possible to 'run out' of memory while the STATS menu still displays a small amount of memory free. The memory bargraph in the main page will display the actual amount of memory left for the mix, and will display MEM! when all usable memory is full.

The statistics page is selected as follows.

1. Select **Statistics** from the set up menu and press **ENTER.**
2. Select the desired statistics page using the rotary dial.



Use the rotary dial to rotate through the 3 statistics screens.

Calibrate - The calibrate option is used to calibrate all of the faders to ensure that the fader range is accurate. Calibration is done when the console is first switched on and should not be necessary again.

Select **Calibrate** from the set up menu and press **ENTER** to perform calibration.

All the Moving Faders will move to the bottom position and you will need to manually move the VCA faders there also. Press **ENTER** when you have done this to calibrate.

Safe

The safe option allows you to put any faders or mutes into safe mode. When a button or fader is put into safe mode it cannot be put into a mode that causes recording of new data: those channels/ mutes that are in PLAY mode are 'locked' into PLAY mode and those that are in ISOLATE mode are 'locked' into ISOLATE mode.

By putting channels into safe mode you can prevent accidental erasure of mix data by inadvertently pressing buttons or moving faders.

Faders and buttons are put into safe mode as follows:

1. Select **SAFE** from the menu and press **ENTER**
2. The LCD displays **'Safe channel editor'**
3. Use the channel **REC** or **PLAY buttons** to put a fader into safe mode. When the channel is in safe mode both the RED and GREEN LEDs will be lit.
4. Use the **mutes** to put channels, monitor, effect returns, effect sends or groups into safe mode. When an mute is in safe mode it will be lit.
5. You can use the **right cursor** key to put **all faders and buttons** into safe mode. Pressing the right cursor again will toggle all channels.
6. When you have finished press **ENTER** to keep the safe settings or **EXIT** to lose the settings.

Safe mode is also used for sophisticated On button editing. By putting some buttons into safe mode the remaining buttons can be dropped into record (for example) using the global mute modes *(mute modes\record, etc.)* .

Select safe from the menu and press enter. The following appears:

Safe Channel editor

Select safe channels

RIGHT key selects all

Use the channel REC or PLAY buttons to put faders into safe. Use the mutes to put buttons into safe.

Calibrate - a routine used by the automation computer on first switch on (and subsequently as deemed necessary by the computer) to optimise the fader data reading.

Clear - a menu page used to delete the current mix from memory.

Continuous Controllers - a type of MIDI data used by the automation computer to transfer fader and ON data to and from a sequencer in real time.

Control Grouping - a feature which allows a single fader to control the levels of several faders.

Control Panel - the section of the console containing the cursor keys, rotary dial and LCD display used to control the automation computer.

Cursor - the flashing ">" symbol in the LCD display which indicates the current position in the menu page.

Fader (Moving Fader) - the channel motorised fader, used to control the level of the channel signal. The movements you make with a Moving Fader are physically repeated on playback as the computer controls the fader position using a motor.

Fader (VCA) - the channel or monitor fader, used to control the level of the VCA when in RECORD, TRIM or ISOLATE modes.

File - a set of computer data containing fader levels, ON states and groups, which can be saved to a sequencer as a SYS EX message.

Global modes - a menu page used to put all non-safe channels or mutes into one of the available modes simultaneously.

Isolate mode - a fader/ ON mode which removes the fader or mute from computer control and returns it to manual control.

Master - the piece of equipment in a system linked by timecode which generates the code for the other equipment to follow.

Match - a form of nulling which allows all of the fader levels to be matched to the VCAs without dropping into RECORD mode.

Menus - the various control pages of the automation system, which are viewed in the LCD and selected using the cursor buttons, rotary dial and ENTER/EXIT buttons.

MIDI Machine Control (MMC) - a type of MIDI data used to remotely control tape machine functions. MMC messages are generated by the console's tape machine controls.

MIDI Timecode (MTC) - a type of time code generated and read by the automation computer which is used to synchronise the automation to external sequencers and tape machines.

MIDI Port - the 5 pin DIN sockets used as MIDI inputs and outputs.

Mix - with regard to automation, the mix is the data representing time, fader level and ON status. The mix can be saved to a sequencer or MIDI data file recorder as a SYS EX message, and loaded back into the automation computer when needed.

Nulling - the process of setting the fader to the same level as the VCA before dropping from RECORD or TRIM to PLAY, or from PLAY to RECORD or TRIM. Nulling ensures that there are no sudden jumps in level at drop in/out points in the mix.

Pass - a run through the mix involving fader moves and mute presses.

PLAY mode (faders) - a fader mode in which the channel VCA is set by the automation computer to a previously recorded level.

PLAY mode (mutes) - an mute mode in which the state of the button is controlled by the automation computer according to previous passes.

Record mode - a fader mode in which the fader level or position is recorded into the automation computer for subsequent playback.

Refresh - a command used to insure that continuous controller data is sent out sequentially when a sequencer is used to display fader levels and ON states, so that the information on screen always matches the status of the console.

Re-recording - with regard to automation, re-recording is the process of putting a fader into record mode to overwrite previous passes.

Safe mode - a fader/ ON mode which ensures that no new data can be recorded. Safe mode locks the fader or mute into either PLAY or ISOLATE mode.

Slave - a piece of equipment in a system linked by timecode which reads the code generated by the master and synchronises to it.

System Exclusive (SYS EX) Messages - a type of MIDI data file which is used to save the mix data to a sequencer or MIDI data file recorder.

SMPTE - a type of time code similar to MTC which is standard in film/video production and is often used for synchronisation in studios. SMPTE is not directly compatible with MTC; synchronisation between MTC and SMPTE requires a converter.

SNATCH mode - a Moving Fader mode which allows the touch sensitive Moving Faders to go from play to record and back to play again when touched and released.

Tape Machine Controls - the Rewind, Fast Forward, Play, Stop and Record buttons in the control panel used to control the MTC generator, and external sequencers and tape machines.

Timecode - a signal used to synchronize various pieces of equipment together.

TRIM mode - a VCA fader mode in which the channel fader is used to offset the VCA level recorded in previous passes.

UPDATE mode - a mode in which the mutes are controlled by the computer, but are 'record ready'; pressing the mute in UPDATE mode drops the button into RECORD mode and changes the state of the button.

VCA (Voltage Controlled Amplifier) - an amplifier controlled by the automation computer which determines the level of the channel on playback of the mix.

The PC Display System

SOUNDTRACS PLC

CONTENTS:

1. SYSTEM REQUIREMENTS

2. SYSTEM INTERCONNECTION

3. SOFTWARE INSTALLATION

4. SYSTEM OVERVIEW

5. SENDING AND RECEIVING MIXES TO AND FROM THE CONSOLE

6. SAVING AND RECALLING MIXES TO AND FROM DISK

7. OFF LINE MIX EDITING

8. GLOSSARY

It is assumed in this manual, that the user is familiar with the WINDOWS operating system. If this is not the case it is recommended that the user reads the WINDOWS manual first.

1. SYSTEM REQUIREMENTS

Jade-S consoles are now supplied complete with a matching IBM compatible PC.
This is supplied pre-installed with Jade-S software (version 2.10 or above) and tested with the mixer.

The user will need to provide a SVGA monitor to suit the local mains supply.

The PC will need to be set to the correct mains voltage (115V or 230V) before switching on.

The following sections of the manual give operating instuctions for the fader automation, ADP and VCA grouping systems.

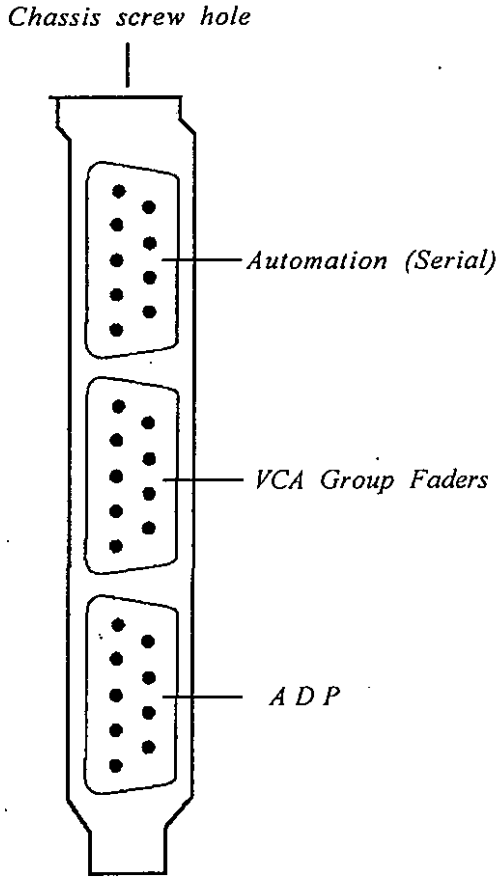
Revised 3.98

2. SYSTEM INTERCONNECTION

Hardware Connection

- Ensure there is nothing connected to the COM1 on your PC. If the mouse is currently connected, remove it.
- Connect the TRACKBALL port on the rear of the console to the COM1 port on the rear of the PC. Use the cable with a female 9-pin connector on one end (all the others are male-male).
- Restart the PC and verify that the trackball is working correctly when the pointer reappears on screen.

Serial Card Cable Connections



Note that with the exception of the trackball cable, all the cables and connectors are the same, so you can use any of them to make the above three links. When all the connections are in place, restart the PC.

3. SOFTWARE INSTALLATION

The PC supplied with the system is preloaded with Microsoft DOS 6.22, Windows 3.11 and Jade-S software.

Refer to the Appendix at end of this automation section for installation notes should the software require to be re-installed.

4. SYSTEM OVERVIEW

This software package has been written to perform the following functions:

1. Display console fader positions and mute status.
2. Display level and mute information against time.
3. Enable mix files to be saved and recalled on the computers hard or floppy disks.
4. Enable mix data (level and mutes) to be edited off line and returned to the console.

Being WINDOWS based, the software is split up into a number of user selectable windows called:

SOUNDTRACS JADE-S (main window on top of which all others reside).

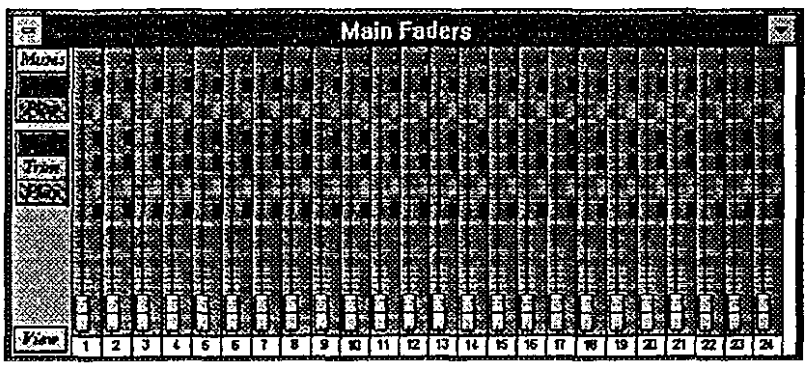
MAIN FADERS
MONITORS
MASTER/FX/AUX
TIMECODE/TRANSPORT
MIX FILE
NOTES

All windows (except the tape transport/timecode window) can displayed or minimised to an icon using the down arrow located in the top right corner of each window. To restore a minimised window double click on its icon with the mouse left button.

SOUNDTRACS JADE-S WINDOW

This is the main window, on top of which all other related windows can reside.
Along the top edge are the familiar WINDOWS pull down menus relating to this particular package.
Below it is a toolbar containing the most used functions in the package. This toolbar can be relocated either as a left or right hand vertical bar by using the pull down WINDOWS menu.

MAIN FADERS AND MONITOR WINDOWS



These windows represents the channel and monitor faders and associated switches on the console.

Along side each fader are seven related switches.

MUTE. Clicking on the mute switch with the mouse left button will toggle it on and off.

REC (upper). Clicking on this switch will place the above mute switch into record mode. The red led to the right of the switch will illuminate when in record mode.

UPD. Clicking on this switch will place the above mute switch into update mode. Both the red led above and green led below will illuminate when in this mode.

PLAY (upper). Clicking on this switch will place the above mute switch into play mode. The green led along side the switch will illuminate when in play mode.

REC (lower). Clicking on this switch will place the adjacent fader into record mode. The red led to the right of the switch will illuminate when in record mode.

TRIM. Clicking on this switch will place the adjacent fader into trim mode. Both the red led above and green led below will illuminate when in this mode. Note: The trim function is not displayed if the fader is a motorised type.

PLAY (lower). Clicking on this switch will place the adjacent fader into play mode. The green led along side the switch will illuminate when in play mode.

On the left hand side of these windows there are eight global switches.

MUTE. Clicking on this switch will toggle all mute switches in the window on or off.

REC (upper). Clicking on this switch will toggle all mute record switches on or off.

UPDATE . Clicking on this switch will toggle all mute update switches on or off..

PLAY (upper). Clicking on this switch will toggle all mute play switches on or off.

REC (lower). Clicking on this switch will toggle all fader record switches on or off.

TRIM. Clicking on this switch will toggle all fader trim switches on or off.

PLAY (lower). Clicking on this switch will toggle all fader play switches on or off.

VIEW. Clicking on this switch toggles the display between expanded view and compressed view. In expanded view the graphical representation of the faders and switches has far more detail, however only a certain number of channels can be displayed at one time. To view other channels click and drag the position cursor located along the bottom edge of the window. In compressed view the detail is reduced, however all faders can be displayed at once.

Below each fader (fully visible on expanded view only) there is a white box with the channel or monitor number in it. This represents the channel or monitor "rubbing strip". Placing the pointer within this box and clicking the left mouse button enables the user to edit the text within the box.

MOVING AND SCALING THE WINDOW.

To reposition the window anywhere on the screen click with the left mouse button any where in the required window so that the title bar is highlighted. Now placing the pointer within the title bar you can click and hold the left mouse button and drag the window to the

required position.

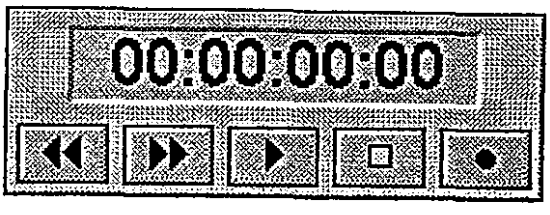
To re-scale the window place the pointer on any edge of the window until the arrow has two pointers. With the left mouse button you can now click and drag the edge or corner to the position required.

These operations apply to all of the windows except the time code window.

MASTER/FX/AUX WINDOW.

This window is similar to the fader windows except it only contains the master fader and related master module mute switches. There are no global switches within this window and it can only be displayed as full view.

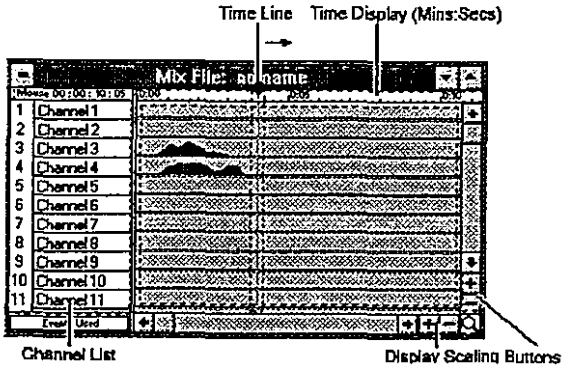
TIMECODE/TRANSPORT WINDOW.



This small window emulates the tape transport and timecode display functions found on the console. The transport buttons can be operated by clicking on them using the mouse left button. This window can be positioned, using click and drag, anywhere within the screen display.

MIX FILE WINDOW.

The mix file window gives the user a graphical view of fader movements and mute status against time. Time is displayed from left to right in hours minutes seconds and frames along the top edge of the window (below the title bar).



Fader and mute information is displayed from top to bottom, channels first, followed by monitors and then finally the master functions.

TIME CODE SCALING.

Placing the mouse pointer anywhere within the window will produce a red cursor to appear in the time code display line (top of the window). The actual time position of the cursor is displayed in the top left corner of the window.

To increase or decrease the amount of time displayed and thus the resolution displayed, use the +/- buttons located along the bottom edge.

To go to a different time window use the mouse to click and drag the scroll bar on the bottom edge of the window.

CHANNEL SCALING

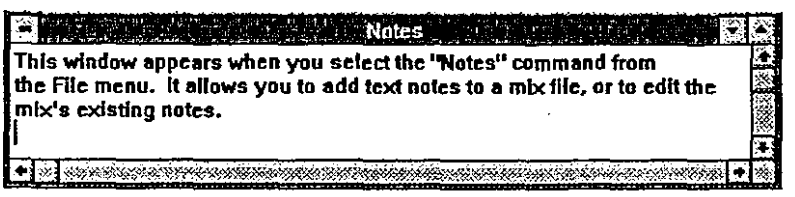
To view more or less channels use the +/- buttons located along the right hand edge.

To view channels above or below those that are displayed in the window use the scroll bar located on the right hand edge.

Located in the bottom right corner there is a magnifying icon. Clicking on this with the left mouse button will enable the user to zoom out and display more channels. Clicking with the right mouse button enables the user to zoom in.

Located down the left edge of the window are channel legend boxes. The text within these boxes are the same as that below the faders in the fader windows. Clicking on a box enables the user to edit the text. This will also cause the text to change in the fader windows.

NOTES WINDOW



The Notes window (under the file menu) is an area where the user can enter and edit text relating to the mix.

The format is very similar to the windows write program (see your Windows manual for more details).

The notes window is saved with the mix file on disk.

5. SENDING AND RECEIVING MIXES TO AND FROM THE CONSOLE

In order to edit a mix off line or save it to disk it needs to be sent from the console memory to the computer memory.

This function is only performed at the end of a mix when timecode has stopped. When timecode is running the system assumes a mix is taking place and prevents any transfer of data at that time.

To send a mix to the computer click on the "GET MIX" icon in the toolbar. A box will then pop up showing the progress of mix transfer to the computer. This process will overwrite any mix currently being edited on the computer so it is essential to save any mix to disk before hand (the system does warn you of this).

To send a mix back to the console click on the "SEND MIX" icon in the toolbar. Again a box will pop up showing the progress of transfer. Note: this process will overwrite any mix currently held in the console.

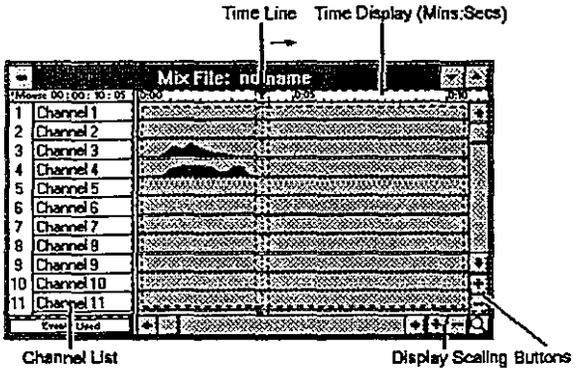
6. SAVING AND RECALLING MIXES TO AND FROM DISK.

Once a mix has been sent to the computer it can then be saved to the computer disk. To do this click on the "SAVE MIX" icon in the toolbar. A save mix file box will then pop up. Your mix file name should be entered in the top left hand box and the directory where you want it to reside should be selected from the directory box. To save the mix click on the OK icon.

To recall a mix from disk click on the "OPEN" icon in the tool box. If a mix already exists in memory the system will warn you and ask you if you want to save it first. This is followed by the open mix file box. Select the mix file you want to open and press the OK icon. The mix file is then loaded into the computer memory. To send the file to the console use the SEND MIX command.

7. OFF LINE MIX EDITING

When a mix has been transferred from the console to the computer all events (fader moves and mutes) are displayed graphically in the MIX FILE window. It is from this window that all off line editing takes place. Note: off line editing can only take place when timecode (automation) is not running.

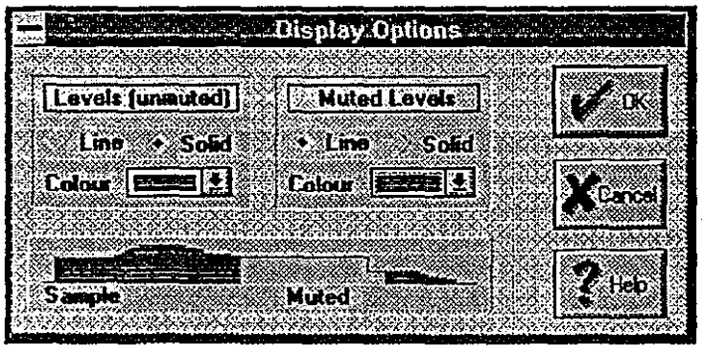


The purpose of off line mix editing is for the user to make changes to a mix file in
non real time. The type of changes that can be made are as follows:

1. INSERTION AND REMOVAL OF MUTES.
2. SHIFTING MUTE POSITIONS.
3. COPYING OF MUTES BETWEEN CHANNELS.
4. CUTTING AND PASTING OF LEVEL WITHIN OR BETWEEN CHANNELS.
5. JOINING ONE LEVEL TO ANOTHER (REMOVAL OF GLITCHES).
6. AUTOFADE FUNCTIONS.

1. INSERTION AND REMOVAL OF MUTES.

The fader levels are normally displayed as solid block in blue. This can be changed using the OPTIONS/DISPLAY menu to other colours and either a solid block or line. When a mute occurs the block changes to a red line, again this can be user defined.



To insert a mute within a mix select the mute insert icon from the toolbar. Now when the mouse cursor is placed over the fader area a mute insert pointer is produced. Place the pointer over the point you want the mute to take place and click the left button.
Now place the pointer over the place you want the mute to end and click the mouse left button.

To obtain an accurate indication time before inserting or editing mutes first click and hold down the left button in the time line box (along the top). Now moving the mouse with the button held down you will obtain a time readout in the top left corner.

If you make a mistake you can click on the UNDO icon to take you back one step.

2. SHIFTING MUTE POSITIONS.

If the position of the mute is not exactly where you want it click on the MUTE EDIT icon and place the cursor at either the start or finish of the mute depending on which you require to edit. Click to highlight the boundary and then use the nudge buttons to shift the mute transition point to the desired location.

Alternatively click and drag the highlighted boundary point.

If the total period of the mute is correct but the overall position is not then you can highlight the whole mute block and move it left or right. To do this select the mute edit tool and then place the mouse pointer just to the top left of the start of the mute. Now click and drag the cursor to draw a box around the whole mute period. On releasing the mouse the mute section should be highlighted. Place the cursor within the box and click and drag to the required position. The time position of the cursor arrow point can be read off in the top left corner. It is also possible to draw a box around a number of mute events and reposition the whole block.

3. COPYING OF MUTES BETWEEN CHANNELS.

To copy a single or block of mutes first draw a box around them as above. Now click on the duplicate switch in the toolbox. Using click and drag copy the highlighted box to the position you want it. Releasing the left button will drop the copied mutes in place. Mutes may be copied to any other channel or to the same channel.

4. CUTTING AND PASTING OF LEVELS WITHIN OR BETWEEN CHANNELS

Any section of mix may be copied to any other section on either a channel by channel basis or as a block of channels. This process is very similar to moving blocks of mutes around.
Click on the level edit icon and drag a box around the fader event you wish to copy. Click on the duplicate icon and then click and hold in the middle of the selected area. Now drag the highlighted area to the position you require. To drop the box release the left button.

This process will only copy level information. If you wish to copy the mute information as well as level use the All Events icon instead.

If you wish to just move a section of fader movements in time you can either click and drag the highlighted area or use the nudge left or right icon.

If you wish to delete a section of fader movements, highlight the required area and click on the Delete icon.

5. JOINING ONE LEVEL TO ANOTHER (REMOVAL OF GLITCHES).

If after copying or moving fader movements you have created a step or irregular level change you can smooth out the transition using the join icon.

Click on the join icon and draw a box covering two points you want to join. On releasing the left mouse button the system will join up the left and right hand ends of the box with a straight line.

6. AUTOFADE FUNCTIONS.

At the end of the mix it is often desirable to have a smooth fade out. This can be automated using the Autofade function. Select the Fade icon in the toolbox. Draw a box using click and drag over the channels you wish to fade out. Drag the box to the right for a period you wish to fade over. Release the left button and the system will automatically create a fade out.

8. GLOSSARY

This chapter provides an alphabetical list of all functions in the software package. Some functions appear both in pull down menu bar as well as the toolbar. Many functions can also be called up using certain keystrokes, these are indicated in brackets.

ARRANGE ICONS
When a window is minimised it produces an icon representation of itself. This command arranges all the minimised window icons in a neat row along the bottom of the screen.

CASCADE
Cascade arranges all the open windows on top of each other. They are offset such that all can be viewed at the same time. Clicking on any of the windows title bars will bring it to the top of the stack.

CLEAR
Clear enables you to clear either all data relating to the mix or just a part of it. The parts consist of :
1. The mix held in the console.
2. The mix held on the computer.
3. The names entered in the rubbing strip/track sheet..
4. Any notes in the note pad.

CONFIGURE
Configure enables the user to setup the following initial conditions:
1. Number of channels....Maximum number of channels the console can hold. 24,32 or 40.
2. Frames per second....The midi timecode frame rate. 24,25, 30 and 30 drop frame.
3. Serial port....Which RS232 port is used for communication to the console. Com1 or Com2.

CONSOLE
This is a main menu heading relating to communication to the console.

COPY (Ctrl-C)
Copy is used in the note pad window to enable users to copy blocks of text to another area or to the windows clip board (see your Windows manual for more information).

CUT (Ctrl-X)
Cut is used to either remove blocks of test in the note pad window or send it to the Windows clip board (see your Windows manual for more information).

DELETE (Del)
Delete is used to remove sections of fader events and or mutes. It is also used to remove areas of text in the note pad window.

DISPLAY
Display enables the user to define the colours and line type (solid or block) of fader levels and mutes in the mix file window.

DUPLICATE
Duplicate enables the user to copy blocks of fader movements and/ or mutes from one area of the mix to another. These blocks can be within a channel or between channels.

EDIT
Edit is a main menu title for all Off-Line mix and text editing.

EVENT SELECTOR (F2)
This is the all select icon in the toolbar. It is used in off line editing when you wish to select and edit both mutes and levels at the same time.

EXIT
Exit closes down the solitaire automation program. If you have a un-saved mix still open you will be prompted to save or discard beforehand.

FADE
Fade is used to select the autofade mode in off-line editing.

FILE
File is a main menu heading for selecting all the functions relating to saving and recalling mixes etc.

FOLLOW TIME
Switching this icon on in the MIX FILE window (with the window active) will enable the time-bar cursor to scroll from left to right and wrap over.

FORWARD Num-*
Forward activates the fast forward tape transport control on the console. Via Midi Machine control this can be used to fast forward a tape transport.

GET MIX FROM CONSOLE
Activating this icon (or command) will initiate the transfer of mix data from the console to the computer.

HORIZONTAL TOOL BAR
This places the toolbar horizontally across the top of the screen.

JOIN (F7)
Join is used to join two points in a mix i.e. between two levels, with a straight line. Its main purpose is to smooth out any irregularities in the mix.

LEFT VERTICAL TOOL BAR
This places the toolbar vertically on the left hand side of the screen.

LEVEL SELECTOR
The level selector icon is used in off line editing when you wish to select and edit level information only (ignoring the mutes).

MAIN FADERS
Clicking on Main faders opens up the MAIN FADER window.

MASTER/FX/AUX
Clicking on Master/fx/aux opens up the MASTER/FX/AUX window.

MERGE
This command allows you to import information from a previously saved mix into your current mix. You select the mix file to merge using the file and directory selections.
When merging a mix file you can use the INCLUDE check boxes to choose which of the events, track-lists and notes are imported from the saved mix file to the current one. If you choose to exclude any of these options, the program will preserve the current mix data for that option. This allows you to merge and share data between different mix files. Note: the mix level and mute data you import will overwrite and replace any data already in memory.

MIX FILE
The MIX FILE is the widow that displays level and mute information against time. If is from this window that all off line editing takes place.

MONITORS
Clicking on Monitors opens up the MONITOR FADER window.

MUTE INSERT (F5)
This tool or command or quick key enables the user to insert mutes into the current mix in off line editing mode.

MUTE SELECTOR (F4)
This tool, command or quick key enables the mute select cursor. Its purpose is to highlight mute boundaries and enable them to be moved, nudged or deleted.

NEW
New starts a completely new mix. It will erase all previous information including track lists and notes. If a mix currently exists the system will prompt you to save it first.

NOTES
The Notes window (under the file menu) is an area where the user can enter and edit text relating to the mix.
The format is very similar to the Windows write program (see your Windows manual for more details).
The notes window is saved with the mix file on disk.

NUDGE BACK
NUDGE FORWARDS
The nudge back and forwards commands are used in off line mix editing to shift fader events or mutes backwards or forwards in time.

OFF-LINE (Ctrl-O)
This icon, command or quick key turns off the communication between the console and the computer. This is normally done when you wish to do off line editing whilst timecode is still running on the console.

ON-LINE (Ctrl-O)
This icon, command or quick key turns on the communications between the console and the computer. This is required to transmit timecode, mix files and fader movement information between the console and the computer.

OPEN
Open is used to fetch an existing mix file from disk. This command will overwrite all current mix information held in memory. The system will prompt you first to save the current data.

OPTIONS
This is a main menu command used to select user definable options relating to the operation of the automation system.

PASTE (Ctrl-V)
Paste is used to insert previously cut or copied information from the Windows clip board into the notes window. For more information on the paste function refer to your Windows manual.

PLAY (Enter)
Play activates the play tape transport control on the console. Via Midi Machine control this can be used to start a tape transport.

RESTORE
Restore rearranges the windows on the screen to how they were when you started.

REVERT
This command simply discards any changes you have made since the mix was last saved. It has the same effect as using the new command, then opening the current mix file from disk.

REWIND (Num-/)
Rewind activates the rewind tape transport control on the console. Via Midi Machine control this can be used to rewind the tape transport.

RIGHT VERTICAL TOOL BAR
This places the toolbar vertically on the right hand side of the screen.

SAVE
This icon or command saves all information relating to the mix to disk. If a mix title name has not been allocated it will prompt you for one. Once a mix file has been named any subsequent changes will be saved under that name when the save command is used.

SAVE AS
Save As is similar to Save except it prompts you to give the file a name each time.

SAVE ON EXIT
If this option is selected, the programs initial windows positions and screen layout will always be the same as they were when you last exited from the program.

SAVE SETTINGS
This program saves the current windows positions and screen layout, so that these settings can be automatically restored next time the program is run.
Note: that only one layout setting can be stored, so if you use the save settings command, you should switch off the save on exit option, otherwise the settings you have just saved will be over-written when you exit from the program.

SEND MIX TO CONSOLE
This command or icon will send the mix file held in the computer memory to that of the console. This will over write any current mix held in the console.

STOP (Num-0)
Stop activates the stop tape transport control on the console. Via Midi Machine control this can be used to stop a tape transport.

TILE
Tile will divide the screen up evenly between the windows currently open.

TOOLS
Tools is a main menu command. It is used as an alternative way to select commands that are found in the toolbar.

UNDO
This command undoes the last nudge, delete or other editing operation, leaving the mix in the state it was in before the nudge or delete command was used. It can also be used when text editing in the note window.

VIEW
The View button is found in the bottom left corner of both Main and Monitor fader windows. It is used to show all channels in a reduced size display, or a number of channels at a larger size.

WINDOW
This is a main menu command. It enables the pull down menu for all windows related commands.

ZOOM IN
ZOOM OUT
These commands change the viewing scale of the currently active window. For example, if you select the Zoom Out with the fader windows active, the windows switches to its reduced-sized display. Selecting Zoom in and Zoom out in the events window has the same effect as clicking with the left and right and right mouse button over the magnifying-glass icon.

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10

ISS	REVISIONS
P2	B/AN PCB P2
P3	2-2-84 AN 2487
A	05-05-94

A1 BUS
C68 /.47PF
R140 /.10K
IN4 /.IND-1MH
C66 /.1000UF
R139 /.10K
IC14-A /.IC-NE5532
C65 /.1000UF
AUX1

A2 BUS
C72 /.47PF
R144 /.10K
IN5 /.IND-1MH
C75 /.1000UF
R145 /.10K
IC14-B /.IC-NE5532
C74 /.1000UF
AUX2

A3 BUS
C81 /.47PF
R153 /.10K
IN6 /.IND-1MH
C78 /.1000UF
R152 /.10K
IC16-A /.IC-NE5532
C77 /.1000UF
AUX3

A4 BUS
C83 /.47PF
R156 /.10K
IN7 /.IND-1MH
C87 /.1000UF
R158 /.10K
IC16-B /.IC-NE5532
C86 /.1000UF
AUX4

C104 /.47PF
R177 /.10K
C103 /.1000UF
IN10 /.IND-1MH
R176 /.10K
IC20-A /.IC-NE5532
C102 /.1000UF
AUX5

C109 /.47PF
R184 /.10K
C113 /.1000UF
IN11 /.IND-1MH
R185 /.10K
IC20-B /.IC-NE5532
C112 /.1000UF
AUX6

C92 /.47PF
R161 /.10K
C90 /.1000UF
IN8 /.IND-1MH
R160 /.10K
IC17-A /.IC-NE5532
C89 /.1000UF
AUX7

C97 /.47PF
R164 /.10K
IN9 /.IND-1MH
C99 /.1000UF
R165 /.10K
IC17-B /.IC-NE5532
C98 /.1000UF
AUX8

SOLO TRIM
VR1 /.POT000003
R10 /.1K
R4 /.1K
C4 /.47PF
R11 /.10K
C8 /.47PF
R19 /.1M
C2 /.1000UF
IN1 /.IND-1MH
R5 /.10K
R8 /.10K
IC1-A /.IC-TL072
R7 /.1M
IC1-B /.IC-TL072
C7 /.68UF
PFL

C55 /.47PF
R123 /.10K
C54 /.1000UF
IN2 /.IND-1MH
R122 /.10K
IC12-A /.IC-NE5532
R97 /.10K
C49 /.47PF
R98 /.10K
IC11-A /.IC-TL072
C46 /.68UF

C59 /.47PF
R132 /.10K
C64 /.1000UF
IN3 /.IND-1MH
R134 /.10K
IC12-B /.IC-NE5532
R105 /.10K
C52 /.47PF
R103 /.10K
IC11-B /.IC-TL072
C53 /.68UF

PFL BUS
LEFT BUS
RIGHT BUS
R137 /.10K
R118 /.10K

+5V +17V -17V +48V
P5V +VS -VS P48V
RN1 /.10K SIL08C
IPS STATUS
CN4 /.CON-M50W
AUX-OSC/TB
RN2 /.10K SIL08C
RN3 /.10K SIL08C
RN4 /.10K SIL08C
GRP-OSC/TB
CN10 /.CON-M50W
R SEND
R109 /.100R
L SEND
R91 /.100R
R93 /.100K
R111 /.100K

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CIRCUIT DUMP FILES
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TITLE: MASTER
PRODUCT: SOLITAIRE
SIZE
SHEET 1 OF 5 SHEETS
DRAWN JS | CHECKED | APPD
DRAWING NO. S12877A
ISSUE A

ISS	REVISIONS
P2	B/AN PCB P2
P3	2-2-94 AN 2487
A	05-05-94

REAR CONNECTION
CN2 /.CON-M40W

INTER MASTER BUS
CN3 /.CON-M34W

L/R INJECT RETURNS

IC15-A /.IC-TL072
IC15-B /.IC-TL072
IC23-A /.IC-TL072
IC23-B /.IC-TL072

CN9 /.IDC-100-03VLMH
MOVING FADER

LEFT FADER
CN6 /.IDC-100-03VLMH

MOVING FADER
CN8 /.IDC-100-03VLMH

CN7 /.IDC-100-03VLMH
RIGHT FADER

VCA

S20 /.SW000038

METER
CN1 /.CON-M16W
L3 /.D0015

CN11 /.HEAD-BOX-10W

PLY
REC
DIG GND
S18 /.SW000034
S19 /.SW000034
L4 /.D0014
R211 /.330R
R212 /.330R

IC19 /.IC-SSM2018
IC18 /.IC-SSM2018
OVCE

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TITLE	MASTER
PRODUCT	SOLITAIRE
SIZE	SHEET 2 OF 5 SHEETS
DRAWN JS	CHECKED / APPD
DRAWING NO.	S128778 ISSUE A

2

ISS	REVISIONS
P2	B/AN PCB P2
P3	2-2-84 AN 2467
A	05-05-94

STUDIO-OSC/TB
R77 /.22K
R80 /.22K
C28 /.18PF
R63 /.22K
C36 /.68UF
C45 /.68UF
IC7-A /.IC-TL072
R96 /.22K
C34 /.18PF
R69 /.22K
C47 /.68UF
C43 /.68UF
IC7-B /.IC-TL072
R95 /.22K
STR FEED
STL FEED
VR4 /.POT000005
STUDIO

S9 /.SW000035
S8 /.SW000035
CR
S10 /.SW000035
AUX 1-2
AUX 3-4
R82 /.22K
R84 /.22K
R86 /.47K
R87 /.47K
R89 /.47K
R88 /.47K
POST A2
POST A1
POST A4
POST A3

C5 /.22UF
C125 /.22UF
C91 /.330UF
C51 /.22UF
+17V
VCC
+VS
R174 /.10R
D6 /.D0009
D7 /.D0009
C88 /.330UF
R175 /.10R
-17V
-VS
C1 /.22UF
C48 /.22UF
C131 /.22UF

NOTE:- LK100 & LK101 ARE NOT PRESENT ON THE BOARD
LK101 /.LINK
VCC
P5V
TO IC22/16
C132 /.100NF
LK100 /.LINK
GND

IC22-A /.IC-4551
IC22-B /.IC-4551
IC22-C /.IC-4551
IC22-D /.IC-4551

LEFT
R127 /.20K
CR LEFT
R129 /.10K
R131 /.10K
S17 /.SW000035
MONO
CR RIGHT
R130 /.10K
R128 /.10K
RIGHT
R126 /.20K
R190 /.10K
R191 /.10K
PFL
C122 /.68UF
R203 /.10K
C118 /.68UF
R198 /.10K

C124 /.18PF
LEFT METER
R204 /.10K
C129 /.68UF
IC24-A /.IC-TL072
C130 /.18PF
RIGHT METER
R210 /.10K
C127 /.68UF
IC24-B /.IC-TL072

PHONES R
PHONES L
VR6 /.POT000005
PHONES
CCG2
S21 /.SW000036
L5 /.D0014
CCG3
CRAR FEED
CRAL FEED
CR LEVEL
VR7 /.POT000005
CRBR FEED
CRBL FEED
ALT LEVEL
ALT
VR5 /.POT000005

R189 /.10K
PFL LED
C14 /.10NF
D5 /.D0008
R188 /.100K
+17V
R30 /.100K
PFL= -VE
AFL= +VE
D2 /.D0008
R1 /.2K7
D3 /.D0004
R23 /.100K
D1 /.D0008
D4 /.D0004
PFL= +VE
AFL= -VE
IPS
L1 /.D0014
STATUS
R38 /.100K
R35 /.1M
IC4-A /.IC-TL072
IC4-B /.IC-TL072
CCG1
S1 /.SW000035
T1 /.MPS2222A
IPS
R13 /.2K2
C3 /.68UF
IPS LED
R15 /.10K

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TITLE: MASTER
PRODUCT: SOLITAIRE
SIZE:
SHEET 3 OF 5 SHEETS
DRAWN JS | CHECKED | APPD
DRAWING NO. S12877C
ISSUE A

B

ISS	REVISIONS
P2	B/AN PCB P2
P3	2-2-84 AN 2487
A	05-05-94

S11 /.SW000035 S12 /.SW000036 S13 /.SW000036 S14 /.SW000035 S15 /.SW000035 S16 /.SW000035

R99 /.20K — RIGHT POST
R100 /.20K, R106 /.39K, R104 /.39K — LEFT POST, +2TA R, -2TA R
R101 /.39K, R102 /.39K — -2TA L, +2TA L
R112 /.39K, R110 /.39K, R107 /.39K, R108 /.39K — +2TB R, -2TB R, -2TB L, +2TB L, +2TC R, -2TC R
R115 /.10K, R116 /.10K — -2TC L, +2TC L
R113 /.10K — POST A2
R114 /.10K, R117 /.39K — POST A1, POST A4
R119 /.39K — POST A3
R120 /.39K
R121 /.39K

C57 /.68UF — R124 /.10K
C63 /.18PF — R136 /.20K — IC13-A /.IC-TL074 — C58 /.68UF — CR LEFT
R133 /.20K — C62 /.18PF — R135 /.20K — IC13-D /.IC-TL074 — C56 /.68UF — R125 /.10K
C67 /.18PF — R141 /.20K — IC13-B /.IC-TL074 — C70 /.68UF — CR RIGHT
C71 /.68UF — R147 /.10K
R143 /.20K — C69 /.18PF — R142 /.20K — IC13-C /.IC-TL074
C73 /.68UF — R146 /.10K

OSC ON
L2 /.00014
CCG1 — CCG2
S2 /.SW000035
R27 /.180R
LP1 /.LAMP001
IC3 /.IC-TL071
C15 /.68UF
C11 /.15NF
OSC LEVEL
VR2 /.POT000002
R56 /.47K

100Hz
1kHz
S4 /.SW000036
S3 /.SW000036
C10 /.15NF
R17 /.10M
R42 /.1K
R47 /.100K
R49 /.100K
R41 /.10K
R44 /.10K
R43 /.1K

S5 /.SW000035 MIX — AUX-OSC/TB
S6 /.SW000035 GROUP — GRP-OSC/TB
S7 /.SW000035 STUDIO — STUDIO-OSC/TB

+17V — R138 /.22K — C37 /.47PF — R72 /.33K
TALK MIC
VCC /.TP
SIG /.TP — C61 /.100NF
GND /.TP — C60 /.22UF
R73 /.100K — R74 /.1K
IC9-B /.IC-TL072
C50 /.68UF — VR3 /.POT000002 — TALK LEVEL
C32 /.18PF — R67 /.100K
DIR-OSC/TB — R60 /.47R
C26 /.68UF
IC9-A /.IC-TL072
R51 /.100K
R66 /.10K
TALK S22 /.SW000035 — R206 /.10K
CCG3 — -17V
L6 /.00014

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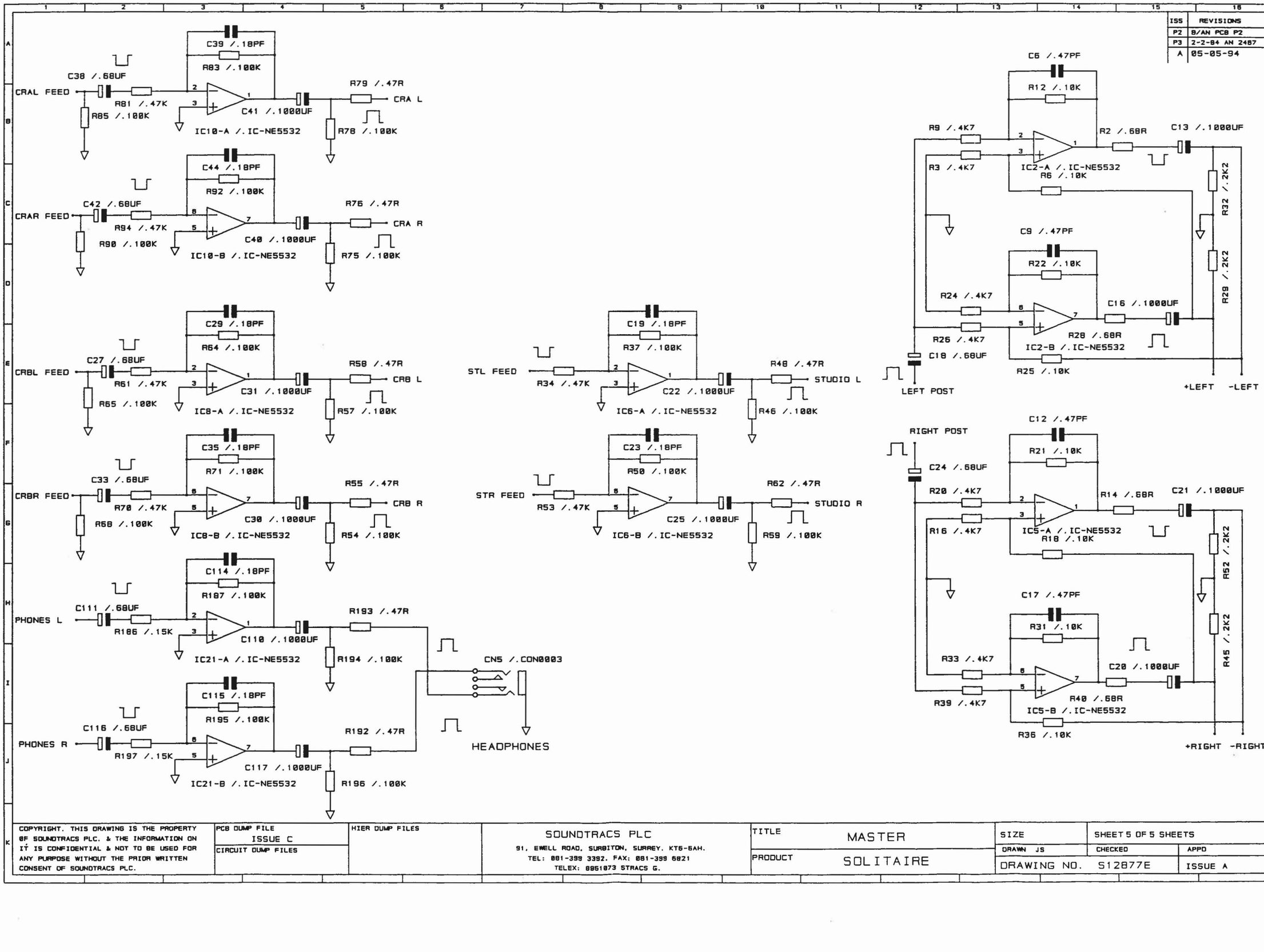
TITLE	MASTER	SIZE	SHEET 4 OF 5 SHEETS
PRODUCT	SOLITAIRE	DRAWN JS / CHECKED / APPD	
		DRAWING NO. S128770	ISSUE A

14

ISS	REVISIONS
P2	B/AN PCB P2
P3	2-2-84 AN 2487
A	05-05-94



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ISSUE C
CIRCUIT DUMP FILES

HIER DUMP FILES

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TITLE MASTER
PRODUCT SOLITAIRE

SIZE | SHEET 5 OF 5 SHEETS
DRAWN JS | CHECKED | APPD
DRAWING NO. S12877E | ISSUE A

5

ISS	REVISIONS
P2	B/AN PCB P2
P3	2-2-94
P4	22-2-94 AN 2332
A	05-05-94

IC1-A /.IC-TL072
C2 /.47PF
R4 /.20K
R5 /.10K
R3 /.6K8
-RIGHT
+RIGHT
R6 /.20K
R2 /.10K
C1 /.47PF
R1 /.6K8
C3 /.68UF
C12 /.68UF
R10 /.33K
R24 /.100K
S1 /.SW000036
C11 /.47PF
R12 /.10K
R7 /.6K8
+LEFT
-LEFT
R9 /.20K
R8 /.10K
R14 /.6K8
R11 /.20K
C9 /.47PF
IC1-B /.IC-TL072
C8 /.68UF
C5 /.68UF
R25 /.100K
+17V
-17V
IC3-A /.IC-2402
SSM2402
PSU
R32 /.33K
R21 /.10K
C13 /.18PF
IC2-B /.IC-TL074
R22 /.10K
C15 /.68UF
R15 /.6K8
VR2 /.POT000004
IC2-D /.IC-TL074
R23 /.100K
R16 /.7K5
C10 /.2N7
C18 /.220NF
R30 /.5K6
R29 /.10K
C18 /.18PF
C7 /.2N7
R27 /.10K
R18 /.7K5
R26 /.100K
VR1 /.POT000004
R13 /.6K8
R20 /.33K
C17 /.68UF
IC2-C /.IC-TL074
R19 /.33K
IC2-A /.IC-TL074
C14 /.220NF
R17 /.5K6
S2 /.SW000035
LEFT
RIGHT
C24 /.47PF
VR4 /.POT000007
AUX1,2
IC3-B /.IC-2402
R44 /.4K7
CN3 /.IDC-100-03VLMH
RIGHT FADER
C23 /.68UF
C20 /.68UF
VR5 /.POT000004
R36 /.10K
RIGHT
PAN
R43 /.2K2
IC4-A /.IC-TL072
R42 /.100K
R41 /.100K
C25 /.47PF
R35 /.3K3
VR3 /.POT000004
R37 /.10K
LEFT
R45 /.4K7
R38 /.3K3
R28 /.3K9
R31 /.3K9
BAL
R33 /.20K
R34 /.20K
LEFT FADER
C26 /.68UF
C22 /.68UF
A2
A1
A4
A3
R47 /.2K2
IC4-B /.IC-TL072
R48 /.100K
R46 /.100K
S3 /.SW000035
AUX 3-4
+17V
L1 /.00015
PFL
R53 /.100K
S4 /.SW000035
STATUS
CCG1
R40 /.20K
R39 /.20K
PFL
IC3-C /.IC-2402
FX LED
CN4 /.IDC-100-03VLMH

BACK AND 13.06.93

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PCB DUMP FILE: ISSUE B
CIRCUIT DUMP FILES:
HIER DUMP FILES:

SOUNDTRACS PLC
91, EWELL ROAD, SURBITON, SURREY. KT6-6AH.
TEL: 081-399 3392. FAX: 081-399 6821
TELEX: 8951073 STRACS G.

TITLE: FX AUX MASTER
PRODUCT: SOLITAIRE
SIZE:
SHEET 1 OF 2 SHEETS
DRAWN JS
CHECKED
APPD
DRAWING NO. S12878A
ISSUE A

16

ISS	REVISIONS
P2	B/AN PCB P2
P3	2-2-94
P4	22-2-94 AN 2332
A	05-05-94

AUX1
A1 LED
IC6-C /.IC-2402
VR6 /.POT000002
C28 /.68UF
R59 /.10K
C29 /.18PF
R60 /.20K
IC7-A /.IC-NE5532
C27 /.1000UF
R56 /.47R
R54 /.100K
POST A1

AUX2
A2 LED
IC6-B /.IC-2402
VR7 /.POT000002
C33 /.68UF
R62 /.10K
C32 /.18PF
R61 /.20K
IC7-B /.IC-NE5532
C34 /.1000UF
R66 /.47R
R67 /.100K
POST A2

+17V
IC6-A /.IC-2402
SSM2402 PSU
-17V

LK11 /.HEAD-24W
CN2 /.CON-M40W
GND

FX MUTE
S9 /.SW000034
A2 MUTE
A1 MUTE
S7 /.SW000034
S5 /.SW000034

C19 /.22UF
C4 /.22UF
C30 /.330UF
+17V
D2 /.D0009
C21 /.22UF
D1 /.D0009
-17V
C6 /.22UF
C31 /.330UF

AUX1
AUX2
POST A1
POST A2
R57 /.10R
R58 /.10R
LK12 /.HEAD-24W
STATUS
A4 A3 A2 A1 LEFT RIGHT PFL
CN5 /.CON-M34W

POST A1
POST A2
R55 /.10K
R65 /.10K
PFL
AUX1 AFL
S6 /.SW000035
S8 /.SW000035
AUX2 AFL
R63 /.100K
R64 /.100K
STATUS

LK10 /.HEAD-24W
-RIGHT
-LEFT
+RIGHT
+LEFT
FX LED
A1 LED
A2 LED
L2 /.D0014
CCG1
R50 /.2K7
L3 /.D0015
L4 /.D0014
L5 /.D0015
L6 /.D0014
IC5 /.IC-OPTO4
R49 /.4K7
R51 /.4K7
R52 /.4K7

R69 /.22K
+17V
T1 /.MPS2222A
D3 /.D0008
R68 /.100R
D4 /.D0008
-17V

POST A2
POST A1
LK1 /.HEAD-16W
LK2 /.HEAD-16W
LK3 /.HEAD-16W
CN1 /.CON-M40W
TO REAR CONNECTORS

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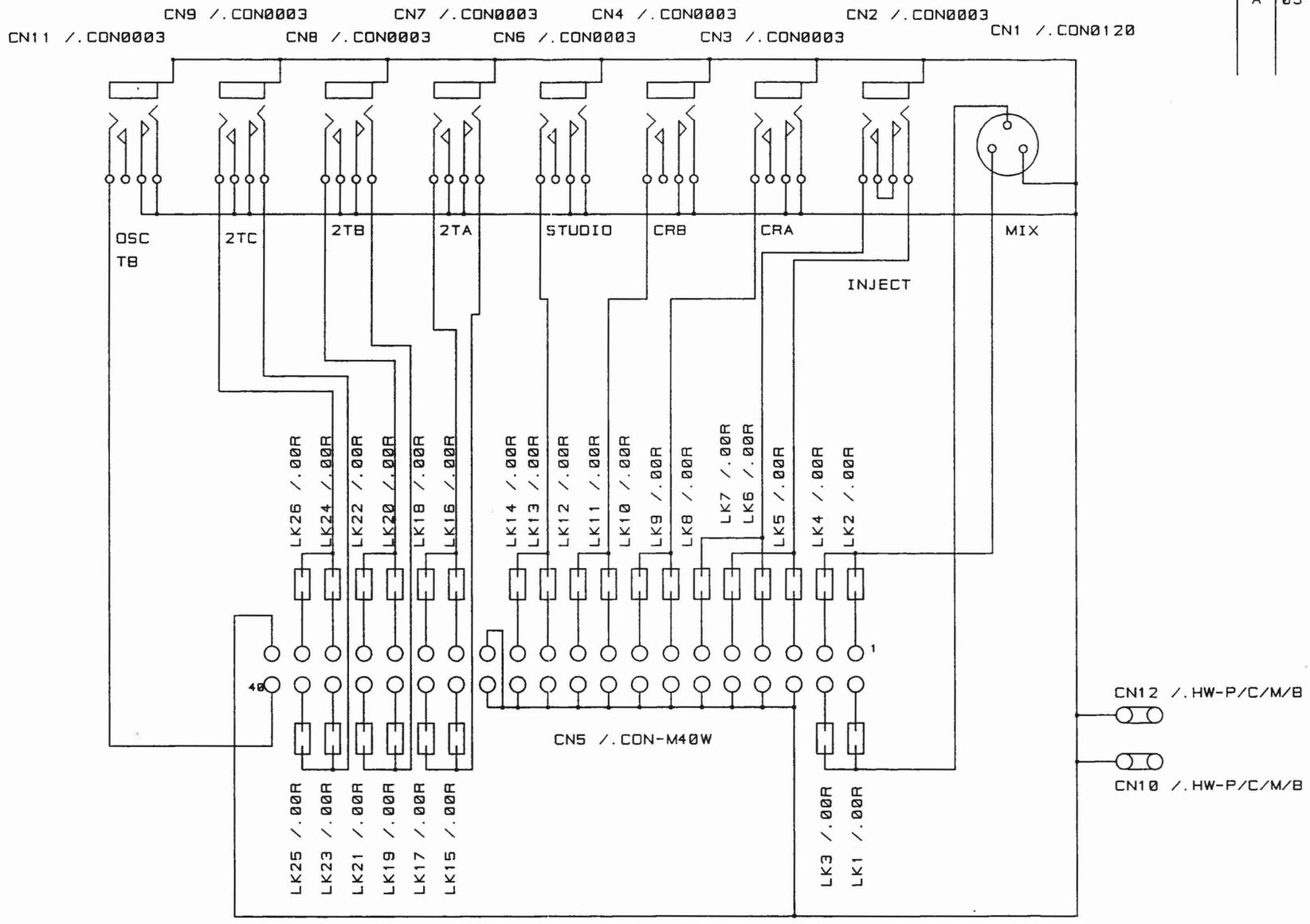
PCB DUMP FILE: ISSUE B
CIRCUIT DUMP FILES:
HIER DUMP FILES:

SOUNDTRACS PLC
91, EWELL ROAD, SURBITON, SURREY. KT6 6AH.
TEL: 081-399 3392. FAX: 081-399 6821
TELEX: 8951073 STRACS G.

TITLE: FX AUX MASTER
PRODUCT: SOLITAIRE
SIZE:
SHEET 2 OF 2 SHEETS
DRAWN JS | CHECKED | APPD
DRAWING NO. S12878B
ISSUE A

ISS	REVISIONS
P3	17-12-93 BAN
A	05-05-94



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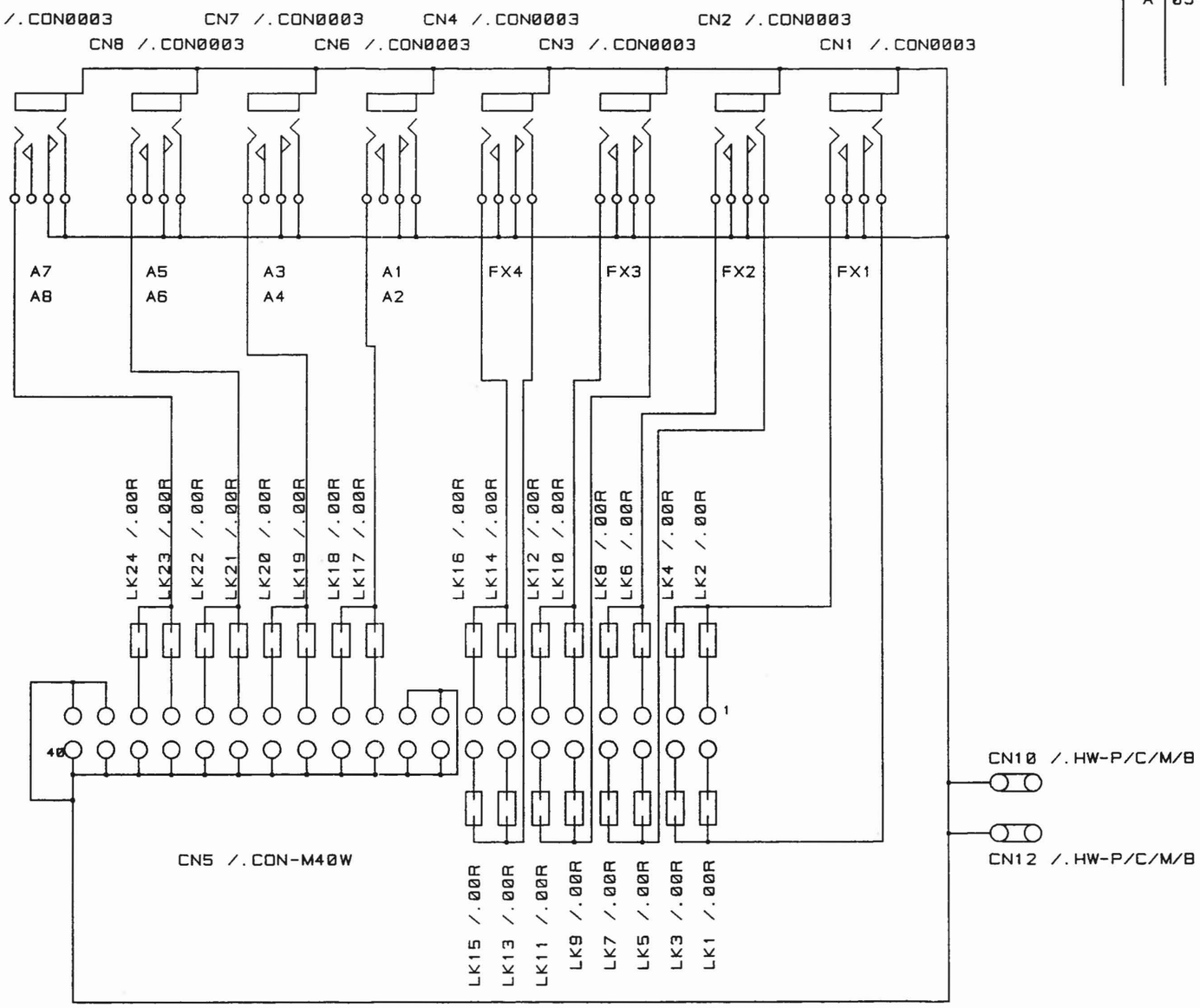
PCB DUMP FILE	ISSUE A
CIRCUIT DUMP FILES	
HIER DUMP FILES	

SOUNDTRACS PLC
91, EWELL ROAD, SURBITON, SURREY. KT6-6AH.
TEL: 081-399 3392. FAX: 081-399 6821
TELEX: 8951073 STRACS G.

TITLE	MASTER REAR 1	SIZE	SHEET 1 OF 1SHEETS
PRODUCT	SOLITAIRE	DRN / CKD / APPD	
		DRG NO. S12880	ISSUE A

8

ISS	REVISIONS
P3	17-12-93
A	05-05-94



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PCB DUMP FILE	ISSUE A
CIRCUIT DUMP FILES	
HIER DUMP FILES	

SOUNDTRACS PLC
91, EWELL ROAD, SURBITON, SURREY. KT6-6AH.
TEL: 081-399 3392. FAX: 081-399 6821
TELEX: 8951073 STRACS G.

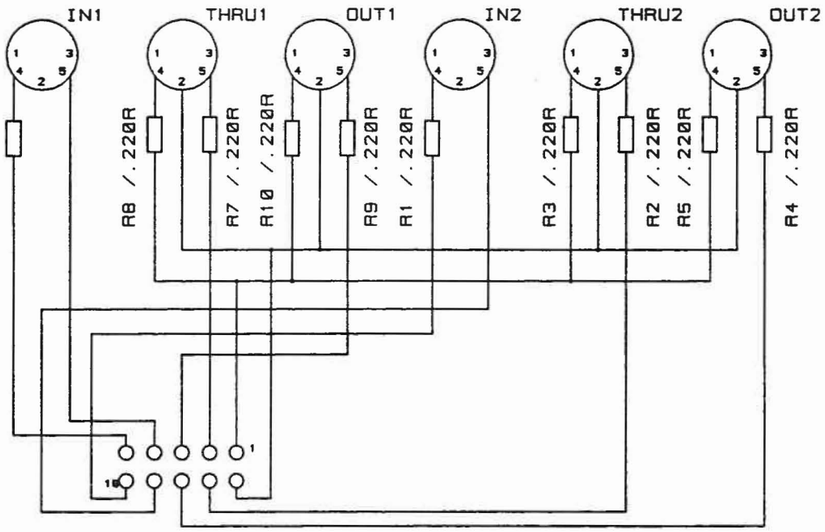
TITLE	MASTER REAR 2	SIZE	SHEET 1 OF 1SHEETS
PRODUCT	MEGAS II REC	DRN / CKD / APPD	
		DRG NO. S12881	ISSUE A

19

ISS	REVISIONS
P1	23-9-92
P2	
P3	7-1-94 BAN
A	05-05-94

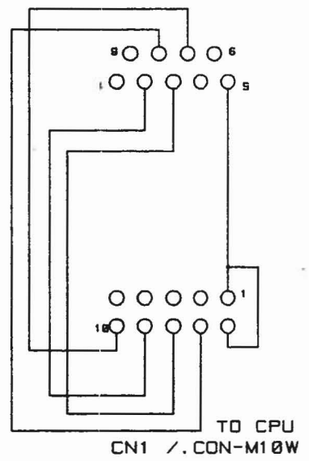
DUAL MIDI PORTS

CN12 /.CONN5DIN CN7 /.CONN5DIN CN9 /.CONN5DIN
CN11 /.CONN5DIN CN13 /.CONN5DIN CN8 /.CONN5DIN



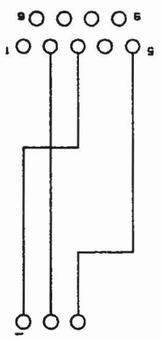
CN10 /.CON-M10W
TO P12607 CPU

AUTOMATION DATA
SERIAL INTERFACE
CN2 /.CON-PCB09D-F



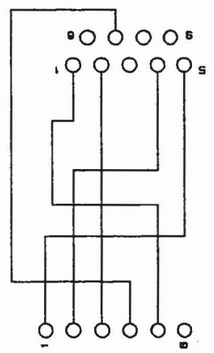
TO CPU
CN1 /.CON-M10W

DYNAMICS DATA
CN4 /.CON-PCB09D-F



CN3 /.IDC-100-03VLMH

TRACKER BALL DATA
CN6 /.CON-PCB09D-F



CN5 /.IDC-100-06VLMH

SERIAL CONNECTIONS

1 DCD
2 RXD
3 TXD
4 DTR
5 SIGNAL GROUND
6 DSR
7 RTS
8 CTS
9 RING INDICATOR

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PCB DUMP FILE
ISSUE B
CIRCUIT DUMP FILES

HIER DUMP FILES

SOUNDTRACS PLC
91, EWELL ROAD, SURBITON, SURREY. KT6-6AH.
TEL: 081-399 3302. FAX: 081-398 6821
TELEX: 8951073 STRACS G.

TITLE MIDI SERIAL I/O
PRODUCT SOLITAIRE

SIZE | SHEET 1 OF 1 SHEETS
DRAWN JRS | CHECKED | APPD
DRAWING NO. S12882 | ISSUE A

20

ISS	REVISIONS
P2	21-12-93 BAN
P3	22-2-94 AN 2332
A	05-05-94

NOTE:- THE LEDS ARE PART OF THE SWITCHES.

DWA /.TP
DWB /.TP
DWGND /.TP
DATA WHEEL

L6 /.D0015
L1 /.D0014
L3 /.D0014
L2 /.D0014
L4 /.D0014

REC
REW
PLY
FF
STOP

R2 /.270R
R6 /.270R
R5 /.270R
R4 /.270R
R1 /.270R

USER 1 — S9 /.SW000024
USER 2 — S10 /.SW000024
USER 3 — S11 /.SW000024

CN1 /.HEAD-BOX-34W

REC — S5 /.SW000024
REW — S1 /.SW000024
PLY — S3 /.SW000024
FF — S2 /.SW000024
STOP — S4 /.SW000024
LEFT — S7 /.SW000024
ENTER — S6 /.SW000024
RIGHT — S8 /.SW000024

P1 /.PRE-5K-VRT

R3 /.10R

GND VCC CONT A0 A1 EN D0 D1 D2 D3 D4 D5 D6 D7 GND

LCD1 /.SOCK-SIL08 LCD2 /.SOCK-SIL08

TO LCD DISPLAY

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PCB DUMP FILE: ISSUE A
CIRCUIT DUMP FILES

HIER DUMP FILES

SOUNDTRACS PLC
81, EWELL ROAD, SURBITON, SURREY. KT6 6AH.
TEL: 081-399 3392. FAX: 081-399 6821
TELEX: 8951873 STRACS G.

TITLE: KEYBOARD
PRODUCT: SOLITAIRE

SIZE | SHEET 1 OF 1 SHEETS
DRAWN JRS | CHECKED | APPD
DRAWING NO. P12883 | ISSUE A

21

ISS	REVISIONS

PARALLEL 1

PARALLEL 2

L SEND J1 /.CON8643
L RETURN J2 /.CON8643
R SEND J3 /.CON8643
R RETURN J4 /.CON8643
LEFT J5 /.CON8643
RIGHT J6 /.CON8643
STUDIO L J7 /.CON8643
STUDIO L NORMAL J8 /.CON8643
STUDIO R J9 /.CON8643
STUDIO R NORMAL J10 /.CON8643
2TAL SEND J11 /.CON8643
2TAR SEND J12 /.CON8643
2TBL SEND J13 /.CON8643
2TBR SEND J14 /.CON8643
2TCL SEND J15 /.CON8643
2TCR SEND J16 /.CON8643
2TAL RET J17 /.CON8643
2TAR RET J18 /.CON8643
2TBL RET J19 /.CON8643
2TBR RET J20 /.CON8643
2TCL RET J21 /.CON8643
2TCR RET J22 /.CON8643
OSC/TB J23 /.CON8643
OSC/TB J24 /.CON8643
J25 /.CON8643
J26 /.CON8643
J27 /.CON8643
J28 /.CON8643
J29 /.CON8643
J30 /.CON8643
J31 /.CON8643
J32 /.CON8643

CN7 /.HW-P/C/M/B-1/4

CN2 /.CON-M48W TO MASTER CN2

CN1 /.CON-M48W TO EDAC (CR, STUDIO, AUX)

CN3 /.CON-M48W
TWO TRACKS TO EDAC

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PCB DUMP FILE

CIRCUIT DUMP FILES

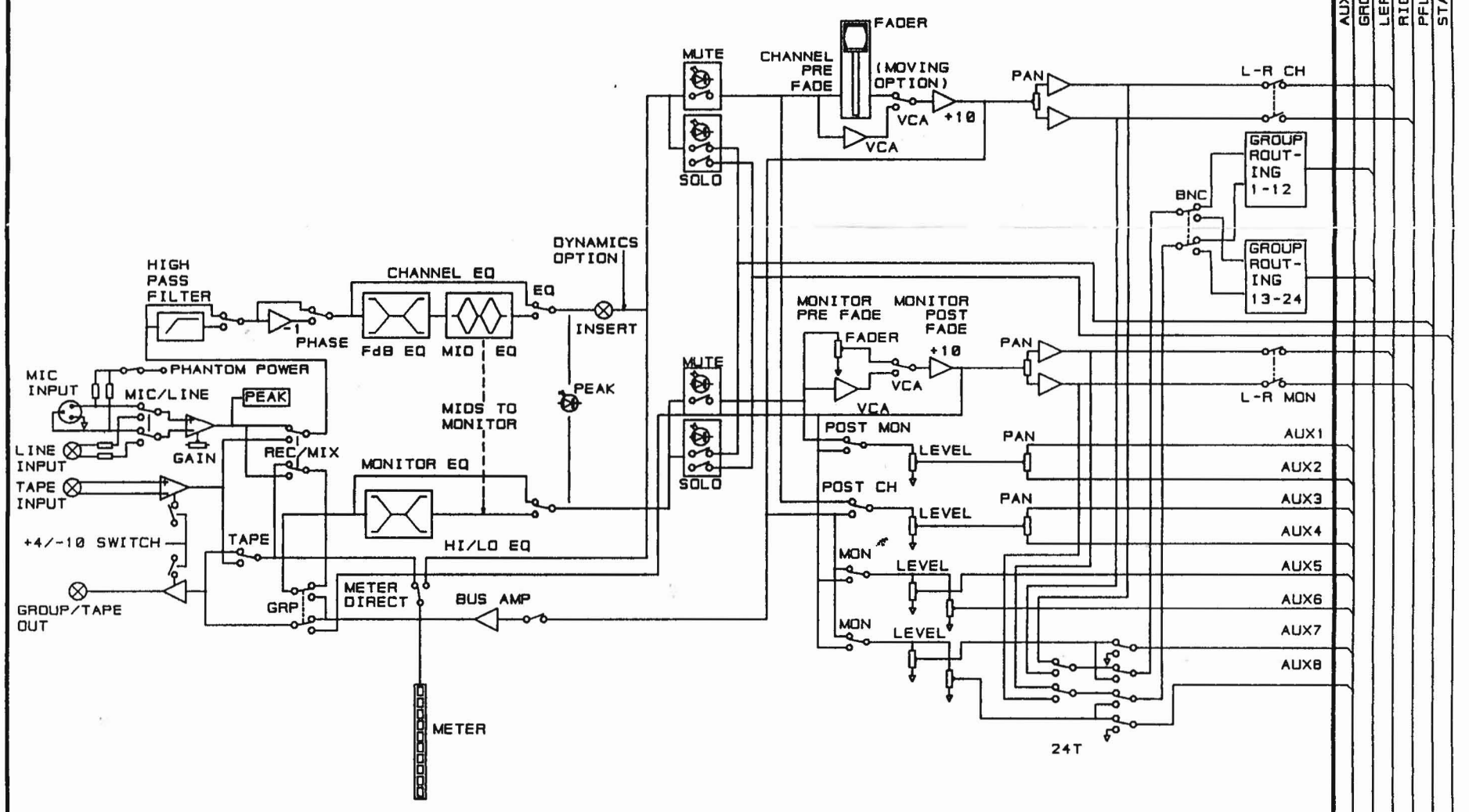
HIER DUMP FILES

SOUNDTRACS PLC
91, CHELL ROAD, SURBITON, SURREY, KT6 6AH
TEL: 081-399 3282. FAX: 081-399 6621
TELEX: 8851073 STRACS G

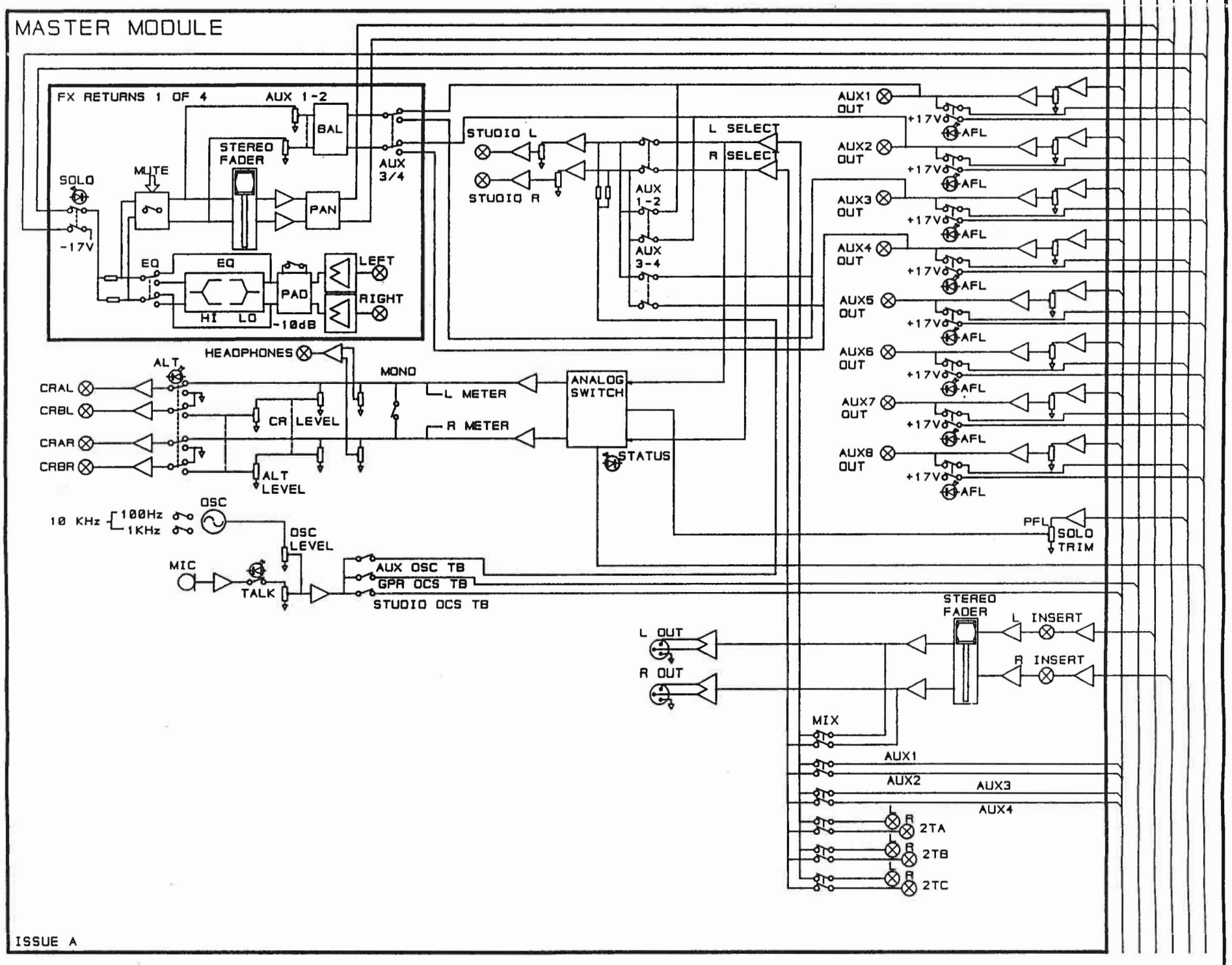
TITLE	MASTER PATCH 1
PRODUCT	SOLITAIRE
SIZE	SHEET OF SHEETS
DRAWN JRS	CHECKED / APPD
DRAWING NO.	SI2918
ISSUE	P1

SOLITAIRE

INPUT/OUTPUT MODULE 1 OF 24/32/40

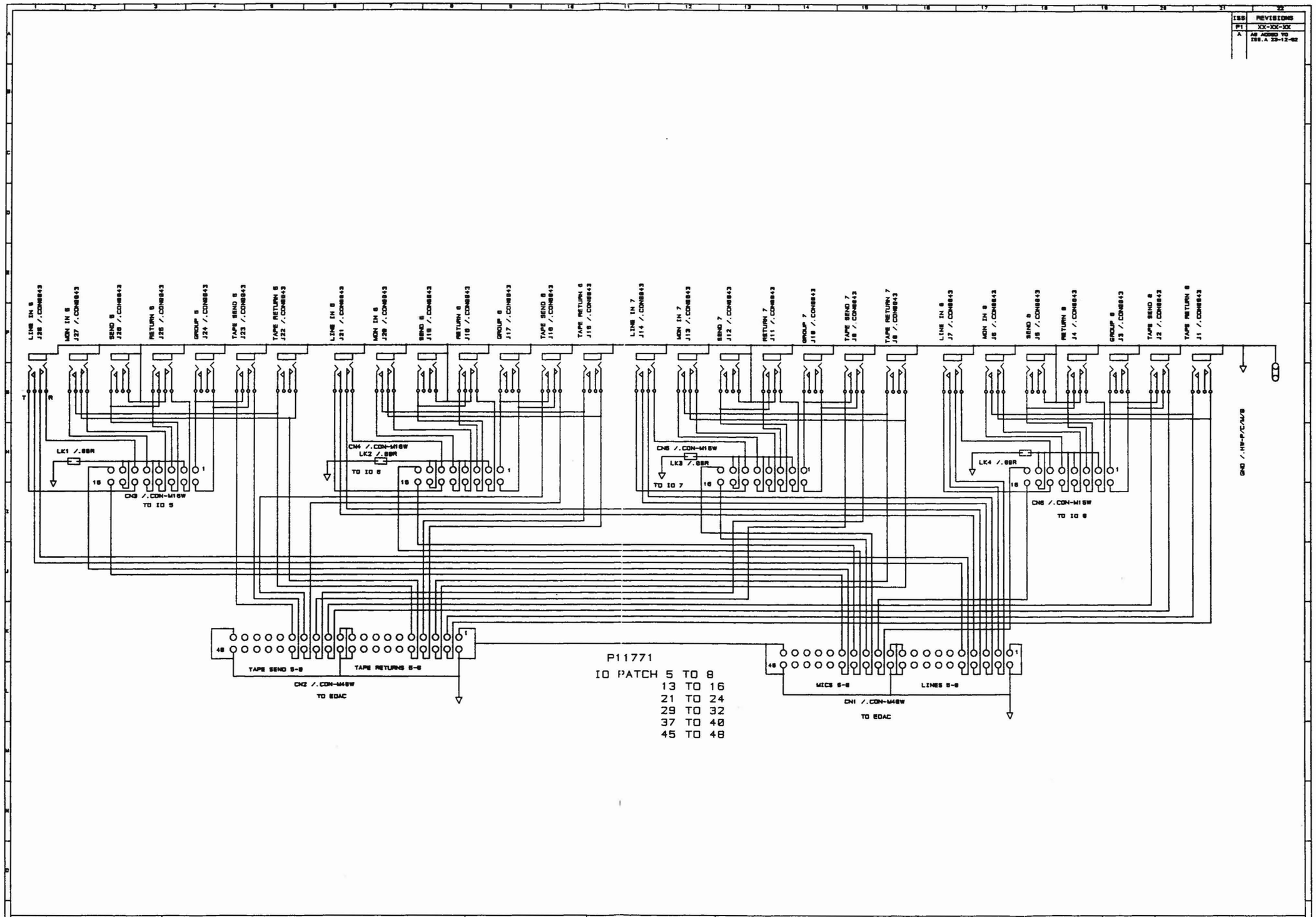


MASTER MODULE



ISSUE A

3



ISS	REVISIONS
P1	XX-XX-XX
A	AS ADDED TO ISS.A 23-12-82

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PCB DUMP FILE

CIRCUIT DUMP FILES

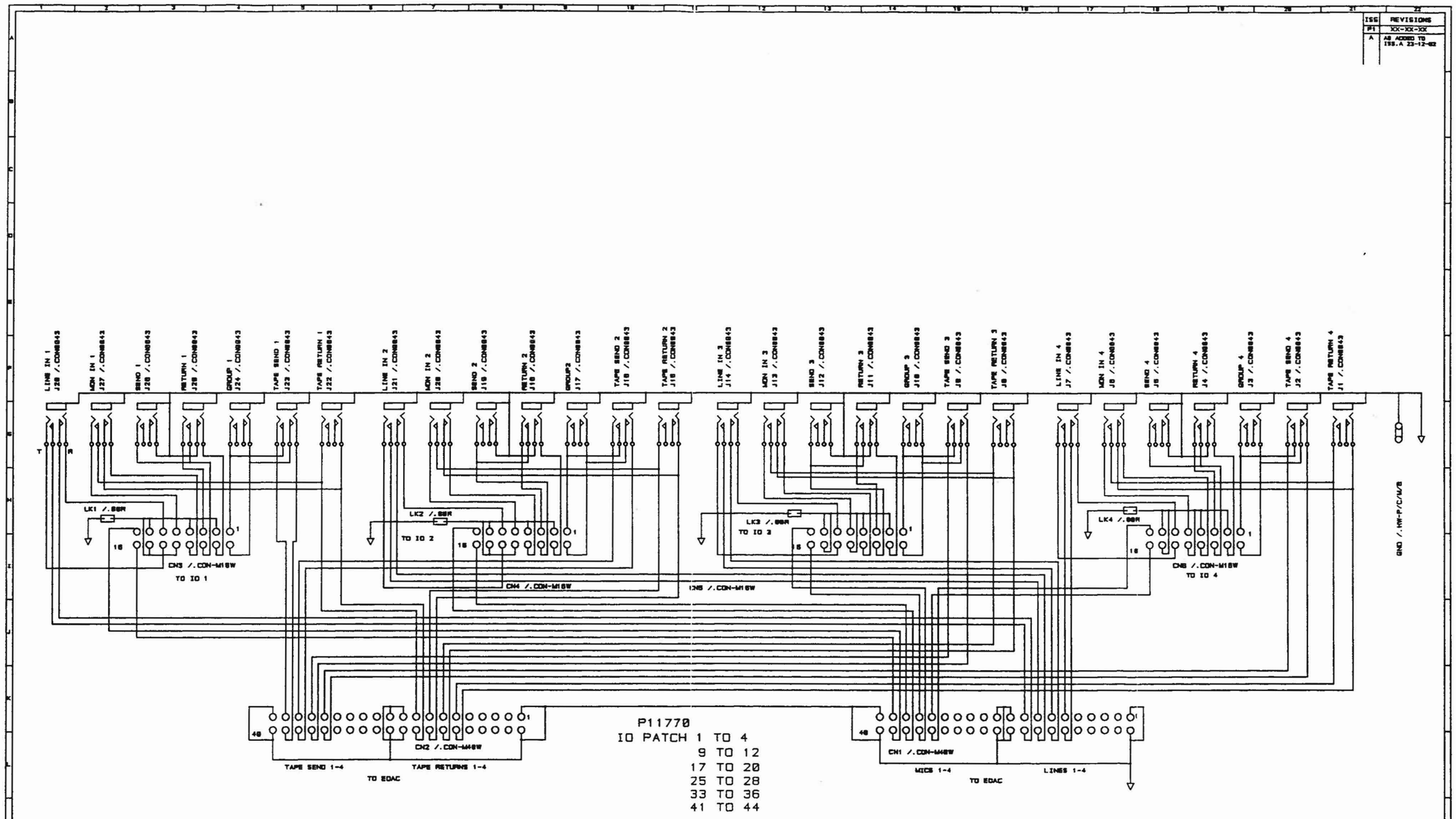
HIER DUMP FILES

SOUNDTRACS PLC
81, EWELL ROAD, SURBITON, SURREY, KT6-6AH.
TEL: 961-399 3382. FAX: 961-399 6821
TELEX: 8951873 STRACS G.

TITLE	I/O PATCH 5-8	SIZE	SHEET OF SHEETS
PRODUCT	VARIOUS	DRAWN TMW / CHECKED / APPD	
		DRAWING NO. S11771	ISSUE A

2

ISS	REVISIONS
P1	XX-XX-XX
A	AS ADDED TO ISS.A 23-12-82



P11770
IO PATCH 1 TO 4
9 TO 12
17 TO 20
25 TO 28
33 TO 36
41 TO 44

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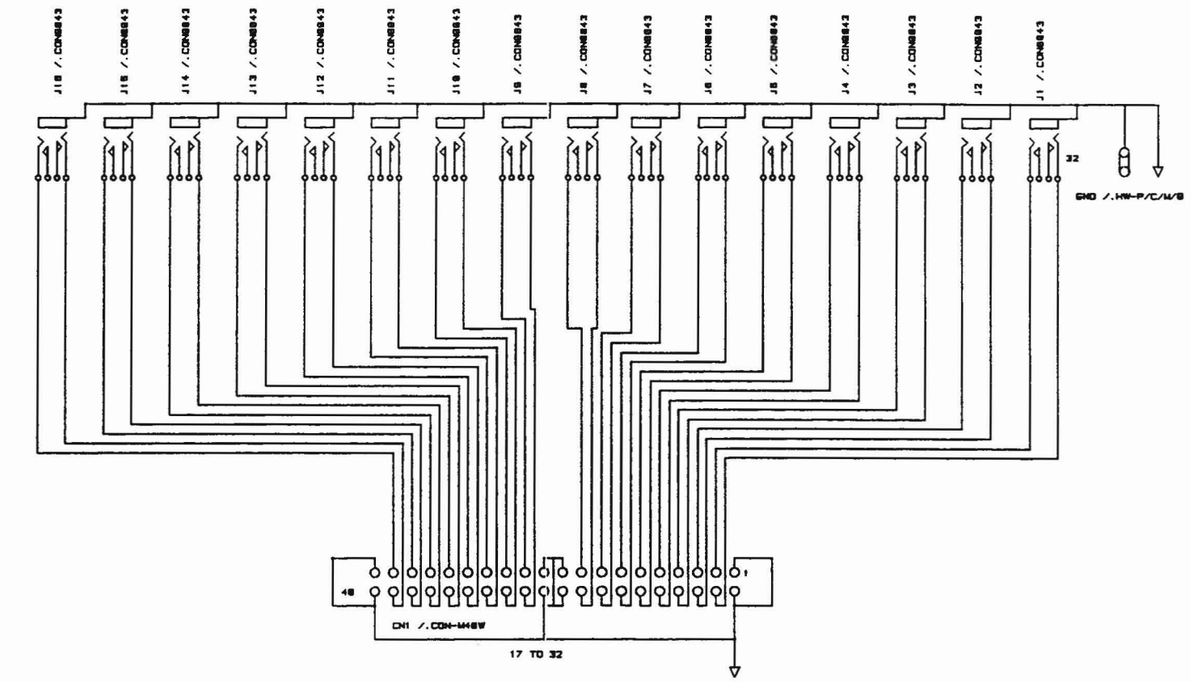
PCB DUMP FILE
CIRCUIT DUMP FILES
HIER DUMP FILES

SOUNDTRACS PLC
91, ENELL ROAD, SURBITON, SURREY. KT6 6AH.
TEL: 081-398 3362. FAX: 081-399 8821
TELEX: 8951673 STRACS G.

TITLE I/O PATCH 1-4
SIZE
SHEET 1 OF 1SHEETS
PRODUCT VARIOUS
DRAWING NO. S11770 ISSUE A

ISS	REVISIONS
A	85-05-84



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PCB DUMP FILE	HIER DUMP FILES	SOUNDTRACS PLC
CIRCUIT DUMP FILES		

TITLE	TIE LINES 1-32	SIZE	SHEET OF SHEETS
PRODUCT	VARIOUS	DRAWN JAS	APVD
		DRAWING NO. S11773	ISSUE A

ISS	REVISIONS
P7	18-11-83 BAN
P8	1-2-84 AN 2332
B	28-4-84
C	11-07-84

C11 /.47PF/AX
R16 /.10K
IC2-A /.IC-TL072
R11 /.4K7
R13 /.68R
C9 /.1000UF
R15 /.4K7
IC3-A /.IC-NE5532
R14 /.10K
C10 /.68UF
R10 /.100K
R12 /.1K
R17 /.330R
OPTION
+4/-10
LK25 /.HEAD-4W
C15 /.47PF/AX
R25 /.10K
BUS OUTPUT
R9 /.2K2
R34 /.2K2
R27 /.4K7
R33 /.68R
R31 /.4K7
IC3-B /.IC-NE5532
C20 /.1000UF
R29 /.10K
C14 /.47PF/AX
R24 /.20K
R22 /.6K8
R30 /.10K
C13 /.68UF
R32 /.10K
R21 /.100K
IC2-B /.IC-TL072
R36 /.6K8
C16 /.47PF/AX
R28 /.20K
+4/10
LK33 /.HEAD-6W
+48V
S6 /.SW000035
+48V
R18 /.1K
R20 /.6K8
R19 /.6K8
C12 /.4U7
R35 /.2K2
C19 /.1NF
IN2 /.IND-1MH
IN1 /.IND-1MH
C18 /.47UF
C17 /.47UF
R23 /.22K
R26 /.22K
CN1 /.CON0004
MIC
CN2 /.CON0003
LINE
CN4 /.CON0003
TAPE
CN3 /.CON0003
INJECT
CN5 /.CON0003
GROUP
+17V
C21 /.68UF
R37 /.100K
LK9 /.SOCK-SIL10
LINK A TO MAIN CARD
LK24 /.LINK
ADD ON NON PATCH
VERSION ONLY
CN6 /.CON-M16W
TO PATCHBAY
NOT NEEDED ON
NON PATCH DESK
NOTE: +4/-10 LINKS ARE IN +4 POSITION
HPF
S5 /.SW000035
HIGH PASS FILTER
-3dB @ 100Hz
-12dB OCTAVE
C3 /.47PF
R4 /.10K
PHASE
R3 /.10K
C2 /.68UF
R2 /.100K
C1 /.68UF
IC1-A /.IC-TL072
R1 /.100K
R6 /.120K
C4 /.10N
C5 /.10N
R7 /.100K
R5 /.220K
IC1-B /.IC-TL072
C6 /.68UF
R8 /.100K
MIDS
S4 /.SW000036
POST
S3 /.SW000035
S2 /.SW000035
MON
+17V
C7 /.22UF
C8 /.22UF
-17V
-17V
+48V
LK7 /.SOCK-SIL10
LINK B TO MAIN CARD
LK3 /.SOCK-SIL10
LINK C TO MAIN CARD
LK1 /.SOCK-SIL10
LINK D TO MAIN CARD
24T
S1 /.SW000035

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PCB DUMP FILE: ISSUE B
CIRCUIT DUMP FILES
HIER DUMP FILES

SOUNDTRACS PLC
81, EWELL ROAD, SURBITON, SURREY. KT6 6AH.
TEL: 081-399 3392. FAX: 081-399 6821
TELEX: 8951073 STRACS G.

TITLE: I/O LEFT
PRODUCT: SOLITAIRE
SIZE
SHEET 1OF 1 SHEETS
DRAWN
CHECKED JRS
APPD
DRAWING NO. S12759
ISSUE C

ISS	REVISIONS
PB	11-11-93 BAN
PB	1-2-94 AN 2332
A	05-05-94
B	11-07-94

+17V
C63 /.330UF
C47 /.22UF
R124 /.10R
+VS
D5 /.D0009
C10 /.22UF
D6 /.D0009
C13 /.22UF
R123 /.10R
-17V
-VS
C64 /.330UF
C48 /.22UF

+17V
D4 /.D0008
D2 /.D0008
R12 /.7K5
R14 /.7K5
C15 /.18PF/AX
R22 /.10K
IC2-A /.IC-TL074
R147 /.1K
C71 /.1NF
R21 /.10K
IC2-D /.IC-TL074
T1 /.TRN-2SD786S
C8 /.47PF/AX
R17 /.10K
S1 /.SW000036
C4 /.68UF
R2 /.22K
C1 /.68UF
R18 /.3K3
T2 /.TRN-2SD786S
R3 /.22K
R1 /.6K8
R4 /.6K8
LINE
R15 /.3K3
C7 /.470PF/AX
C9 /.470PF/AX
R6 /.22R
C2 /.1000UF/10V
R20 /.10K
C11 /.47PF/AX
C22 /.47PF/AX
D1 /.D0008
D3 /.D0008
R7 /.470R
R19 /.15K
R16 /.15K
C23 /.68UF
R36 /.3K9
-17V
IC2-C /.IC-TL074
+17V
CH SEND
INSERT RET+
INSERT RET-
R5 /.2K2
CW
VR1 /.POT000006
MIC/LINE GAIN
R33 /.1K8
1
LK2 /.SOCK-SIL10
LINK A TO SUBBOARD
DYNAMIC LINK
C20 /.47PF/AX
(OUT)
R31 /.10K
LK1 /.HEAD-6W
R27 /.10K
C16 /.68UF
CH PRE
R28 /.10K
R30 /.10K
R24 /.100K
IC2-B /.IC-TL074
C18 /.47PF/AX
BUS SUM OUT
BUS OUT
TAPE IN
C3 /.68UF
GROUP
TAPE
MIX
R8 /.100K
S16 /.SW000035
R109 /.100R
MON O VCA
CH O VCA
TOUCH
MON MU SW
MON REC SW
MON PLY SW
CH MU SW
CH REC SW
CH PLY SW
+VREF
CN1 /.CON-M26W
AUDIO I/O
S13 /.SW000035
S14 /.SW000035
S15 /.SW000035
METER
CH PRE
GND
MON I VCA
CH I VCA
ENABLE
MON MU LED
MON REC LED
MON PLY LED
CH MU LED
CH REC LED
CH PLY LED
-VREF
CH INPUT
MON INPUT
MON POST

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PCB DUMP FILE ISSUE C
CIRCUIT DUMP FILES

HIER DUMP FILES

SOUNDTRACS PLC
91, EWELL ROAD, SURBITON, SURREY. KT6-6AH.
TEL: 081-399 3392. FAX: 081-399 6021
TELEX: 8951073 STRACS G.

TITLE I/O RIGHT
PRODUCT SOLITAIRE

SIZE
SHEET 1 OF 4 SHEETS
DRAWN JS
CHECKED
APPD
DRAWING NO. S12760A
ISSUE B

ISS	REVISIONS
P3	MAN BAN
P8	11-11-93 BAN
P9	1-2-94 AN 2332
A	05-05-94
B	11-07-94

LK18 /.HEAD-16W
MOVING FADER
-VREF
+VREF
VCC
GND
+MOTOR
-MOTOR
ENABLE
TOUCH
CH I VCA
CH VCA

DISTORTION NULL
P2 /.PRE-50K-VRT

+17V
R121 /.10K
MONITOR SOLO
S8 /.SW000036
MON PRE
POST MON MUTE

R122 /.4K7
R110 /.4K7
R111 /.4K7
MON MU LED
MON REC LED
MON PLY LED
R120 /.22K
GND
IC12 /.IC-OPTO4
R79 /.47K

L1 /.D0014
MON SOLO
L2 /.D0015
MON MUTE
L3 /.D0015
MON REC
L4 /.D0014
MON PLAY

R119 /.10K
PFL
IC8-C /.IC-2402
IC6-B /.IC-TL072
C42 /.22UF/25V
C46 /.22UF/25V
R73 /.4K7
R76 /.100K
R69 /.10K
MONITOR MUTE

R84 /.470K
C51 /.47PF/AX
R86 /.18K
C61 /.68UF
R100 /.100K
OVCE
+17V
R85 /.18K
C50 /.68UF
R91 /.150K
MON I VCA
R89 /.2K2
MONITOR VCA
R83 /.18K
C53 /.47PF/AX
IC9 /.IC-SSM2018
C52 /.4U7
R88 /.2K7
-17V

R129 /.4K7
R114 /.4K7
R117 /.4K7
R139 /.22K
IC14 /.IC-OPTO4
CH MU LED
CH REC LED
CH PLY LED
GND

R118 /.100K
STATUS
R135 /.100K
MONITOR FADER
CN2 /.IDC-100-03VLMH
MON FADER BUFFER
S11 /.SW000036
+VREF
MON VCA
-VREF
MON O VCA

L5 /.D0014
CH SOLO
L6 /.D0015
CH MUTE
IPS
L7 /.D0015
CH REC
L8 /.D0014
CH PLAY
CCG2
R136 /.10K
CH PRE
PFL
S18 /.SW000036
CHANNEL SOLO

+17V
R140 /.10K
R80 /.47K
SSM2402
PSU
-17V

MONITOR MUTE
MON MU SW
S9 /.SW000034
S19 /.SW000034
CHANNEL
MUTE
CH MU SW
GND

R40 /.470K
C26 /.47PF/AX
C34 /.68UF
R43 /.18K
R55 /.100K
DISTORTION NULL
P1 /.PRE-50K-VRT
OVCE
+17V
R53 /.150K
R41 /.18K
R50 /.2K2
CH I VCA
R38 /.18K
IC4 /.IC-SSM2018
CHANNEL VCA
C30 /.47PF/AX
S21 /.SW000036
C29 /.4U7
R48 /.2K7
-17V
VCA FADER

BUS SUM
IC8-A /.IC-2402
G1 G13 G14 G2 G3 G15 G16 G4 G5 G17 G18 G6 G7 G19 G20 G8 G9 G21 G22 G10 G11 G23 G24 G12
LK38 /.HEAD-48W
IC8-B /.IC-2402
IC6-A /.IC-TL072
C38 /.22UF/25V
C37 /.22UF/25V
R60 /.4K7
R58 /.100K
R63 /.10K
POST CH MUTE
C32 /.68UF
CN5 /.IDC-100-03VLMH
VCA
CN6 /.CON-M50W
GROUP BUSSES
+VREF
CH VCA IN
LK39 /.HEAD-4W
CH FADER BUFFER
-VREF
LK16 /.HEAD-4W
CH VCA
CH O VCA
MOVING FADER

MON REC SW
MON PLY SW
CH REC SW
CH PLY SW
CHANNEL
FADER
MOVING
GND
S10 /.SW000034
S12 /.SW000034
S20 /.SW000034
S22 /.SW000034
CN4 /.IDC-100-03VLMH

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PCB DUMP FILE
ISSUE C
CIRCUIT DUMP FILES

HIER DUMP FILES

SOUNDTRACS PLC
91, EWELL ROAD, SURBITON, SURREY. KT6 6AH.
TEL: 081-399 3392. FAX: 081-399 6021
TELEX: 8951073 STRACS G.

TITLE I/O RIGHT
PRODUCT SOLITAIRE

SIZE | SHEET 2 OF 4 SHEETS
DRAWN JRS | CHECKED | APPD
DRAWING NO. S127608 | ISSUE B

8

S24 /.SW000036 S25 /.SW000036 S26 /.SW000036 S27 /.SW000036 S28 /.SW000036 S29 /.SW000036 S30 /.SW000036

1-2 3-4 5-6 7-8 9-10 11-12

RP2-A /.10K DIL8I RP2-B /.10K DIL8I RP2-C /.10K DIL8I RP2-D /.10K DIL8I RP2-E /.10K DIL8I RP2-F /.10K DIL8I RP2-G /.10K DIL8I RP2-H /.10K DIL8I RP3-A /.10K DIL8I RP3-B /.10K DIL8I RP3-C /.10K DIL8I RP3-D /.10K DIL8I RP3-E /.10K DIL8I RP3-F /.10K DIL8I RP3-G /.10K DIL8I RP3-H /.10K DIL8I RP4-A /.10K DIL8I RP4-B /.10K DIL8I RP4-C /.10K DIL8I RP4-D /.10K DIL8I RP4-E /.10K DIL8I RP4-F /.10K DIL8I RP4-G /.10K DIL8I RP4-H /.10K DIL8I

G1 G13 G14 G2 G3 G15 G16 G4 G5 G17 G18 G6 G7 G19 G20 G8 G9 G21 G22 G10 G11 G23 G24 G12

S23 /.SW000035 S7 /.SW000035

R146 /.10K R116 /.10K R113 /.10K R145 /.10K

LEFT L-R RIGHT

R L +12

CH POST

R133 /.8K2 R128 /.68K R127 /.100R VR21 /.POT000004

R134 /.8K2 C65 /.68UF IC13-B /.IC-TL072 R112 /.100K R115 /.100K R125 /.68K R126 /.100R C66 /.68UF IC13-A /.IC-TL072

CHANNEL PAN

C57 /.68UF C55 /.47PF/AX R95 /.4K7 IC10-A /.IC-TL072 R92 /.100K R94 /.2K2 R93 /.100K

S6 /.SW000036

24T AUX8 AUX7 A7 A8 RP1-G /.10K DIL8I RP1-H /.10K DIL8I

TAPE IN BUS OUT CH INPUT PHASE

LK26 /.SOCK-SIL10 LINK D TO SUB BOARD

C69 /.47PF/AX R137 /.10K C68 /.47PF/AX R132 /.10K

OUTPUT BUS AMP C70 /.470UF/4V IN1 /.IND-1MH BUS SUM R141 /.10K R138 /.10K IC15-B /.IC-NE5532 R130 /.10K IC15-A /.IC-NE5532 C67 /.68UF R131 /.100K

CH FADER BUFFER BUS SUM OUT

MON FADER BUFFER C56 /.47PF/AX R97 /.4K7 C60 /.68UF R98 /.2K2 R101 /.100K R99 /.100K IC10-B /.IC-TL072 C59 /.68UF VR20 /.POT000004

MON POST

R107 /.8K2 R102 /.68K R103 /.100R C58 /.68UF R96 /.100K R108 /.8K2 R104 /.100R R105 /.68K R106 /.100K C62 /.68UF IC11-A /.IC-TL072 IC11-B /.IC-TL072

MONITOR PAN

POST CH MUTE S4 /.SW000035 LK35 /.HEAD-4W BUS/LOCAL SELECT

CH POST

AUX 5-6 FEED VR16 /.POT000002 AUX 5-6 A5 RP1-E /.10K DIL8I VR17 /.POT000002 A6 RP1-F /.10K DIL8I

VR15 /.POT000002 R90 /.3K9 VR14 /.POT000004 LEVEL AUX 3-4 PAN RP1-C /.10K DIL8I A3 R87 /.3K9 A4 RP1-D /.10K DIL8I

AUX 1-2 FEED VR13 /.POT000002 R82 /.3K9 VR12 /.POT000004 LEVEL AUX 1-2 PAN RP1-A /.10K DIL8I A1 R81 /.3K9 A2 RP1-B /.10K DIL8I

S5 /.SW000035 CH POST MON POST VR18 /.POT000002 VR19 /.POT000002 AUX 7-8 7 AUX7 8 AUX8

+48V +MOTOR -MOTOR VCC GND STATUS +VS -VS A1 A2 A3 A4 A5 A6 A7 A8 PFL LEFT RIGHT IPS CN3 /.CON-M50W

ISS	REVISIONS
P8	11-11-93 BAN
P8	1-3-94 AN 2332
A	05-05-94
B	11-07-94

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PCB DUMP FILE ISSUE C

CIRCUIT DUMP FILES

HIER DUMP FILES

SOUNDTRACS PLC
81, EWELL ROAD, SURBITON, SURREY. KT6 6AH.
TEL: 081-399 3392. FAX: 081-399 6821
TELEX: 8951073 STRACS G.

TITLE I/O RIGHT

PRODUCT SOLITAIRE

SIZE SHEET 3 OF 4 SHEETS

DRAWN CHECKED APPD

DRAWING NO. S12760C ISSUE B

9

ISS	REVISIONS
P8	11-11-93 BAN
P9	1-2-94 AN 2332
A	05-05-94
B	11-07-94

MON PRE
CH PRE
+17V
T6 /.BC549C
CCG2
PEAK
L9 /.D0014
T5 /.MPS2222A
C44 /.4U7
C39 /.4U7
R144 /.47K
R67 /.47K
R143 /.22K
R71 /.6K8
R62 /.6K8
R70 /.680R
R65 /.680R
T4 /.BC549C
T3 /.BC549C
C40 /.100NF
D8 /.D0008
D7 /.D0008
R142 /.100R
-17V
R61 /.100R
CH SEND
CH EQ
S2 /.SW000035
PHASE
PHASE
S17 /.SW000035
-17V
A8++
MON EQ OUT
1
LINK B TO SUB BOARD
LK3 /.SOCK-SIL10

MON HI EQ
MON INPUT
C49 /.68UF
R66 /.47K
IC7-A /.IC-TL072
R68 /.47K
R75 /.1M
C43 /.18PF/AX
R74 /.1M
R78 /.10K
R64 /.6K8
C41 /.2N7
IC7-B /.IC-TL072
MON LO EQ
C36 /.68UF
R59 /.10K
MON EQ
MON PRE
MON EQ OUT
S3 /.SW000035
VR10 /.POT000003
R72 /.1K5
R77 /.1K5
C45 /.220NF
VR11 /.POT000003

C24 /.68UF
VR5 /.POT000003
UPPER MIDS
R44 /.22K
R35 /.4K7
R37 /.22K
R39 /.10K
IC3-A /.IC-TL072
C17 /.3N3
C19 /.1N5F
R29 /.4K7
FREQ
VR4 /.POT000007
VR7 /.POT000003
LOWER MIDS
R46 /.4K7
R45 /.22K
R34 /.22K
C28 /.68UF
IC3-B /.IC-TL072
C25 /.47NF
R47 /.10K
R42 /.4K7
C27 /.22NF
FREQ
VR6 /.POT000007

CH HIGH EQ
C12 /.18PF/AX
R23 /.10K
R25 /.10K
R13 /.15K
IC1-B /.IC-TL072
C6 /.18PF/AX
VR2 /.POT000007
FREQ
R11 /.10K
IC1-A /.IC-TL072
VR3 /.POT000003
C14 /.2N2
C5 /.47PF/AX
R10 /.22K
R9 /.10K
VR9 /.POT000003
CH LOW EQ
C35 /.68UF
C33 /.18PF/AX
R56 /.10K
R26 /.10K
R57 /.10K
R51 /.10K
IC5-A /.IC-TL072
C31 /.15NF
VR8 /.POT000007
FREQ
R54 /.13K
R49 /.12K
R52 /.18K
IC5-B /.IC-TL072
POST MON MUTE
CH POST
MON POST
AUX 1-2 FEED
AUX 5-6 FEED
1
LK8 /.SOCK-SIL10
LINK C TO SUB BOARD

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CIRCUIT DUMP FILES

HIER DUMP FILES

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81, EWELL ROAD, SURBITON, SURREY. KT6 6AH.
TEL: 081-398 3392. FAX: 081-398 6821
TELEX: 8951073 STRACS G.

TITLE I/O RIGHT
PRODUCT SOLITAIRE

SIZE
SHEET 4 OF 4 SHEETS
DRAWN JRS
CHECKED
APPD
DRAWING NO. S12760D
ISSUE B

P11770C SOLT PATCH 1-4 CARD(P1 Revn P1 JEY 27.04.94

Stock Number	Description	Quantity	Ref.	Class.
CON0043	.RTT-34B-02 JACK	28	10	Pur
CON-M16W	.0918 516 7913 HEADER	4	20	Pur
CON-M40W	.0918-540-7913 HEADER	2	30	Pur
HW-P/C/M/B	.534-840 HOR. (100/PK)	1	40	Pur
R000000R	.0 OHM 1/4W 5% C/F	4	50	Pur
PCB-P11770	.QUARTZ PATCH 1-4 PCB(A) P.T.H,AIR LEVELLED. BARE BOARD TESTED.	1	60	Pur
F-B13120/02	.SOLIT P/BAY PCB BRKT(P1 AN2483BL 02.03.94.	2		Pur
F-A13119/02	.SOLIT P/BAY CTR BRK(P1 AN2483BL 02.03.94.	1		Pur
HW-P-RIVET-48	.1661-0516 AVDEL RIVET WAS TAPD48BS TYPE AN2488JE. 17-02-94.	6		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.01		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.01		Bulk

End of Report

P12760A SOLT MOVFDR R.H IP(P3 Revn P3 AN2581BL 05.07.94
AN2581BL 05.07.94.

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12760	.SOLITAIRE R.H IO PCB(C) P.T.H,FR4,B.B.TESTED,HOT AIRLEVELD,PLTD TO 1OZ CU PHOTOIMAGEABLE RESISIT.	1	10	Pur
R00004R7	.FA8225-4R7J FUSE RESIST 1/4W OR FRN1/4W-4R7-5% R123,124.	2	20	Pur
R000022R	.22R 1/4W 1% M/F R6.	1	30	Pur
R000100R	.100R 1/4W 1% M/F R61,103,104,109,126,127,142.	7	40	Pur
R000470R	.470R 1/4W 1% M/F R7.	1	50	Pur
R000680R	.680R 1/4W 1% M/F R65,70.	2	60	Pur
R001K	.1K 1/4W 1% M/F R147.	1	65	Pur
R001K5	.1K5 1/4W 1% M/F R72,77.	2	70	Pur
R001K8	.1K8 1/4W 1% M/F R33.	1	80	Pur
R002K2	.2K2 1/4W 1% M/F R5,50,89,94,98.	5	90	Pur
R002K7	.2K7 1/4W 1% M/F R48,88.	2	100	Pur
R003K3	.3K3 1/4W 1% M/F R15,18.	2	110	Pur
R003K9	.3K9 1/4W 1% M/F R36,81,82,87,90.	5	120	Pur
R004K7	.4K7 1/4W 1% M/F R29,35,42,46,60,73,95,97,110, 111,114,117,122,129.	14	130	Pur
R006K8	.6K8 1/4W 1% M/F R1,4,62,64,71.	5	140	Pur
R007K5	.7K5 1/4W 1% M/F R12,14.	2	150	Pur
R008K2	.8K2 1/4W 1% M/F R107,108,133,134.	4	160	Pur
R010K	.10K 1/4W 1% M/F R9,11,17,20-23,25-28,30,31,32, 39,47,51,56,57,59,63,69,78, 113,116,119,121,130,132, 136-138,140,141,145,146,148, 149.	38	170	Pur
R012K	.12K 1/4W 1% M/F R49.	1	180	Pur
R013K	.13K 1/4W 1%M/F RESISTOR	1	190	Pur

P12760A SOLT MOVFDR R.H IP(P3 Revn P3 AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
	R54.			
R015K	.15K 1/4W 1% M/F R13,16,19.	3	200	Pur
R018K	.18K 1/4W 1% M/F R38,41,43,52,83,85,86.	7	210	Pur
R022K	.22K 1/4W 1% M/F R2,3,10,34,37,44,45,120,139, 143.	10	220	Pur
R047K	.47K 1/4W 1% M/F R66-68,79,80,144.	6	230	Pur
R068K	.68K 1/4W 1% M/F R102,105,125,128.	4	240	Pur
R100K	.100K 1/4W 1% M/F R8,24,55,58,76,92,93,96, 99-101,106,112,115,118,131, 135.	17	250	Pur
R150K	.150K 1/4W 1% M/F R53,91.	2	260	Pur
R470K	.470K 1/4W 1% M/F R40,84.	2	270	Pur
RR1M	.1M 1/4W 1% M/F R74,75.	2	280	Pur
CAP0095	.ECBR1H180JCW 18PF AXIAL CERAMIC CAP.5% PANASONIC C6,12,15,33,43.	5	290	Pur
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW C5,8,11,18,20,22,26,30,51,53, 55,56,68,69.	14	300	Pur
CAP0102	.ECBR1H471KBW 470PF AXIAL CERAMIC CAPACITOR C7,9.	2	310	Pur
CAP0014	.ECQB1J102JZ 1N PANASON (630-19102) C71.	1	315	Pur
CAP0015	.ECQB1J222JZ 2N2 PANASON (630-19222) C14.	1	320	Pur
CAP0016	.ECQB1J272JZ 2N7 PANASON C41.	1	330	Pur
CAP0110	.ECQB1J153JZ 15N DIPP POLY CAP.PANASONIC C31.	1	340	Pur
CAP0026	.ECQB1J223JZ 22N PANASON (368-55223) C27.	1	350	Pur

P12760A SOLT MOVFDR R.H IP(P3 Revn P3 AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
CAP0027	.ECQV1J473JZ 47N PANASON (368-45473) C25.	1	360	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C40.	1	370	Pur
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C29,39,44,52.	4	380	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C10,13,37,38,42,46-48.	8	390	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C1,3,4,16,21,23,24,28,32, 34-36,49,50,54,57-62,65-67.	24	400	Pur
CAP0029	.ECQV1J224JZ 220N PANASON C45.	1	410	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C63,64.	2	420	Pur
CAP0085	.ECQB1J332JZ 3N3 PANASONI CERAMICCAPACITOR C17.	1	430	Pur
CAP0118	.ECQB1J152JZ 1N5 DIPPED POLYESTER CAP.PANASONIC C19.	1	440	Pur
CAP0074	.1000U/10V ECEA1AU102 PAN C2.	1	450	Pur
CAP0123	.ECEA0GKA471 470UF/4V RADIAL(8x7MM)PANASONIC C70.	1	460	Pur
TRN-2SD786S	.2SD786S TRANSISTOR T1,2.	2	470	Pur
TRN-BC549C	.BC549C ITT T3,4,6.	3	480	Pur
TRN-MPS2222A	.MPS2222A T5.	1	490	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D1-4,7,8.	6	500	Pur
D0047	.EL1224 VGD 3mm GREEN SUPER BRIGHT GRN DIFFUSE L1,4,5,8.	4	510	Pur
D0014	.EL204ID RED LED L2,3,6,7,9.	5	520	Pur
D0009	.IN4003 SYMBOL D5,6.	2	530	Pur
IC-TL072	.TL072P STM	8	540	Pur

P12760A SOLT MOVFDR R.H IP(P3 Revn P3 AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
	IC1,3,5-7,10,11,13.			
IC-TL074	.TL074CN STM IC2.	1	550	Pur
IC-SSM2018	.SSM2018 VOLTAGE CONTR AMP. IC4,9.	2	560	Pur
IC-2502	.PS2502-4 QUAD OPTO ISOLATOR.NEC IC12,14.	2	570	Pur
IC-NE5532	.NE5532 (TI) IC15.	1	580	Pur
IC-2402	.SSM2402 SWITCH PMI IC8.	1	590	Pur
IND-BEAD	.BL01RN1-A62TS BEAD IND FERRITE BEAD INDUCTOR IN1.	1	600	Pur
SW000034	.ALPS SPUJ19122A 2POLE MOMENTARY SWITCH 19467A S9,10,12,19,20,22.	6	610	Pur
SW000035	.SPUJ 19128A 2PL LAT SW S2-5,7,13-17,23.	11	620	Pur
SW000036	.SPUJ 19123A 4POLE LATCH SWITCH 19515A S1,6,8,11,18,21,24-30.	13	630	Pur
CON-M50W	.0918-550-7913 HEADER CN3,6.	2	640	Pur
CON-M26W	.0918-526-7913 HEADER CN1.	1	650	Pur
POT000002	.RK11K1120A2HA 10KA LOG 10K A LOG POT VR13,15-19.	6	660	Pur
POT000003	.RK11K112002UA 10KB LIN 10KB LIN POT CD VR3,5,7,9-11.	6	670	Pur
POT000004	.RK14K122001XA 2x10KB LIN 10K+10K B LIN CD POT VR12,14,20,21.	4	680	Pur
POT000006	.RK14K122OAOYA 2x20KCRLOG 20K+20K C R LOG POT VR1.	1	690	Pur
POT000007	.RK14K12BOA15A 2x100KCRLG 100K+100K C R LOG POT VR2,4,6,8.	4	700	Pur
PRE-500K-VRT	.72RX-R500K 500K TRIMMER VERT,PCB MNT,F/ADJ P1,2.	2	710	Pur
CON0093	.1000-010-2101 10WY SKT	4	720	Pur

P12760A SOLT MOVFDR R.H IP(P3 Revn P3 AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
	METHODE 0.1" SIL. LK2,3,8,26.			
IDC-100-03VLMH	.1100-8-103-01 LKG HDR METHODE CN2,4,5.	3	730	Pur
HEADER-80WAY	.STRIP 910F124002 LK1,16,18,35,38,39.	1.025	740	Bulk
RN-10K-DIL16	.4116R-001-103 8 ISOLATED RESISTORS BOURNS RP1-4.	4	750	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC1,3,5-7,10,11,13,15.	9	760	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC2,8.	2	770	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC4,9,12,14.	4	780	Pur
CON0057	.76265101 DUPONT LOOSE PIECES.	6		Pur
HW-M3x3.8-CSPA	.B11574/07 ISSUE E.	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P11773B SOLT TIELINE 1-32CARD(P1 Revn P1 JEY 27.04.94

Stock Number	Description	Quantity	Ref.	Class.
CON0043	.RTT-34B-02 JACK	32	10	Pur
CON-M40W	.0918-540-7913 HEADER	2	30	Pur
HW-P/C/M/B	.534-840 HOR. (100/PK)	1	40	Pur
PCB-P11773	.QUARTZ TIELINE 1-32 (A) SINGLE SIDE,AIR LEVELLED FR4.	1	60	Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.01		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.01		Bulk
F-B13120/02	.SOLIT P/BAY PCB BRKT(P1 AN2483BL 02.03.94.	2		Pur
F-A13119/02	.SOLIT P/BAY CTR BRK(P1 AN2483BL 02.03.94.	1		Pur
HW-P-RIVET-48	.1661-0516 AVDEL RIVET WAS TAPD48BS TYPE AN2488JE. 17-02-94.	6		Pur

End of Report

P11771C SOLT PATCH 5-8 CARD(P1 Revn P1 JEY 27.04.94

Stock Number	Description	Quantity	Ref.	Class.
CON0043	.RTT-34B-02 JACK	28	10	Pur
CON-M16W	.0918 516 7913 HEADER	4	20	Pur
CON-M40W	.0918-540-7913 HEADER	2	30	Pur
HW-P/C/M/B	.534-840 HOR. (100/PK)	1	40	Pur
PCB-P11771	.QUARTZ PATCH 5-8 PCB(A) P.T.H,AIR LEVELLED. BARE BOARD TESTED.	1	50	Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.01		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.01		Bulk
R000000R	.0 OHM 1/4W 5% C/F	4	60	Pur
F-B13120/02	.SOLIT P/BAY PCB BRKT(P1 AN2483BL 02.03.94.	2		Pur
F-A13119/02	.SOLIT P/BAY CTR BRK(P1 AN2483BL 02.03.94.	1		Pur
HW-P-RIVET-48	.1661-0516 AVDEL RIVET WAS TAPD48BS TYPE AN2488JE. 17-02-94.	6		Pur

End of Report

P12759 SOLT STD L.H IO CARD(P5) Revn P5 AN2616BL 02.09.94
AN2616BWL 02.09.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12759	.SOLT VCD LH IO CARD(P1 AN2581BL	1	10	
CAP0015	.ECQB1J222JZ 2N2 PANASON (630-19222) C19.	1	150	Pur
CAP0019	.ECQB1J103JZ 10N PANASON (368-55103) C4,5.	2	160	Pur
CAP0045	.ECEA1JU470 47U/63V PANAS (035-59479) C17,18.	2	190	Pur
CAP0074	.1000U/10V ECEA1AU102 PAN C9,20.	2	210	Pur
SW000035	.SPUJ 19128A 2PL LAT SW S1-3,5,6.	5	230	Pur
SW000036	.SPUJ 19123A 4POLE LATCH SWITCH 19515A S4.	1	240	Pur
IC-TL072	.TL072P STM IC1,2.	2	250	Pur
IC-NE5532	.NE5532 (TI) IC3.	1	260	Pur
CON0003	.M203-43 JACK BLACK CN2-5.	4	270	Pur
CON0018	.NC 3FGHI CN1.	1	280	Pur
CON0092	.CAP0017-10 SPACED HDR METHODE 0.1". LK1,3,7,9.	4	290	Pur
HEADER-80WAY	.STRIP 910F124002 LK25,33.	0.125	300	Bulk
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC1-3.	3	320	Pur
CON0057	.76265101 DUPONT LOOSE PIECES.	4		Pur
F-B12207/02	.STU PB IP CARD BRKT(C)	1		Pur
HW-No2x1/4-P/P	.No2x1/4 P/P TYPE B BZP	2		Pur
HW-No4x1/4-P/P	.No.4x1/4 PP/ST/AB/BZCP	2		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P12759 SOLT VCD LH IO CARD(P1 Revn P1 AN2581BL 05.07.94
AN2581BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12759	.SOLT L.H IO PCB(B) S/SIDE,B.B.TESTED,PLTD TO 1OZ,PHOTOIMAGEABLE RESIST,HOTAIR LEVELLED.	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK2,4-6,8,10-24,26-32,34-39.	33	20	Pur
R000068R	.68R 1/4W 1% M/F R13,33.	2	30	Pur
R000330R	.330R 1/4W 1% M/F R17.	1	40	Pur
R001K	.1K 1/4W 1% M/F R12,18.	2	50	Pur
R002K2	.2K2 1/4W 1% M/F R9,34,35.	3	60	Pur
R004K7	.4K7 1/4W 1% M/F R11,15,27,31.	4	70	Pur
R006K8	.6K8 1/4W 1% M/F R19,20,22,36.	4	80	Pur
R010K	.10K 1/4W 1% M/F R3,4,14,16,25,29,30,32.	8	90	Pur
R020K	.20K 1/4W 1% M/F R24,28.	2	100	Pur
R022K	.22K 1/4W 1% M/F R23,26.	2	110	Pur
R100K	.100K 1/4W 1% M/F R1,2,7,8,10,21,37.	7	120	Pur
R120K	.120K 1/4W 1% M/F R6.	1	130	Pur
R220K	.220K 1/4W 1% M/F R5.	1	140	Pur
IND-BEAD	.BL01RN1-A62TS BEAD IND FERRITE BEAD INDUCTOR IN1,2.	2	145	Pur
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C12.	1	170	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C7,8.	2	180	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C1,2,6,10,13,21.	6	200	Pur
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW	5	220	Pur

VCD-P12759 SOLT VCD LH IO CARD(Pl Revn Pl AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
	C3,11,14-16.			
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	2		Bulk

End of Report

P12759A SOLT PB L.H IO CARD(P5 Revn P5 AN2633BL 22.08.94
AN2633BL 23.08.94

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12759A	.SOLT VCD PB LH IO (P1) AN2581BL	1	10	
CAP0015	.ECQB1J222JZ 2N2 PANASON (630-19222) C19.	1	160	Pur
CAP0019	.ECQB1J103JZ 10N PANASON (368-55103) C4,5.	2	170	Pur
CAP0045	.ECEA1JU470 47U/63V PANAS (035-59479) C17,18.	2	200	Pur
CAP0074	.1000U/10V ECEA1AU102 PAN C9,20.	2	220	Pur
SW000035	.SPUJ 19128A 2PL LAT SW S1-3,5,6.	5	240	Pur
SW000036	.SPUJ 19123A 4POLE LATCH SWITCH 19515A S4.	1	250	Pur
IC-TL072	.TL072P STM IC1,2.	2	260	Pur
IC-NE5532	.NE5532 (TI) IC3.	1	270	Pur
CON0018	.NC 3FGHI CN1.	1	280	Pur
CON0092	.CAP0017-10 SPACED HDR METHODE 0.1". LK1,3,7,9.	4	290	Pur
HEADER-80WAY	.STRIP 910F124002 LK25,33.	0.125	300	Bulk
CON-M16W	.0918 516 7913 HEADER CN6.	1	310	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC1-3.	3	320	Pur
CON0057	.76265101 DUPONT LOOSE PIECES.	4		Pur
HW-No2x1/4-P/P	.No2x1/4 P/P TYPE B BZP	2		Pur
F-B12207/02	.STU PB IP CARD BRKT(C)	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13173A SOLT PB L.H STER PCB(P1 Revn P1 JEY 28.06.94

Stock Number	Description	Quantity	Ref.	Class.
PCB-P13173	.SOLT STEREO LH PCB(P2 FR4,P.T.H,HOTAIR LEVELD PHOTOIMAGEABLE RESIST B.B.TEST,PLTD TO 1OZ CU	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F	2	20	Pur
R000010R	.FRN1/4W 10R 5%	2	30	Pur
R000039R	.39R 1/4W 1% M/F	1	40	Pur
R000100R	.100R 1/4W 1% M/F	3	50	Pur
R001K	.1K 1/4W 1% M/F	1	60	Pur
R002K2	.2K2 1/4W 1% M/F	2	70	Pur
R004K7	.4K7 1/4W 1% M/F	11	80	Pur
R005K1	.5K1 1/4W 1% M/F	8	90	Pur
R010K	.10K 1/4W 1% M/F	28	100	Pur
R015K	.15K 1/4W 1% M/F	1	110	Pur
R018K	.18K 1/4W 1% M/F	6	120	Pur
R027K	.27K 1/4W 1% M/F	1	130	Pur
R047K	.47K 1/4W 1% M/F	1	140	Pur
R100K	.100K 1/4W 1% M/F	6	150	Pur
R120K	.120K 1/4W 1% M/F	2	160	Pur
R150K	.150K 1/4W 1% M/F	2	170	Pur
R220K	.220K 1/4W 1% M/F	3	180	Pur
R470K	.470K 1/4W 1% M/F	2	190	Pur
R10M	.10M 1/4W 2% M/F	2	200	Pur
D0004	.BZX55C5V1 ZENER ITT	1	210	Pur
D0007	.OA91 PHILIPS	1	220	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN	8	230	Pur
D0009	.IN4003 SYMBOL	3	240	Pur
CAP0017	.ECQB1J472JZ 4N7 PANASON (630-19472)	2	250	Pur
CAP0019	.ECQB1J103JZ 10N PANASON (368-55103)	5	260	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104)	4	270	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229)	5	280	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S)	20	290	Pur
CAP0080	.330U/25V ECEA1EU331 PAN	2	300	Pur
CAP0095	.ECBR1H180JCW 18PF AXIAL CERAMIC CAP.5% PANASONIC	4	310	Pur
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW	14	320	Pur
CAP0102	.ECBR1H471KBW 470PF AXIAL CERAMIC CAPACITOR	1	330	Pur
IC-TL072	.TL072P STM	2	340	Pur

P13173A SOLT PB L.H STER PCB(P1 Revn P1 JEY 28.06.94

Stock Number	Description	Quantity	Ref.	Class.
IC-TL074	.TL074CN STM	4	350	Pur
IC-SSM2018	.SSM2018TP VOLT CONTR AMP.	2	360	Pur
IC-LM339	.LM339N STM	1	370	Pur
IC-4053	.4053B TRIPLE 2CH MULTI PLEXER (TOSHIBA) USE HEF4053BP AFTERUSING TOSHIBA DEVICES.	1	380	Pur
IC-4551	.MC14551BCP QUAD 2IP ANA LOG MULTI/DEMULTIPLEXER MOTOROLA	1	390	Pur
PRE-100K-VRT	.72RX-R100K 100K TRIMMER VERT,PCB MNT,F/ADJ	2	400	Pur
PRE-500K-VRT	.72RX-R500K 500K TRIMMER VERT,PCB MNT,F/ADJ	2	410	Pur
SW000035	.SPUJ 19128A 2PL LAT SW 0.26 US DOLLARS	5	420	Pur
CON0003	.M203-43 JACK BLACK	4	430	Pur
CON0092	.CAP0017-10 SPACED HDR METHODE 0.1".	4	440	Pur
CON-M16W	.0918 516 7913 HEADER	1	450	Pur
HEADER-80WAY	.STRIP 910F124002	0.1	460	Bulk
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13174 SOLT STER RH PCB ASY(P2 Revn P2 AN2640NK 14.10.94
AN2640QH 14-10-94

Stock Number	Description	Quantity	Ref.	Class
PCB-P13174	.SOLT STER RH IP PCB (P2 FR4,P.T.H,HOTAIR LEVELD PHOTOIMAGE RESIST B.B.TEST,PLTD TO 1OZ CU	1	10	Pur
R00004R7	.FA8225-4R7J FUSE RESIST 1/4W OR FRN1/4W-4R7-5% R100,101.	2	20	Pur
R000100R	.100R 1/4W 1% M/F R87,98,109,144.	4	30	Pur
R000680R	.680R 1/4W 1% M/F R138,139.	2	40	Pur
R001K	.1K 1/4W 1% M/F R3,5,7,8,10.	5	50	Pur
R001K5	.1K5 1/4W 1% M/F R60,62,66,68.	4	60	Pur
R002K2	.2K2 1/4W 1% M/F R78,99,119.	3	70	Pur
R002K7	.2K7 1/4W 1% M/F R77.	1	80	Pur
R003K9	.3K9 1/4W 1% M/F R83-86.	4	90	Pur
R004K7	.4K7 1/4W 1% M/F R30,38,40,42,46,53,58,59,89, 91,115,118,129,131,132.	15	100	Pur
R005K1	.5K1 1/4W 1% M/F R26,28,29,31,34.	5	110	Pur
R006K8	.6K8 1/4W 1% M/F R37,45,137,140.	4	120	Pur
R008K2	.8K2 1/4W 1% M/F R121,123.	2	130	Pur
R010K	.10K 1/4W 1% M/F R19,23,69,74,76,79,104,106, 108,110,133,135,136.	13	140	Pur
R015K	.15K 1/4W 1% M/F R27,32,33,35.	4	150	Pur
R018K	.18K 1/4W 1% M/F R67,70,72,80-82.	6	160	Pur
R020K	.20K 1/4W 1% M/F R111-114,122,124-128.	10	170	Pur
R022K	.22K 1/4W 1% M/F R16,24,134.	3	180	Pur
R047K	.47K 1/4W 1% M/F R36,39,41,43,44,47-49,51,54, 55,57,130,141,143.	15	190	Pur
R068K	.68K 1/4W 1% M/F R103,107.	2	200	Pur
R100K	.100K 1/4W 1% M/F	28	210	Pur

P13174 SOLT STER RH PCB ASY(P2 Revn P2 AN2640NK 14.10.94

Stock Number	Description	Quantity	Ref.	Class.
	R1,11-15,17,18,20-22,25,56,71, 88,90,92-97,102,105,116,117, 120,142.			
R120K	.120K 1/4W 1% M/F R2,4,6,9.	4	220	Pur
R150K	.150K 1/4W 1% M/F R63,75.	2	230	Pur
R470K	.470K 1/4W 1% M/F R61,73.	2	240	Pur
RR1M	.1M 1/4W 1% M/F R50,52,64,65.	4	250	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D3,4.	2	260	Pur
D0009	.IN4003 SYMBOL D1,2.	2	270	Pur
D0014	.EL204ID RED LED L1,4,5.	3	280	Pur
D0047	.EL1224 VGD 3mm GREEN SUPER BRIGHT GRN DIFFUSE L2,3.	2	290	Pur
CAP0016	.ECQB1J272JZ 2N7 PANASON C17,18.	2	300	Pur
CAP0026	.ECQB1J223JZ 22N PANASON (368-55223) C27,28.	2	310	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C69.	1	320	Pur
CAP0029	.ECQV1J224JZ 220N PANASON C34,36.	2	330	Pur
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C35,44,67,68.	4	340	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C43,46,53,57.	4	350	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C2,4,6,7,9-16,24,32,37,39,40, 42,45,47,49,51,52,55,58-61, 64-66.	31	360	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C54,56.	2	370	Pur
CAP0118	.ECQB1J152JZ 1N5 DIPPED POLYESTER CAP.PANASONIC C19,21.	2	380	Pur
CAP0095	.ECBR1H180JCW 18PF AXIAL	4	390	Pur

P13174 SOLT STER RH PCB ASY(P2 Revn P2 AN2640NK 14.10.94

Stock Number	Description	Quantity	Ref.	Class.
	CERAMIC CAP.5% PANASONIC C5,8,29,33.			
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW C1,3,20,22,23,38,41,48,50,62, 63.	11	400	Pur
CAP0085	.ECQB1J332JZ 3N3 PANASONI CERAMICCAPACITOR C25,26.	2	410	Pur
CAP0027	.ECQV1J473JZ 47N PANASON (368-45473) C30,31.	2	420	Pur
IC-TL072	.TL072P STM IC3,9.	2	430	Pur
IC-TL074	.TL074CN STM IC1,2,4,5,10.	5	440	Pur
IC-SSM2018	.SSM2018TP VOLT CONTR AMP. IC6,7.	2	450	Pur
IC-2402	.SSM2402 SWITCH PMI IC8.	1	460	Pur
IC-2502	.PS2502-4 QUAD OPTO ISOLATOR.NEC IC11.	1	470	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC3,9.	2	480	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC1,2,4,5,8,10.	6	490	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC6,7,11.	3	500	Pur
CON0093	.1000-010-2101 10WY SKT METHODE 0.1" SIL. LK1-3,5.	4	510	Pur
CON-M26W	.0918-526-7913 HEADER CN1,2.	2	520	Pur
CON-M50W	.0918-550-7913 HEADER CN3,5.	2	530	Pur
IDC-100-06VLMH	.1100-8-106-01 LKG HDR CN4.	1	540	Pur
HEADER-80WAY	.STRIP 910F124002 LK4.	0.4	550	Bulk
TRN-MPS2222A	.MPS2222A T4.	1	560	Pur

P13174 SOLT STER RH PCB ASY(P2 Revn P2 AN2640NK 14.10.94

Stock Number	Description	Quantity	Ref.	Class.
TRN-BC549C	.BC549C ITT T1-3.	3	570	Pur
RN-10K-DIL16	.4116R-001-103 8 ISOLATED RESISTORS BOURNS RP1-3.	3	580	Pur
SW000034	.ALPS SPUJ19122A 2POLE MOMENTARY SWITCH 19467A 0.25 US DOLLARS S8,9,11.	3	590	Pur
SW000035	.SPUJ 19128A 2PL LAT SW 0.26 US DOLLARS S1-6,12.	7	600	Pur
SW000036	.SPUJ 19123A 4POLE LATCH SWITCH 19515A 0.36 US DOLLARS S7,13-19.	8	610	Pur
SW000038	.ALPS SPUJ19124A 6POLE LATCHING SWITCH 19466A S10.	1	620	Pur
PRE-500K-VRT	.72RX-R500K 500K TRIMMER VERT,PCB MNT,F/ADJ P1,2.	2	630	Pur
POT000004	.RK14K122001XA 2x10KB LIN 10K+10K B LIN CD POT VR1-3,5,7-9,11,17.	9	640	Pur
POT000005	.RK14K12BOA16A 2x10KA LOG 10K+10K A LOG POT 0.42 US DOLLARS VR10,12-16.	6	650	Pur
POT000008	.RK097142000EA 4x100KCRLG 100KX4 C R LOG POT VR4,6.	2	660	Pur
HW-M3x3.8-CSPA	.B11574/07 (F) SPACER AN2667NK 22-11-94	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P12878 SOLIT AUX MASTER CARD(P4 Revn P4 AN2621 22.08.94

Stock Number	Description	Quantity	Ref.	Class.
	METHODE CN3,4.			
CON-M40W	.0918-540-7913 HEADER CN1,2.	2	430	Pur
CON-M34W	.0918-534-7913 HEADER CN5.	1	440	Pur
HEADER-80WAY	.STRIP 910F124002 LK1-3,10-12.	1.5	450	Bulk
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC1,4,7.	3	460	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC2,3,6.	3	470	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC5.	1	480	Pur
CON0057	.76265101 DUPONT LOOSE PIECES.	16		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P12878 SOLIT AUX MASTER CARD(P4 Revn P4 AN2621 22.08.94
AN2621BWL 22.08.94

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12878	.SOLT VCD AUX MAS CARD(P2 AN2621BWL	1	10	
CAP0016	.ECQB1J272JZ 2N7 PANASON C7,10.	2	180	Pur
CAP0029	.ECQV1J224JZ 220N PANASON C14,16.	2	190	Pur
CAP0074	.1000U/10V ECEA1AU102 PAN C27,34.	2	220	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C30,31.	2	230	Pur
IC-TL072	.TL072P STM IC1,4.	2	260	Pur
IC-TL074	.TL074CN STM IC2.	1	270	Pur
IC-2402	.SSM2402 SWITCH PMI IC3,6.	2	280	Pur
IC-NE5532	.NE5532 (TI) IC7.	1	290	Pur
IC-2502	.PS2502-4 QUAD OPTO ISOLATOR.NEC IC5.	1	300	Pur
D0014	.EL204ID RED LED L2,4,6.	3	330	Pur
D0047	.EL1224 VGD 3mm GREEN SUPER BRIGHT GRN DIFFUSE L1,3,5.	3	340	Pur
TRN-MPS2222A	.MPS2222A T1.	1	350	Pur
SW000034	.ALPS SPUJ19122A 2POLE MOMENTARY SWITCH 19467A S5,7,9.	3	360	Pur
SW000035	.SPUJ 19128A 2PL LAT SW S2-4,6,8.	5	370	Pur
SW000036	.SPUJ 19123A 4POLE LATCH SWITCH 19515A S1.	1	380	Pur
POT000002	.RK11K1120A2HA 10KA LOG 10K A LOG POT VR6,7.	2	390	Pur
POT000004	.RK14K122001XA 2x10KB LIN 10K+10K B LIN CD POT VR1-3,5.	4	400	Pur
POT000007	.RK14K12BOA15A 2x100KCRLG 100K+100K C R LOG POT VR4.	1	410	Pur
IDC-100-03VLMH	.1100-8-103-01 LKG HDR	2	420	Pur

P12877 SOLIT MASTER(VCA)CARD(P3 Revn P3 AN2581BL 05.07.94
AN2581BL 05.07.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12877	.SOLT VCD MAST(VCA) (P1) AN2581BL	1	10	
R010K	.10K 1/4W 1% M/F R130,131.	2	120	Pur
R022K	.22K 1/4W 1% M/F R96,138.	2	160	Pur
CAP0019	.ECQB1J103JZ 10N PANASON (368-55103) C14.	1	260	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C61,132.	2	270	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C60.	1	290	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C88,91.	2	310	Pur
CAP0110	.ECQB1J153JZ 15N DIPP POLY CAP.PANASONIC C10,11.	2	340	Pur
CAP0123	.ECEA0GKA471 470UF/4V RADIAL(8x7MM)PANASONIC C2,13,16,20-22,25,30,31,40,41, 54,64-66,74,75,77,78,86,87,89, 90,98,99,102,103,110,112,113, 117.	31	350	Pur
RN-10K-SIL09	.4609X-101-103(10K) RN1-4.	4	360	Pur
CON-M16W	.0918 516 7913 HEADER CN1.	1	370	Pur
CON-M34W	.0918-534-7913 HEADER CN3.	1	380	Pur
CON-M40W	.0918-540-7913 HEADER CN2.	1	390	Pur
CON-M50W	.0918-550-7913 HEADER CN4,10.	2	400	Pur
HDR-VLMG-10WAY	.FCN-744P010-AU/R CN11.	1	410	Pur
IDC-100-03VLMH	.1100-8-103-01 LKG HDR METHODE CN6-9.	4	420	Pur
MIC-CI.200	.EM3RN MIC INSERT	1	430	Pur

P12877 SOLIT MASTER(VCA)CARD(P3 Revn P3 AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
	MIC.			
CON0003	.M203-43 JACK BLACK CN5.	1	440	Pur
IC-NE5532	.NE5532 (TI) IC2,5,6,8,10,12,14,16,17,20, 21.	11	450	Pur
IC-TL074	.TL074CN STM IC13.	1	460	Pur
IC-4551	.MC14551BCP QUAD 2IP ANA LOG MULTI/DEMULTIPLEXER MOTOROLA IC22.	1	470	Pur
IC-TL072	.TL072P STM IC1,4,7,9,11,15,23,24.	8	480	Pur
IC-SSM2018	.SSM2018 VOLTAGE CONTR AMP. IC18,19.	2	490	Pur
IC-TL071	.TL071CN STM IC3.	1	500	Pur
LAMP001	.5682WT 14V T1.5 LP1.	1	510	Pur
POT000002	.RK11K1120A2HA 10KA LOG 10K A LOG POT VR2,3.	2	520	Pur
POT000003	.RK11K112002UA 10KB LIN 10KB LIN POT CD VR1.	1	530	Pur
POT000005	.RK14K12BOA16A 2x10KA LOG 10K+10K A LOG POT VR4-7.	4	540	Pur
SW000034	.ALPS SPUJ19122A 2POLE MOMENTARY SWITCH 19467A S18,19.	2	550	Pur
SW000035	.SPUJ 19128A 2PL LAT SW S1,2,5-11,15-17,22.	13	560	Pur
SW000036	.SPUJ 19123A 4POLE LATCH SWITCH 19515A S3,4,12-14.	5	570	Pur
SW000038	.ALPS SPUJ19124A 6POLE LATCHING SWITCH 19466A S20,21.	2	580	Pur
HEADER-80WAY	.STRIP 910F124002 LK1.	0.1	590	Bulk
D0014	.EL204ID RED LED L1,2,3,5,6.	5	600	Pur
D0047	.EL1224 VGD 3mm GREEN	1	610	Pur

P12877 SOLIT MASTER(VCA)CARD(P3 Revn P3 AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
	SUPER BRIGHT GRN DIFFUSE L4.			
PRE-50K-20TURN	.67W-R50K 3/8"SQ,20TURN VERTICAL PCB MNT TRIMMER P1,2.	2	650	Pur
HW-S/S/T/P	.433-854 TERMINAL PIN SIG,VCC,GND.	3	660	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC1-12,14-17,20,21,23,24.	20	670	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC13.	1	680	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC18,19,22.	3	690	Pur
TRN-MPS2222A	.MPS2222A T1.	1	700	Pur
HW-TAB-1/4V	.PCB1-250HTD 6.3x.8MM PCB MNT VERT MALE TAB CN12.	1	710	Pur
CLIP-MIC	.VM-1002 (100 PER BAG) CLIP FOR MIC CI.200	1		Pur
HW-No4x1/4-C/P	.No4x1/4 C/P BZP S/TAP AB	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P12877 SOLT VCD MAST(VCA) (P1) Revn P1 AN2581BL 05.07.94
AN2581BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12877	.SOLITAIRE MASTER PCB(C) P.T.H,FR4,B.B.TESTED HOTAIR LEVELD,PHOTOIMAGE RESIST,PLTD TO 1OZ CU.	1	10	Pur
R000010R	.FRN1/4W 10R 5% R174,175.	2	20	Pur
R000047R	.47R 1/4W 1% M/F R48,55,58,60,62,76,79,192,193.	9	30	Pur
R000068R	.68R 1/4W 1% M/F R2,14,28,40.	4	40	Pur
R000100R	.100R 1/4W 1% M/F R91,109.	2	50	Pur
R000180R	.180R 1/4W 1% M/F R27.	1	60	Pur
R000330R	.330R 1/4W 1% M/F R211,212.	2	70	Pur
R001K	.1K 1/4W 1% M/F R4,10,42,43,74.	5	80	Pur
R002K2	.2K2 1/4W 1% M/F R13,29,32,45,52,180,181.	7	90	Pur
R002K7	.2K7 1/4W 1% M/F R1,178,179.	3	100	Pur
R004K7	.4K7 1/4W 1% M/F R3,9,16,20,24,26,33,39,202, 205.	10	110	Pur
R010K	.10K 1/4W 1% M/F R5,6,8,11,12,15,18,21,22,25, 31,36,41,44,66,97,98,103,105, 113-116,118,122-125,128-129, 132,134,137,139,140,144-161, 164,165,176,177,184,185,189, 190,191,198,203,204,206,210.	67	120	Pur
R015K	.15K 1/4W 1% M/F R186,197.	2	130	Pur
R018K	.18K 1/4W 1% M/F R166,167,170-173.	6	140	Pur
R020K	.20K 1/4W 1% M/F R99,100,126,127,133,135,136, 141-143.	10	150	Pur
R022K	.22K 1/4W 1% M/F R63,69,77,80,82,84,95.	7	160	Pur
R033K	.33K 1/4W 1% M/F R72.	1	170	Pur
R039K	.39K 1/4W 1% M/F R101,102,104,106-108,110,112, 117,119-121.	12	180	Pur
R047K	.47K 1/4W 1% M/F	11	190	Pur

VCD-P12920 SOLT VCD IO MTR CARD(P2 Revn P2 AN2605BL 03.08.94
AN2605BL 3.08.94.

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12920	.SOLIT IO METER PCB(A) FR4,P.T.H,HOTAIR LEVELD PHOTOIMAGEABLE RESIST PLATED TO 1OZ COPPER	1	10	Pur
R000010R	.FRN1/4W 10R 5% R61,80.	2	20	Pur
R000082R	.82R 1/4W 1% M/F R8,11,17,29,42,54,69,82,95,99.	10	30	Pur
R000150R	.150R 1/4W 1% M/F R3,10.	2	40	Pur
R000180R	.180R 1/4W 1% M/F R4.	1	50	Pur
R000330R	.330R 1/4W 1% M/F R7.	1	60	Pur
R000470R	.470R 1/4W 1% M/F R6,9.	2	70	Pur
R000680R	.680R 1/4W 1% M/F R16,33,41,59,68,86,94,109.	8	80	Pur
R000750R	.750R 1/4W 1% M/F R2.	1	90	Pur
R001K2	.1K2 1/4W 1% M/F R1.	1	100	Pur
R003K3	.3K3 1/4W 1% M/F R22,47,74,102.	4	110	Pur
R004K7	.4K7 1/4W 1% M/F R58.	1	120	Pur
R005K1	.5K1 1/4W 1% M/F R5.	1	130	Pur
R008K2	.8K2 1/4W 1% M/F R18,31,43,56,70,84,97,107.	8	140	Pur
R010K	.10K 1/4W 1% M/F R21,23,24,34-36,46,48,49,60, 62,63,73,75,76,87-89,101,103, 104,106,112,113.	24	150	Pur
R039K	.39K 1/4W 1% M/F R19,30,44,55,71,83,98,111.	8	160	Pur
R047K	.47K 1/4W 1% M/F R12-14,20,26,27,32,37-39,45, 51,52,57,64-66,72,78,79,85, 90-92,100,105,108,110.	28	170	Pur
R150K	.150K 1/4W 1% M/F R15,25,28,40,50,53,67,77,81, 93,96,114.	12	180	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D2-5,7-20.	18	190	Pur
D0009	.IN4003 SYMBOL	2	200	Pur

P12918 SOLT MAS PATCH 1 CARD(P1 Revn P2 JEY 27.04.94

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12918	.SOLIT MAS PATCH 1 PCB(A FR4,P.T.H,HOTAIR LEVELD PHOTOIMAGEABLE RESIST PLTD TO 1OZ COPPER	1	10	Pur
CON0043	.RTT-34B-02 JACK J1-32.	32	20	Pur
CON-M40W	.0918-540-7913 HEADER CN1-3.	3	30	Pur
HW-TAB-1/4V	.PCB1-250HTD 6.3x.8MM PCB MNT VERT MALE TAB GND.	1	40	Pur
F-B13120/02	.SOLIT P/BAY PCB BRKT(P1 AN2483BL 02.03.94.	2		Pur
F-A13119/02	.SOLIT P/BAY CTR BRK(P1 AN2483BL 02.03.94.	1		Pur
HW-P-RIVET-48	.1661-0516 AVDEL RIVET WAS TAPD48BS TYPE AN2488JE. 17-02-94.	6		Pur

End of Report

P12883 SOLIT AUTO KEYBOARD(P1 Revn P2 JEY 07.04.94

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12883	.SOLIT KEYBOARD PCB(A) FR4,P.T.H,HOTAIR LEVELD PHOTOIMAGEABLE RESIST B.B.TESTD,PLTD TO 1ZO CU	1	10	Pur
R000010R	.FRN1/4W 10R 5% R3.	1	20	Pur
R000270R	.270R 1/4W 1% M/F R1,2,4-6.	5	30	Pur
DISPLAY-4	.SDM3-216D-BV-C-LD 2x16 ALPHANUMERIC MODL WITH LED BACKLIGHT.B/V	1	40	Pur
ENCODER2	.EVQWPLF2524B ENCODER METAL SHAFT,NO DETENT	1	50	Pur
PRE-5K-3/8HZ	.3104P-1-502 5K HRZ TRIMMER.MURATA P1.	1	60	Pur
HDR-VLMG-34WAY	.FCN-744P034-AU/R 34WY PCB MOUNT BOX HEADER CN1.	1	70	Pur
SW000029	.6425.0101 KB SWITCH 6420.0101 S6-11.	6	80	Pur
SW000030	.643100101 SW/RED LED 6425 4111(ALTERNATIVE) S1,2,4,5.	4	90	Pur
SW000031	.6431.0103 SW/GREEN LED 6425 4131(ALTERNATIVE) S3.	1	100	Pur
HW-S/S/T/P	.433-854 TERMINAL PIN DWA,DWB,DWGND(FIT ON SOLDER SIDE).	3	110	Pur
KEYCAP10	.826 000 011 15.5MM BLNK	6	120	Pur
KEYCAP12	.829 000 011 15.5MM BLNK	4		Pur
CON0112	.744-20,T&B SIL SKT	1	130	Pur
C-16WY-FLEXI	.151-963,2 FLEXISTRIP 16WAY,T&B	1	140	Pur
HW-M2.5x08-P/P	.M2.5x08 P/POZI BZP SCREW	4		Pur
HW-M2.5-FULLNU	.M2.5 FULLNUT BS4183 BZCP	4		Pur
HW-M2.5-FLAT	.M2.5 FLATWASG BS4183 BZP	4		Pur
HW-M2.5-SHAKEP	.M2.5 SHAKEPROOF INTERNAL TEETH WASHER	4		Pur
C-TCW-22SWG-B	.355-079 TIN.CU (200g/RL)	0.001		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P12882 SOLT MAS LOGIC REAR (P4 Revn P4 AN2620BL 06.09.94
AN2620BWL 06.09.94.

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12882	.SOLIT MIDI REAR PCB(B) S/SIDE,FR4,PHOTOIMAGE RESIST,PLATED TO 1OZ CU	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK1,2.	2	20	Pur
R000220R	.220R 1/4W 1% M/F R1-10.	10	30	Pur
CON-PCB09D-F	.9WAY CONN 472-152 CN2,4,6.	3	40	Pur
SOCK-05DIN	.D5-DIN SOCKET CN7-9,11-13.	6	50	Pur
CON-M10W	.0918-510-7913 HEADER CN1,10.	2	60	Pur
IDC-100-03RLMH	.1100-12-103-01 R/A LKG MALE HEADER.METHODE CN3.	1	70	Pur
IDC-100-06RLMH	.1100-12-106-01 6WY R/A LKG MALE 0.1" HEADER CN5.	1	80	Pur
F-B12207/02	.STU PB IP CARD BRKT(C)	1		Pur
HW-RIVET-2508	.1188-2508 6.78/6.17 BRASS AVTRONIC RIVET	7		Pur
F-B12145/01	.STG/STU EARTH BRKT(C)	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P12881 SOLT MAST 2 REAR CARD(P3 Revn P3 AN2581BL 05.07.94
AN2581BL 05.07.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12881	.SOLT VCD MAST REAR 2(P1 AN2581BL	1	10	
CON0003	.M203-43 JACK BLACK CN1-4,6-9.	8	20	Pur
HW-TAB-1/4RA	.PCB3-250 HTD 1/4 R/A PCB MOUNT TAB.20.65/1000 CN10,12.	2	30	Pur
CON-M40W	.0918-540-7913 HEADER CN5.	1	50	Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P12881 SOLT VCD MAST REAR 2(P1 Revn P1 AN2581BL 05.07.94
AN2581BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12881	.SOLIT MAS2 REAR PCB(A) S/SIDE,FR4,HOTAIR LEVELD PHOTOIMAGEABLE RESIST PLATED TO 1OZ COPPER	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK1,2,5,6,9,10,13,14,17,19,21, 23.	12	40	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	0.5		Bulk

End of Report

P12881A SOLT MAS REAR 2 LOW(P2 Revn P2 AN2581BL 05.07.94
AN2581BL 05.07.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12881A	.SOLT VCD M/REAR 2 LW(P1 AN2581BL	1	10	
CON0003	.M203-43 JACK BLACK CN1-4,6-9.	8	20	Pur
HW-TAB-1/4RA	.PCB3-250 HTD 1/4 R/A PCB MOUNT TAB.20.65/1000 CN10,12.	2	30	Pur
CON-M40W	.0918-540-7913 HEADER CN5.	1	50	Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P12881A SOLT VCD M/REAR 2 LW(P1 Revn P1 AN2581BL 05.07.94
AN2581BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12881	.SOLIT MAS2 REAR PCB(A) S/SIDE,FR4,HOTAIR LEVELD PHOTOIMAGEABLE RESIST PLATED TO 1OZ COPPER	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK3,4,7,8,11,12,15,16,18,20, 22,24.	12	40	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	0.5		Bulk

End of Report

P12880 SOLT MASTER REAR 1 (P5) Revn P5 AN2626BL 23.08.94
AN2626BL 23.08.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12880	.SOLT VCD MAS REAR 1 (P2) AN2626BL	1	10	
CON0003	.M203-43 JACK BLACK CN2-4,6-9,11.	8	20	Pur
HW-TAB-1/4RA	.PCB3-250 HTD 1/4 R/A PCB MOUNT TAB.20.65/1000 CN10,12.	2	30	Pur
CON0019	.NC3MGHI CN1.	1	40	Pur
CON-M40W	.0918-540-7913 HEADER CN5.	1	50	Pur
HW-No2x1/4-P/P	.No2x1/4 P/P TYPE B BZP	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P12880 SOLT VCD MAS REAR 1 (P2) Revn P2 AN2626BL 22.08.94
AN2626BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12880	.SOLIT MAS1 REAR PCB(A) S/SIDE,FR4,HOTAIR LEVELD PLATED TO 1OZ COPPER PHOTOIMAGEABLE RESIST	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK1,2,5,6,9,11,13,15,16,19,20, 23,24,27.	14	60	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	0.5		Bulk

End of Report

P12880A SOLT MAS REAR 1 LOW(P6) Revn P6 AN2616BL 02.09.94
AN2616BWL 02.09.94.
0

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12880A	.SOLT VCD M/REAR 1 LW(P2) AN2626BL	1	10	
CON0003	.M203-43 JACK BLACK CN2-4,6-9.	7	20	Pur
HW-TAB-1/4RA	.PCB3-250 HTD 1/4 R/A PCB MOUNT TAB.20.65/1000 CN10,12.	2	30	Pur
CON0019	.NC3MGHI CN1.	1	40	Pur
CON-M40W	.0918-540-7913 HEADER CN5.	1	50	Pur
HW-No2x1/4-P/P	.No2x1/4 P/P TYPE B BZP	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P12880A SOLT VCD M/REAR 1 LW(P2) Revn P2 AN2626BL 23.08.94
AN2626BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12880	.SOLIT MAS1 REAR PCB(A) S/SIDE,FR4,HOTAIR LEVELD PLATED TO 1OZ COPPER PHOTOIMAGEABLE RESIST	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK3,4,7,8,10,12,14,17,18,21, 22,25,26,27.	14	60	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	0.5		Bulk

End of Report

VCD-P12878 SOLT VCD AUX MAS CARD(P2 Revn P2 AN2621B 22.08.94
AN2621BWL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12878	.SOLIT FX AUXMAS PCB(B) P.T.H,FR4,HOTAIR LEVELD PHOTOIMAGE RESIST B.B TESTED,PLTD TO 1OZ CU	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK4-9.	6	15	Pur
R000010R	.FRN1/4W 10R 5% R57,58.	2	20	Pur
R000047R	.47R 1/4W 1% M/F R56,66.	2	30	Pur
R000100R	.100R 1/4W 1% M/F R68.	1	40	Pur
R002K2	.2K2 1/4W 1% M/F R43,47,70,71.	4	50	Pur
R002K7	.2K7 1/4W 1% M/F R50.	1	60	Pur
R003K3	.3K3 1/4W 1% M/F R35,38.	2	70	Pur
R003K9	.3K9 1/4W 1% M/F R28,31.	2	80	Pur
R004K7	.4K7 1/4W 1% M/F R44,45,49,51,52.	5	90	Pur
R005K6	.5K6 1/4W 1% M/F R17,30.	2	100	Pur
R006K8	.6K8 1/4W 1% M/F R1,3,7,13-15.	6	110	Pur
R007K5	.7K5 1/4W 1% M/F R16,18.	2	120	Pur
R010K	.10K 1/4W 1% M/F R4,5,8,12,21,22,27,29,36,37, R59,62,33,34.	14	130	Pur
R020K	.20K 1/4W 1% M/F R2,6,9,11,55,65,39,40,60,61.	10	140	Pur
R022K	.22K 1/4W 1% M/F R69.	1	150	Pur
R033K	.33K 1/4W 1% M/F R10,19,20,32.	4	160	Pur
R100K	.100K 1/4W 1% M/F R23-26,41,42,46,48,53,54,63, 64,67.	13	170	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C4,6,19,21.	4	200	Pur
CAP0046l	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C3,5,8,12,15,17,20,22,23,26, 28,33.	12	210	Pur

VCD-P12878 SOLT VCD AUX MAS CARD(P2 Revn P2 AN2621B 22.08.94

Stock Number	Description	Quantity	Ref.	Class.
CAP0095	.ECBR1H180JCW 18PF AXIAL CERAMIC CAP.5% PANASONIC C13,18,29,32.	4	240	Pur
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW C1,2,9,11,24,25.	6	250	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D3,4.	2	310	Pur
D0009	.IN4003 SYMBOL D1,2.	2	320	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	2		Bulk

End of Report

VCD-P12877 SOLT VCD MAST(VCA) (P1) Revn P1 AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
	R34,53,56,61,70,81,86-89,94.			
R100K	.100K 1/4W 1% M/F R23,37,38,46,47,49-51,54,57, 59,64,65,67,68,71,73,75,78,83, 85,90,92,93,111,162,163,187, 188,194-196,199,200,208,209.	36	200	Pur
R150K	.150K 1/4W 1% M/F R182,183.	2	210	Pur
R470K	.470K 1/4W 1% M/F R168,169.	2	220	Pur
RR1M	.1M 1/4W 1% M/F R7,19,30,35.	4	230	Pur
R10M	.10M 1/4W 2% M/F R17.	1	240	Pur
IND-BEAD	.BL01RN1-A62TS BEAD IND FERRITE BEAD INDUCTOR IN1-11.	11	250	Pur
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C105,108.	2	280	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C1,5,48,51,125,131.	6	290	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C3,7,15,18,24,26,27,33,36,38, 42,43,45-47,50,53,56-58,70,71, 73,76,85,93-96,111,116, 118-120,122,126-129.	39	300	Pur
CAP0095	.ECBR1H180JCW 18PF AXIAL CERAMIC CAP.5% PANASONIC C19,23,28,29,32,34,35,39,44, 62,63,67,69,114,115,124,130.	17	320	Pur
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW C4,6,8,9,12,17,37,49,52,55,59, 68,72,79-84,92,97,100,101,104, 106,107,109,121,123.	29	330	Pur
D0004	.BZX55C5V1 ZENER ITT D3,4.	2	620	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D1,2,5.	3	630	Pur
D0009	.IN4003 SYMBOL D6,7.	2	640	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING	2		Bulk

VCD-P12877 SOLT VCD MAST(VCA) (P1) Revn P1 AN2581BL 05.07.94

Stock Number	Description	Quantity	Ref.	Class.
	3000M/ROLL			

End of Report

VCD-P12760 SOLT RH (VCA) IP (P2) Revn P2 AN2592BL 20.07.94
AN2592BL 20.07.94.

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12760	.SOLITAIRE R.H IO PCB(C) P.T.H,FR4,B.B.TESTED,HOT AIRLEVELD,PLTD TO 1OZ CU PHOTOIMAGEABLE RESISIT.	1	10	Pur
R00004R7	.FA8225-4R7J FUSE RESIST 1/4W OR FRN1/4W-4R7-5% R123,124.	2	20	Pur
R000022R	.22R 1/4W 1% M/F R6.	1	30	Pur
R000100R	.100R 1/4W 1% M/F R61,103,104,109,126,127,142.	7	40	Pur
R000470R	.470R 1/4W 1% M/F R7.	1	50	Pur
R000680R	.680R 1/4W 1% M/F R65,70.	2	60	Pur
R001K	.1K 1/4W 1% M/F R147.	1	65	Pur
R001K5	.1K5 1/4W 1% M/F R72,77.	2	70	Pur
R001K8	.1K8 1/4W 1% M/F R33.	1	80	Pur
R002K2	.2K2 1/4W 1% M/F R5,50,89,94,98.	5	90	Pur
R002K7	.2K7 1/4W 1% M/F R48,88.	2	100	Pur
R003K3	.3K3 1/4W 1% M/F R18.	1	110	Pur
R003K9	.3K9 1/4W 1% M/F R36,81,82,87,90.	5	120	Pur
R004K7	.4K7 1/4W 1% M/F R29,35,42,46,60,73,95,97,110, 111,114,117,122,129.	14	130	Pur
R006K8	.6K8 1/4W 1% M/F R1,4,62,64,71.	5	140	Pur
R007K5	.7K5 1/4W 1% M/F R12,14.	2	150	Pur
R008K2	.8K2 1/4W 1% M/F R107,108,133,134.	4	160	Pur
R010K	.10K 1/4W 1% M/F R9,11,17,20-23,25-28,30,31,32, 39,47,51,56,57,59,63,69,78, 113,116,119,121,130,132, 136-138,140,141,145,146,148, 149.	38	170	Pur
R012K	.12K 1/4W 1% M/F R49.	1	180	Pur
R013K	.13K 1/4W 1%M/F RESISTOR	1	190	Pur

VCD-P12760 SOLT RH (VCA) IP (P2) Revn P2 AN2592BL 20.07.94

Stock Number	Description	Quantity	Ref.	Class.
	R54.			
R015K	.15K 1/4W 1% M/F R13,16,19.	3	200	Pur
R018K	.18K 1/4W 1% M/F R38,41,43,52,83,85,86.	7	210	Pur
R022K	.22K 1/4W 1% M/F R2,3,10,34,37,44,45,120,139, 143.	10	220	Pur
R047K	.47K 1/4W 1% M/F R66-68,79,80,144.	6	230	Pur
R068K	.68K 1/4W 1% M/F R102,105,125,128.	4	240	Pur
R100K	.100K 1/4W 1% M/F R8,24,55,58,76,92,93,96, 99-101,106,112,115,118,131, 135.	17	250	Pur
R150K	.150K 1/4W 1% M/F R53,91.	2	260	Pur
R470K	.470K 1/4W 1% M/F R40,84.	2	270	Pur
RR1M	.1M 1/4W 1% M/F R74,75.	2	280	Pur
CAP0095	.ECBR1H180JCW 18PF AXIAL CERAMIC CAP.5% PANASONIC C6,12,15,33,43.	5	290	Pur
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW C5,8,11,18,20,22,26,30,51,53, 55,56,68,69.	14	300	Pur
CAP0102	.ECBR1H471KBW 470PF AXIAL CERAMIC CAPACITOR C9.	1	310	Pur
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C29,39,44,52.	4	380	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C10,13,37,38,42,46-48.	8	390	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C1,3,4,16,21,23,24,28,32, 34-36,49,50,54,57-62,65-67.	24	400	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D7,8.	2	500	Pur
D0009	.IN4003 SYMBOL	2	530	Pur

VCD-P12760 SOLT RH (VCA) IP (P2) Revn P2 AN2592BL 20.07.94

Stock Number	Description	Quantity	Ref.	Class.
	D5,6.			
D0069	.BAV21 SWITCHING DIODE DO-35 PACKAGE	2	540	Pur
	D1,2.			
IND-BEAD	.BL01RN1-A62TS BEAD IND FERRITE BEAD INDUCTOR	1	600	Pur
	IN1.			
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	2		Bulk

End of Report

P12760 SOLT R.H(VCA) IP CARD(P6 Revn P6 AN2592BL 20.07.94
AN2592BL 20.07.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12760	.SOLT RH (VCA) IP (P2) AN2592BL 20.07.94.	1	10	
R003K3	.3K3 1/4W 1% M/F R15.	1	15	Pur
CAP0014	.ECQB1J102JZ 1N PANASON (630-19102) C71.	1	315	Pur
CAP0015	.ECQB1J222JZ 2N2 PANASON (630-19222) C14.	1	320	Pur
CAP0016	.ECQB1J272JZ 2N7 PANASON C41.	1	330	Pur
CAP0110	.ECQB1J153JZ 15N DIPP POLY CAP.PANASONIC C31.	1	340	Pur
CAP0026	.ECQB1J223JZ 22N PANASON (368-55223) C27.	1	350	Pur
CAP0027	.ECQV1J473JZ 47N PANASON (368-45473) C25.	1	360	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C40.	1	370	Pur
CAP0029	.ECQV1J224JZ 220N PANASON C45.	1	410	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C63,64.	2	420	Pur
CAP0085	.ECQB1J332JZ 3N3 PANASONI CERAMICCAPACITOR C17.	1	430	Pur
CAP0102	.ECBR1H471KBW 470PF AXIAL CERAMIC CAPACITOR C7.	1	125	Pur
CAP0118	.ECQB1J152JZ 1N5 DIPPED POLYESTER CAP.PANASONIC C19.	1	440	Pur
CAP0074	.1000U/10V ECEA1AU102 PAN C2.	1	450	Pur
CAP0123	.ECEA0GKA471 470UF/4V RADIAL(8x7MM)PANASONIC C70.	1	460	Pur
TRN-2SD786S	.2SD786S TRANSISTOR T1,2.	2	470	Pur
TRN-BC549C	.BC549C ITT T3,4,6.	3	480	Pur
TRN-MPS2222A	.MPS2222A	1	490	Pur

P12760 SOLT R.H(VCA) IP CARD(P6 Revn P6 AN2592BL 20.07.94

Stock Number	Description	Quantity	Ref.	Class.
	T5.			
D0069	.BAV21 SWITCHING DIODE DO-35 PACKAGE D3,4.	2	185	Pur
D0047	.EL1224 VGD 3mm GREEN SUPER BRIGHT GRN DIFFUSE L1,4,5,8.	4	510	Pur
D0014	.EL204ID RED LED L2,3,6,7,9.	5	520	Pur
IC-TL072	.TL072P STM IC1,3,5-7,10,11,13.	8	540	Pur
IC-TL074	.TL074CN STM IC2.	1	550	Pur
IC-SSM2018	.SSM2018 VOLTAGE CONTR AMP. IC4,9.	2	560	Pur
IC-2502	.PS2502-4 QUAD OPTO ISOLATOR.NEC IC12,14.	2	570	Pur
IC-NE5532	.NE5532 (TI) IC15.	1	580	Pur
IC-2402	.SSM2402 SWITCH PMI IC8.	1	590	Pur
SW000034	.ALPS SPUJ19122A 2POLE MOMENTARY SWITCH 19467A S9,10,12,19,20,22.	6	610	Pur
SW000035	.SPUJ 19128A 2PL LAT SW S2-5,7,13-17,23.	11	620	Pur
SW000036	.SPUJ 19123A 4POLE LATCH SWITCH 19515A S1,6,8,11,18,21,24-30.	13	630	Pur
CON-M50W	.0918-550-7913 HEADER CN3,6.	2	640	Pur
CON-M26W	.0918-526-7913 HEADER CN1.	1	650	Pur
POT000002	.RK11K1120A2HA 10KA LOG 10K A LOG POT VR13,15-19.	6	660	Pur
POT000003	.RK11K112002UA 10KB LIN 10KB LIN POT CD VR3,5,7,9-11.	6	670	Pur
POT000004	.RK14K122001XA 2x10KB LIN 10K+10K B LIN CD POT VR12,14,20,21.	4	680	Pur
POT000006	.RK14K122OAOYA 2x20KCRLOG 20K+20K C R LOG POT VR1.	1	690	Pur

P12760 SOLT R.H(VCA) IP CARD(P6 Revn P6 AN2592BL 20.07.94

Stock Number	Description	Quantity	Ref.	Class.
POT000007	.RK14K12BOA15A 2x100KCRLG 100K+100K C R LOG POT VR2,4,6,8.	4	700	Pur
PRE-500K-VRT	.72RX-R500K 500K TRIMMER VERT,PCB MNT,F/ADJ P1,2.	2	710	Pur
CON0093	.1000-010-2101 10WY SKT METHODE 0.1" SIL. LK2,3,8,26.	4	720	Pur
IDC-100-03VLMH	.1100-8-103-01 LKG HDR METHODE CN2,4,5.	3	730	Pur
HEADER-80WAY	.STRIP 910F124002 LK1,16,18,35,38,39.	1.025	740	Bulk
RN-10K-DIL16	.4116R-001-103 8 ISOLATED RESISTORS BOURNS RP1-4.	4	750	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC1,3,5-7,10,11,13,15.	9	760	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC2,8.	2	770	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC4,9,12,14.	4	780	Pur
CON0057	.76265101 DUPONT LOOSE PIECES.	6		Pur
HW-M3x3.8-CSPA	.B11574/07 ISSUE E.	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P12878 SOLIT AUX MASTER CARD(P4 Revn P4 AN2621 22.08.94
AN2621BWL 22.08.94

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12878	.SOLT VCD AUX MAS CARD(P2 AN2621BWL	1	10	
CAP0016	.ECQB1J272JZ 2N7 PANASON C7,10.	2	180	Pur
CAP0029	.ECQV1J224JZ 220N PANASON C14,16.	2	190	Pur
CAP0074	.1000U/10V ECEA1AU102 PAN C27,34.	2	220	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C30,31.	2	230	Pur
IC-TL072	.TL072P STM IC1,4.	2	260	Pur
IC-TL074	.TL074CN STM IC2.	1	270	Pur
IC-2402	.SSM2402 SWITCH PMI IC3,6.	2	280	Pur
IC-NE5532	.NE5532 (TI) IC7.	1	290	Pur
IC-2502	.PS2502-4 QUAD OPTO ISOLATOR.NEC IC5.	1	300	Pur
D0014	.EL204ID RED LED L2,4,6.	3	330	Pur
D0047	.EL1224 VGD 3mm GREEN SUPER BRIGHT GRN DIFFUSE L1,3,5.	3	340	Pur
TRN-MPS2222A	.MPS2222A T1.	1	350	Pur
SW000034	.ALPS SPUJ19122A 2POLE MOMENTARY SWITCH 19467A S5,7,9.	3	360	Pur
SW000035	.SPUJ 19128A 2PL LAT SW S2-4,6,8.	5	370	Pur
SW000036	.SPUJ 19123A 4POLE LATCH SWITCH 19515A S1.	1	380	Pur
POT000002	.RK11K1120A2HA 10KA LOG 10K A LOG POT VR6,7.	2	390	Pur
POT000004	.RK14K122001XA 2x10KB LIN 10K+10K B LIN CD POT VR1-3,5.	4	400	Pur
POT000007	.RK14K12BOA15A 2x100KCRLG 100K+100K C R LOG POT VR4.	1	410	Pur
IDC-100-03VLMH	.1100-8-103-01 LKG HDR	2	420	Pur

P12878 SOLIT AUX MASTER CARD(P4 Revn P4 AN2621 22.08.94

Stock Number	Description	Quantity	Ref.	Class.
	METHODE			
	CN3,4.			
CON-M40W	.0918-540-7913 HEADER	2	430	Pur
	CN1,2.			
CON-M34W	.0918-534-7913 HEADER	1	440	Pur
	CN5.			
HEADER-80WAY	.STRIP 910F124002	1.5	450	Bulk
	LK1-3,10-12.			
SOCK-IC-DIL08	.634008 IC SOCKET	3	460	Pur
	TAICOM			
	IC1,4,7.			
SOCK-IC-DIL14	.634014 IC SOCKET	3	470	Pur
	TAICOM			
	IC2,3,6.			
SOCK-IC-DIL16	.634016 IC SOCKET	1	480	Pur
	TAICOM			
	IC5.			
CON0057	.76265101 DUPONT	16		Pur
	LOOSE PIECES.			
SLD001	.FLOWSOLDER (4BARS/KG)LDC	0.001		Bulk
	TRU-ALLOY GRADE KP			
	60/40 SOLDER			
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13173 SOLT STD L/H STER (P2) Revn P2 AN2640NK 14.10.94
AN2640QH 14-10-94

Stock Number	Description	Quantity	Ref.	Class.
PCB-P13173	.SOLT STEREO LH PCB(P2 FR4,P.T.H,HOTAIR LEVELD PHOTOIMAGEABLE RESIST B.B.TEST,PLTD TO 1OZ CU	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK6,7.	2	20	Pur
R000010R	.FRN1/4W 10R 5% R7,8.	2	30	Pur
R000039R	.39R 1/4W 1% M/F R15.	1	40	Pur
R000100R	.100R 1/4W 1% M/F R29,81,82.	3	50	Pur
R001K	.1K 1/4W 1% M/F R54.	1	60	Pur
R002K2	.2K2 1/4W 1% M/F R44,47.	2	70	Pur
R004K7	.4K7 1/4W 1% M/F R25-28,30,32,34,36-38,41.	11	80	Pur
R005K1	.5K1 1/4W 1% M/F R39,40,49,52,55,60,62,66.	8	90	Pur
R010K	.10K 1/4W 1% M/F R31,33,45,46,48,50,51,53, 56-59,61,63-65,67-78.	28	100	Pur
R027K	.27K 1/4W 1% M/F R18.	1	110	Pur
R018K	.18K 1/4W 1% M/F R2,3,5,10,11,13.	6	120	Pur
R022K	.22K 1/4W 1% M/F R17.	1	130	Pur
R047K	.47K 1/4W 1% M/F R16.	1	140	Pur
R100K	.100K 1/4W 1% M/F R19,35,42,43,79,80.	6	150	Pur
R120K	.120K 1/4W 1% M/F R21,22.	2	160	Pur
R150K	.150K 1/4W 1% M/F R6,14.	2	170	Pur
R220K	.220K 1/4W 1% M/F R20,23,24.	3	180	Pur
R470K	.470K 1/4W 1% M/F R1,9.	2	190	Pur
R10M	.10M 1/4W 2% M/F R4,12.	2	200	Pur
D0004	.BZX55C5V1 ZENER ITT Z1.	1	210	Pur
D0007	.OA91 PHILIPS D4.	1	220	Pur

P13173 SOLT STD L/H STER (P2) Revn P2 AN2640NK 14.10.94

Stock Number	Description	Quantity	Ref.	Class.
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D3,6-12.	8	230	Pur
D0009	.IN4003 SYMBOL D1,2,5.	3	240	Pur
CAP0017	.ECQB1J472JZ 4N7 PANASON (630-19472) C4,10.	2	250	Pur
CAP0019	.ECQB1J103JZ 10N PANASON (368-55103) C12-14,16,35.	5	260	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C20,29,33,34.	4	270	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C15,17,19,38,39.	5	280	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C1,7,11,18,21-23,25,26,30-32, 40,44,45,48,53,55-57.	20	290	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C5,6.	2	300	Pur
CAP0095	.ECBR1H180JCW 18PF AXIAL CERAMIC CAP.5% PANASONIC C2,8,36,37.	4	310	Pur
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW C3,9,24,27,41-43,46,47,49-52, 54.	14	320	Pur
CAP0102	.ECBR1H471KBW 470PF AXIAL CERAMIC CAPACITOR C28.	1	330	Pur
IC-TL072	.TL072P STM IC3,4.	2	340	Pur
IC-TL074	.TL074CN STM IC6,9-11.	4	350	Pur
IC-SSM2018	.SSM2018TP VOLT CONTR AMP. IC1,2.	2	360	Pur
IC-LM339	.LM339N STM IC8.	1	370	Pur
IC-4053	.4053B TRIPLE 2CH MULTI PLEXER (TOSHIBA) USE HEF4053BP AFTERUSING TOSHIBA DEVICES.	1	380	Pur

P13173 SOLT STD L/H STER (P2) Revn P2 AN2640NK 14.10.94

Stock Number	Description	Quantity	Ref.	Class.
	IC7.			
IC-4551	.MC14551BCP QUAD 2IP ANA LOG MULTI/DEMULTIPLEXER MOTOROLA	1	390	Pur
	IC5.			
PRE-100K-VRT	.72RX-R100K 100K TRIMMER VERT,PCB MNT,F/ADJ	2	400	Pur
	P2,4.			
PRE-500K-VRT	.72RX-R500K 500K TRIMMER VERT,PCB MNT,F/ADJ	2	410	Pur
	P1,3.			
SW000035	.SPUJ 19128A 2PL LAT SW 0.26 US DOLLARS	5	420	Pur
	S1-5.			
CON0003	.M203-43 JACK BLACK	4	430	Pur
	CN2-5.			
CON0092	.CAP0017-10 SPACED HDR METHODE 0.1".	4	440	Pur
	LK1-3,5.			
CON-M16W	.0918 516 7913 HEADER	1	450	Pur
	CN1.			
HEADER-80WAY	.STRIP 910F124002	0.1	460	Bulk
	LK4.			
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13159 SOLT DYN VCA CARD(P3 Revn P3 AN2616BL 02.09.94
AN2616BWL 02.09.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P13159	.SOLT VCD DYN VCA CARD(P1 AN2616BWL 01.09.94.	1	10	
RN-10K-SIL08	.4608X-102-103(10K) RP2-4,6,8-10,12,14-16,18, 20-22,24.	16	130	Pur
RN-4K7-SIL08	.4608X-102-472 RP1,5,7,11,13,17,19,23.	8	140	Pur
D0007	.OA91 PHILIPS D3,6,9,12,15,18,21,26.	8	150	Pur
CAP0019	.ECQB1J103JZ 10N PANASON (368-55103) C13,15,18,32,44,46,48,62,74, 76,78,92,104,106,109,122.	16	180	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C16,27,47,57,77,87,107.	7	190	Pur
CAP0077	.100U 10V ECEA1AU101 PAN C2-4,8,9,19,24,25,29,30,34-36, 40,41,49,54,55,59,60,64-66,70, 71,79,84,85,89,90,94-96,100, 101,110,115,116,119,120.	40	200	Pur
CAP0079	.22U/25V ECEA1EU220 PAN C1,5,12,17,20,28,33,37,50,58, 63,67,80,88,93,97,108,111,118.	19	210	Pur
CAP0097	.ECBR1H470JCW 47PF AXIAL CERAMIC CAP.5% PANASONIC ECBR1H470JW OR ECBT1H470JW C11,C113.	2	220	Pur
PRE-500K-SAMT	.64X-504 500K S/ADJ VERT TRIMMER P2,4,6,8,10,12,14,16.	8	230	Pur
PRE-100K-SAMT	.64X-104 100K S/ADJ VERT TRIMMER P1,3,5,7,9,11,13,15.	8	240	Pur
IC-SSM2018	.SSM2018 VOLTAGE CONTR AMP. IC1,5,8,12,15,19,22,26.	8	250	Pur
IC-TL074	.TL074CN STM IC3,7,10,14,17,21,24,28.	8	260	Pur
IC-4053	.4053B TRIPLE 2CH MULTI PLEXER (TOSHIBA) USE HEF4053BP AFTERUSING	8	270	Pur

P13159 SOLT DYN VCA CARD(P3 Revn P3 AN2616BL 02.09.94

Stock Number	Description	Quantity	Ref.	Class.
	TOSHIBA DEVICES. IC2,6,9,13,16,20,23,27.			
IC-LM339	.LM339N STM IC4,11,18,25.	4	280	Pur
HDR-VLMG-26WAY	.FCN-744P026-AU/R CN1,3.	2	290	Pur
HDR-VLMG-34WAY	.FCN-744P034-AU/R 34WY PCB MOUNT BOX HEADER CN2.	1	300	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC3,4,7,10,11,14,17,18,21,24, 25,28.	12	310	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC1,2,5,6,8,9,12,13,15,16,19, 20,22,23,26,27.	16	320	Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13158 SOLT DYN PROCESS CARD(P2 Revn P2 AN2616BL 02.09.94
AN2616BWL 02.09.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P13158	.SOLT VCD DYN PRO CARD(P1 AN2616BWL 01.09.94.	1	10	
RN-47K-SIL09	.4609X-101-473 BOURNES RN1,2.	2	110	Pur
RN-4K7-SIL09	.L09-1-R4K7 4K7 SIL 9PIN 8COMMON RESIST RN9.	1	120	Pur
RN-470R-SIL09	.4609X-101-471 BOURNES RN7,8.	2	130	Pur
RN-100R-DIL16	.4116R-001-101 BOURNES RN5,6.	2	140	Pur
RN-470R-DIL16	.898-3-R470 470R RES NETWORK RN3,4.	2	150	Pur
CAP0002	.18pf 100V RD8706NP0180G6 MURATA(DD003226CH180D50) (683-10189) C24,30.	2	190	Pur
CAP00061	.DD003226B221K50 220PF 100V MURATA CERAMIC (683-58221) C44,45.	2	200	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C1-11,14-16,22,23,25-29,34-42, 46,47,51,52,54,55,57,58.	38	210	Pur
CAP0045	.ECEA1JU470 47U/63V PANAS (035-59479) C12,20,21,32.	4	230	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C13,33.	2	240	Pur
CAP0091	.DD104SL220J50 22PF MURATA CERAMIC CAP C48,53,56.	3	250	Pur
CRYS-10.000MHz	.MK10000A HC-18U 10MHz CRYSTAL X1.	1	260	Pur
PRE-50K-MT	.433PW-1-503 BOURNES P1.	1	270	Pur
IC-TL071	.TL071CN STM IC15.	1	280	Pur
IC-TL072	.TL072P STM IC16.	1	290	Pur
IC-4051	.HCF4051BEY SINGLE 8CH ANALOG MULTI/DEMULT STM IC8,9.	2	300	Pur

P13158 SOLT DYN PROCESS CARD(P2 Revn P2 AN2616BL 02.09.94

Stock Number	Description	Quantity	Ref.	Class.
IC-AD781	.AD781JN SAMPLE AND HOLD AMPLIFIER,100ns. ANALOG DEVICE. IC11.	1	310	Pur
IC-7672	.AD7672KN03 12BIT A/D CONVERTER IC13.	1	320	Pur
IC-74HCT32	.74HCT32 STM IC17.	1	330	Pur
IC-62256-10	.GM76C256L-100ns 256K STATIC RAM GOLDSTAR IC30.	1	340	Pur
IC-GAL20V8	.GAL20V8AS-15QB1 STM/NATIONAL PALCE20V8Q15PC AMD IC24,31.(ISSUE TO TEST).	2	350	Pur
IC-DAC8221	.DAC8221HP DUAL 12BIT BUFFERED MNLTIPLYING CMOS D/A CONVERTER. ANALOG DEVICE. IC14.	1	360	Pur
IC-74HC174	.M74HC174B1R HEX D-TYPE FLIP-FLOP WITH CLEAR IC18,22,23.	3	370	Pur
IC-74HCT574	.M74HCT574B1R OCTAL D-TYP FLIP-FLOP(3STATE) IC19,29.	2	380	Pur
IC-74LS244	.74LS244 STM IC20,21.	2	390	Pur
IC-74HCT245	.74HCT245E TOSH IC25,27,28.	3	400	Pur
IC-ADSP2105	.ADSP2105KP40 DSP IC ANALOG DEVICE IC26.	1	410	Pur
IC-74HCT240	.74HCT240 IC4,5.	2	420	Pur
IC-SSM2300	.PMI SSM2300 8CH/MULTTIPX SAMPLE-AND-HOLD IC IC1,2,7,10.	4	430	Pur
IC-L7812	.L7812CV 12V/1.5A +VE VOLTAGE REGULATOR,T0220 IC12.	1	440	Pur
IC-L7905	.L7905CV 5V/1.5A -VE VOLTAGE REGULATOR,T0220. IC6.	1	450	Pur
IC-L7912	.L7912CV 12V/1.5A -VE VOLTAGE REGULATOR,T0220 IC3.	1	460	Pur

P13158 SOLT DYN PROCESS CARD(P2 Revn P2 AN2616BL 02.09.94

Stock Number	Description	Quantity	Ref.	Class.
HEADER-80WAY	.STRIP 910F124002 LK2,3,4.	0.3	470	Bulk
CON-M50W	.0918-550-7913 HEADER CN6.	1	480	Pur
CON-M20W	.0918-520-7913 HEADER CN5,7.	2	490	Pur
HDR-VLMG-26WAY	.FCN-744P026-AU/R CN1-4.	4	500	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC11,15,16.	3	510	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC17.	1	520	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC1,2,7-10,18,22,23.	9	530	Pur
SOCK-TPS-DIL24	.634324ATAICOM 0.3 24PIN PACK OF 17 PIECES IC13,14,24,31.	4	535	Pur
IC-TPS-DIL20	.634320 TURNED PIN IC SOCKET.0.3" PITCH TAICOM IC4,5,19-21,25,27-29.	9	540	Pur
IC-TPS-DIL28	.634328 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC30.	1	550	Pur
SOCK-IC-68PLCC	.213-068-401 68PIN PLCC IC SOCKET 213-068-401 IC26.	1	560	Pur
C-TCW-22SWG-B	.355-079 TIN.CU (200g/RL)	0.001		Pur
HW-M3x08-P/P	.M3x8 P/P BZP BS4183	3		Pur
HW-NR231A	.RECT METAL WASH 471109	3		Pur
HW-M3-FLAT	.M3 FLATWASHER BS4183BZCP	3		Pur
HW-M3-SHAKEPRO	.M3 S/P/W BS4183 BZCP	6		Pur
HW-M3-FULLNUT	.M3 FULLNUT BS4183 BZCP	3		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13135 SOLIT DYNAMICS CPU(P1 Revn P1 JEY 28.04.94

Stock Number	Description	Quantity	Ref.	Class.
PCB-P13135	.SOLIT DYNAMICS CPU PCB(B FR4,P.T.H,HOTAIRLEVELLED PHOTOIMAGEABLE RESIST, PLATED TO 1OZ COPPER	1	10	Pur
R000010R	.FRN1/4W 10R 5% R3.	1	20	Pur
R001K	.1K 1/4W 1% M/F R4.	1	30	Pur
R004K7	.4K7 1/4W 1% M/F R1,2.	2	40	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D1-4,6.	5	50	Pur
D0009	.IN4003 SYMBOL D5.	1	60	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C5,8,10,11-13.	6	70	Pur
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C1-4.	4	80	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C9.	1	90	Pur
CAP0091	.DD104SL220J50 22PF MURATA CERAMIC CAP C6,7.	2	100	Pur
IC-Z180	.Z8018006VSC ZILOG 68PIN PLCC PROCESSOR IC2.	1	110	Pur
IC-MAX232	.MAX232CPE RS232DRV/RECEI MAXIM DEVICE 16PIN DIL IC1.	1	120	Pur
IC-MAX691	.MAX691 UP SUPERVISORY MICROPROCESSOR CIRCUIT IC7.	1	130	Pur
IC-82C55	.D71055C CMOS (NEC) PARALLEL INTERFACE UNIT. IC4.	1	140	Pur
IC-62256-10	.GM76C256L-100ns 256K STATIC RAM GOLDSTAR IC5.	1	150	Pur
IC-74HCT138	.74HCT138 TOSH IC3.	1	160	Pur
IC-74HCT04	.74HCT04E STM IC8.	1	170	Pur
IC-74HCT08	.74HCT08E STM IC9.	1	180	Pur
IC-27C256-10	.M27C256B-10XF1 256K	1	190	Pur

P13135 SOLIT DYNAMICS CPU(P1 Revn P1 JEY 28.04.94

Stock Number	Description	Quantity	Ref.	Class.
	EPROM,DIL,0.6"PITCH IC6. 'ISSUE TO TEST'			
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC8,9.	2	200	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC1,3,7.	3	210	Pur
IC-TPS-DIL28	.634328 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC5,6.	2	220	Pur
IC-TPS-DIL40	.634340 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC4.	1	230	Pur
SOCK-IC-68PLCC	.213-068-401 68PIN PLCC IC SOCKET 213-068-401 IC2.	1	240	Pur
RN-10K-SIL09	.4609X-101-103(10K) RN1,2.	2	250	Pur
CRYS-12.288MHz	.MK12288A HC-18U 12.288 MHz CRYSTAL X1.	1	260	Pur
BAT1	.3/100 DKO BATTERY MEMO BAT1. 'ISSUE TO TEST'	1	270	Pur
ENCODER3	.EVQWQ5F2524B ENCODER 16MM DIGITAL CONTACTING 24 DETENTS.PANASONIC. EN1-6.	6	280	Pur
IDC-100-03VLMH	.1100-8-103-01 LKG HDR METHODE CN1.	1	290	Pur
CON0108	.CA-S08VSC-12B 8WY SIL SKT.0.1"PITCH.FLAIR CN8.	1	300	Pur
HEAD-BOX-50W	.0918-550-7324 CN2.	1	310	Pur
CON0112	.744-20,T&B SIL SKT LCD.	1	320	Pur
HW-TAB-1/4V	.PCB1-250HTD 6.3x.8MM PCB MNT VERT MALE TAB CN3-7.	5	330	Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP	0.001		Bulk

P13135 SOLIT DYNAMICS CPU(P1 Revn P1 JEY 28.04.94

Stock Number	Description	Quantity	Ref.	Class.
	60/40 SOLDER			
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13130 SOLT MAS MTR CARD(P1 Revn P1 JEY 11.04.94

Stock Number	Description	Quantity	Ref.	Class.
PCB-P13130	.SOLIT MAS MTR SUB PCB(A S/SIDE,FR4,PHOTOIMAGE RESIST,PLTD TO 1OZ CU. 0	1	10	Pur
IDC-100-04RLMH	.1100-12-104-01 R/A LKG CN1.	1	20	Pur
HW-M3x08-P/P	.M3x8 P/P BZP BS4183	4		Pur
HW-M3-FULLNUT	.M3 FULLNUT BS4183 BZCP	4		Pur
HW-M3-SHAKEPRO	.M3 S/P/W BS4183 BZCP	4		Pur

End of Report

P13111 SOLT BUS INTFC CARD (P2 Revn P2 AN2581BL 05.07.94
AN2581BL 05.07.94.

Stock Number	Description	Quantity	Ref.	Class.
PCB-P13111	.SOLIT BUS INTFC PCB(A) FR4,P.T.H,HOTAIR LEVELD PHOTOIMAGEABLE RESIST PLATED TO 2OZ COPPER	1	10	Pur
R000100R	.100R 1/4W 1% M/F R1.	1	20	Pur
D00041	.12V 400mW ZENER STM D4.	1	30	Pur
D0009	.IN4003 SYMBOL D1.	1	40	Pur
D0010	.1N5402 D2,3,5-7.	5	50	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C3.	1	60	Pur
CAP0075	.RSG 1000/25V ELNA VERT LOW IMPEDANCE ELECTROLYT PAN ECA1EFQ102 C1,2.	2	70	Pur
TH003	.BT152THYRISTER(RS262488) TH1.	1	80	Pur
HEAD-BOX-50W	.0918-550-7324 CN12.	1	90	Pur
HW-TAB-1/4RA	.PCB3-250 HTD 1/4 R/A PCB MOUNT TAB.20.65/1000 CN1-11,13-26.	25	100	Pur
HW-M3x08-P/P	.M3x8 P/P BZP BS4183	1		Pur
HW-M3-SHAKEPRO	.M3 S/P/W BS4183 BZCP	2		Pur
HW-M3-FULLNUT	.M3 FULLNUT BS4183 BZCP	1		Pur
HW-NR231A	.RECT METAL WASH 471109	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13110 SOLT MUTE K/BRD CARD(P3 Revn P3 AN2611BL 11.08.94
AN2611BL 11.08.94.

Stock Number	Description	Quantity	Ref.	Class.
PCB-P13110	.SOLIT MUTE K/BRD PCB(A) P.T.H,FR4,HOTAIR LEVELD PHOTOIMAGEABLE RESIST PLTD TO 1OZ COPPER	1	10	Pur
R000270R	.270R 1/4W 1% M/F R7-10.	4	20	Pur
R022K	.22K 1/4W 1% M/F R1-6,11,12.	8	30	Pur
RN-270R-DIL14	.4114R-001-271(270R) RN1-3.	3	40	Pur
D0051	.ELS-313AHR HI-EFF RED 7SEGMENT COMM CATH DISP DIS1-4.	4	50	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C1.	1	60	Pur
IC-4511	.CD4511BE BCD TO 7 SEG MENT LATCH NSC IC1-3.	3	70	Pur
IC-7406N	.DM7406N/ 030999R IC4.	1	80	Pur
SW000029	.6425.0101 KB SWITCH 6420.0101 S1,3,5,7-9.	6	90	Pur
SW000030	.643100101 SW/RED LED 6425 4111(ALTERNATIVE) S2,4.	2	100	Pur
SW000037	.B3W1000 FARNEL 176-986 ALT FARNEL 176-432 S6.	1	110	Pur
HEADER-80WAY	.STRIP 910F124002 RES.	0.025	120	Bulk
HDR-VLMG-34WAY	.FCN-744P034-AU/R 34WY PCB MOUNT BOX HEADER CN1.	1	130	Pur
SOCK-IC-DIL14T	.D2814-21 LOW PROFILE	4		Pur
KEYCAP10	.826 000 011 15.5MM BLNK	6		Pur
KEYCAP12	.829 000 011 15.5MM BLNK	2		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P13109 SOLT CPU CARD (P4) Revn P4 AN2616BL 01.09.94
AN2616BWL 01.09.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P13109	.SOLT VCD CPU CARD (P1) AN2581BL	1	10	
RN-22K-SIL09	.4609X-101-223(22K) RP1-17.	17	130	Pur
CRYS-6.0000MHz	.6MHz HC18 CRYSTAL X1.	1	140	Pur
CAP0004	.47pf100V RD8716N150470G6 MURATA(DD003226CH470J50) (683-34479) C2.	1	150	Pur
CAP0014	.ECQB1J102JZ 1N PANASON (630-19102) C4.	1	160	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C5-23,25-28.	23	170	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C3.	1	190	Pur
IC-Z8470	.Z0847006PSC ZILOG OR STM IC12.	1	200	Pur
IC-82C55	.D71055C CMOS (NEC) PARALLEL INTERFACE UNIT. IC3,5,7,9,11,13,16,19,22,24, 25.	11	210	Pur
IC-74HCT154	.74HCT154 HARR IC14.	1	220	Pur
IC-74LS04	.74LS04 STM IC2.	1	230	Pur
IC-74HCT32	.74HCT32 STM IC15.	1	240	Pur
IC-Z80	.Z84C0006PEC ZILOG IC4.	1	250	Pur
IC-62256-10	.GM76C256L-100ns 256K STATIC RAM GOLDSTAR IC8.	1	260	Pur
IC-27C256-10	.M27C256B-10XF1 256K EPROM,DIL,0.6"PITCH IC10.(ISSUE TO TEST).	1	270	Pur
IC-74LS245	.74LS245 STM IC6,17.	2	280	Pur
IC-74HCT14	.74HCT14 HARR IC18.	1	290	Pur
IC-74LS92N	.74LS92N HARR IC1.	1	300	Pur
IC-6N138	.6N138 SINGLE OPTOISOLATO	1	310	Pur

P13109 SOLT CPU CARD (P4) Revn P4 AN2616BL 01.09.94

Stock Number	Description	Quantity	Ref.	Class.
	ISOCOM/SIEMENS/QUALITYTE IC23.			
IC-7611	.ICL7611DCPA HARRIS IC21.	1	320	Pur
IC-ILD74	.ILD74 DUAL OPTO ISOC ISOCOM IC20.	1	330	Pur
BAT1	.3/100 DKO BATTERY MEMO BAT1.(ISSUE TO TEST).	1	340	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC20,21,23.	3	350	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC1,2,15,18.	4	360	Pur
IC-TPS-DIL20	.634320 TURNED PIN IC SOCKET.0.3" PITCH TAICOM IC6,17.	2	370	Pur
IC-TPS-DIL24	.634324 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC14.	1	380	Pur
IC-TPS-DIL28	.634328 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC8,10.	2	390	Pur
IC-TPS-DIL40	.634340 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC3-5,7,9,11-13,16,19,22,24, 25.	13	400	Pur
HEADER-80WAY	.STRIP 910F124002 LK1.	0.2	410	Bulk
HDR-VLMG-10WAY	.FCN-744P010-AU/R CN48.	1	420	Pur
HDR-VLMG-16WAY	.FCN-744P016-AU/R CN16,21,36,41,59,60.	6	430	Pur
HDR-VLMG-26WAY	.FCN-744P026-AU/R CN1,3-7,9,10,12-15,17-20,22, 23,25-30,32-35,37-40,42-47,50, 51,53-58,61,63.	48	440	Pur
HDR-VLMG-34WAY	.FCN-744P034-AU/R 34WY PCB MOUNT BOX HEADER CN2,8,11,24,31,49,52.	7	450	Pur
HEAD-BOX-40W	.0918-540-7324 CN62.	1	460	Pur
HW-TAB-1/4RA	.PCB3-250 HTD 1/4 R/A	6	470	Pur

P13109 SOLT CPU CARD (P4) Revn P4 AN2616BL 01.09.94

Stock Number	Description	Quantity	Ref.	Class.
	PCB MOUNT TAB.20.65/1000 CN64-69.			
TRN-MPS2222A	.MPS2222A TR1.	1	480	Pur
HW-TY-WRAP	.T18R CABLE TIES	2		Pur
C-TCW-22SWG-B	.355-079 TIN.CU (200g/RL)	0.001		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P13109 SOLT VCD CPU CARD (P1) Revn P1 AN2581BL 05.07.94
AN2581BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P13109	.SOLITAIRE CPU PCB(A) P.T.H,FR4,B.B.TESTED HOTAIR LEVELD,PHOTOIMAGE RESIST.PLATED TO 1OZ CU.	1	10	Pur
R000220R	.220R 1/4W 1% M/F R10.	1	20	Pur
R000330R	.330R 1/4W 1% M/F R2.	1	30	Pur
R001K	.1K 1/4W 1% M/F R1,3,13.	3	40	Pur
R000470R	.470R 1/4W 1% M/F R14.	1	50	Pur
R004K7	.4K7 1/4W 1% M/F R9.	1	60	Pur
R022K	.22K 1/4W 1% M/F R4,6,7.	3	70	Pur
R047K	.47K 1/4W 1% M/F R5.	1	80	Pur
R820K	.820K 1/4W 1% M/F R15.	1	90	Pur
RR1M	.1M 1/4W 1% M/F R11,12,16.	3	95	Pur
R10M	.10M 1/4W 2% M/F R8.	1	100	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D1-4.	4	110	Pur
D0010	.1N5402 D5-9.	5	120	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C24.	1	180	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C1,29.	2	190	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	2		Bulk

End of Report

P13089 SOLT FDRAUTO IO CARD (P4 Revn P4 AN2590BL 18.07.94
AN2590BL 18.07.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P13089	.SOLT VCD FDRAUTO IO (P1) AN2581BL	1	10	
RN-10K-SIL09	.4609X-101-103(10K) RN1,3,4,6,7,9,10,12,13,15,17, 18,20-22,24-26.	18	110	Pur
RN-100R-DIL16	.4116R-001-101 BOURNES RN2,5,8,11,14,16,19,23.	8	120	Pur
CAP0014	.ECQB1J102JZ 1N PANASON (630-19102) C21,22.	2	150	Pur
CAP0019	.ECQB1J103JZ 10N PANASON (368-55103) C37.	1	160	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C2-19,23-29,31,34,35,38,39, 41-45,47,50-53,55-58,60,61, 65-68.	50	170	Pur
CAP0029	.ECQV1J224JZ 220N PANASON C36.	1	180	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C1,20,33,40,49,71,72.	7	200	Pur
CAP0108	.ECQV1J474JF 470NF/63V DIPPED POLY PANASONIC C62.	1	210	Pur
IC-74HCT573	.74HCT573 TOSH IC15,16.	2	220	Pur
IC-74HCT245	.74HCT245E TOSH IC1,3,6,10,13,18,20,24,31,34, 39,44,48,52,54,57.	16	230	Pur
IC-74HCT574	.M74HCT574B1R OCTAL D-TYP FLIP-FLOP(3STATE) IC2,4,7,11,14,19,21,25,32,35, 40,45,49,53,55,58.	16	240	Pur
IC-74ALS138	.DM74ALS138N 3-8 LINE DECODER/MULTIPLEXER IC42,43,50,51.	4	250	Pur
IC-SSM2300	.PMI SSM2300 8CH/MULTTIPX SAMPLE-AND-HOLD IC IC5,17,33,47.	4	260	Pur
IC-ADS574	.ADS574JP A-D CONVERTER W/SAMPLER .BURR BROWN MIN DROP QTY 25 IC23.	1	270	Pur
IC-AD558	.AD558JN 8BIT DAC IC ANALOG DEVICE IC28.	1	280	Pur

P13089 SOLT FDRAUTO IO CARD (P4 Revn P4 AN2590BL 18.07.94

Stock Number	Description	Quantity	Ref.	Class.
IC-TL071	.TL071CN STM IC27.	1	290	Pur
IC-74HCT139	.74HCT139E NSC IC37.	1	300	Pur
IC-74HCT00	.74HCT00E IC36.	1	310	Pur
IC-74HCT14	.74HCT14 HARR IC30.	1	320	Pur
IC-74HC4051	.TC74HC4051AP 8CH ANALOGU MULTIPLEXER. IC12,22,41,56.	4	330	Pur
IC-74HCT74	.74HCT74E STM IC8.	1	340	Pur
IC-74HC245	.74HC245 IC NSC IC9,29.	2	350	Pur
IC-NE5534	.NE5534P (TI) IC26.	1	360	Pur
IC-759	.LM759CP NSC (LM77000) IC59.	1	370	Pur
IC-LM317T	.LM317T REGULATOR STM NATIONAL/SGS IC38,46.	2	380	Pur
IC-7905	.LM7905CT NATIONAL IC60.	1	390	Pur
PRE-1K-MT	.67W-R1K 1K TRIMMER BECKMAN P2.	1	400	Pur
PRE-5K-MT	.67W-R5K VERT M/TURN TRIMMER.BECKMAN. P1.	1	410	Pur
HEADER-80WAY	.STRIP 910F124002 LK1.	0.025	420	Bulk
HDR-VLMG-16WAY	.FCN-744P016-AU/R CN13,23.	2	430	Pur
HDR-VLMG-26WAY	.FCN-744P026-AU/R CN2,4,6,7,10-12,14-18,20-22, 24.	16	440	Pur
HDR-VLMG-34WAY	.FCN-744P034-AU/R 34WY PCB MOUNT BOX HEADER CN9,19.	2	450	Pur
CON-M10W	.0918-510-7913 HEADER CN26.	1	460	Pur
CON-M40W	.0918-540-7913 HEADER CN25.	1	470	Pur
CON-64W-ABF	.0902-164-6825 PCB CON CN8.	1	480	Pur

P13089 SOLT FDRAUTO IO CARD (P4 Revn P4 AN2590BL 18.07.94

Stock Number	Description	Quantity	Ref.	Class.
HW-TAB-1/4V	.PCB1-250HTD 6.3x.8MM PCB MNT VERT MALE TAB CN1,3,5.	3	490	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC26,27.	2	500	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC8,30,36.	3	510	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC5,12,17,22,28,33,37,41-43, 47,50,51,56.	14	520	Pur
IC-TPS-DIL20	.634320 TURNED PIN IC SOCKET.0.3" PITCH TAICOM IC1-4,6,7,9-11,13-16,18-21,24, 25,29,31,32,34,35,39,40,44,45, 48,49,52-55,57,58.	36	530	Pur
IC-TPS-DIL28	.634328 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC23.	1	540	Pur
HW-M3x08-P/P	.M3x8 P/P BZP BS4183	4		Pur
HW-M3x18-CSPA	.B11574/06 ISSUE E M3x18 SPACER	4		Pur
HW-M3-SHAKEPRO	.M3 S/P/W BS4183 BZCP	4		Pur
HW-M3-FULLNUT	.M3 FULLNUT BS4183 BZCP	4		Pur
HW-NR231A	.RECT METAL WASH 471109	4		Pur
HW-S/S/T/P	.433-854 TERMINAL PIN	2		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P13089 SOLT VCD FDRAUTO IO (P1) Revn P1 AN2581BL 05.07.94
AN2581BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P13089	.SOLIT FDRAUTO IO PCB(A) FR4,P.T.H,H,B.B.TESTED, HOTAIR LEVELD,PHOTOIMAGE RESIST,PLTD TO 1OZ CU.	1	10	Pur
R000010R	.FRN1/4W 10R 5% R1,2.	2	20	Pur
R000100R	.100R 1/4W 1% M/F R6,9.	2	30	Pur
R000180R	.180R 1/4W 1% M/F R7,10.	2	40	Pur
R000560R	.560R 1/4W 1% M/F R11.	1	50	Pur
R000680R	.680R 1/4W 1% M/F R12.	1	60	Pur
R001K	.1K 1/4W 1% M/F R8,13.	2	70	Pur
R001K5	.1K5 1/4W 1% M/F R3.	1	80	Pur
R022K	.22K 1/4W 1% M/F R5.	1	90	Pur
RR1M	.1M 1/4W 1% M/F R4.	1	100	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D1,4.	2	130	Pur
D0009	.IN4003 SYMBOL D2,3,5-12.	10	140	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C30,32,46,48,54,59,63,64,69, 70.	10	190	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	1		Bulk

End of Report

P12924 SOLT FDR AUTOCPU CARD(P5 Revn P5 AN2616BL 02.09.94
AN2616BWL 01.09.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12924	.SOLT VCD AUTOCPU CARD(P5 AN2616BWL 01.09.94.	1	100	
CAP0004	.47pf100V RD8716N150470G6 MURATA(DD003226CH470J50) (683-34479) C23.	1	120	Pur
CAP00061	.DD003226B221K50 220PF 100V MURATA CERAMIC (683-58221) C12.	1	130	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C2-9,14-21,24-32,41-45.	30	140	Pur
CAP0029	.ECQV1J224JZ 220N PANASON C11.	1	150	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C1,50.	2	160	Pur
CAP0091	.DD104SL220J50 22PF MURATA CERAMIC CAP C10,13.	2	170	Pur
D0010	.1N5402 D1.	1	175	Pur
CRYS-32.000MHz	.MM032A00 32.0MHz CRYSTAL HC-18U PACK.EUROQUARTZ. OR ACT A3200W-M1 HC-49U X1.	1	180	Pur
CRYS-3.6864MHz	.MK03686A 3.6864MHz CRYS TAL HC-49U ENCLOSURE X2.	1	190	Pur
IC-2681	.SCN2681AC1N40 DUAL UART 8BIT PROGRAMMABLE IC10.	1	200	Pur
IC-80C186	.KU80C186EC16 16BIT HIGH INTEGRATION EMBEDDED PROCESSOR.PQFP PACK. 100PIN IC12. 'ISSUE TO TEST'	1	210	Pur
IC-74ALS573	.DM74ALS573BN OCTAL TRANSPARENT LATCH IC13,17.	2	220	Pur
IC-MAX232	.MAX232CPE RS232DRV/RECEI MAXIM DEVICE 16PIN DIL IC23,24.	2	230	Pur
IC-MAX691	.MAX691 UP SUPERVISORY MICROPROCESSOR CIRCUIT IC18.	1	240	Pur
IC-74HCT04	.74HCT04E STM	2	250	Pur

P12924 SOLT FDR AUTOCPU CARD(P5 Revn P5 AN2616BL 02.09.94

Stock Number	Description	Quantity	Ref.	Class.
	CN4.			
HW-TAB-1/4RA	.PCB3-250 HTD 1/4 R/A PCB MOUNT TAB.20.65/1000 CN2,3.	2	450	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC30,31.	2	460	Pur
SOCK-IC-DIL14	.634014 IC SOCKET TAICOM IC11,16,25-29,32.	8	470	Pur
SOCK-IC-DIL16	.634016 IC SOCKET TAICOM IC18,23,24.	3	480	Pur
IC-TPS-DIL20	.634320 TURNED PIN IC SOCKET.0.3" PITCH TAICOM IC1-9,13-15,17.	13	490	Pur
IC-TPS-DIL28	.634328 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC19,20.	2	500	Pur
IC-TPS-DIL32	.634332 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC21,22.	2	510	Pur
IC-TPS-DIL40	.634340 TURNED PIN IC SOCKET.0.6" PITCH TAICOM IC10.	1	520	Pur
CON0132	.2XX7243001807 PQFP SOCK AND LID. IC12.	1	530	Pur
CON0133	.700-72743-00-1100 PQFP BASE PLATE IC12. 'ISSUE TO TEST'	1	540	Pur
C-TCW-22SWG-B	.355-079 TIN.CU (200g/RL)	0.001		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P12924 SOLT FDR AUTOCPU CARD(P5 Revn P5 AN2616BL 02.09.94

Stock Number	Description	Quantity	Ref.	Class.
	IC16,29.			
IC-74ALS164	.74ALS164 IC11.	1	260	Pur
IC-74HCT245	.74HCT245E TOSH IC2-5,7.	5	270	Pur
IC-6N138	.6N138 SINGLE OPTOISOLATO ISOCOM/SIEMENS/QUALITYTE IC30,31.	2	280	Pur
IC-681000-10	.KM681000LP-10 STATIC RAM 1Mb(128Kx8)100nSacc CMOS TC551001APL-10 TOSHIBA HM628128LP10.HITACHI IC21,22.	2	290	Pur
IC-74LS14	.74LS14 NSC IC27.	1	300	Pur
IC-M27C512B-12	.M27C512B 512K EPROM,DIL,0.6"PITCH IC19,20. 'ISSUE TO TEST'	2	310	Pur
IC-74ALS245	.DM74ALS245AN OCTAL BUS TRANCEIVER IC1,6.	2	320	Pur
IC-74HCT14	.74HCT14 HARR IC26.	1	330	Pur
IC-GAL16V8	.GAL16V8AS-25HB1 IC14,15. 'ISSUE TO TEST'	2	340	Pur
IC-74LS05	.74LS05 STM IC25.	1	350	Pur
IC-74HCT00	.74HCT00E IC28.	1	360	Pur
IC-74HCT574	.M74HCT574B1R OCTAL D-TYP FLIP-FLOP(3STATE) IC8.	1	370	Pur
IC-74HCT32	.74HCT32 STM IC32.	1	380	Pur
IC-74HCT573	.74HCT573 TOSH IC9.	1	385	Pur
BAT1	.3/100 DKO BATTERY MEMO BAT1. 'ISSUE TO TEST'	1	390	Pur
RN-10K-SIL09	.4609X-101-103(10K) RN1-6.	6	400	Pur
HEADER-80WAY	.STRIP 910F124002 LK1-4,7,8.	0.3	410	Bulk
CON-M10W	.0918-510-7913 HEADER CN5-9.	5	420	Pur
CON-M34W	.0918-534-7913 HEADER CN1.	1	430	Pur
CON0146	.0902 164 7922 64AB M/VER PCB MOUNT CONNECTOR	1	440	Pur

VCD-P12924 SOLT VCD AUTOCPU CARD(P5 Revn P5 AN2616BL 01.09.94
AN2616BWL 01.09.94.

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12924	.SOLIT FDR AUTO CPU PCB(A FR4,P.T.H,B.B.TESTED, HOTAIR LEVELD,PHOTOIMAGE RESIST,PLTD TO 1OZ CU.	1	10	Pur
R000000R	.0 OHM 1/4W 5% C/F LK5,6.	2	20	Pur
R000470R	.470R 1/4W 1% M/F R7,8.	2	30	Pur
R001K	.1K 1/4W 1% M/F R3,5.	2	40	Pur
R010K	.10K 1/4W 1% M/F R1,2,4,6.	4	50	Pur
D0008	.IN4148 D035 PACKAGE TELEFUNKEN D2.	1	60	Pur
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C33-40.	8	80	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C46-49.	4	90	Pur
IND-4.7uH	.B78108-S1472K 4.7uH MCC SERIES INDUCTOR 8x3.3mm L1.	1	95	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	6		Bulk

End of Report

P12922 SOLT MOVING FDR CARD(P7) Revn P7 AN2632BL 30.08.94
AN2632BL 23.08.94

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12922	.SOLT MOVING FADE CARD(P1 AN2581BL	1	10	
R10M	.10M 1/4W 2% M/F R14.	1	60	Pur
CAP0028	.ECQV1J104JZ 100N PANASON (368-45104) C3,10,12-14.	5	70	Pur
CAP0029	.ECQV1J224JZ 220N PANASON C11.	1	80	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C4,5.	2	100	Pur
CAP0103	.ECQV1J105JF 1U/63V PANAS DIPPED POLYESTER 5mmP C6,7.	2	130	Pur
IC-TL074	.TL074CN STM IC4.	1	140	Pur
IC-4053	.4053B TRIPLE 2CH MULTI PLEXER (TOSHIBA) USE HEF4053BP AFTERUSING TOSHIBA DEVICES. IC5.	1	150	Pur
IC-759	.LM759CP NSC (LM77000) IC1,2.	2	160	Pur
IC-D460319	.TOUCH SWITCH P&G D460319 IC3.	1	170	Pur
IDC-100-06RLMH	.1100-12-106-01 6WY R/A LKG MALE 0.1" HEADER CN1.	1	210	Pur
PRE-50K-VRT	.3386H-1-503 BOURNS P1.	1	220	Pur
CON0149	.CA-D16-VSC-12B 16WY DIL LK2.	1	230	Pur
HW-M3x12PP-BZP	.M3x12 PAN POZI BZP SCREW	2		Pur
HW-M3-FULLNUT	.M3 FULLNUT BS4183 BZCP	2		Pur
HW-M3-SHAKEPRO	.M3 S/P/W BS4183 BZCP	4		Pur
HW-NR231A	.RECT METAL WASH 471109	2		Pur
HW-M3x12.7HXSP	.M3x12.7 HEX SPACER	2		Pur
F-B13201/01	.SOLIT P12922 HEAT/S(P1 AN2550BL 23.05.94.	1		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P12920 SOLT IO METER CARD(P3 Revn P3 AN2581BL 06.07.94
AN2581BL 06.07.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12920	.SOLT VCD IO MTR CARD(P2 AN2605BL 3.08.94.	1		
D0070	.EL333GD 5mm GREEN LED L2,4,6,8,10,12,14,16.	8	240	Pur
D0039	.EL112B/3I+7G BARGRAPH EVERLITE DIS1-8.	8	250	Pur
D0040	.EL333ID 5mm RED LED L1,3,5,7,9,11,13,15.	8	260	Pur
IC-TL072	.TL072P STM IC4,11,18,25.	4	270	Pur
IC-LM339	.LM339N STM IC1-3,5-10,12-17,19-24,26-28.	24	280	Pur
TRN-BC549C	.BC549C ITT T2-4,7-9,12-14,17-19,22-24, 27-29,32-34,38-40.	24	290	Pur
TRN-BC557B	.BC557B NSC T1,5,6,10,11,15,16,20,21,25, 26,30,31,35-37.	16	300	Pur
HDR-VLMG-16WAY	.FCN-744P016-AU/R CN2.	1	310	Pur
HDR-VLMG-20WAY	.FCN-744P020-AU/R CN1.	1	320	Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P12922 SOLT MOVING FADE CARD(P1 Revn P1 AN2581BL 05.07.94
AN2581BL

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12922	.SOLIT MOVING FDR PCB(A FR4,P.T.H,B.B.TESTED PHOTOIMAGEABLE RESIST HOTAIR LEVLD,PLTD TO 2OZ	1	10	Pur
R000470R	.470R 1/4W 1% M/F R8.	1	20	Pur
R001K	.1K 1/4W 1% M/F R11.	1	30	Pur
R010K	.10K 1/4W 1% M/F R1-4,6,7,9,13.	8	40	Pur
R100K	.100K 1/4W 1% M/F R5,10,12.	3	50	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C8,9.	2	90	Pur
CAP0095	.ECBR1H180JCW 18PF AXIAL CERAMIC CAP.5% PANASONIC C2.	1	110	Pur
CAP0098	.ECBR1H101JW 100PF AXIAL CERAMIC CAP.5% PANASONIC C1.	1	120	Pur
D0004	.BZX55C5V1 ZENER ITT Z1.	1	180	Pur
D0009	.IN4003 SYMBOL D1-4.	4	190	Pur
D0050	.BZX55C2V7 2V7 ZENNER DIODE Z2,3.	2	200	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	1		Bulk

End of Report

P12923M MOTOR PSU Revn P1 JRS 25.03.94

Stock Number	Description	Quantity	Ref.	Class.
	C6,11,17.			
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C9,13,23,24,26,27,30,38,39,42.	8	260	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C22,37.	1	270	Pur
CAP0045	.ECEA1JU470 47U/63V PANAS (035-59479) C3,10,16,49.	2	280	Pur
CAP0072	.10000UF/50V ELEC CAP LP4 RUBYCON 50USP10000m ECOS1HP103DA C43,44.	2	300	Pur
CAP0075	.RSG 1000/25V ELNA VERT LOW IMPEDANCE ELECTROLYT PAN ECA1EFQ102 C31,32,34,35,40,41.	4	320	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C47,52.	2	330	Pur
CAP0095	.ECBR1H180JCW 18PF AXIAL CERAMIC CAP.5% PANASONIC C54.	1	340	Pur
SW000022	.SPUN 19036A 4 POLE S1.	1	350	Pur
D0047	.EL1224 VGD 3mm GREEN SUPER BRIGHT GRN DIFFUSE D12,14,16,18.	2	360	Pur
D0030	.MBR1045-BOX SCHOTTKY D1,2,5.	2	380	Pur
D0020	.KBPC25-02/04/06 SYMBOL 25A BRIDGE RECTIFIER. B1,2.	2	390	Pur
D0009	.IN4003 SYMBOL D3,4,6,7,13,15,17,19.	5	400	Pur
HW-TAB-1/4V	.PCB1-250HTD 6.3x.8MM PCB MNT VERT MALE TAB CN1-14.	11	410	Pur
IND-27TURN	.CHOKE 27TURN L1-3.	2	420	Pur
IC-L4970	.SGS VERT SWITCH REG IC2-4.	2	440	Pur
HS-TV5	.TV5 T0220	2		Pur
HW-M3x12PP-BZP	.M3x12 PAN POZI BZP SCREW	2		Pur
HW-M3-FULLNUT	.M3 FULLNUT BS4183 BZCP	2		Pur
HW-M3-FLAT	.M3 FLATWASHER BS4183BZCP	2		Pur
HW-M3-SHAKEPRO	.M3 S/P/W BS4183 BZCP	2		Pur
HS-BRIDGE25A	.PF622 HEATSINK 3.6HOLE	2		Pur

P12923M MOTOR PSU Revn P1 JRS 25.03.94

Stock Number	Description	Quantity	Ref.	Class.
	FOR 25A BRIDGE RECTIFIER			
HW-M2.5x16-P/P	.M2.5x16 P/P BZP BS4183	2		Pur
HW-M2.5-FLAT	.M2.5 FLATWASG BS4183 BZP	4		Pur
HW-M2.5-SHAKEP	.M2.5 SHAKEPROOF INTERNAL TEETH WASHER	2		Pur
HW-M2.5-FULLNU	.M2.5 FULLNUT BS4183 BZCP	2		Pur
HW-SLEE-H50	.SLEEVE H50x25mm GREY	2		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

P12921 SOLT MAS METER CARD(P3 Revn P3 AN2590BL 18.07.94
AN2590BL 18.07.94.

Stock Number	Description	Quantity	Ref.	Class.
VCD-P12921	.SOLT VCD MAS MTR CARD(P3 AN2605BL 3.08.94.	1	130	Ph
D0032	.57173 RED LED ELB-57173HR EVERLIGHT L3-5.	3	140	Pur
D0058	.ELB-54173G GREEN LED BAR EVERLIGHT. L1,2.	2	150	Pur
IC-TL072	.TL072P STM IC1.	1	160	Pur
IC-7812	.7812 NATIONAL IC2.	1	170	Pur
PRE-4K7-HRZ	.PT10LV 4K7 HORIZONTAL PIHER TYPE P1,2.	2	180	Pur
TRN-BC549C	.BC549C ITT T1,2.	2	190	Pur
CAP0076	.1000U/35V ECEA1VU102 PAN C6.	1	200	Pur
CAP0080	.330U/25V ECEA1EU331 PAN C5.	1	210	Pur
HDR-VLMG-16WAY	.FCN-744P016-AU/R CN1.	1	220	Pur
IDC-100-04RLMH	.1100-12-104-01 R/A LKG CN2.	1	230	Pur
SOCK-IC-DIL08	.634008 IC SOCKET TAICOM IC1.	1	240	Pur
MTR007	.AK-60 VU METER(ST.ALBANS WITH BEZEL,LAMP&FIXINGS MTRS AS SPEC REF DT/DY DATED 30-11-93 M1,2.	2	250	Pur
P13130	.SOLT MAS MTR CARD(P1	1		
HW-M3x08-P/P	.M3x8 P/P BZP BS4183	1		Pur
HW-M3-FULLNUT	.M3 FULLNUT BS4183 BZCP	1		Pur
HW-NR231A	.RECT METAL WASH 471109	1		Pur
HW-M3-SHAKEPRO	.M3 S/P/W BS4183 BZCP	16		Pur
SLD001	.FLOWSOLDER (4BARS/KG)LDC TRU-ALLOY GRADE KP 60/40 SOLDER	0.001		Bulk
SLD-FLUX	.FLUX SMT35-10 (20LTR/DM)	0.001		Bulk

End of Report

VCD-P12921 SOLT VCD MAS MTR CARD(P3 (Phantom) Revn P3 AN2605BL 03.08.94
AN2605BL 3.08.94.

Stock Number	Description	Quantity	Ref.	Class.
PCB-P12921	.SOLIT MAS METER PCB(A) FR4,P.T.H,HOTAIR LEVELD PHOTOIMAGEABLE RESIST ON 2SIDES,PLTD TO 1OZ CU	1	10	Pur
R000010R	.FRN1/4W 10R 5% R4,5.	2	20	Pur
R000100R	.100R 1/4W 1% M/F R8,15.	2	30	Pur
R000220R	.220R 1/4W 1% M/F R12.	1	40	Pur
R001K5	.1K5 1/4W 1% M/F R2,6,16.	3	50	Pur
R002K2	.2K2 1/4W 1% M/F R7,9.	2	60	Pur
R008K2	.8K2 1/4W 1% M/F R10,14.	2	70	Pur
R010K	.10K 1/4W 1% M/F R1,3.	2	80	Pur
R039K	.39K 1/4W 1% M/F R11,13.	2	90	Pur
D0009	.IN4003 SYMBOL D1,2.	2	100	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C1,2.	2	110	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C3,4.	2	120	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	5		Bulk

End of Report

VCD-P12920 SOLT VCD IO MTR CARD(P2 Revn P2 AN2605BL 03.08.94

Stock Number	Description	Quantity	Ref.	Class.
	D1,6.			
CAP0041	.ECEB2AU4R7S 4U7/100V PAN (030-38478) C4,5,8,9,13,14,18,19.	8	210	Pur
CAP0043	.ECEB1EU220S 22U/25V PANA (030-36229) C1,2,10,16.	4	220	Pur
CAP00461	.100uF ECEB0JU101SA PAN (021-24101/ECEB0JU680S) C3,6,7,11,12,15,17,20.	8	230	Pur
TAPE-VCD163	.NO163 WHITE SEQUENCING 3000M/ROLL	5		Bulk

End of Report