

# SERVICE MANUAL

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STEREO VIDEO CASSETTE RECORDER BASIC VIDEO MECHANISM : NC3600 P4LRH

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- If requiring information about the mechanism, see Service Manual of NCP4LHR3600, (S/MCode No.09-995-333-1n1).

# SPECIFICATIONS

<b>Video recording system</b>	Rotary 2 head helical scanning system	<b>RF output</b>	UHF channel between 22 and 69 72 dB $\mu$ <EH> UHF channel between 22 and 69 73 dB $\mu$ <K>
<b>Video head</b>	Double azimuth 4 heads	<b>Video input</b>	0.5–2.0 Vp-p, 75 ohms, unbalanced
<b>Tuner system</b>	Frequency synthesised tuner	<b>Video output</b>	1.0 Vp-p, 75 ohms, unbalanced
<b>TV system</b>	B/G <EH> I <K>	<b>Horizontal resolution</b>	240 lines (nominal)
<b>Video signal</b>	PAL color signal, 625 lines, 50 fields	<b>Video S/N</b>	43 dB (nominal)
<b>Usable cassettes</b>	VHS video cassettes	<b>Audio track</b>	3 tracks (Hi-Fi sound 2 tracks, Normal sound 1 track)
<b>Recording/playback time</b>	PAL <EH> SP: 5 hours max. with E-300 tape LP: 10 hours max. with E-300 tape <K> SP: 4 hours 20 minutes max. with E-260 tape LP: 8 hours 40 minutes max. with E-260 tape NTSC (Playback only) SP: 3 hours max. with T-180 tape LP: 6 hours max. with T-180 tape EP: 9 hours max. with T-180 tape	<b>Audio input level</b>	SCART: –8 dBs, 22 kohms RCA: –8 dBs, 22 kohms
<b>Tape speed</b>	PAL SP: 23.39 mm/sec LP: 11.69 mm/sec NTSC (Playback only) SP: 33.35 mm/sec LP: 16.67 mm/sec EP: 11.12 mm/sec	<b>Audio output level</b>	SCART: –8 dBs less than 2.2 kohm RCA: –8 dBs less than 2.2 kohm
<b>Rewind time</b>	Approx. 1 min. with E-180 tape	<b>Hi-Fi frequency response</b>	20 Hz–20 kHz
<b>Channel coverage</b>	VHF-Low <EH> : E2–4, S1–6 VHF-High <EH> : E5–12, S7–41 UHF: 21–69	<b>Hi-Fi dynamic range</b>	More than 90 dB
		<b>Hi-Fi Wow and Flutter</b>	Less than 0.01% (nominal)
		<b>Operating temperature</b>	5°C–40°C
		<b>Power requirements</b>	EH: 220–240 V AC, 50 Hz K: 230 V AC, 50 Hz
		<b>Power consumption</b>	21 watts TYP 2.2 watts (power save mode, 230V AC)
		<b>Dimensions</b>	380 (W) x 304 (D) x 92 (H) mm (15 x 12 x 3 <sup>5</sup> / <sub>8</sub> in.)
		<b>Weight</b>	Approx. 4.2 kg (9.24lbs.)

- Design and specifications are subject to change without notice.
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## ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-JU1-901-110	IB,K (E)	-FX8700<K>
1	8A-JU1-903-110	IB,EH	EGDSI-FX8700<EH>
$\triangle$	2	87-050-076-010	AC CORD SET ASSY,E<EH>
$\triangle$	2	87-A80-062-010	AC CORD SET ASSY,K BLK<K>
3	87-A80-141-010		CORD,PIN 2PC368V 150CM R-W
3	87-034-796-010		CORD,RF PAL S
4	8A-JU1-620-010		RC UNIT,RC-AVR01<K>
4	8A-JU1-624-010		RC UNIT,RC-AVR02<EH>

## VCR TEST TAPE INTERCHANGEABILITY TABLE

新しいタイプのテストテープは、CH-1 (NTSC用) とCH-2 (PAL用) の2種類があります。それぞれのテープには、(1)～(4)で区別する4種類の信号が、次の順番と時間で記録されています。

There are two types of the new alignment tape CH-1B (for NTSC) and CH-2 (for PAL). On each tape four signals (1) - (4) are recorded for the times and in the order shown below.

(1) : 8 min. → (2) : 2 min. → (3) : 5 min. → (4) : 5 min.

TTV-MP1 (M-PAL用), TTV-MS1 (MESECAM用), TTV-S1 (SECAM用) については現行通りです。

The TTV-MP1 (for M-PAL), TTV-MS1 (for MESECAM) and TTV-S1 (for SECAM) alignment tapes have the same contents as the previous tapes.

方式 Method	現行タイプ Now in use TYPE		新タイプ New Type		主な用途 Application
	テープ名 Model	記録内容※1 Contents ※1	テープ名 Model	記録内容※1 Contents ※1	
NTSC	TTV-N1	NTSC, Color, 1kHz, SP	CH-1B(1)	NTSC, Stairsteps, 1kHz, SP	PB-Yレベル調整等の一般電気調整。ACEヘッドの高さ/傾き調整。 PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-N1E	NTSC, Color, 1kHz, EP	CH-1B(4) ※2	NTSC, Color, 1kHz, EP	スイッチング位置調整。 Switching position ADJ.
	TTV-N2	NTSC, Stairsteps, 7kHz, SP	CH-1B(2)	NTSC, Stairsteps, 7kHz, SP	ACEヘッドのアジマス調整。スーパークリアーピクチャーのレベル調整。 Head ACE Azimuth ADJ.
	TTV-N12 (SCV-1998)	NTSC, Color, 1kHz, SP	CH-1B(4)	NTSC, Color, 1kHz, EP	FMエンベロープ調整。Xバリュー (位相) 調整。 FM Envelope ADJ. X-Value ADJ.
	TTV-N7A	NTSC, Stairsteps, 1kHz, SP, HiFi400Hz	CH-1B(3)	NTSC, Color, No sound SP, HiFi400Hz	HiFiオーディオ再生レベル調整。 HiFi Audio PB Level ADJ.
PAL	TTV-P1	PAL, Color, 1kHz, SP	CH-2(2) ※3	PAL, Stairsteps, 1kHz, SP	スイッチング位置調整。(SP専用モデル)PB-Yレベル調整等の一般電気調整。ACEヘッドの高さ/傾き調整。 Switching position ADJ. PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-P1L	PAL, Color, 1kHz, LP	CH-2(4)	PAL, Color, 1kHz, LP	スイッチング位置調整。(LP対応モデル) FMエンベロープ調整。 (LP対応モデル) Xバリュー (位相) 調整。(LP対応モデル) Switching position. (LP Model) FM Envelope ADJ. (LP Model) X-Value ADJ. (LP Model)
	TTV-P2	PAL, Stairsteps, 6kHz, SP	CH-2(1)	PAL, Stairsteps, 6kHz, SP	ACEヘッドのアジマス調整。FMエンベロープ調整。(SP専用モデル) Xバリュー (位相) 調整。(SP専用モデル) Head ACE Azimuth ADJ. FM Envelope ADJ. (SP Model) X-Value ADJ. (SP Model)
	TTV-P7	PAL, Stairsteps, 1kHz, SP, HiFi 1kHz	CH-2(3)	PAL, Color, No sound SP, HiFi400Hz	HiFiオーディオ再生レベル調整。 HiFi Audio PB Level ADJ.
	TTV-P16	PAL, Color, 400Hz, SP, HiFi 1kHz	変更なし No Changed.		FMフィルター調整 FM Filter ADJ.

※ 1. カラー方式→映像信号→ノーマル音声→テープスピード→HiFi 音声の順に記載されています。

※ 1. Described in the order of color format, video signal, linear audio, tape speed and Hi-Fi audio.

※ 2. SP専用モデルの場合は、CH-1Bの(1)～(3)を使用して下さい。

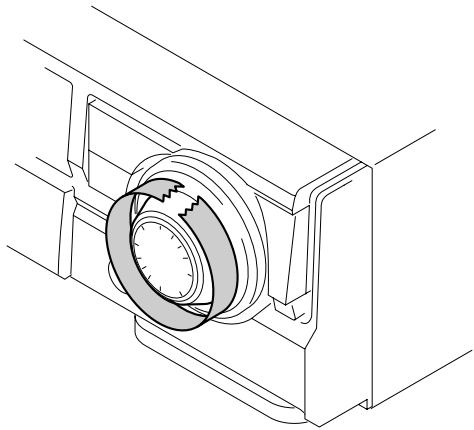
※ 2. Use CH-1B (1) - (3) with models used exclusively in the SP mode.

※ 3. 色信号の観測が必要な場合はCH-2の(3)または(4)を使用して下さい。

※ 3. Use CH-2 (3) and (4) when it is necessary to observe the chroma signal.

## DISASSEMBLY INSTRUCTION

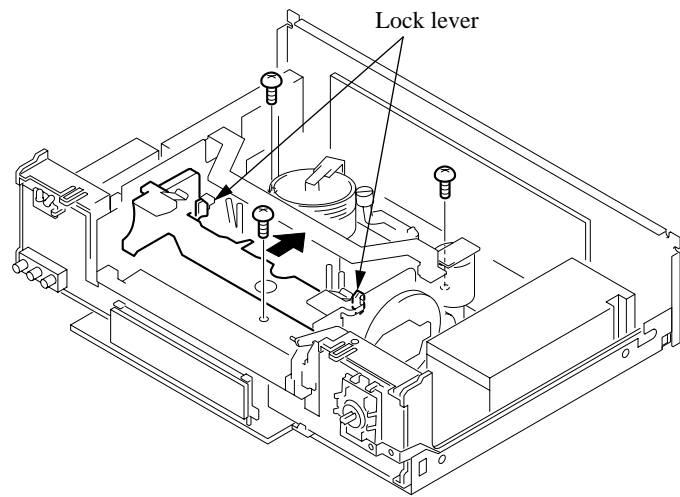
### 1. How to Remove the JOG/SHUTTLE



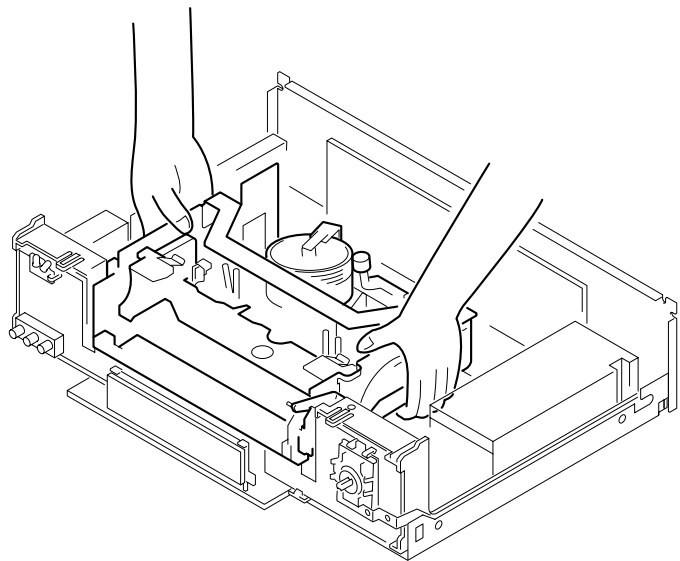
Wrap a tape around the JOG/SHUTTLE and remove it.

### 2. How to Remove the Mechanism

NOTE: Adjust switching position after reassembling mechanism assy.



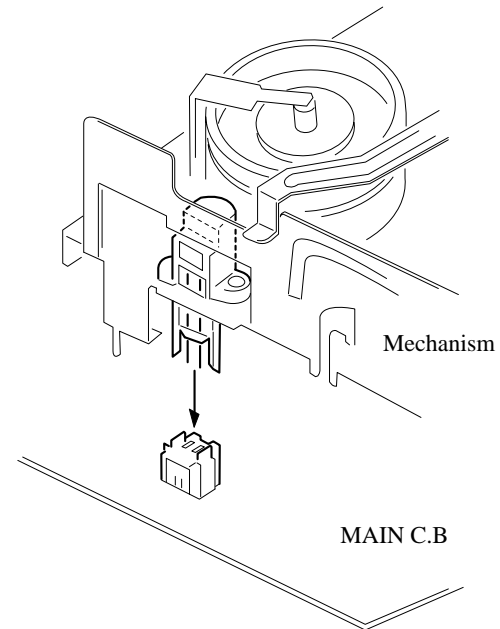
Slide the cassette holder (as shown in the illustration), and remove the three screws fixing the MAIN BASE of the mechanism deck.



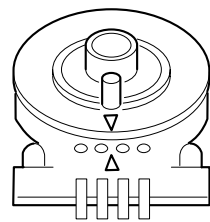
Raise the mechanism deck and remove it.

Note: Never hold the TOP BRACKET of the mechanism.

### 3. Caution When Attaching the Mechanism



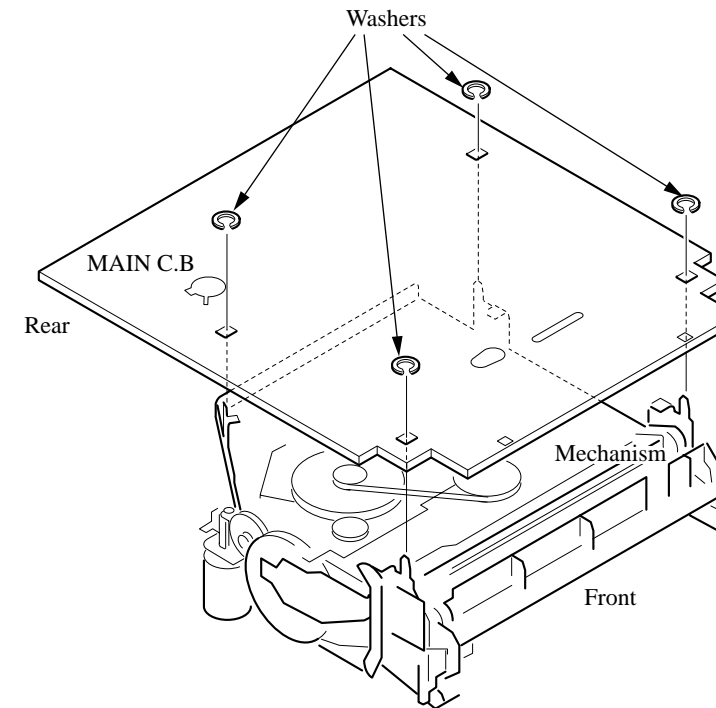
Be careful when attaching the MAIN C.B. to mechanism that the leg leads of the erase head must be correctly inserted.



Be careful when attaching the MAIN C.B. to mechanism that the marked position of the rotary switch on the MAIN C.B. must agree with the corresponding marking on the MAIN C.B. (See the above illustration.)

## SERVICE POSITION

The washers that fix the MAIN C.B., are prepared to be used for service, for the purpose that the mechanism can be easily set in the service position while the main power of the machine is turned on. Attach the four washers to the four feet of the mechanism. (See the illustration below.)



This model has the structure that the MAIN, TU and PS C.B. are removed together with the rear panel when the rear panel is removed. At the same time, be careful not to touch the power supply block during repair work.

Part No. 87-067-505-010 PW, 2.5-6-0.5 SLT

# ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				C104	87-010-311-080		C-CAP,S 12P-50 CH
	87-A21-186-010	IC,STR-F6552		C105	87-010-197-080		C-CAP,S 0.01-25 KB
	87-A20-649-080	IC,HA17431VP		C106	87-010-322-080		C-CAP,S 100P-50 CH
	87-A20-389-010	IC,NJM7809FA		C107	87-010-197-080		C-CAP,S 0.01-25 KB
	8Z-JU1-600-010	IC,TMP93CW76F-1A78<K>		C108	87-010-079-080		CAP,E 100-6.3V M 5L
	8Z-JU1-610-010	IC,TMP93CW76F-1A77<EH>		C109	87-016-040-080		CAP,DL 0.047F-5.5FM
	87-A20-676-040	IC,S-80827ANNP-EDQ		C110	87-010-079-080		CAP,E 100-6.3V M 5L
	87-A21-217-040	IC,S-24C08AFJA-TB-01		C111	87-015-695-080		CAP,E 1-50 7L
	87-070-242-010	IC,LA7123		C112	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-001-982-010	IC,TA7291S		C113	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-A21-146-010	IC,TB6515AP		C114	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-017-375-080	IC,TC4094BF		C115	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-A21-147-010	IC,TA1278AF		C116	87-015-681-080		CAP,E 10-16 7L
	8Z-JU1-601-040	IC,TC90A24F-406		C117	87-010-405-080		CAP,ELECT 10-50V
	87-001-854-010	IC,BA7755A		C118	87-010-405-080		CAP,ELECT 10-50V
	87-A21-022-040	IC,BA3880FS		C119	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-A21-148-010	IC,TA1246AF		C120	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-A20-943-080	IC,LA7157M		C121	87-015-677-080		CAP,E 100-6.3 7L
	87-A91-074-010	RCR UNIT,NJL68H380		C122	87-010-550-040		CAP,E 100-6.3 M 5L
	87-A21-221-040	IC,TC4021BF		C123	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-A20-371-080	IC,KA33V		C124	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-A20-562-010	IC,SDA5650P-DIP-14		C125	87-015-681-080		CAP,E 10-16 7L
	87-A21-261-010	IC,MSP3417D		C127	87-010-374-080		CAP,ELECT 47-10V
TRANSISTOR				C128	87-010-197-080		C-CAP,S 0.010.25 KB
	87-A30-217-010	TR,2SB1436R		C129	87-010-405-080		CAP,ELECT 10-50V
	87-026-223-080	CHIP-TR,DTC143TK		C130	87-010-263-080		CAP,ELECT 100-10V
	87-A30-218-080	TR,2SB1237(Q)		C131	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-026-235-080	CHIP-TR,DTC114EK		C132	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-026-210-080	CHIP-TR,DTC144EK		C133	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-A30-216-080	TR,2SA933AS(R)		C134	87-010-197-080		C-CAP,S 0.01-0.25 KB
	87-026-227-080	CHIP-TR,DTA114EK		C135	87-010-178-080		C-CAP,S 1000P-50KB
	87-A30-220-080	TR,2SC1741AS(R)		C136	87-010-374-080		CAP,ELECT 47-10V
	89-110-372-080	CHIP-TR,2SA1037K(R)		C137	87-010-403-080		CAP,ELECT 3.3-50V
	87-A30-219-080	TR,2SB1443(Q)		C138	87-010-405-080		CAP,ELECT 10-50V
	89-324-122-080	CHIP-TR,2SC2412KR		C139	87-010-805-080		CAP,S 1-16
	87-A30-270-010	P-TR,PT493F		C140	87-010-322-080		C-CAP,S 100P-50 CH
	87-A30-099-080	TR,2SC3708S/T		C146	87-010-196-080		CAP,0.1-25 ZF
	89-418-580-080	TR,2SD1858 TV2		C147	87-010-197-080		C-CAP,S 0.01-25 KB
	87-A30-062-080	CHIP-TR,KRC104S		C148	87-010-197-080		C-CAP,S 0.01-25 KB
	87-A30-063-080	CHIP-TR,KRA104S		C149	87-010-197-080		C-CAP,S 0.01-25 KB
DIODE				C150	87-010-196-080		C-CAP,S 0.1-25
	87-070-173-010	DIODE,S1WBA60		C151	87-010-197-080		C-CAP,S 0.01-25 KB
	87-A40-368-080	DIODE,EG01C		C152	87-010-197-080		C-CAP,S 0.01-25 KB
	87-A40-172-080	DIODE,EG01Z		C153	87-010-260-080		CAP,ELECT 47-25V
	87-020-465-080	DIODE,1SS133		C154	87-010-498-080		CAP,E 10-16 M 5L
	87-A40-367-080	DIODE,EU01		C155	87-010-498-040		CAP,E 10-16 M 5L
	87-A40-628-080	DIODE,EN01Z		C156	87-010-498-040		CAP,E 10-16 M 5L
	87-A40-369-090	DIODE,RN3Z		C157	87-015-689-080		CAP,E 0-35 7L
	87-070-274-080	DIODE,1N4003 SEM		C158	87-010-197-080		C-CAP,S 0.01-25 KB
	87-A40-184-090	DIODE,RK34(F)		C159	87-010-178-080		C-CAP,S 1000P-50 KB
	87-A40-353-080	ZENER,HZS333		C160	87-010-197-080		C-CAP,S 0.01-25 KB
	87-A40-002-080	ZENER,MTZJ5.1C		C161	87-010-197-080		C-CAP,S 0.01-25 KB
	87-017-079-080	ZENER,HZS4A3		C162	87-010-178-080		C-CAP,S 1000P-50 KB
	87-A40-597-010	LED,GL451V		C163	87-010-175-080		C-CAP,S 560P-50
	87-027-406-080	ZENER,HZ3A33		C164	87-010-263-080		CAP,ELECT 100-10V
	87-017-130-080	ZENER,HZS12A1		C165	87-010-196-080		C-CAP,S 0.1-25
	87-017-350-080	LED,SEL1550CM PGRN		C166	87-010-198-080		C-CAP,S 0.022-25
	87-A90-531-080	LED,SEL6915A		C167	87-010-322-080		C-CAP,S 100P-50 CH
	87-A40-343-010	LED,SIR-56ST3F TRP		C168	87-010-260-080		CAP,ELECT 47-25V
	87-020-027-080	C-DIODE,1SS184		C169	87-015-684-080		CAP,E 47-16 7L
MAIN C.B				C170	87-010-197-080		C-CAP,S 0.01-25 KB
C101	87-010-313-080	C-CAP,S 18P-50 CH		C171	87-010-197-080		C-CAP,S 0.01-25 KB
C102	87-010-313-080	C-CAP,S 18P-50 CH		C172	87-010-197-080		C-CAP,S 0.01-25 KB
C103	87-010-311-080	C-CAP,S 12P-50 CH		C173	87-010-078-080		CAP,E 47-6.3 5L
				C174	87-010-281-080		CAP,ELECT 22-35 SRE
				C175	87-012-368-080		C-CAP,S 0.1-50 F
				C176	87-010-197-080		C-CAP,S 0.01-25 KB
				C177	87-010-553-040		CAP,E 47-16 M 5L
				C182	87-010-263-080		CAP,ELECT 100-10V
				C183	87-010-197-080		C-CAP,S 0.01-25 KB

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C184	87-010-322-080		C-CAP,S 100P-50 CH	C374	87-010-196-080		C-CAPACITOR,S 0.1-25
C185	87-010-322-080		C-CAP,S 100P-50 CH	C375	87-010-196-080		C-CAPACITOR,S 0.1-25
C186	87-010-322-080		C-CAP,S 100P-50 CH	C376	87-010-263-080		CAP,ELECT 100-10V
C187	87-010-322-080		C-CAP,S 100P-50 CH	C377	87-010-322-080		C-CAP,S 100P-50 CH
C188	87-010-197-080		C-CAP,S 0.01-25 KB	C378	87-010-197-080		C-CAP,S 0.01-25 KB
C190	87-010-197-080		C-CAP,S 0.01-25 KB	C379	87-010-178-080		C-CAP,S 1000P-50
C191	87-010-178-080		C-CAP,S 1000P-50	C381	87-010-178-080		C-CAP,S 1000P-50
C192	87-010-197-080		C-CAP,S 0.01-25 KB	C392	87-010-321-080		C-CAPACITOR,S 82P-50
C193	87-018-134-080		CAPACITOR,TC-U 0.01-16	C402	87-010-197-080		C-CAP,S 0.01-25 KB
C301	87-010-403-080		CAP,ELECT 3.3-50V	C403	87-010-186-080		C-CAP,S 4700P-50
C303	87-010-181-080		C-CAP,S 1800P-50 KB	C404	87-010-196-080		C-CAPACITOR,S 0.1-25
C304	87-010-400-080		CAP,ELECT 0.47-50V	C405	87-015-677-080		CAP,E 100-6.3 7L
C305	87-010-196-080		C-CAPACITOR,S 0.1-25	C408	87-010-197-080		C-CAP,S 0.01-25 KB
C306	87-010-263-080		CAP,ELECT 100-10V	C409	87-012-155-080		C-CAP,S 180P-50CH
C308	87-010-213-080		C-CAP,S 0.015-25 KB	C410	87-010-197-080		C-CAP,S 0.01-25 KB
C309	87-010-400-080		CAP,ELECT 0.47-50V	C411	87-010-178-080		C-CAP,S 1000P-50
C310	87-010-316-080		C-CAP,S 33P-50 CH	C413	87-015-677-080		CAP,E 100-6.3 7L
C311	87-010-197-080		C-CAP,S 0.01-25 KB	C414	87-010-196-080		C-CAPACITOR,S 0.1-25
C312	87-010-196-080		C-CAPACITOR,S 0.1-25	C415	87-010-186-080		C-CAP,S 4700P-50
C313	87-010-993-080		C-CAP,S 0.056-25 KB	C450	87-010-401-080		CAP,ELECT 1-50V
C314	87-010-197-080		C-CAP,S 0.01-25 KB	C451	87-010-382-080		CAP,ELECT 22-25V
C315	87-010-197-080		C-CAP,S 0.01-25 KB	C452	87-010-197-080		C-CAP,S 0.01-25 KB
C316	87-015-695-080		CAP,E 1-50 7L	C453	87-010-197-080		C-CAP,S 0.01-25 KB
C317	87-010-197-080		C-CAP,S 0.01-25 KB	C454	87-010-196-080		C-CAPACITOR,S 0.1-25
C318	87-010-196-080		C-CAPACITOR,S 0.1-25	C455	87-010-263-080		CAP,ELECT 100-10V
C319	87-015-677-080		CAP,E 100-6.3 7L	C456	87-010-405-080		CAP,ELECT 10-50V
C320	87-010-196-080		C-CAPACITOR,S 0.1-25	C457	87-010-184-080		C-CAPACITOR,S 3300P-50
C321	87-015-677-080		CAP,E 100-6.3 7L	C458	87-010-178-080		C-CAP,1000P-50
C322	87-010-197-080		C-CAP,S 0.01-25 KB	C459	87-010-406-080		CAP,ELECT 22-50
C323	87-010-186-080		C-CAP,S 4700P-50 KB	C460	87-010-197-080		C-CAP,S 0.01-25 KB
C324	87-010-197-080		C-CAP,S 0.01-25 KB	C461	87-010-193-080		C-CAPACITOR,S 0.033-25
C325	87-010-196-080		C-CAP,S 0.1-25	C462	87-010-196-080		C-CAPACITOR,S 0.1-25
C326	87-010-405-080		CAP,ELECT 10-50V	C463	87-010-405-080		CAP,ELECT 10-50V
C327	87-010-197-080		C-CAP,S 0.01-25	C464	87-010-197-080		C-CAP,S 0.01-25 KB
C328	87-010-400-080		CAP,ELECT 0.47-50V	C465	87-010-182-080		C-CAP,S 2200P-50 KB
C329	87-010-312-080		C-CAP,S 15P-50 CH	C466	87-010-176-080		C-CAP,S 680P-50 SL
C331	87-010-196-080		C-CAPACITOR,S 0.1-25	C467	87-010-382-080		CAP,ELECT 22-25V
C332	87-010-370-080		CAP,E 330-6.3 SME	C468	87-010-196-080		C-CAP,S CAPACITOR,0.1-25
C333	87-015-785-080		C-CAPACITOR,S 0.1-25	C469	87-010-382-080		CAP,ELECT 22-25V
C334	87-010-402-080		CAP,ELECT 2.2-50V	C470	87-010-382-080		CAP,ELECT 22-25V
C335	87-010-196-080		C-CAPACITOR,S 0.1-25	C471	87-010-196-080		C-CAP,S CAPACITOR,0.1-25
C336	87-018-209-080		CAP, TC U 0.1-50V	C472	87-010-183-080		C-CAP,S 2700P-50 KB
C337	87-010-196-080		C-CAPACITOR,S 0.1-25	C473	87-012-365-080		C-CAP,S 0.027-25KB
C338	87-018-209-080		CAP,TC U 0.1-50V	C474	87-010-260-080		CAP,ELECT 47-25V
C339	87-010-196-080		C-CAPACITOR,S 0.022-25	C476	87-012-156-080		C-CAP,S 220P-50 CH
C340	87-010-178-080		C-CAP,S 1000P-50	C478	87-010-196-080		CAPACITOR,0.1-25
C342	87-012-154-080		C-CAP,S 150P-50 CH	C479	87-010-382-080		CAP,ELECT 22-25V
C343	87-010-196-080		C-CAPACITOR,S 0.1-25	C480	87-010-197-080		C-CAP,S 0.01-25 KB
C344	87-010-405-080		CAP,ELECT 10-50V	C481	87-010-184-080		C-CAP,S CAPACITOR 3300P-50
C345	87-010-320-080		C-CAP,S 68P-50	C482	87-010-260-080		CAP,ELECT 47-25V
C346	87-012-154-080		C-CAP,S 150P-50 CH	C553	87-010-370-080		CAP,E 330-6.3 SME
C347	87-012-140-080		C-CAP,S 470P-50	C555	87-010-405-080		CAP,ELECT 10-50V
C348	87-012-155-080		C-CAP,S 180P-50CH	C556	87-010-401-080		CAP,ELECT 1-50V
C349	87-010-153-080		C-CAP,S 9P-50 CH	C558	87-010-405-080		CAP,ELECT 10-50V
C350	87-018-134-080		CAPACITOR,TC-U 0.01-16	C560	87-010-405-080		CAP,ELECT 10-50V
C351	87-018-123-080		CAP,TC U 220P-50V	C563	87-010-382-080		CAP,ELECT 22-25V
C352	87-018-134-080		CAPACITOR,TC-U 0.01-16	C565	87-010-382-080		CAP,ELECT 22-25
C353	87-010-196-080		C-CAPACITOR,S 0.1-25	C572	87-010-382-080		CAP,ELECT 22-25V
C356	87-010-196-080		C-CAPACITOR,S 0.1-25	C573	87-010-263-080		CAP,ELECT 100-10V
C358	87-010-196-080		C-CAPACITOR,S 0.1-25	C574	87-010-196-080		C-CAP,S CAPACITOR,0.1-25
C360	87-010-196-080		C-CAPACITOR,S 0.1-25	C575	87-010-196-080		C-CAP,S CAPACITOR,0.1-25
C361	87-010-374-080		CAP,ELECT 47-10V	C576	87-010-176-080		C-CAP,S 680P-50 SL
C362	87-010-263-080		CAP,ELECT 100-10V	C577	87-010-196-080		C-CAP,S CAPACITOR,0.1-25
C363	87-010-197-080		C-CAP,S 0.01-25 KB	C578	87-010-805-080		CAP,S 1-16
C365	87-010-178-080		C-CAP,S 1000P-50	C580	87-015-681-080		CAP,E 10-16 7L
C366	87-012-157-080		C-CAP,S 330P-50 CH	C582	87-015-681-080		CAP,E 10-16 7L
C367	87-010-313-080		C-CAP,S 18P-50	C583	87-015-695-080		CAP,E 1-50 7L
C368	87-010-313-080		C-CAP,S 18P-50	C585	87-015-681-080		CAP,E 10-16 7L
C369	87-010-196-080		C-CAPACITOR,S 0.1-25	C586	87-010-263-080		CAP,ELECT 100-10V
C371	87-012-156-080		C-CAP,S 220P-50 CH	C587	87-010-196-080		C-CAP,S CAPACITOR,0.1-25

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C588	87-015-695-080		CAP,E 1-50 7L	R90	87-029-115-010		FUSE RESISTER 10-1/4W
C590	87-015-695-080		CAP,E 1-50 7L	S101	8Z-JU1-605-010		SW,RTRY MODE SWITCH
C594	87-010-382-080		CAP,ELECT 22-25V	S102	8Z-JU1-606-010		SW,LEAF REC SWITCH
C595	87-010-401-080		CAP,ELECT 1-50V	X101	87-A70-090-080		VIB,XTAL 16MHZ AT-49
C597	87-010-071-080		CAP,ELECT 1-50 M 5L SRE	X102	87-030-364-010		VIB,XTAL 32 768KHZ CF5-308CT
C599	87-010-244-080		CAP,ELECT 22-16	X301	87-A70-188-080		VIB,XTAL 4.43MHZ TA1278
C683	87-010-263-080		CAP,ELECT 100-10V				
C684	87-010-196-080		C-CAP,S CAPACITOR,0.1-25				
CN508	87-A60-830-010		CONN,15P 15PV-FJ	FR1C.B			
CN101	87-A60-386-010		CONN,18P V BLK 5085 PLUG				
CN102	87-099-843-010		CONN,15P V BLK 5085 PLUG	C701	87-010-197-080		C-CAP,S 0.01-25 K B C2012
CN103	87-A60-583-010		CONN,10P V TKC-G10P	C702	87-010-197-080		C-CAP,S 0.01-25 K B C2012
CN104	8Z-JU1-615-010		CONN,ASSY,2P LM	C703	87-010-550-040		CAP,E 100-6.3 M 5L SRE
CN105	87-A60-635-010		CONN,19P 19P-250K-1.25FJNA	C704	87-015-677-080		CAP,E 100-6.3 M 7L SRA
CN301	87-A60-582-010		CONN,5P V BGE TKX-P05P-X1	C706	87-010-263-080		CAP,E 100-10 M 11L SME
CN302	87-A60-842-010		CONN,18P V BLK FMN-BTRK	C707	87-010-322-080		C-CAP,S 100P-50 J CH GRM
CN303	87-099-668-010		CONN,9P TUC-P 9P-B1	CN701	87-099-841-010		CONN,15P H BLK 5085 RECE
CN450	87-A60-132-010		CONN,7P V FE	HL701	86-JU1-201-210		HLDR,SENSOR A
CN451	8Z-JU1-608-010		CONN,2P V TMC-A02X	HL702	8Z-JU1-202-010		HLDR, JOG
CN551	87-099-573-010		CONN,18P TUC-P18P-B1	L701	87-005-690-080		COIL,33UH J LF5.0S
CN552	87-A60-832-010		CONN,11P 11P-250K-1.25FJNA	L703	87-005-684-080		COIL,10UH J LF5.0S
FL101	8Z-JU1-602-010		FL,10-MT-113 G	S701	87-A90-164-080		SW,TACT SKQAB(N)
H101	8Z-JU1-604-010		SNSR,HW-300B-15 -H2	S702	87-A90-164-080		SW,TACT SKQAB(N)
HL101	8Z-JU1-203-010		HLDR, FL	S703	87-A90-164-080		SW,TACT SKQAB(N)
HL102	8Z-JU1-205-010		HLDR, LED	S704	87-A90-164-080		SW,TACT SKQA(N)
HL103	8Z-JU1-206-010		HLDR, SENSOR	S705	87-A91-307-010		SW, JOG RJS-Y0003-02
HL104	8Z-JU1-206-010		HLDR, SENSOR				
HL105	8Z-JU1-207-010		HLDR, HALL SNSR	FR2 C.B			
ICF50	87-001-196-080		PROTECTOR, ICP-N10				
ICF51	87-002-330-080		PROTECTOR, ICP-N5	C751	87-010-318-080		C-CAP,S 47P-50 J CH GRM
ICF101	87-001-132-080		PROTECTOR ICP-N38	C752	87-010-176-080		C-CAP,S 680P-50 J SL
ICF102	87-001-132-080		PROTECTOR ICP-N38	C753	87-010-176-080		C-CAP,S 680P-50 J SL
L101	87-005-432-080		COIL,10UH K FLR50	C754	87-010-176-080		C-CAP,S 680P-50 J SL
L102	87-005-684-080		COIL,10UH J LF5.0S	C755	87-010-079-080		CAP,E 100 6.3 M 5L SRE
L103	87-005-440-080		COIL,47UH K FLR50	C756	87-010-079-080		CAP,E 100-6.3 M 5L SRE
L104	87-005-684-080		COIL,10UH J LF5.0S	C757	87-010-197-080		C-CAP,S 0.01-25 K B C2012
L105	87-005-684-080		COIL,0UH J LF5.0S	CN751	87-A60-388-010		CONN,18P H BLK 5085 RECE
L106	87-005-684-080		COIL,10UH J LF5.0S	HL751	8Z-JU1-204-010		HLDR,LEDF
L107	87-005-684-080		COIL,10UH J LF5.0S	J751	87-A60-069-010		JACK,PIN 3P 15 VT B
L108	87-005-684-080		COIL,10UH J LF5.0S	L751	87-005-690-080		COIL,33UH J LF5.0S
L109	87-005-432-080		COIL,10UH K FLR50	S751	87-A90-164-080		SW,TACT SKQAB(N)
L110	87-005-432-080		COIL,10UH K FLR50	S752	87-A90-164-080		SW,TACT SKQAB(N)
L111	87-005-432-080		COIL,10UH K FLR50	S754	87-A90-164-080		SW,TACT SKQAB(N)
L112	87-005-684-080		COIL,10UH J FL5.0S	S755	87-A90-164-080		SW,TACT SKQAB(N)
L113	87-005-684-080		COIL,10UH J LF5.0S	S756	87-A90-164-080		SW,TACT SKQAB(N)
L114	87-005-684-080		COIL,10UH J LF5.0S	S758	87-A90-164-080		SW,TACT SKQAB(N)
L301	87-005-432-080		COIL,10UH K FLR50	S759	87-A90-164-080		SW,TACT SKQAB(N)
L302	87-005-440-080		COIL,47UH K FLR50				
L303	87-005-440-080		COIL,47UH K FLR50	REAR C.B			
L304	87-005-432-080		COIL,10UH FLR50				
L305	87-005-693-080		COIL,56UH J LF5.0S	C520	87-015-688-080		CAP,E 4.7-35 M 7L SRA
L306	87-005-697-080		COIL,120UH J LFS5.0S	C521	87-015-688-080		CAP,E 4.7-35 M 7L SRA
L310	87-005-440-080		COIL,47UH K FLR50	C525	87-015-688-080		CAP,E 4.7-35 M 7L SRA
L311	87-005-432-080		COIL,10UH K FLR50	C528	87-015-684-080		CAP,E 47-16 M 7L SRA
L313	87-005-488-080		COIL,180UH J FLR50	C531	87-015-688-080		CAP,E 4.7-35 M 7L SRA
L314	87-005-688-080		COIL,22UH J LF5.0S	C534	87-010-196-080		CHIP CAPACITOR,S 0.1-25 ZFC2012
L315	87-005-684-080		COIL,10UH J LF5.0S	C535	87-010-060-080		CAP,E 100-16 M 7L SRA
L401	87-005-440-080		COIL,47UH K FLR50	C536	87-015-688-080		CAP,E 4.7-35 M 7L SRA
L402	87-005-440-080		COIL,47UH K FLR50	C537	87-015-688-080		CAP,E 4.7-35 M 7L SRA
L450	87-005-432-080		COIL,10UH K FLR50	C600	87-018-134-080		CAPACITOR,TC-U 0.01-16 N Y UP050
L451	87-005-440-080		COIL,47UH K FLR50	C601	87-018-134-080		CAPACITOR,TC-U 0.01-16 N Y UP050
L452	8Z-JU1-644-010		COIL,OSC AE ZJU1	C603	87-018-134-080		CAPACITOR,TC-U 0.01-16 N Y UP050
L453	87-005-440-080		COIL,47UH K FLR50	C604	87-018-134-080		CAPACITOR,TC-U 0.01-16 N Y UP050
L454	8Z-JU1-643-010		COIL,OSC FE ZJU11	C605	87-015-696-080		CAP,E 2.2-50 M 7L SRA
L551	87-005-432-080		COIL,10UH K FLR50	C606	87-015-696-080		CAP,E 2.2-50 M 7L SRA
L552	87-005-432-080		COIL,10UH K FLR50	C607	87-015-684-080		CAP,E 47-16 M 7L SRA
L553	87-005-432-080		COIL,10UH K FLR50	C608	87-015-696-080		CAP,E 2.2-50 M 7L SRA
M101	8Z-JU1-609-010		STATOR,DMNVS	C609	87-015-696-080		CAP,E 2.2-50 M 7L SRA
PS101	8Z-JU1-603-010		SNSR,GP15566	C610	87-015-696-080		CAP,E 2.2-50 M 7L SRA
PS102	8Z-JU1-603-010		SNSR,GP15566	C611	87-015-696-080		CAP,E 2.2-50 M 7L SRA
				C612	87-A10-205-080		CAP,E 470-6.3 M SRG

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C613	87-A10-205-080		CAP,E 470-6.3 M SRG	C931	87-010-178-080		C-CAP,S 1000P-50 K B C2012
C614	87-010-805-080		CAP,S 1-16 Z F	C933	87-010-405-080		CAP,E 10-50 M ML SME
C616	87-015-696-080		CAP,E 2.2-50 M 7L SRA	C934	87-010-180-080		C-CAP,S 1500P-50 K B C2012
C617	87-015-696-080		CAP,E 2.2-50 M 7L SRA	C935	87-012-140-080		C-CAP,S 470P- 50 J CH
C618	87-015-696-080		CAP,E 2.2-50 M 7L SRA	C937	87-010-405-080		CAP,E 10-50 M ML SME
C619	87-015-696-080		CAP,E 2.2-50 M 7L SRA	C938	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C620	87-015-682-080		CAP,E 22-16 M 7L SRA	C939	87-010-197-080		C-CAP,S 0.01-25 K B C2012
C621	87-010-196-080		CHIP CAPACITOR,S SRA 0.1-25 Z	C940	87-010-197-080		C-CAP,S 0.01-25 K B C2012
C622	87-010-060-080		CAP,E 100-16 M 7L SRA	C945	87-010-403-080		CAP,E 3.3-50 M 11L SME
C623	87-010-196-080		CHIP CAPACITOR,S 0.1-25 Z F C2012	C946	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C624	87-015-682-080		CAP,E 22-16 M 7L SRA	C947	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C625	87-010-529-080		CAP,E 1-50 M BP	C948	87-010-405-080		CAP,E 10-50 M ML SME
C626	87-010-197-080		CAP,CHIP S 0.01-25 K B C2012	C949	87-010-405-080		CAP,E 10-50 M ML SME
C627	87-015-682-080		CAP,E 22-16 M 7L SRA	C950	87-010-180-080		C-CAP,S 1500P-50 K B C2012
C628	87-010-197-080		CAP,CHIP 0.01-25 K B C2012	C951	87-012-140-080		C-CAP,S 470P-50 J CH
C629	87-015-677-080		CAP,E 100-6.3 M 7L SRA	C953	87-010-197-080		C-CAP,S 0.01-25 K B C2012
C630	87-015-695-080		CAP,E 1-50 M 7L SRA	C951	87-010-197-080		C-CAP,S 0.01-25 K B C2012
C631	87-012-154-080		C-CAP,S 150P-50 J CH GRM	C955	87-010-406-080		CAP,E 22-50 M 11L SME
C632	87-012-154-080		C-CAP,S 150P-50 J CH GRM	C956	87-010-406-080		CAP,E 22-50 M 11L SME
C633	87-010-322-080		C-CAP,S 100P-50 J CH GRM	C959	87-010-805-080		C-CAP,S 1-16 Z F
C634	87-010-322-080		C-CAP,S 100P-50 J CH GRM	C962	87-012-154-080		C-CAP,S 150P-50 J CH GRM
C635	87-012-154-080		C-CAP,S 150P-50 CH GRM	C963	87-010-318-080		C-CAP,S 47P-50 J CH GRM
C636	87-012-154-080		C-CAP,S 150P-50 CH GRM	C964	87-010-196-080		CAP,S 0.1-25 Z F C2022
C637	87-010-197-080		C-CAP,S 0.01-25 K B C2012	CN901	87-999-670-010		CONN,9P TUC-P9X-B1
C638	87-010-322-080		C-CAP,S 100P-50 CH GRM	L901	87-005-425-080		COIL,2.7UH K FLR50
C639	87-010-318-080		C-CAP,S 47P-50 CHGRM	L902	87-005-425-080		COIL,2.7UH K FLR50
C640	87-012-154-080		C-CAP,S 150P-50 CH GRM	L903	87-005-432-080		COIL,10UH K FLR50
C641	87-012-154-080		C-CAP,S 150P-50 CHGRM	L904	87-005-688-080		COIL,22UH J LF5.0S
C642	87-010-322-080		C-CAP,S 100P-50 CHGRM	X901	87-A70-199-080		VIB,XTAL 18.432MHZ
C643	87-010-322-080		C-CAP,S 100P-50 CHGRM				
C644	87-012-154-080		C-CAP,S 150P-50J CHGRM				
C645	87-012-154-080		C-CAP,S 150P-50 CHGRM				
C647	87-010-178-080		CHIP CAPS 1000P50 K B C2012				
C648	87-010-322-080		C-CAP,S 100P-50J CHGRM				
C649	87-010-322-080		C-CAP,S 100P-50 CHGRM				
C650	87-010-322-080		C-CAP,S 100P-50 CHGRM				
C651	87-010-322-080		C-CAP,S 100P-50 CHGRM				
C653	87-010-318-080		C-CAP,S 47P-50 CHGRM				
C654	87-012-154-080		C-CAP,S 150P-50 CHRM				
C655	87-012-154-080		C-CAP,S 150P-50 J CH GRM				
C656	87-012-154-080		C-CAP,S 150P-50 J CH GRM				
C657	87-012-154-080		C-CAP,S 150P-50 J CH GRM				
C662	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C664	87-015-696-080		CAP,E 2.2-50 M 7L SRA				
C665	87-015-696-080		CAP,E 2.2-50 M 7L SRA				
CN501	87-099-562-010		CONN,18P TUC-P18X-B1				
CN600	87-099-670-010		CONN,9P TUC-P9X-B1				
CN601	87-A60-417-010		CONN,21P V BLK 0350535000				
CN602	87-A60-417-010		CONN,21P V BLK 0350535000				
FB600	87-003-223-080		FERRITE BEAD BL02RN2				
J600	87-A60-368-010		JACK,PIN 2P JK020123				
L501	87-005-432-080		COIL,10UH K FLR50				
L600	87-005-440-080		COIL,47UH K FLR50				
L601	87-005-440-080		COIL,47UH K FLR50				
MPX C.B							
C912	87-012-156-080		C-CAP,S 220P-50 J C,g GRM				
C913	87-012-140-080		C-CAP,S 470,o-50 J CH				
C914	87-010-180-080		C-CAP,S 1500,o-50 K B C2012				
C915	87-010-405-080		CAP,E 10-50 M ML SME				
C916	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C920	87-010-805-080		C-CAP,S 1-16 Z F				
C923	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C924	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C926	87-010-316-080		C-CAP,S 33P-50 J C,g GRM				
C927	87-010-145-080		C-CAP,S 1P-50 C C,g GRM				
C928	87-010-145-080		C-CAP,S 1P-50 C C,g GRM				
C929	87-010-315-080		C-CAP,S 27P-50 J CH<K>				
C929	87-010-317-080		C-CAP,S 39P-50 J CH<EH>				
C930	87-010-319-080		C-CAP,S 56P-50 J CH				
C801	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C803	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C804	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C805	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C806	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C807	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C809	87-010-178-080		C-CAP,S 1000P-50 K B C2012				
C810	87-010-185-080		C-CAP,S 3900P-50 K B				
C811	87-010-196-080		C-CAP,S 0.1-25 Z F C2012				
C812	87-010-382-080		CAP,E 22-25 M 11L SME				
C813	87-010-196-080		C-CAP,S 0.1-25 Z F C2012				
C814	87-010-405-080		CAP,E 10-50 M 11L SME				
C815	87-010-194-080		C-CAP,S 0.047-25 Z F<EH>				
C816	87-010-196-080		C-CAP,S 0.1-25 Z F C2012				
C817	87-010-374-080		CAP,E 47-10 M 11L SME				
C818	87-010-196-080		C-CAP,S 0.1-25 Z F C2012				
C819	87-010-178-080		C-CAP,S 1000P-50 K B C2012				
C820	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C821	87-010-374-080		CAP,E 47-10 M 11L SME				
C822	87-010-178-080		C-CAP,S 1000P-50 K B C2012				
C823	87-012-368-080		C-CAP,S 0.1-50 Z F				
C824	87-010-408-080		CAP,E 47-50 M 11L SME				
C825	87-010-196-080		C-CAP,S 0.1-25 Z F C2012				
C826	87-010-374-080		CAP,E 47-10 M 11L SME				
C827	87-010-178-080		C-CAP,S 1000P-50 K B C2012				
C828	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C829	87-010-374-080		CAP,E 47-10 M 11L SME				
C830	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
C851	87-010-263-080		CAP,E 100-10 M 11L SME				
C852	87-010-180-080		C-CAP,S 1500P-50 K B C2012				
C853	87-A10-468-080		CAP,E 10-10 M 7L BP SRA				
C854	87-010-805-080		C-CAP,S 1-16 Z F				
C855	87-012-154-080		C-CAP,S 150P-50 J CH GRM				
C856	87-010-182-080		C-CAP,S 2200P-50 K B C2012				
C857	87-010-193-080		C-CAP,S 0.033-25 Z F C2012				
C860	87-010-197-080		C-CAP,S 0.01-25 K B C2012				
CN801	87-A60-636-010		CONN,19P 19RK-1.25FJN				
CN802	87-A60-834-010		CONN,11P 11RK-1.25FJN				
CN803	87-099-668-010		CONN,9P TUC-P 9P-B1				

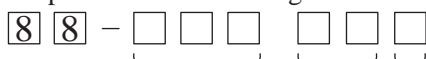


REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
FB803	87-008-372-080		FILTER, EMI BLO1#RNN	△ F1	87-035-454-010		FUSE, 1.6A 250V T 218
FB851	87-008-372-080		FILTER, EMI BLO1#RNN	FB1	87-003-223-080		FERRITE BEAD BLO2RN2
L801	87-005-430-080		COIL, 6.8UH K FLR50	△ FC1	87-033-213-080		CLAMP, FUSE PFC500
L802	87-005-432-080		COIL, 10UH K FLR50	△ FC2	87-033-213-080		CLAMP, FUSE PFC500
L803	87-005-440-080		COIL, 47UH K FLR50	△ ICF2	87-A91-337-080		PROTECTOR, IC ICP-N75
L804	87-005-440-080		COIL, 47UH K FLR50	△ ICF3	87-001-211-080		PROTECTOR, IC ICP-N50
L851	87-005-432-080		COIL, 10UH K FLR50	△ ICF4	87-001-132-080		PROTECTOR, IC ICP-N38
TU801	8Z-JU1-640-010		TU UNIT, I PAL SIF<K>	△ ICF5	87-001-132-080		PROTECTOR, IC ICP-N38
TU801	8Z-JU1-641-010		TU UNIT, BG PAL SIF<EH>	△ ICF6	87-A91-337-080		PROTECTOR, IC ICP-N75
				△ J001	87-A60-021-010		JACK, AC E BLK W/O SW HJC-028
PS C.B				L1	87-A50-193-080		COIL, 10UH K LHL10
				L2	87-A50-180-080		COIL, 22UH K LHL10
				L3	87-A50-444-080		COIL, 22UH K LHL08
△ C001	87-A10-374-010		CAP, M/P 0.1-275 M MKT 1.40 6-2	△ LF001	87-A90-491-010		FLTR, 20UH SU9VD-07020A
△ C007	87-A10-480-090		CAP, CER 4700P-250 M E KH	△ LF002	87-A90-470-010		FLTR, 33MH SS10V-03330
△ C008	87-A10-480-090		CAP, CER 4700P-250 M E KH				
C9	87-A10-898-090		CAP, E 56-400 SMG 0.43A(RMS)	△ LF003	87-A90-470-010		FLTR, 33MH SS10V-03330
C10	87-A11-196-080		CAP, M/P 0.022-400 K MMC	△ PS001	87-A90-717-010		P-COUPLER, PC123FY2
C13	87-A11-194-080		CAP, CER 47P-2K K SL	△ PT001	8Z-JU1-630-010		PT, E ZJU-1 SWT
C14	87-016-501-080		CAP, E 47-35 M 105 SXE	R1	87-022-565-090		RES, M/F 47K-1W J
C15	87-010-190-080		C-CAP, S 0.01-50 Z F C2012	R2	87-A00-410-090		RES, M/F 100K-1W J
C20	87-010-866-080		CAP, E 10-63 M VX				
C21	87-A11-195-080		CAP, E 330-50 KMF	R3	87-A00-558-090		RES, M/F 56K-2W J
C22	87-010-409-080		CAP, E 220-50 M SME	R14	87-A00-254-090		RES, M/F 0.68-2W J
C23	87-A10-493-080		CAP, E 1000-25 KMF	R24	87-A00-279-080		RES, M/F 75-1/6W F
C24	87-010-387-080		CAP, E 470-25-M SME	R25	87-025-365-080		RES, M/F 680-1/6W F
C25	87-010-101-080		CAP, E 220-16M SME	R26	87-025-365-080		RES, M/F 680-1/6W F
C26	87-010-401-080		CAP, E 1-50 M 11L SME				
C27	87-A10-491-080		CAP, E 2200-10 KMF	R41	87-029-374-010		RES, FUSE 47-1/4W J
C28	87-010-377-090		CAP, E 3300-10 M SME	R42	87-029-132-090		RESTOR FUSE 4.7-1/4W J
C29	87-010-247-080		CAP, E 100-50 M SME				
C30	87-010-221-080		CAP, E 470-10 M SME				
CN1	87-A60-831-010		CONN, 15P 15R-FJ				

○チップ抵抗部品コード/CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

Chip Resistor Part Coding



A  
抵抗部品コード  
Resistor Code

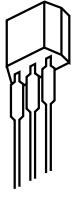
桁表示  
Figure

抵抗値  
Value of resistor

チップ抵抗  
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法/Dimensions (mm)			抵抗コード : A Resistor Code : A	
				外形/Form	L	W		t
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

# TRANSISTOR ILLUSTRATION



E C B

2SA933AS  
2SC1741AS



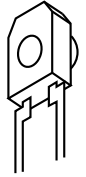
E C B

2SC3708ST



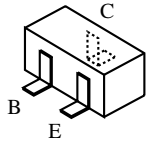
B C E

2SB1237  
2SB1443



C E

PT493F

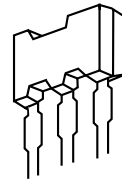


2SA1037      DTC144EK  
2SC2412K    KRA104S  
DTA114EK    KRC102S  
DTC114EK  
DTC143TK



E C B

2SB1436

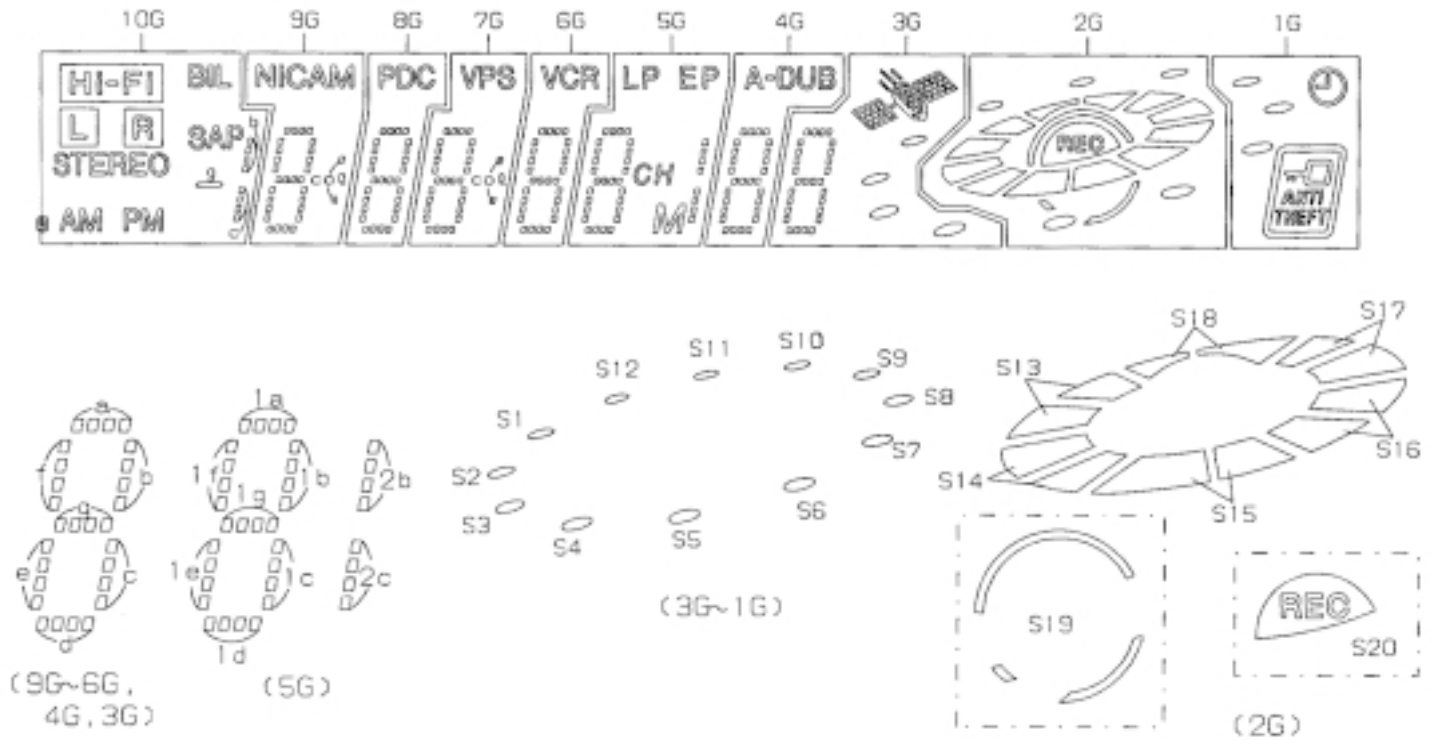


E C B

2SD1858TV2

# FL (10-MT-113G) GRID ASSIGNMENT & ANODE CONNECTION

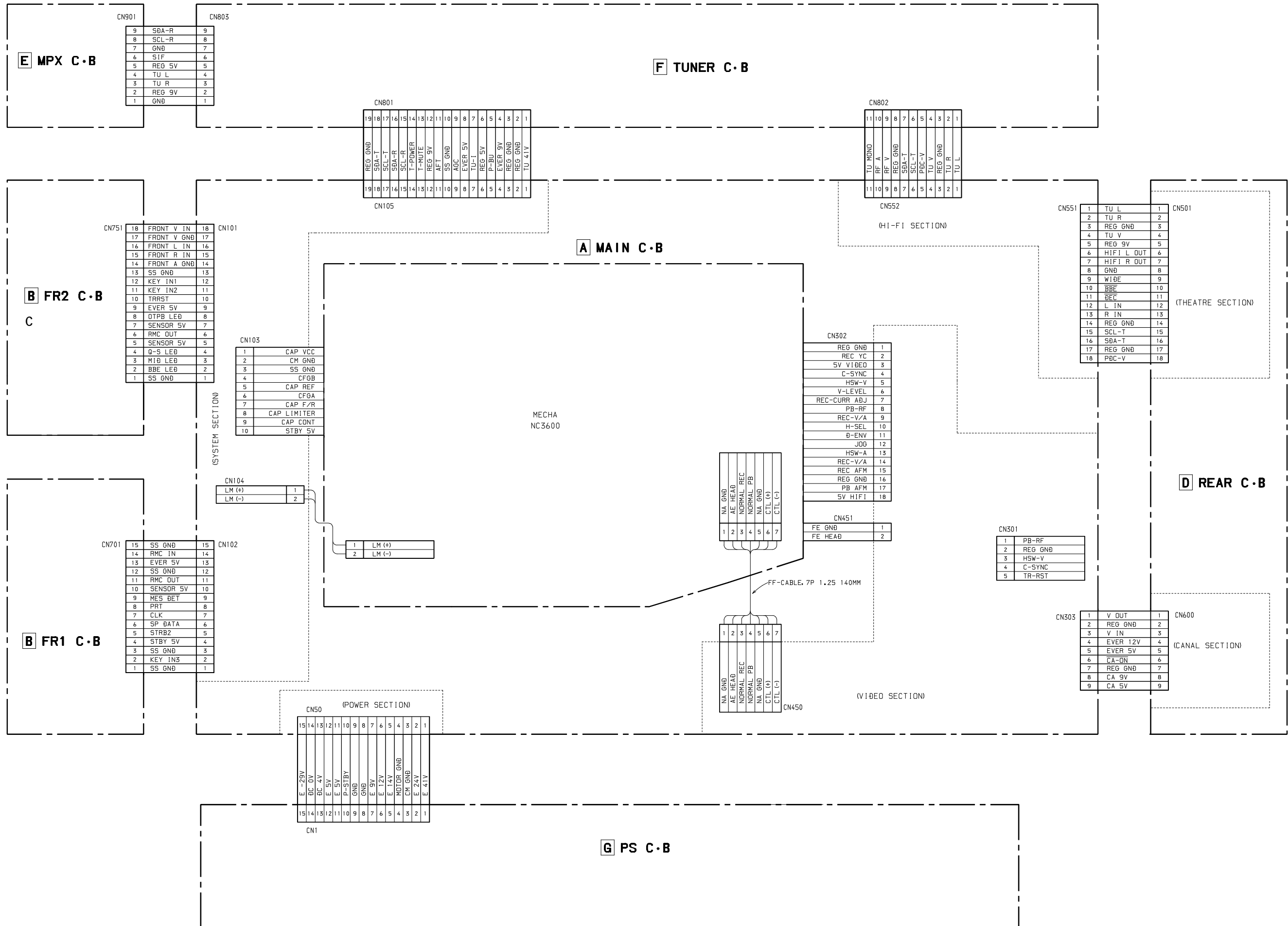
## GRID ASSIGNMENT



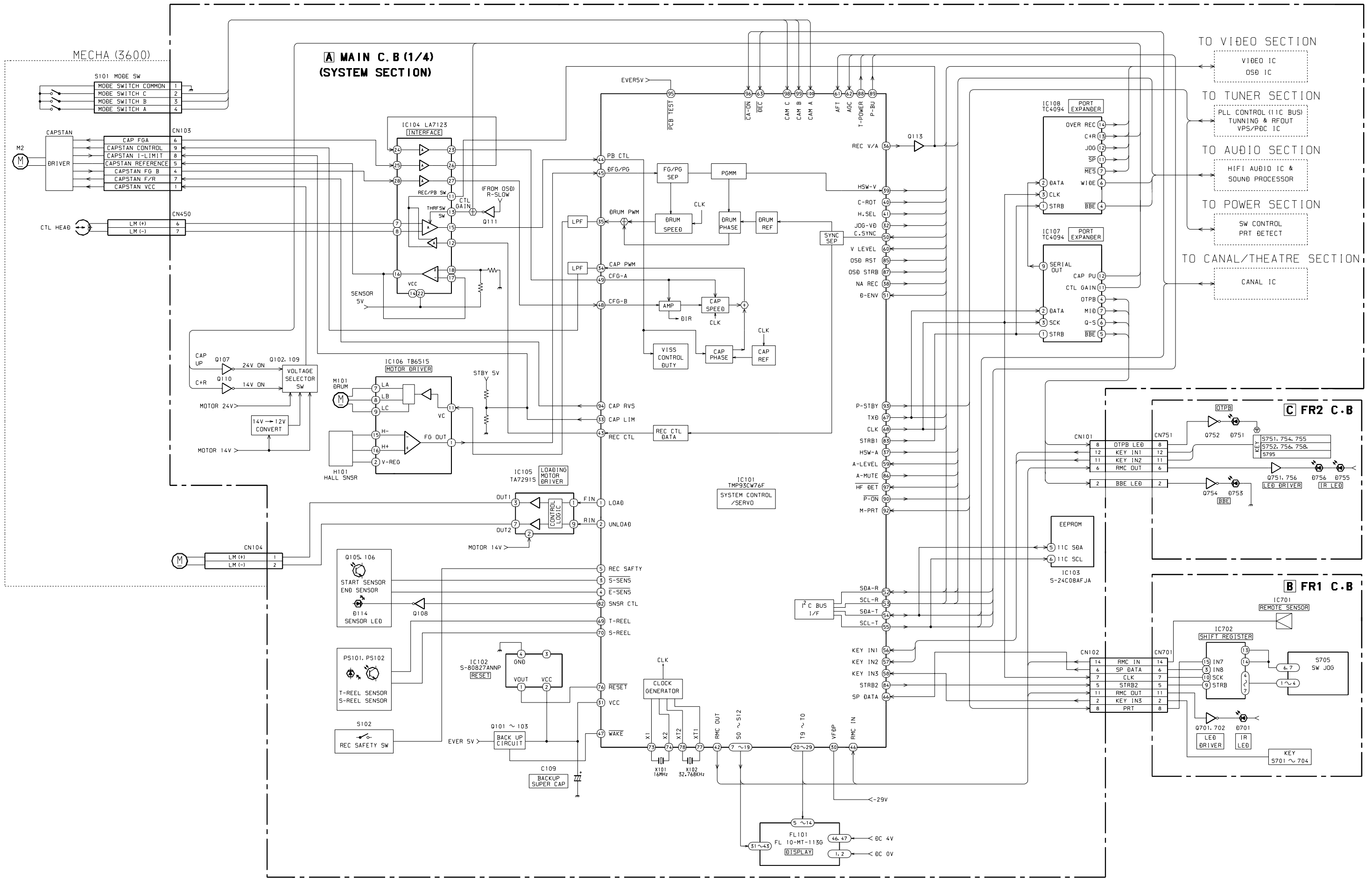
## ANODE CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	HI-FI	a	a	a	a	1a	a	a	S5	S7
P2	L	-	-	-	-	LP	-	-	S6	S8
P3	R	b	b	b	b	1b	b	b	S10	S9
P4	STEREO	f	f	f	f	1f	f	f	S11	🕒
P5	AM	g	g	g	g	1g	g	g	S12	📱
P6	PM	c	c	c	c	1c	c	c	S13	-
P7	BIL	e	e	e	e	1e	e	e	S14	-
P8	SAP	-	-	-	-	EP	-	S1	S15	-
P9	g	-	-	-	-	CH	-	S2	S16	-
P10	b	d	d	d	d	1d	d	d	S17	-
P11	c	col	-	col	-	M	-	S3	S18	-
P12	-	NICAM	PDC	VPS	VCR	2b	A-DUB	S4	S19	-
P13	-	-	-	-	-	2c	-	📡	S20	-

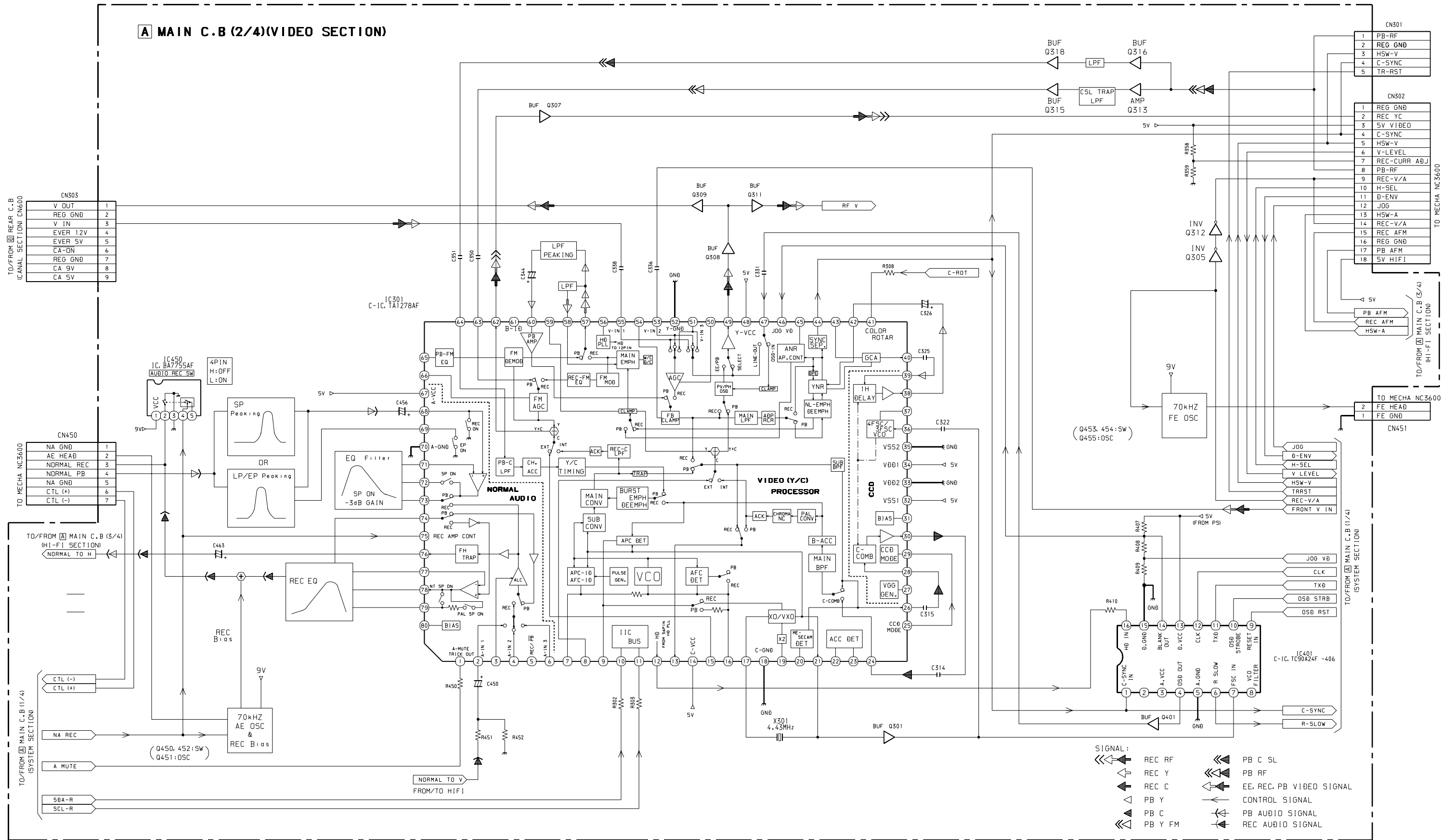
WIRE HARNESS DIAGRAM



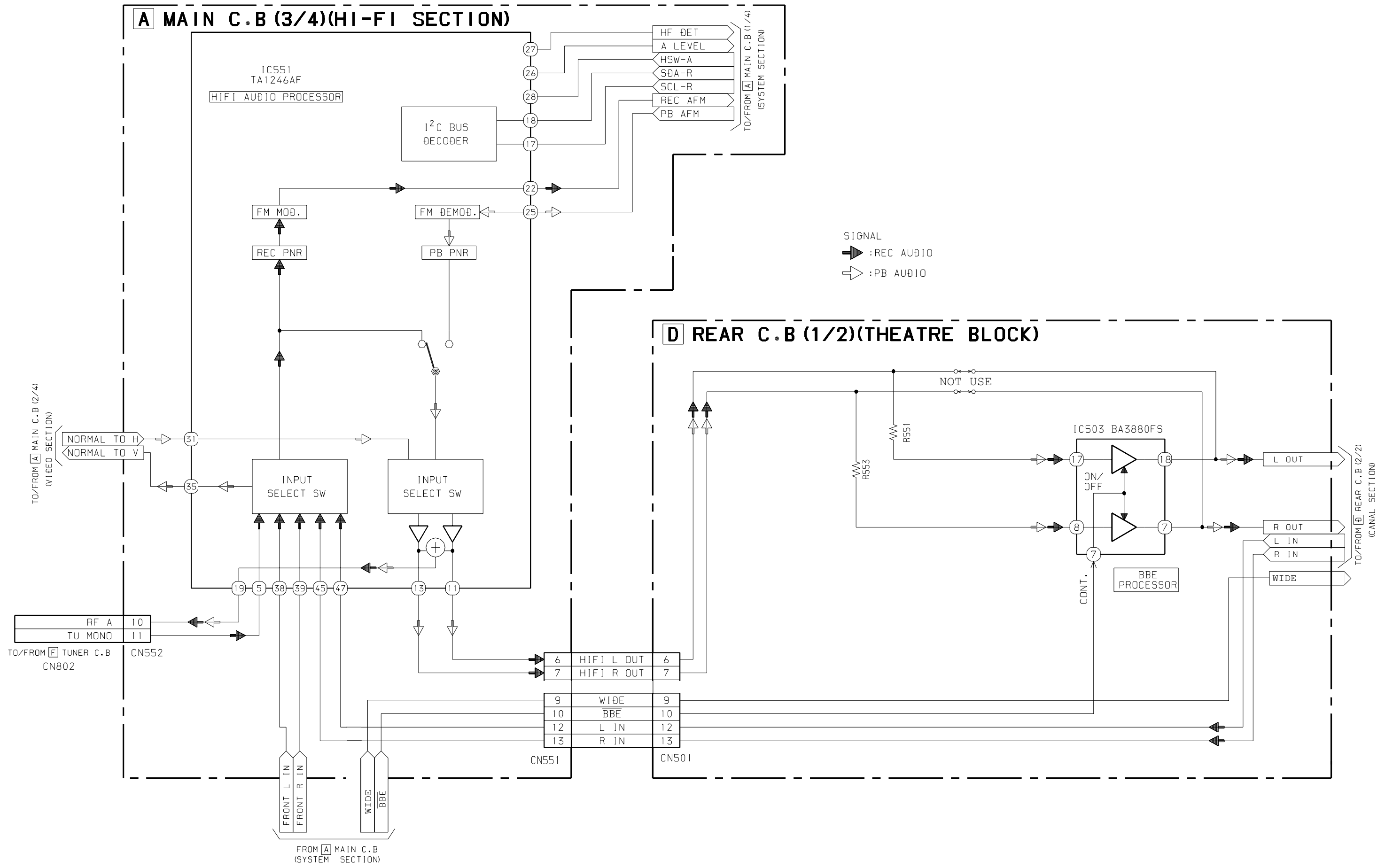
BLOCK DIAGRAM - 1 (SYSCON / SERVO)



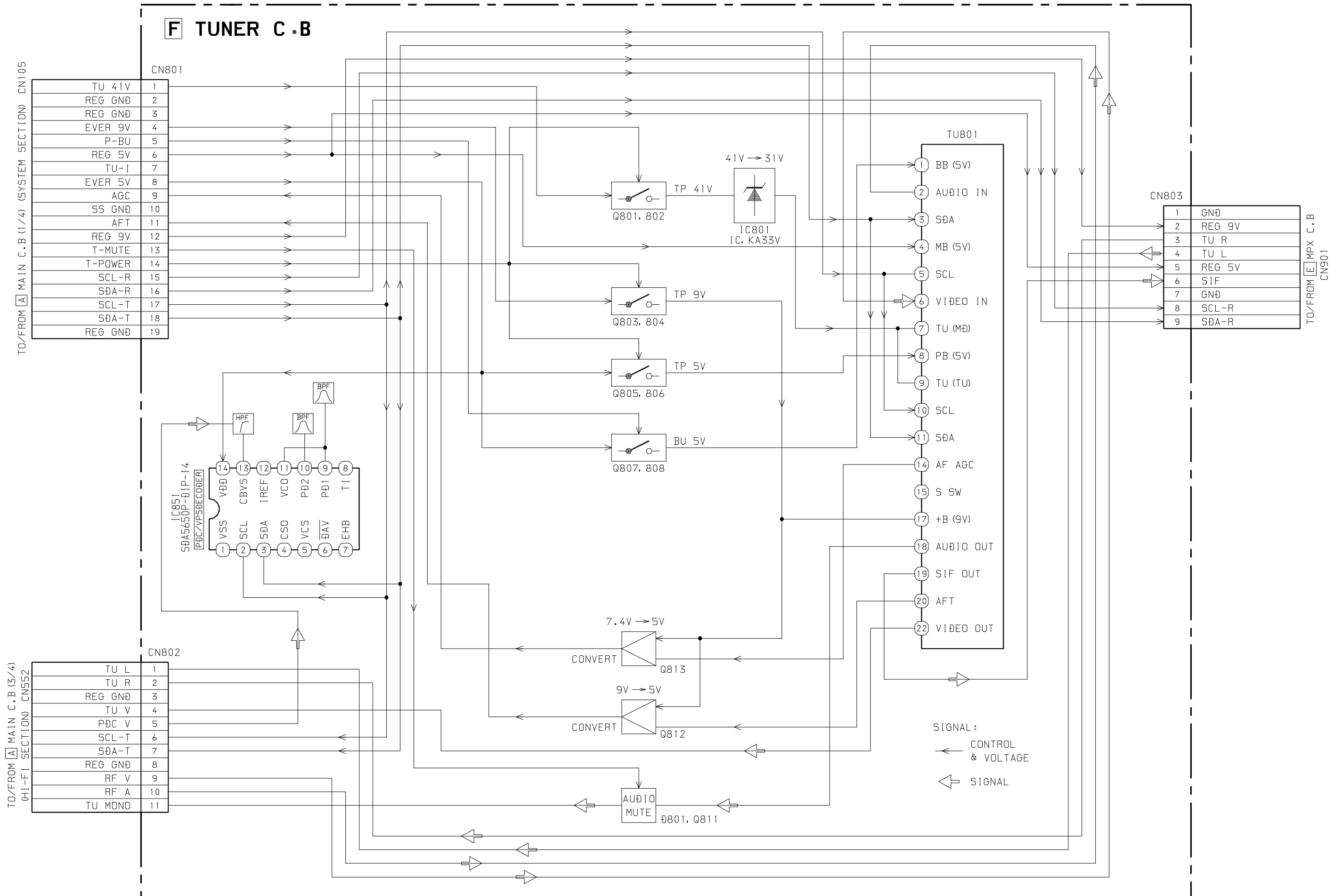
BLOCK DIAGRAM - 2 (VIDEO)



BLOCK DIAGRAM - 3 (HIFI / THEATRE)

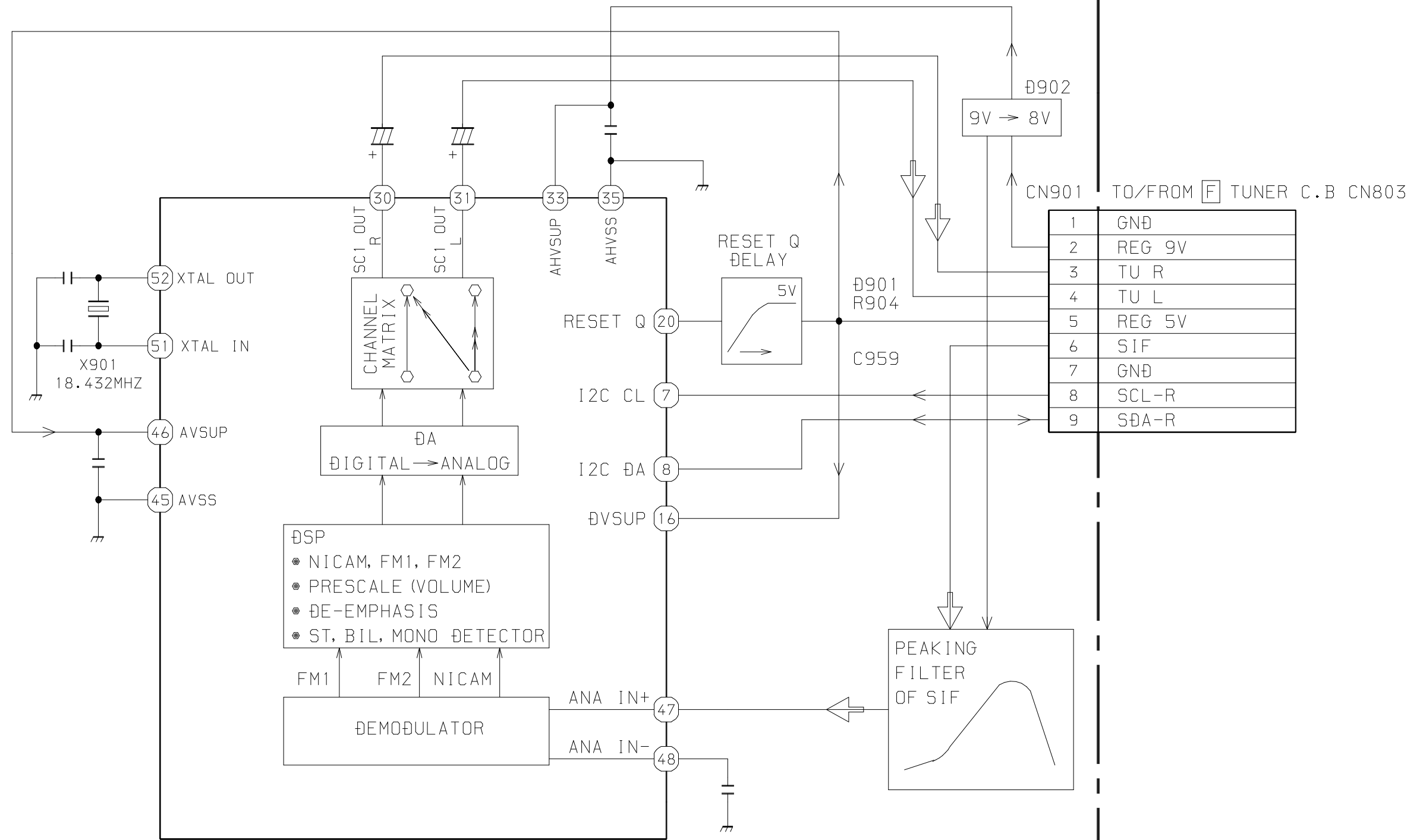


BLOCK DIAGRAM - 4 (TUNER)





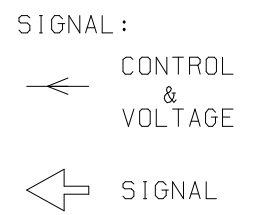
**E MPX C.B**



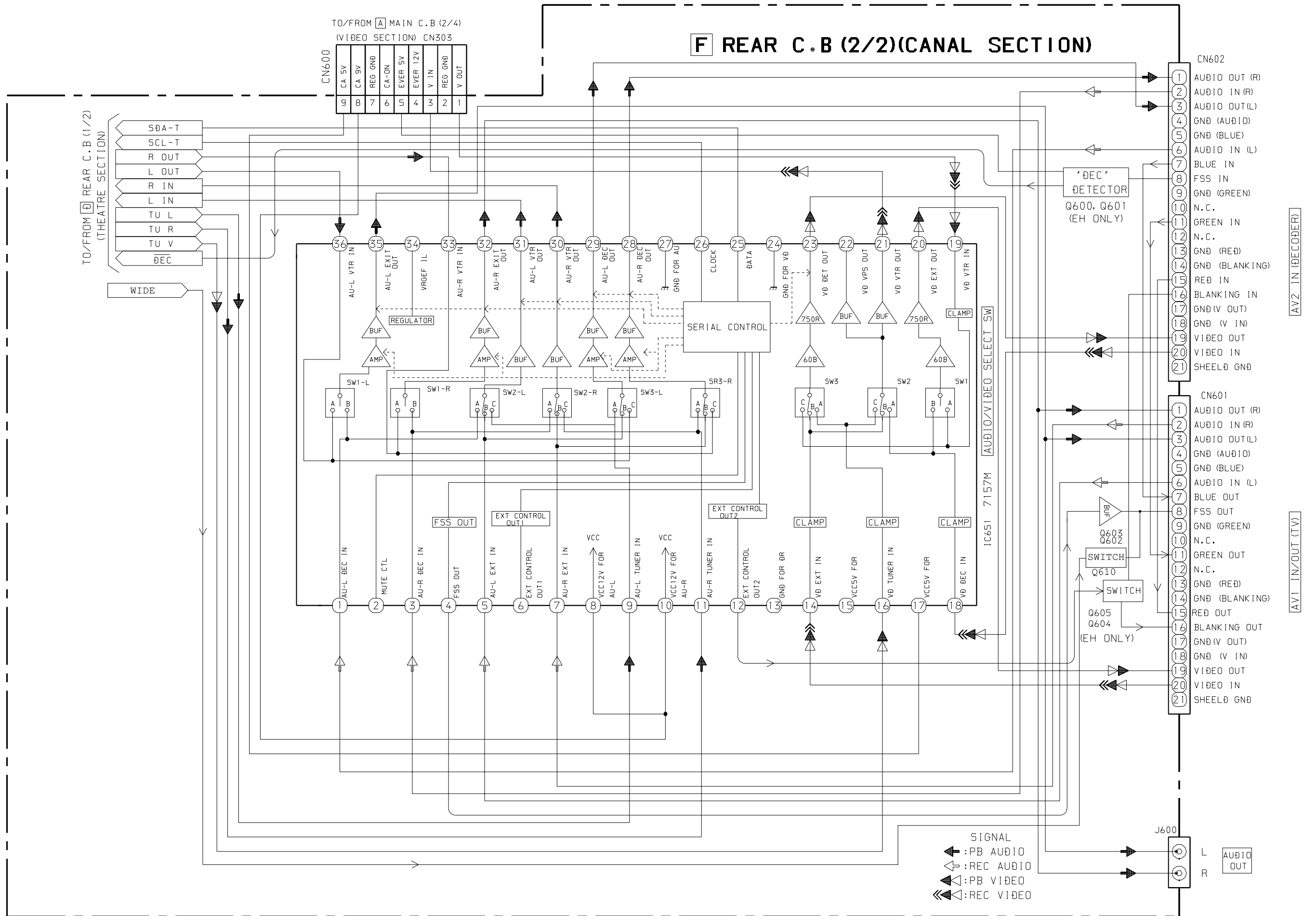
1	GND
2	REG 9V
3	TU R
4	TU L
5	REG 5V
6	SIF
7	GND
8	SCL-R
9	SDA-R

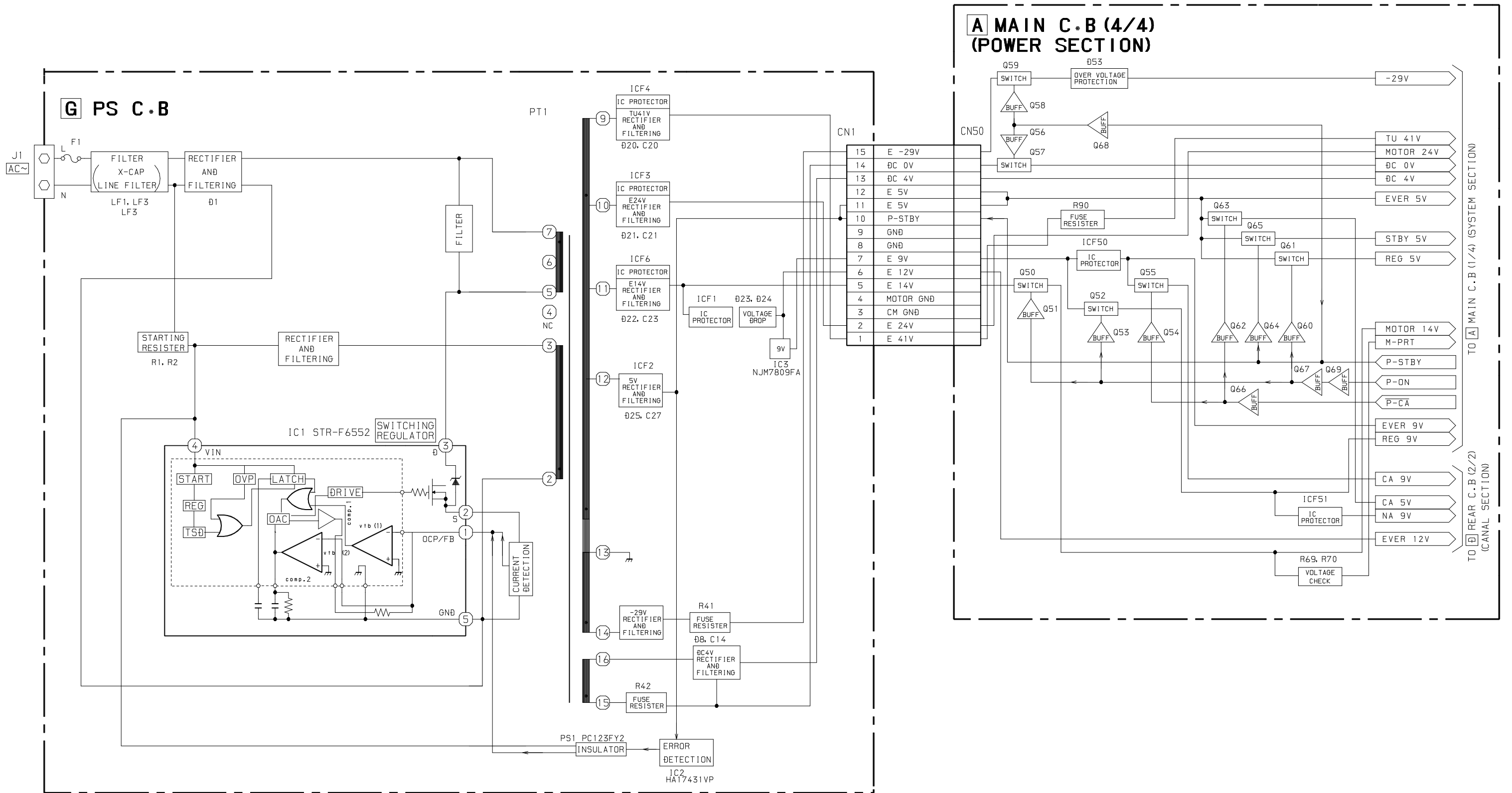
IC901

- Q901 : BUFFER
- Q902 : AMP
- L904 : LC PEAKING
- C926 : LC PEAKING
- C929 : LC PEAKING

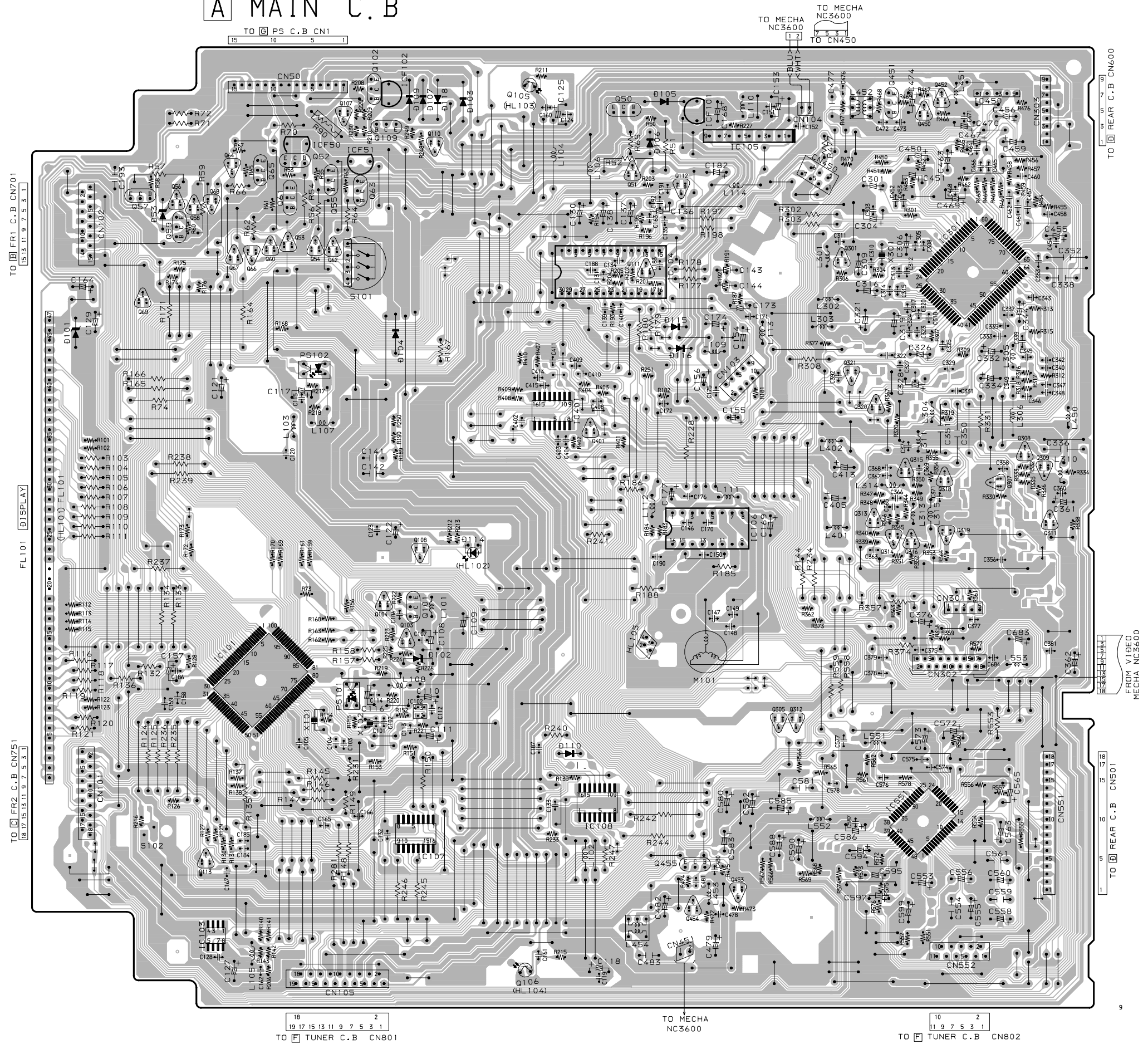


BLOCK DIAGRAM - 6 (CANAL)





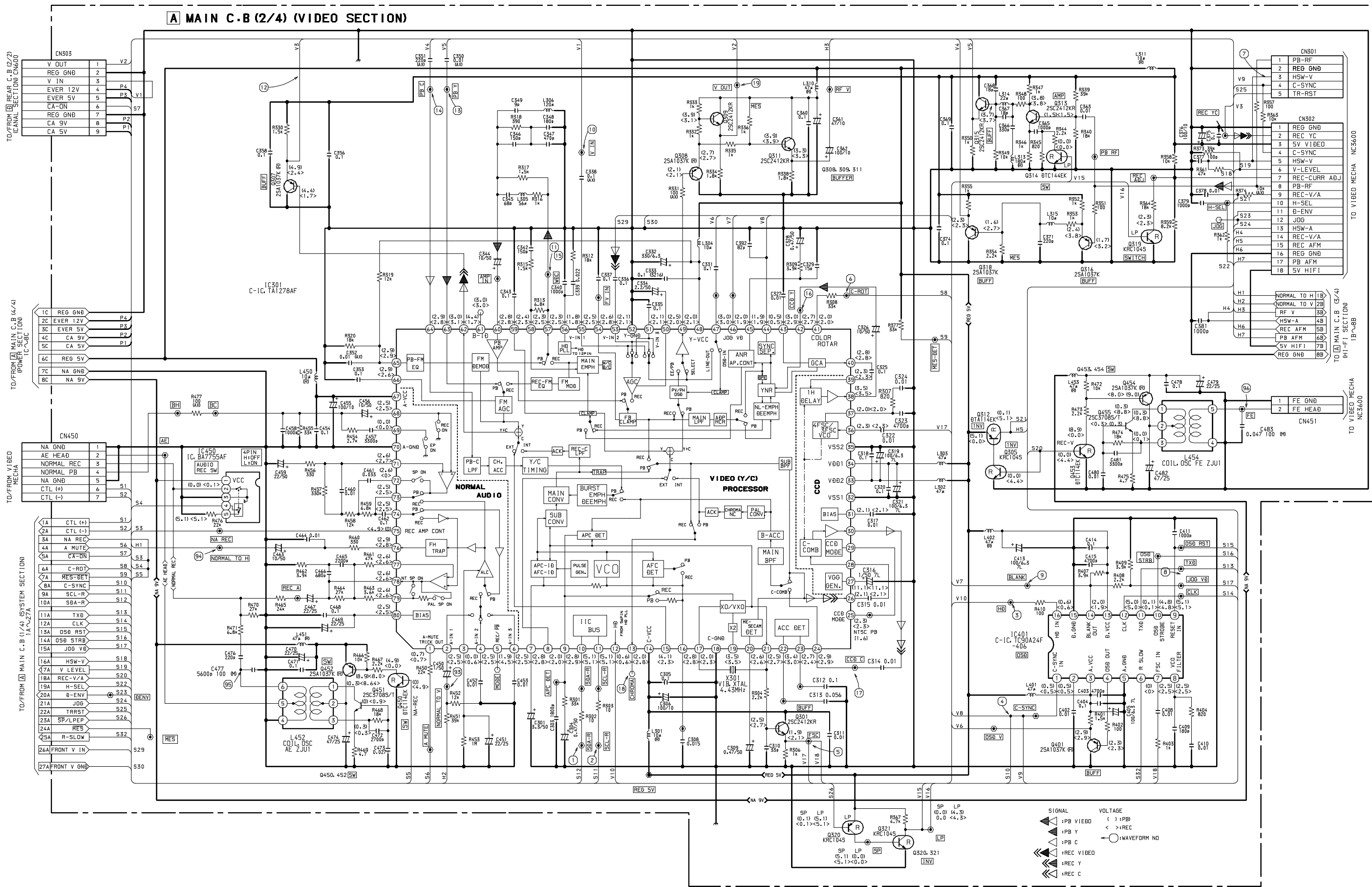
A MAIN C.B



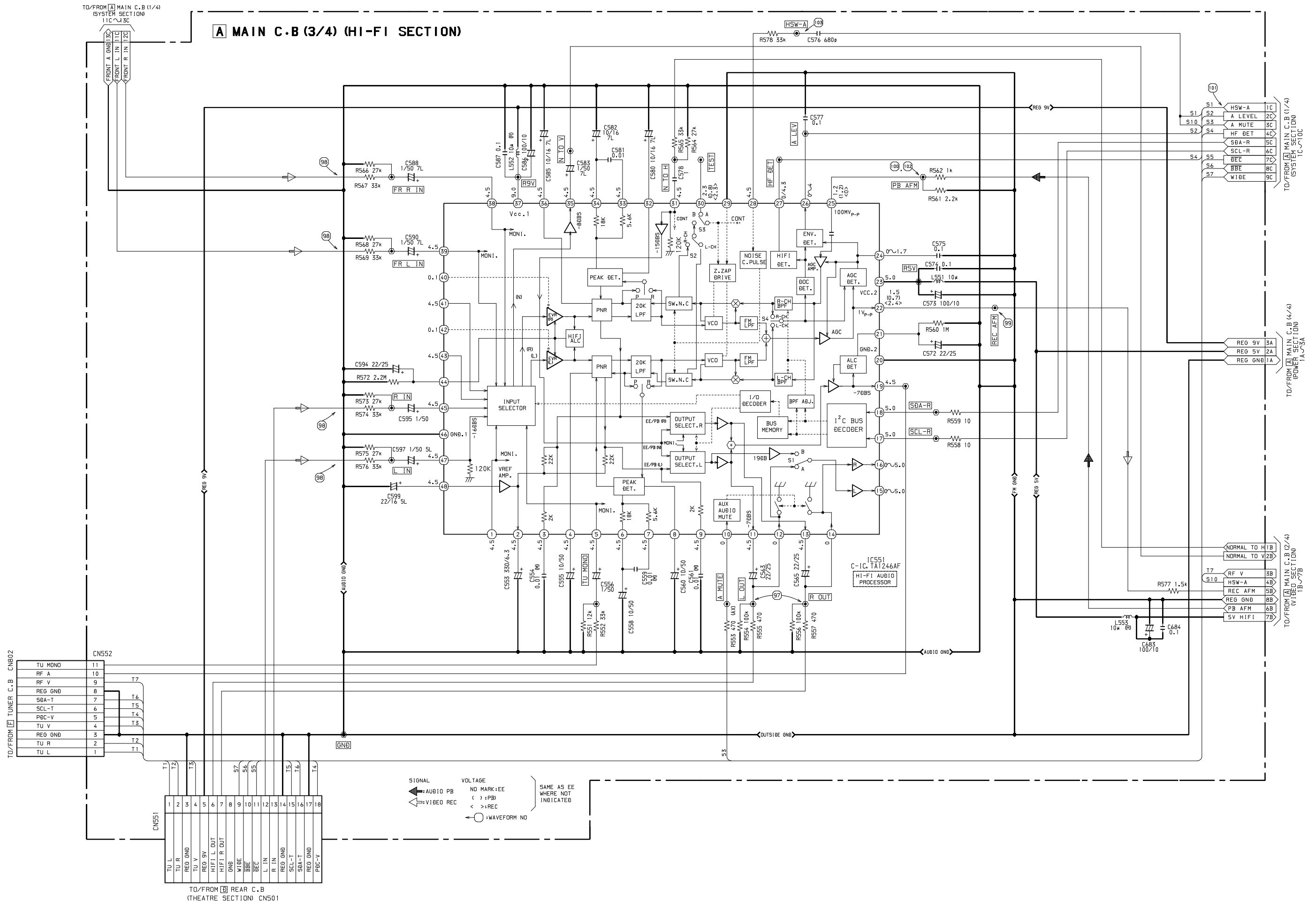
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SCHEMATIC DIAGRAM-2 (MAIN 2/4 : VIDEO SECTION)

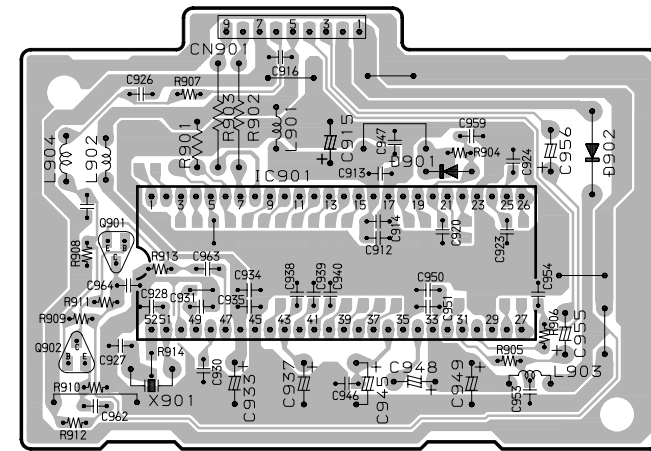


SCHEMATIC DIAGRAM-3 (MAIN 3/4 : HIFI SECTION)

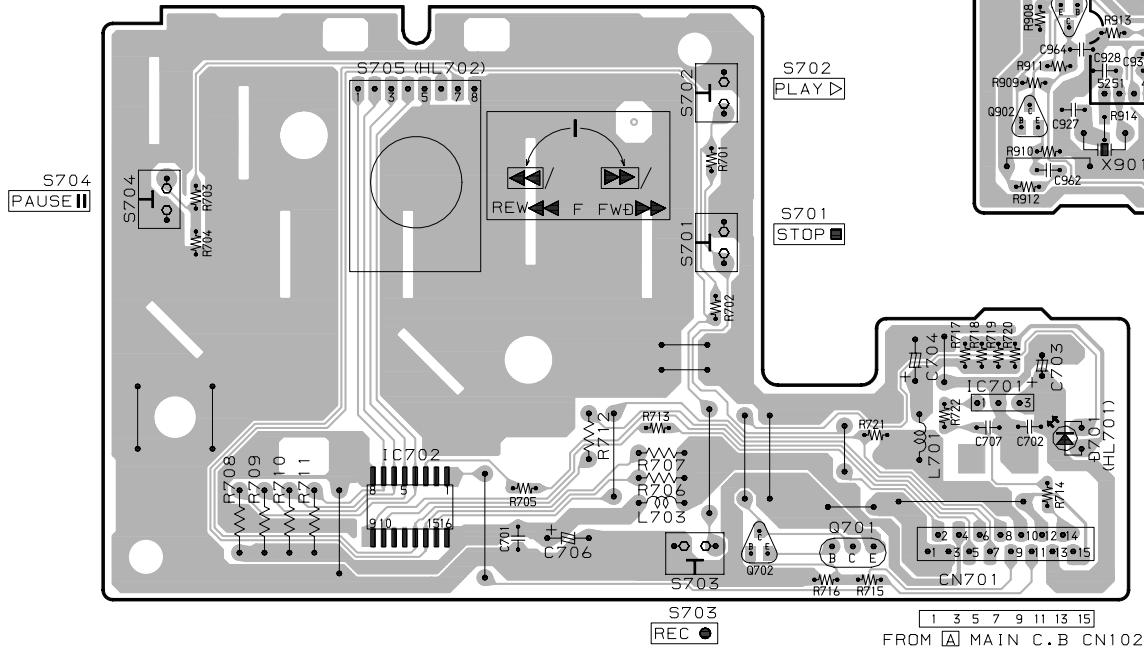


**E** MPX C.B

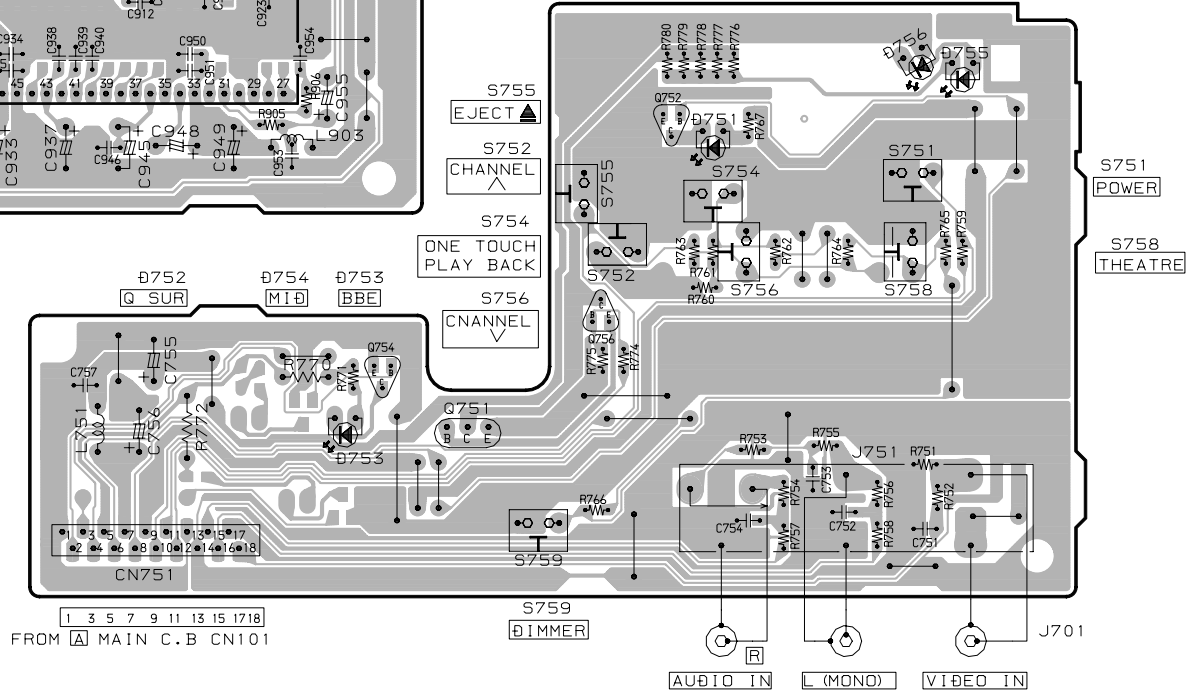
FROM **F** TUNER C.B  
CN803  
9 7 5 3 1



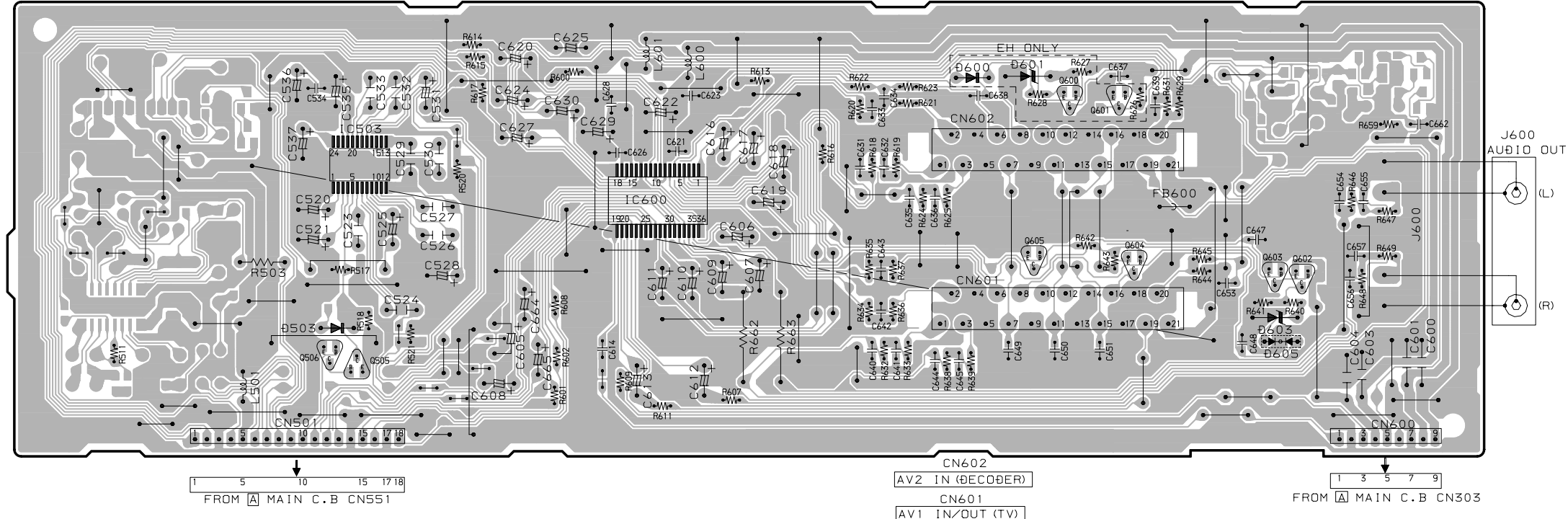
**B** FR1 C.B



**C** FR2 C.B



**D** REAR C.B

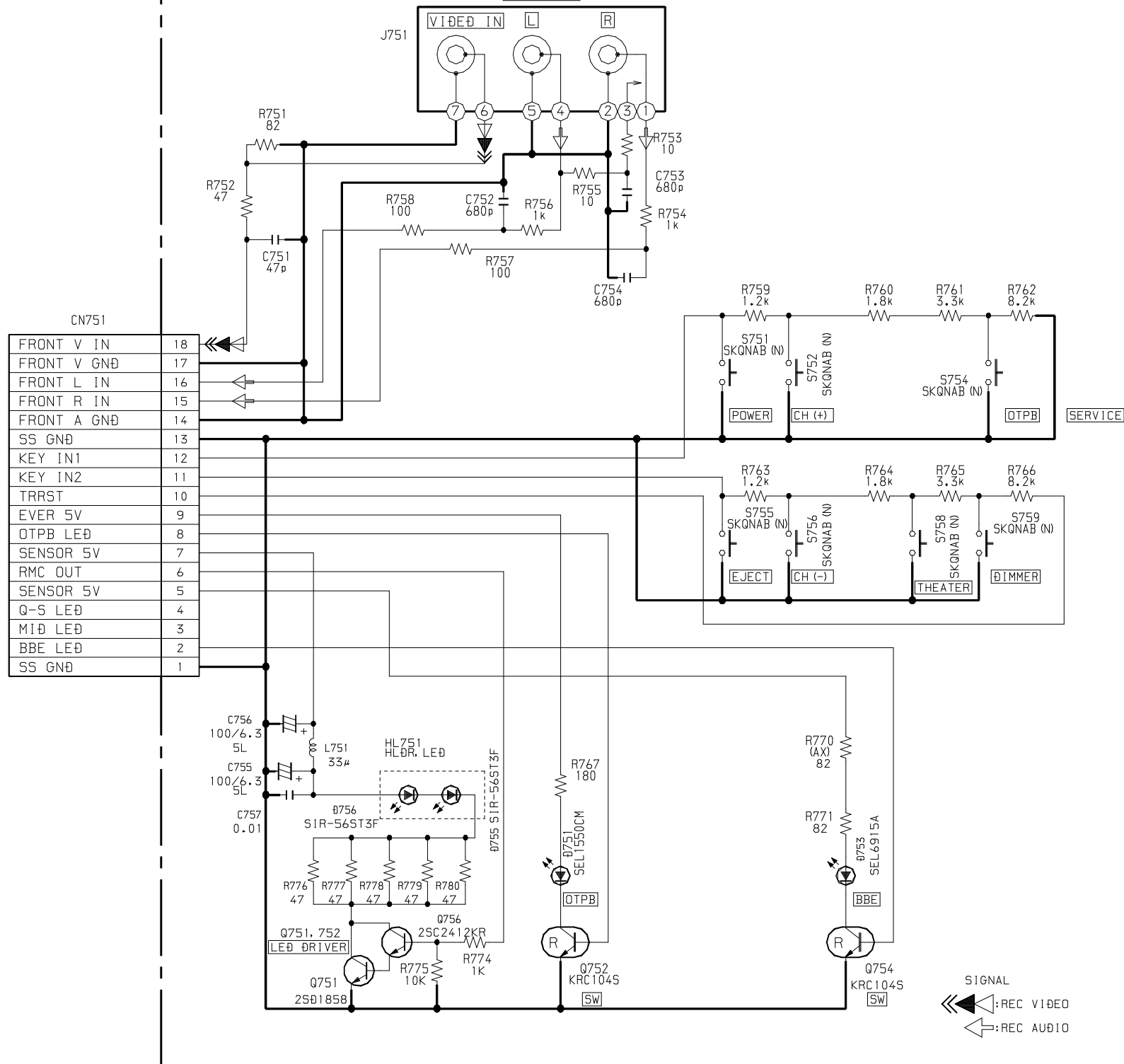




SCHEMATIC DIAGRAM - 4 (FR1/FR2)

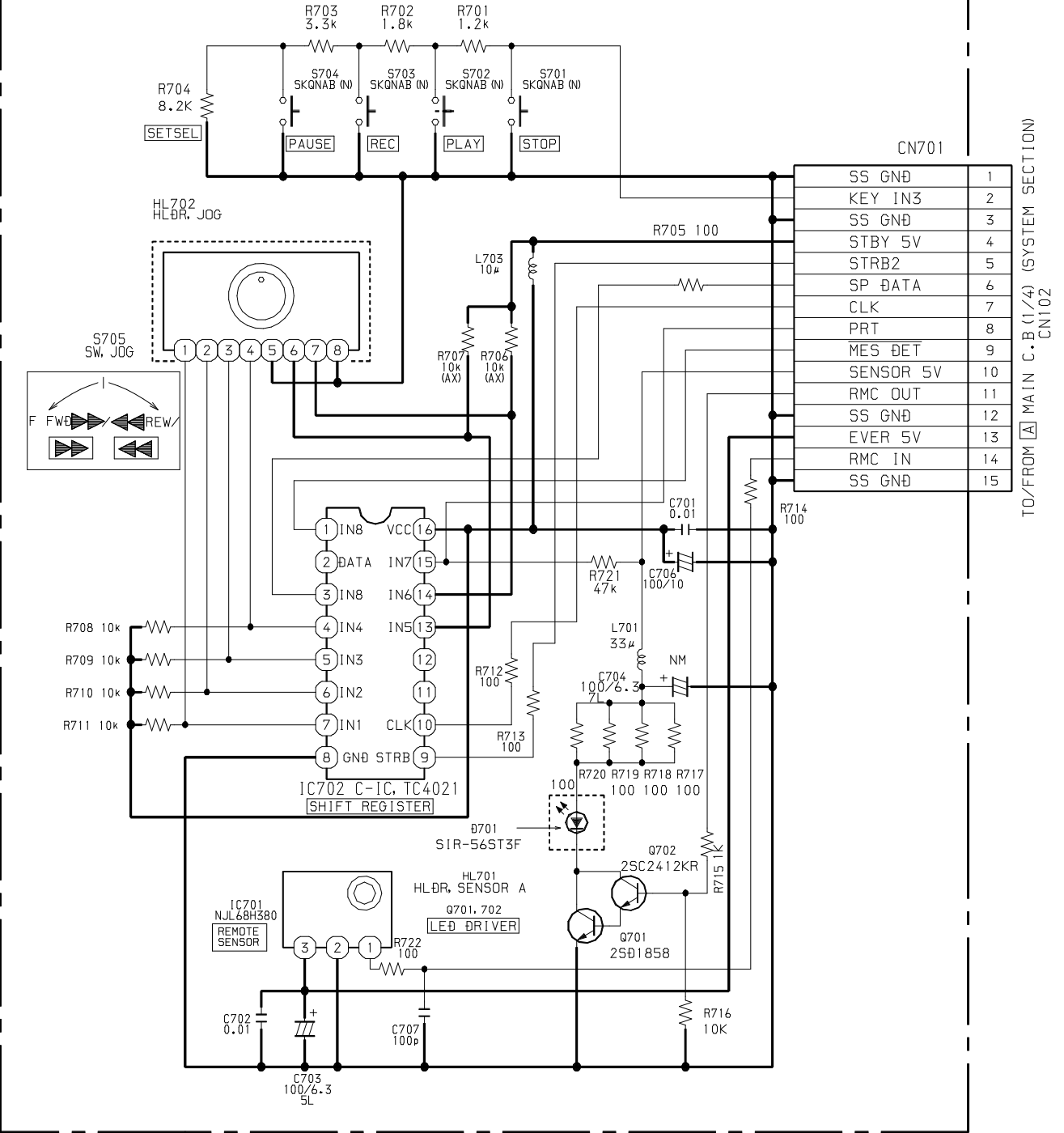
TO/FROM MAIN C.B (1/4) (SYSTEM SECTION) CN101

**C FR2 C.B**



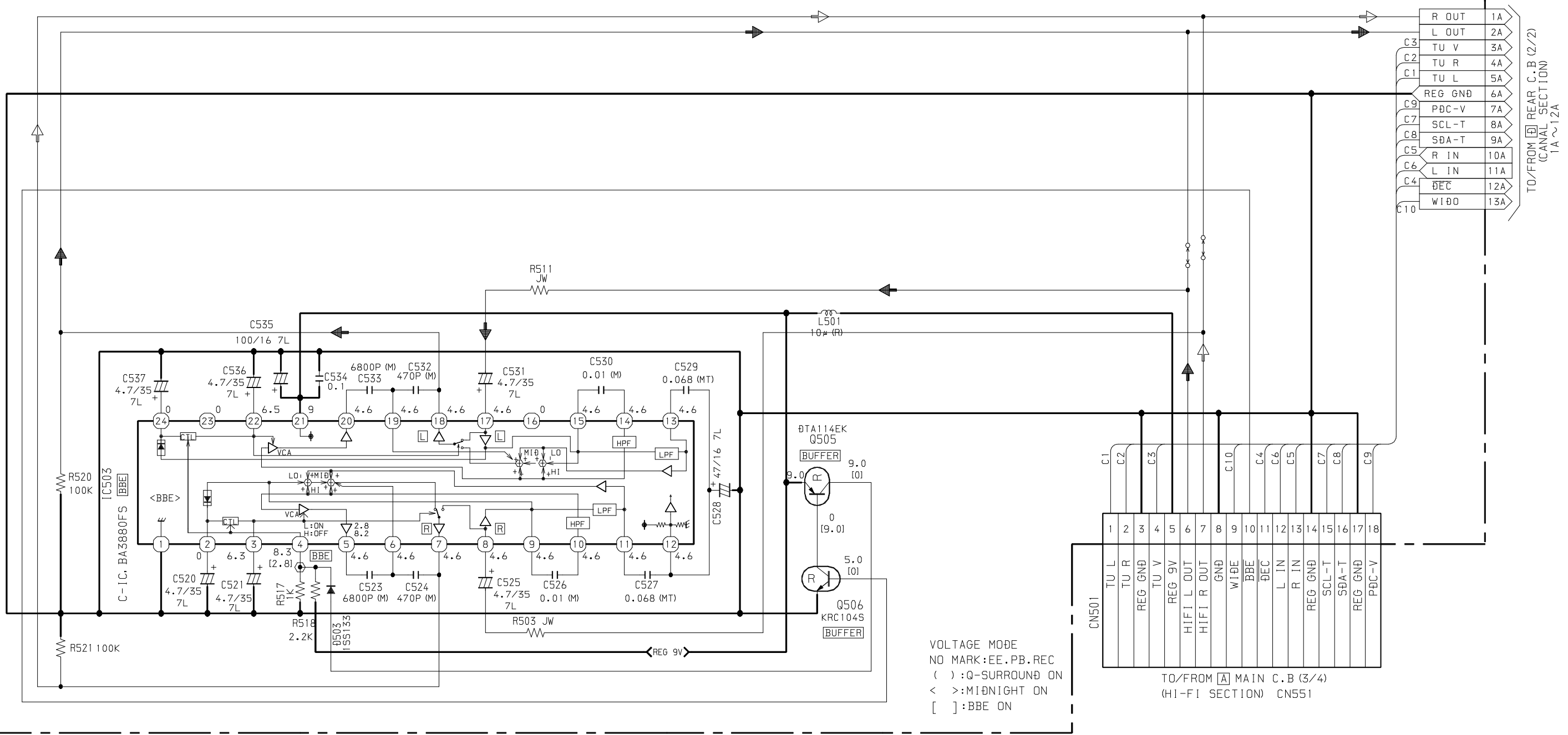
CN751	
FRONT V IN	18
FRONT V GND	17
FRONT L IN	16
FRONT R IN	15
FRONT A GND	14
SS GND	13
KEY IN1	12
KEY IN2	11
TRRST	10
EVER 5V	9
OTPB LED	8
SENSOR 5V	7
RMC OUT	6
SENSOR 5V	5
Q-S LED	4
MID LED	3
BBE LED	2
SS GND	1

**B FR1 C.B**

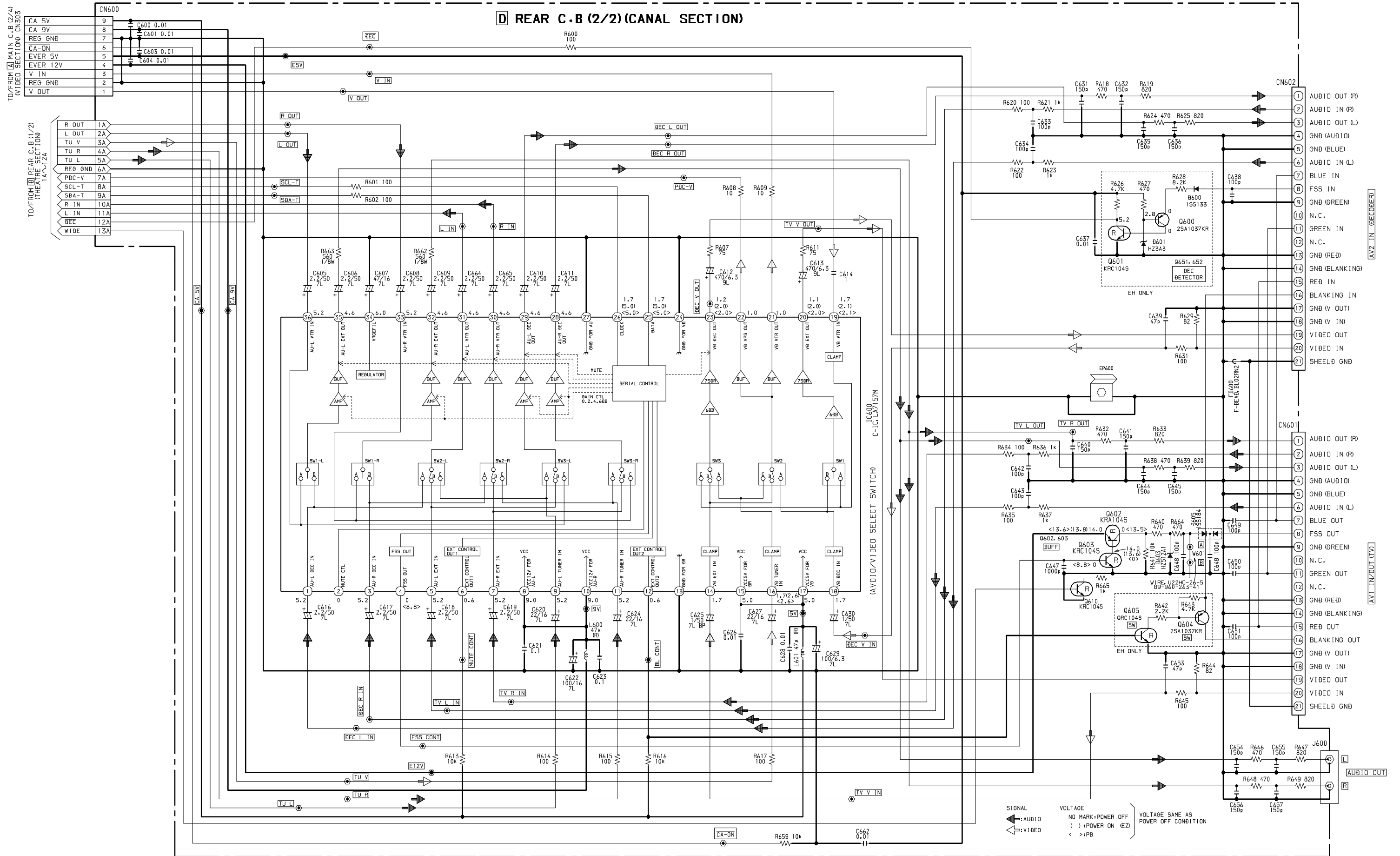


CN701	
SS GND	1
KEY IN3	2
SS GND	3
STBY 5V	4
STRB2	5
SP DATA	6
CLK	7
PRT	8
MES DET	9
SENSOR 5V	10
RMC OUT	11
SS GND	12
EVER 5V	13
RMC IN	14
SS GND	15

**D REAR C.B (1/2)(THEATRE SECTION)**



SCHEMATIC DIAGRAM - 6 (REAR 2/2 : CANAL SECTION)

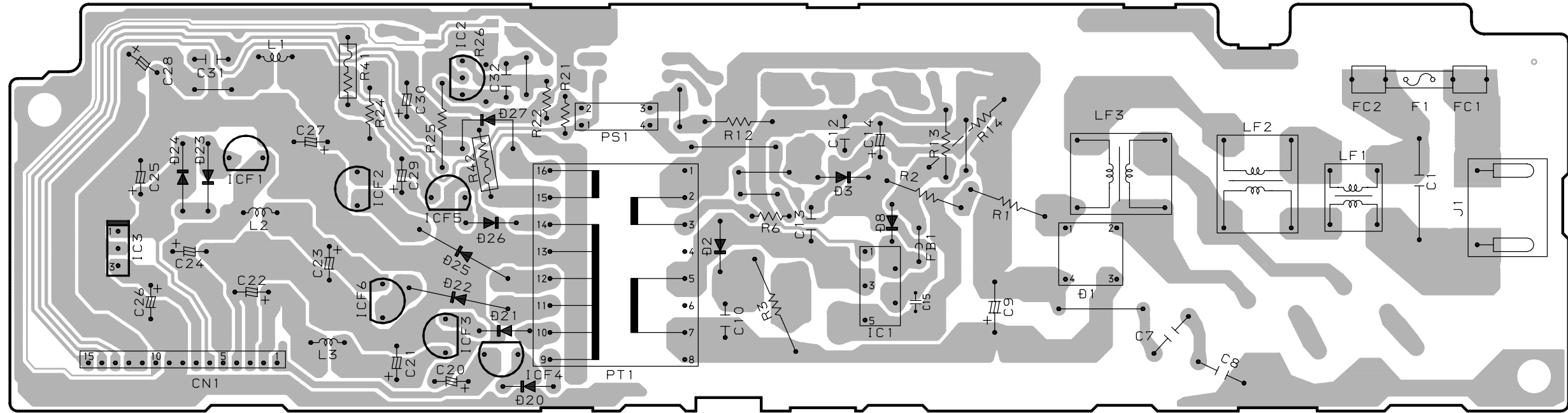


WIRING - 3 (TUNER / PS)

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

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G PS C.B



J1  
AC  
EH: 220~240VAC  
50HZ  
K: 230VAC  
50HZ

15 10 5 1  
FROM MAIN C.B CN50

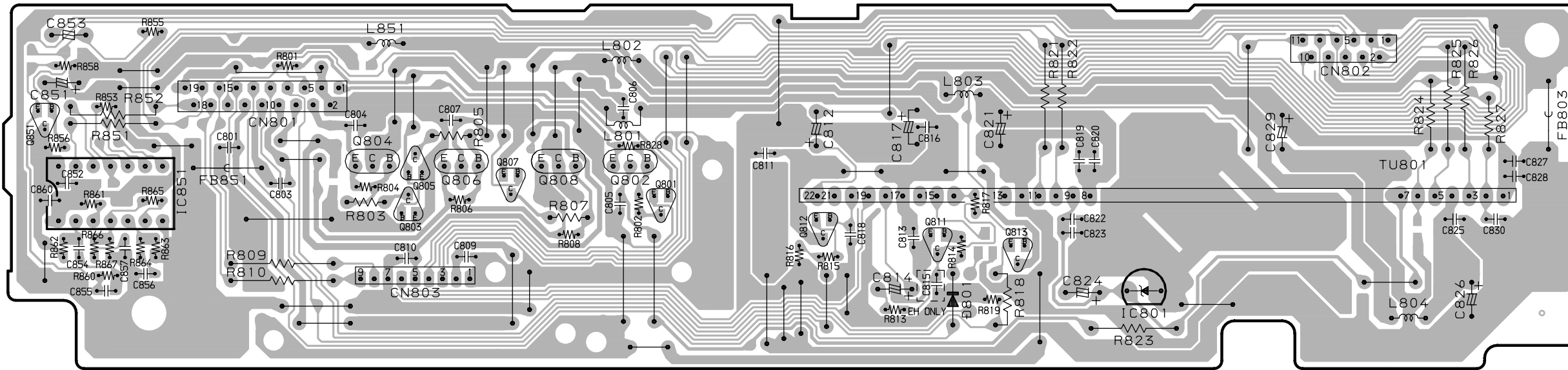
F TUNER C.B

FROM MAIN C.B CN105

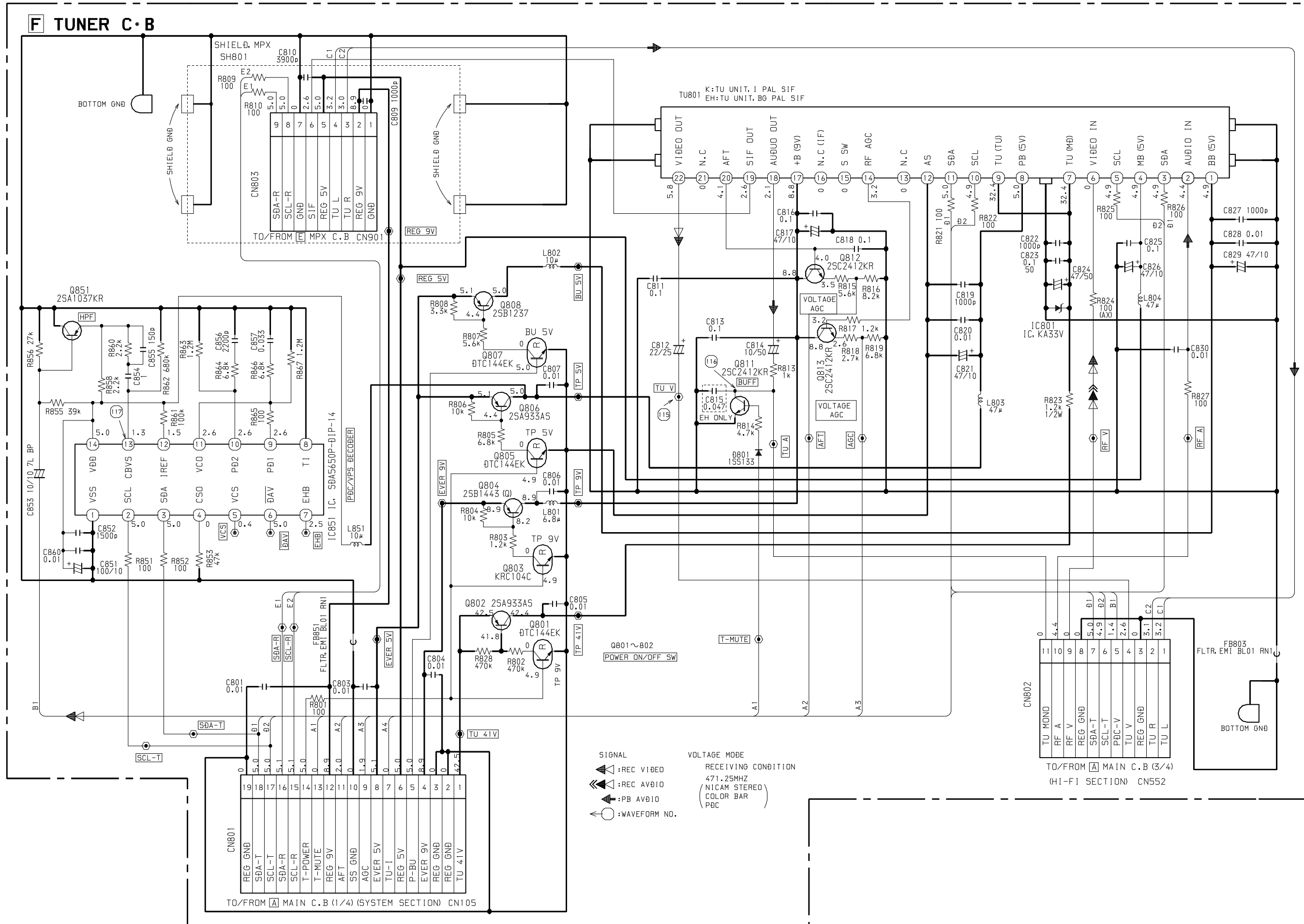
19 17 15 13 11 9 7 5 3 1  
18 2

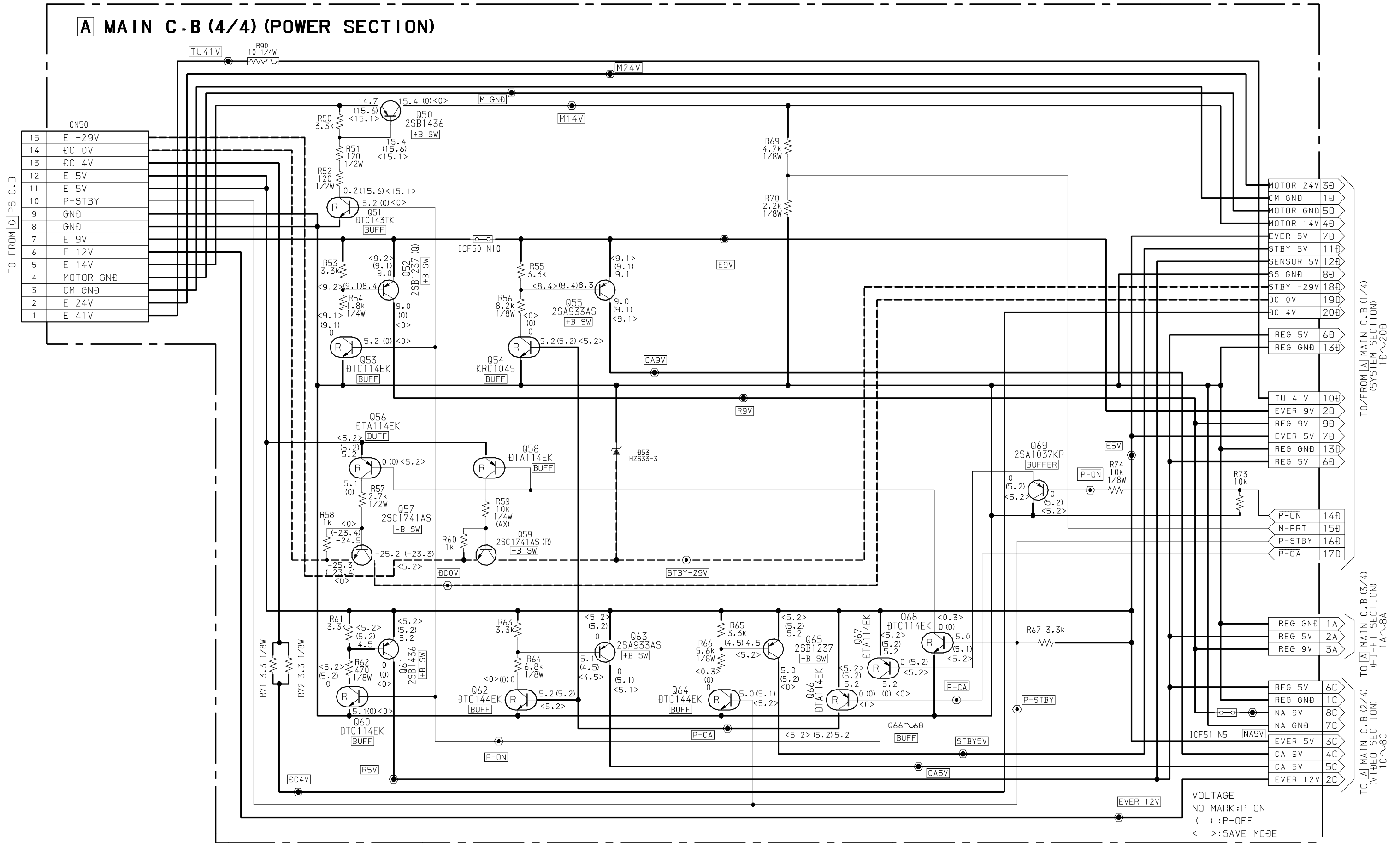
FROM MAIN C.B CN552

11 9 7 5 3 1  
10 2

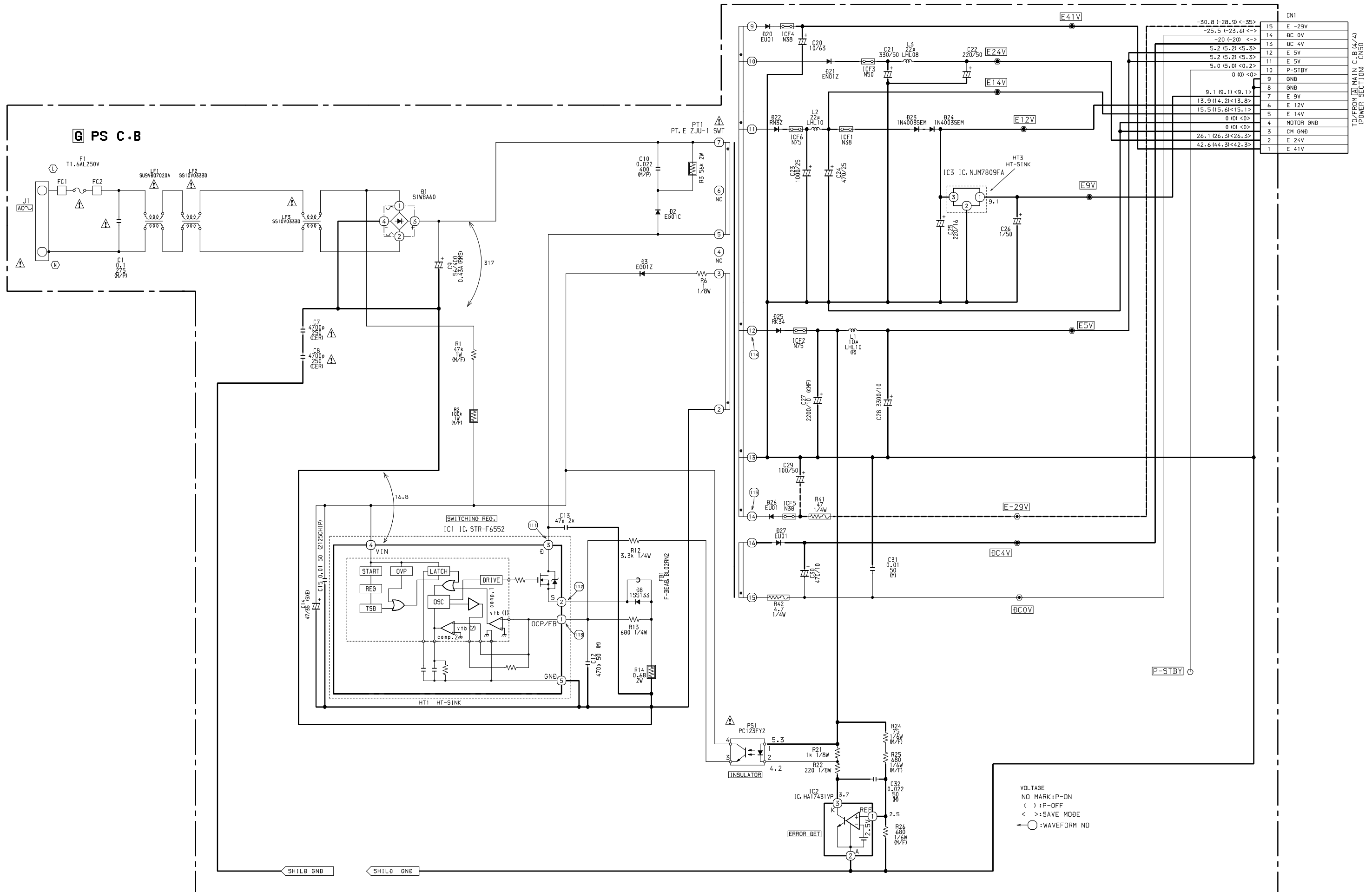


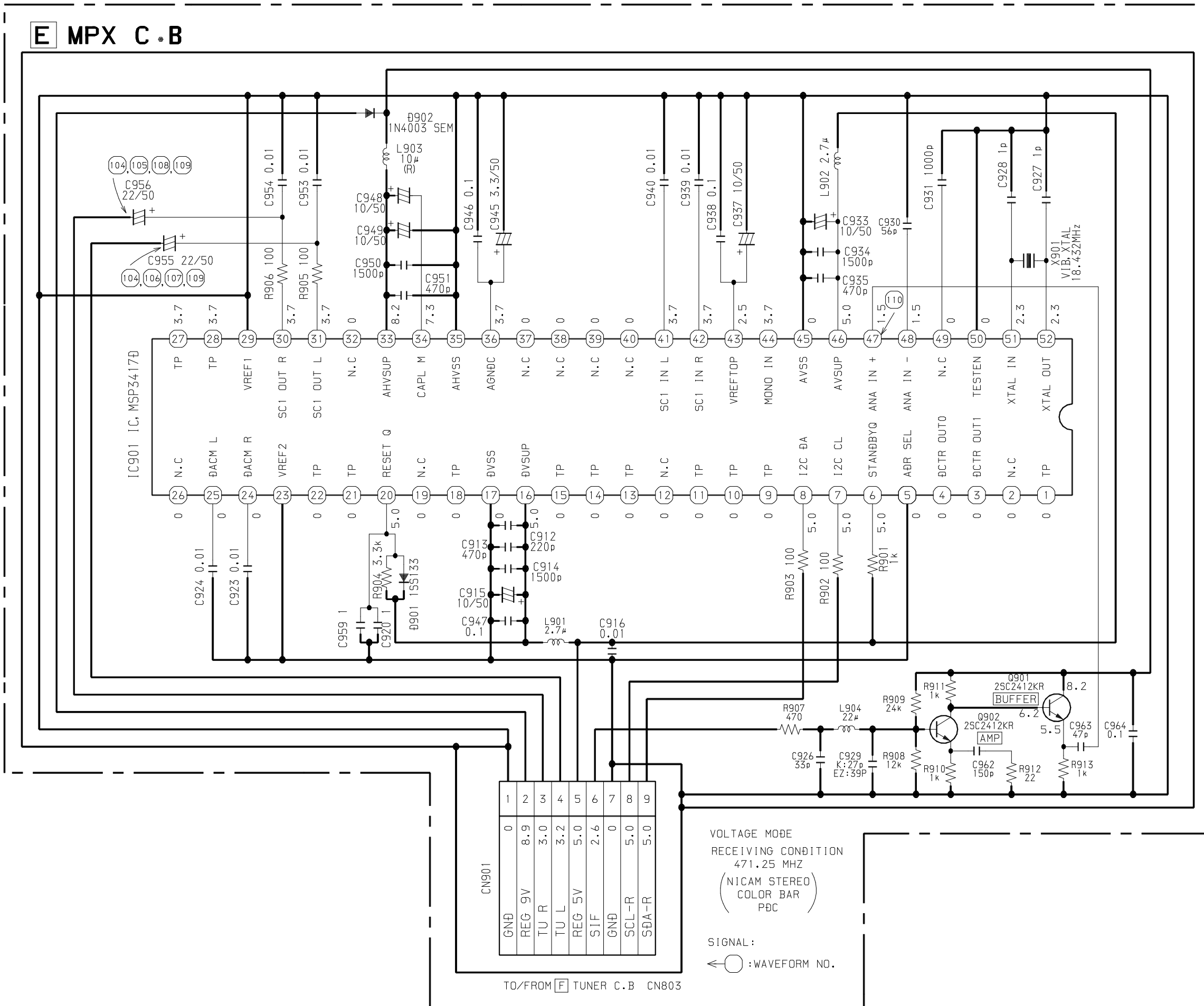
9 7 5 3 1  
TO MPX C.B CN901





SCHEMATIC DIAGRAM - 9 (PS)



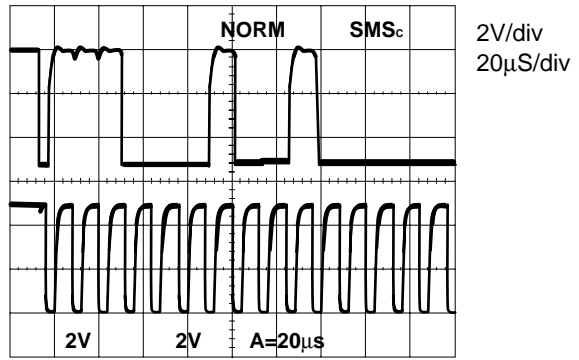




WAVEFORM  
<VIDEO SECTION>

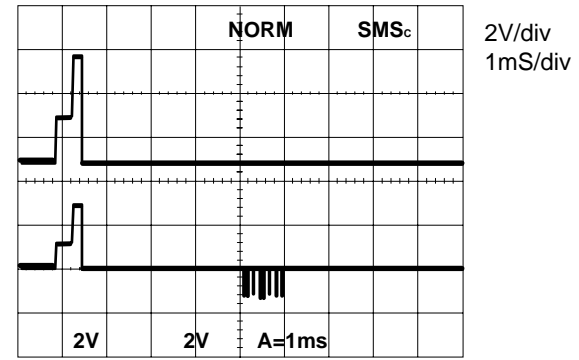
- ① IC301 PIN 10 (SDA-R)
- ② IC301 PIN 11 (SCL-R)

MODE: REC



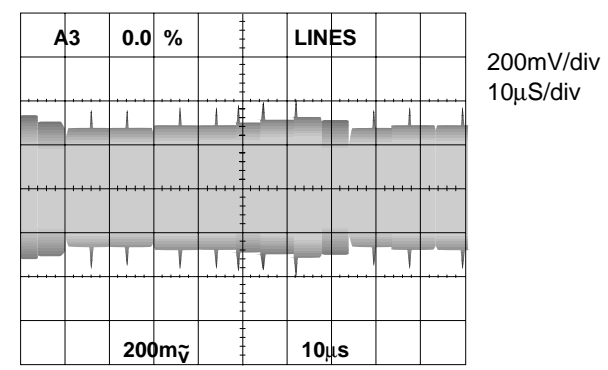
- ⑧ IC401 PIN 14 (JOG VD)
- ⑨ IC401 PIN 14 (BLANK)

MODE: PB



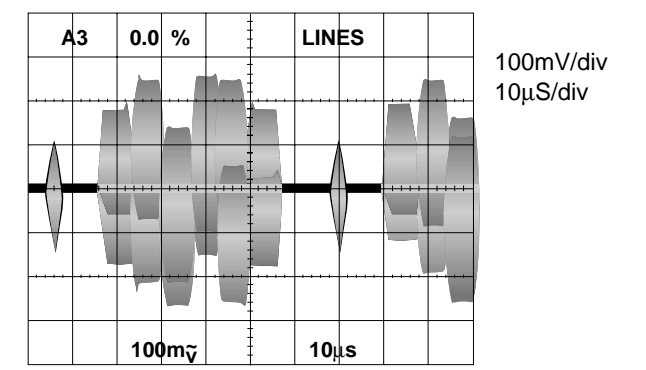
- ⑬ IC301 PIN 63 (PB YFM)

MODE: PB



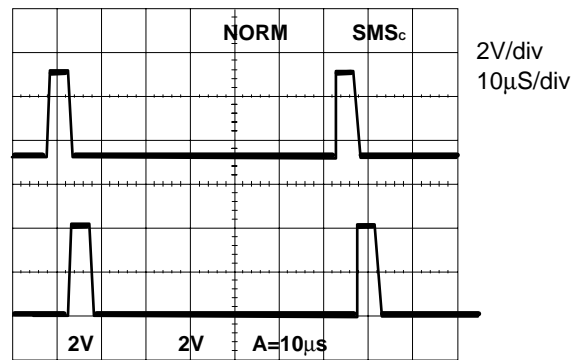
- ⑰ IC301 PIN 24 (C CCD OUT)

MODE: PB



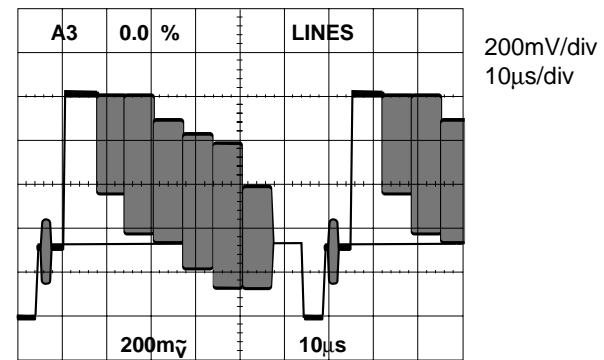
- ③ IC401 PIN 16 (HD)
- ④ IC401 PIN 01 (C-SYNC)

MODE: REC



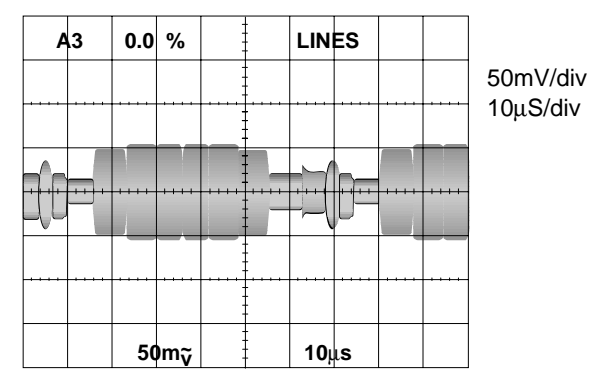
- ⑩ IC301 PIN 55 (V IN)

MODE: REC



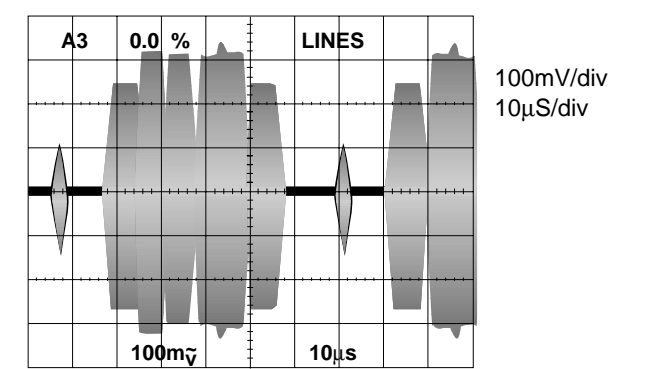
- ⑭ IC301 PIN 64 (PB CSL)

MODE: PB



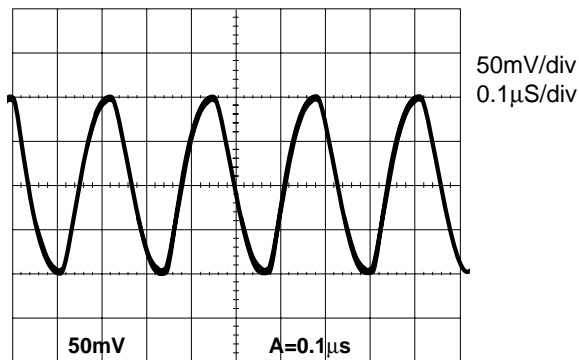
- ⑱ IC301 PIN 13 (PB C)

MODE: PB



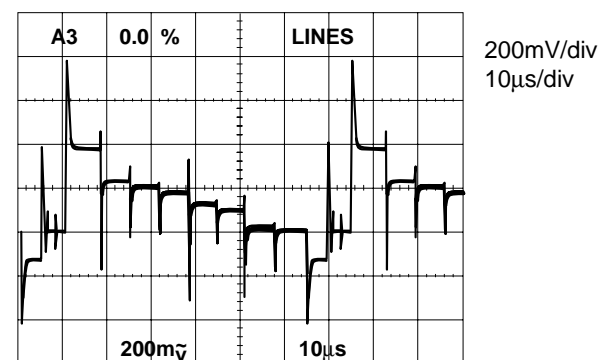
- ⑤ Q301 Emitter (FSC)

MODE: REC



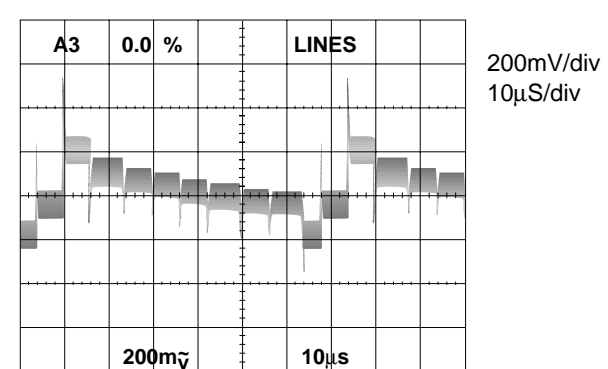
- ⑪ IC301 PIN 57 (WDC)

MODE: REC



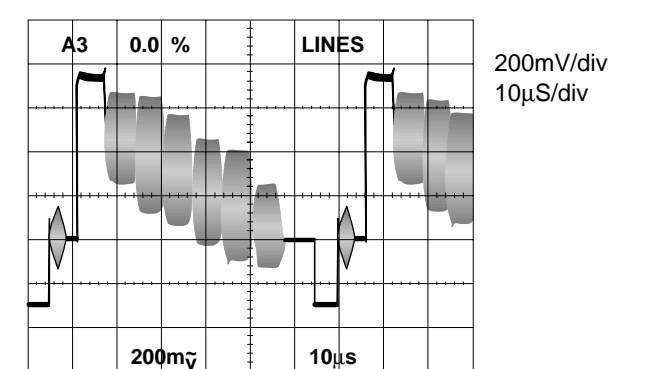
- ⑮ IC301 (DE EMPH)

MODE: PB



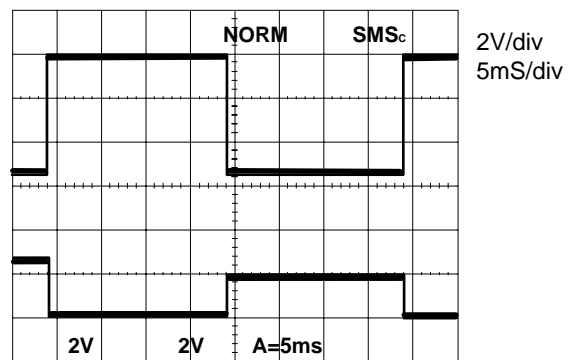
- ⑲ Q309 Emitter (V OUT)

MODE: PB



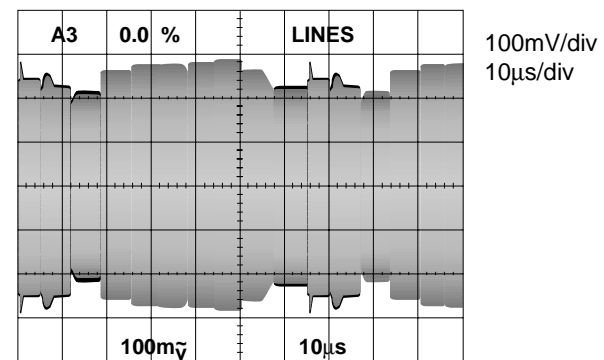
- ⑥ IC301 PIN 41 (C-ROT)
- ⑦ CN301 PIN 3 (HSW-V)

MODE: REC



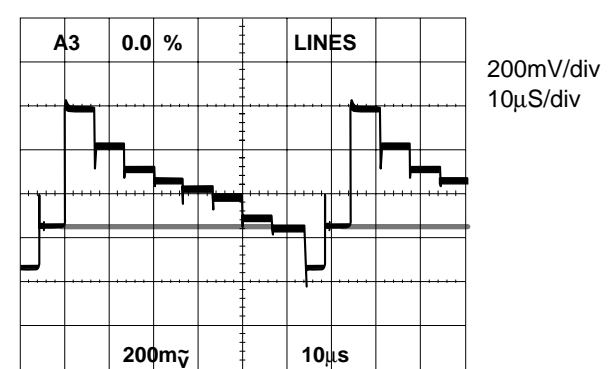
- ⑫ Q307 Emitter (REC YC)

MODE: REC



- ⑯ IC301 PIN 42 (Y CCD OUT)

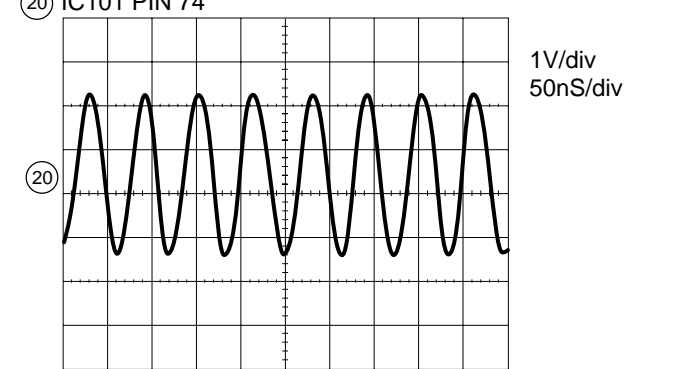
MODE: PB



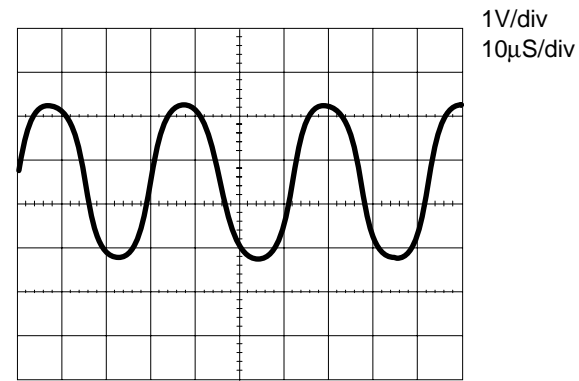
<SYSTEM SECTION>

- ⑳ IC101 PIN 74

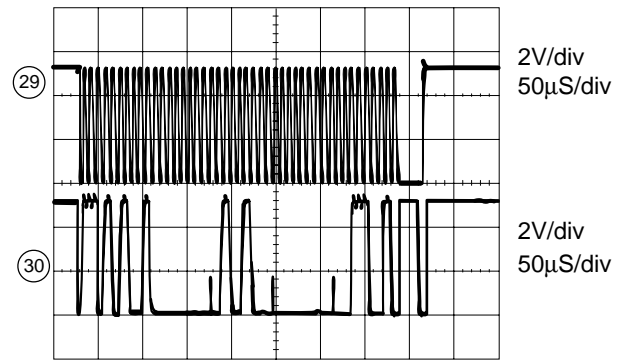
1V/div  
50nS/div



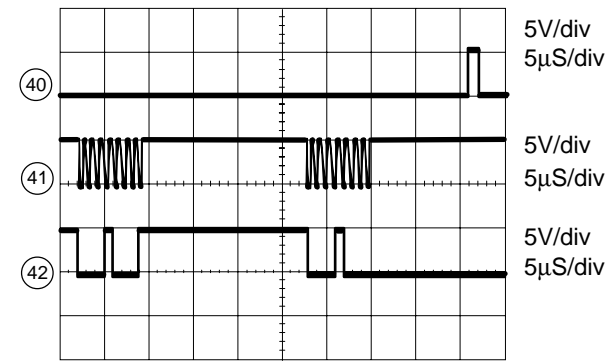
②1 IC101 PIN 78



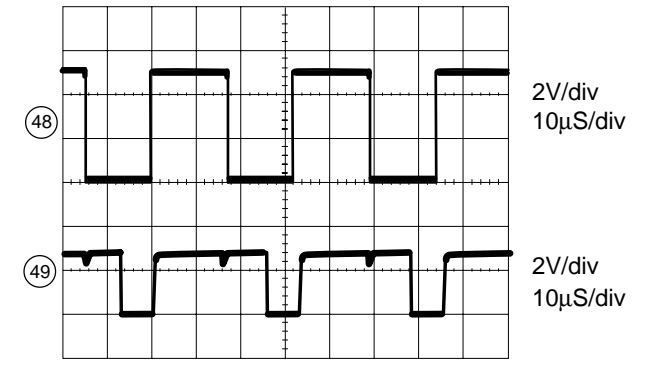
②9 IC101 PIN 55 MODE: Power ON  
③0 IC101 PIN 54 (not always same waveform)



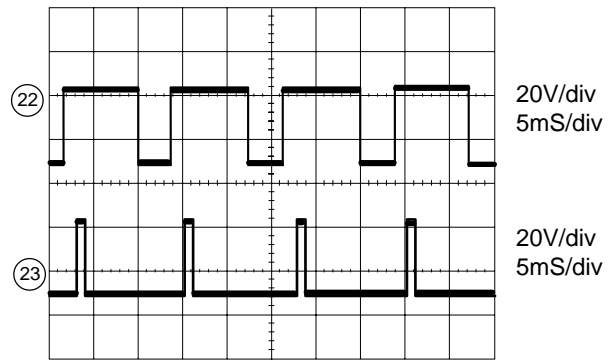
④0 IC101 PIN 83  
④1 IC101 PIN 68  
④2 IC101 PIN 67 (not always the same waveform)



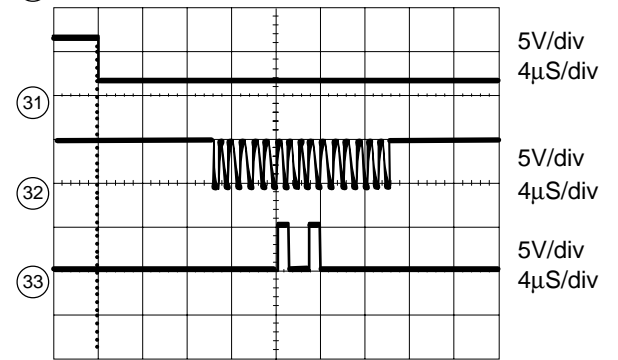
④8 IC101 PIN 34 MODE: P1 PB  
④9 IC101 PIN 33



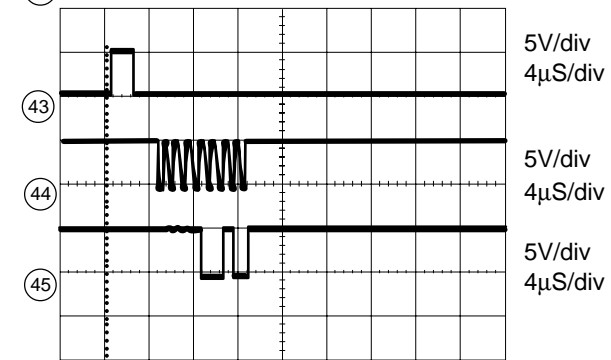
②2 IC101 PIN 7 ~ 19 (not always same waveform)  
②3 IC101 PIN 20 ~ 29 (not always same waveform)  
MODE: Power ON



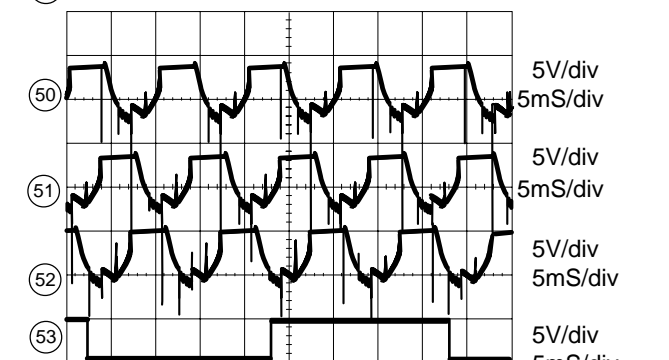
③1 IC101 PIN 87 MODE: Power ON  
③2 IC101 PIN 68  
③3 IC101 PIN 67 (not always same waveform)



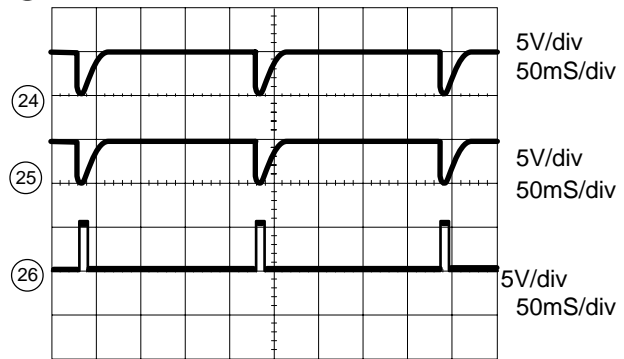
④3 IC101 PIN 84  
④4 IC101 PIN 68  
④5 IC101 PIN 67 (not always the same waveform)



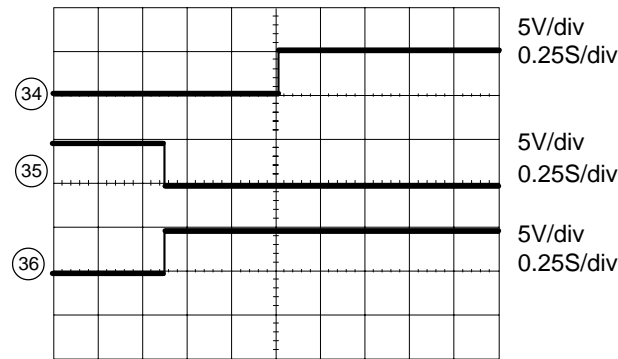
⑤0 IC106 PIN 7 MODE: P1 PB  
⑤1 IC106 PIN 8  
⑤2 IC106 PIN 9  
⑤3 IC101 PIN 39



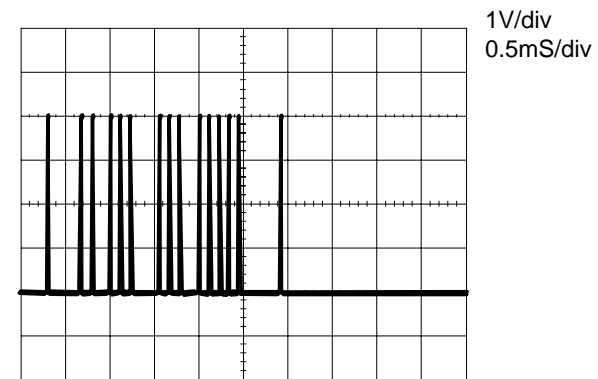
②4 IC101 PIN 4 MODE: P-OFF:NO TAPE  
②5 IC101 PIN 3  
②6 IC101 PIN 82



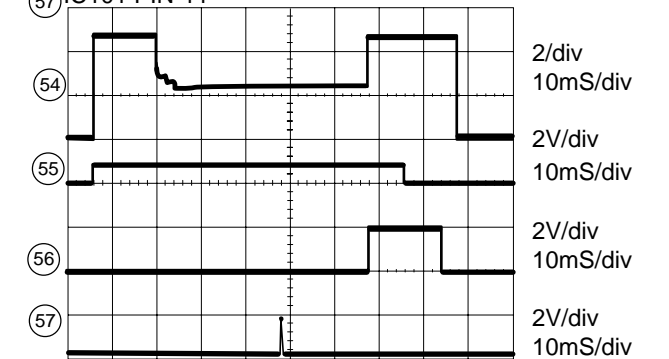
③4 IC101 PIN 85 MODE: P-OFF → P-ON  
③5 IC101 PIN 90  
③6 IC101 PIN 88



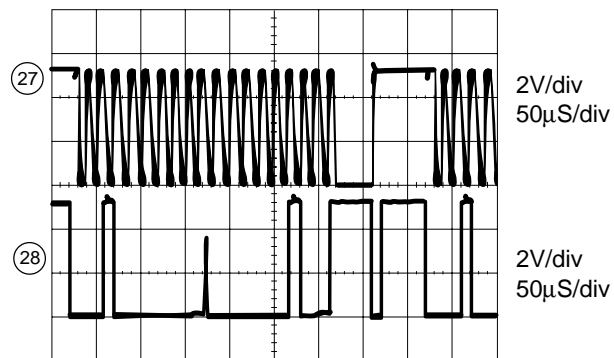
④6 IC101 PIN 42 MODE: SAT CH CALL  
(not always the same waveform)



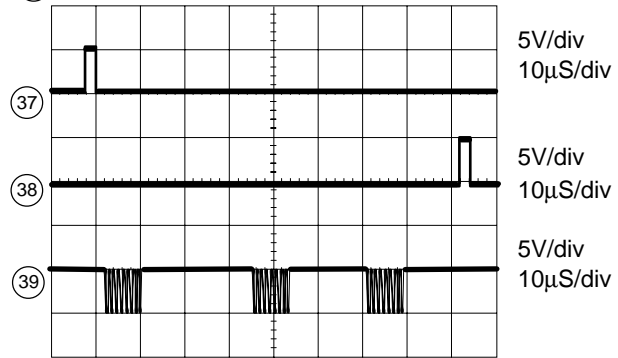
⑤4 CN103 PIN 9 MODE: P1 SLOW  
⑤5 CN103 PIN 8  
⑤6 CN103 PIN 7  
⑤7 IC101 PIN 44



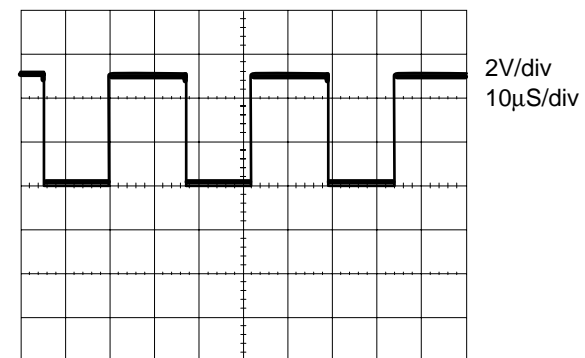
②7 IC101 PIN 53 MODE: Power ON  
②8 IC101 PIN 52 (not always same waveform)



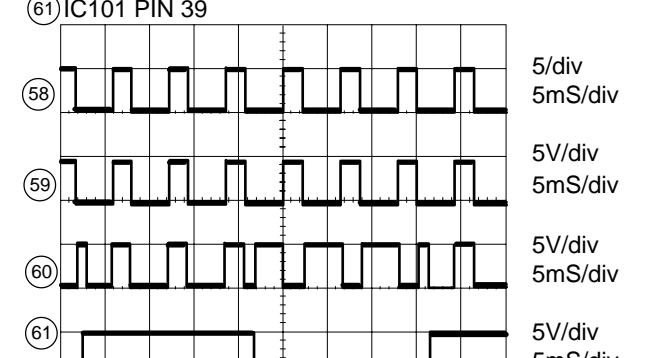
③7 IC101 PIN 84 MODE: P-OFF → P-ON  
③8 IC101 PIN 83  
③9 IC101 PIN 68



④7 IC101 PIN 35 MODE: P1 PB

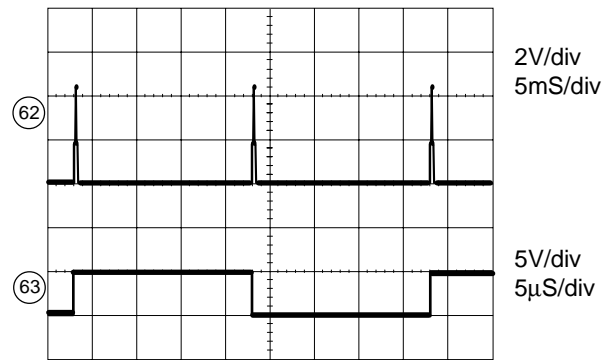


⑤8 IC101 PIN 51 MODE: P1 CUE  
⑤9 IC101 PIN 41  
⑥0 IC101 PIN 40  
⑥1 IC101 PIN 39

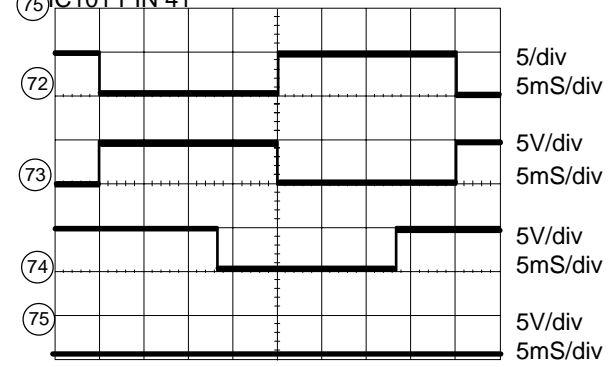


A STRB2+CLK B CLK+STRB

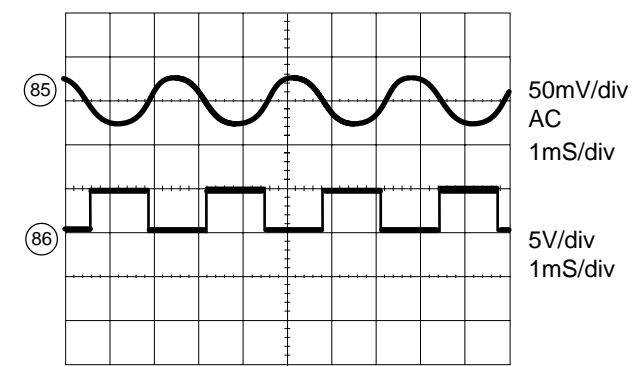
⑥2 IC101 PIN 32  
⑥3 IC101 PIN 39  
MODE: P1 PB



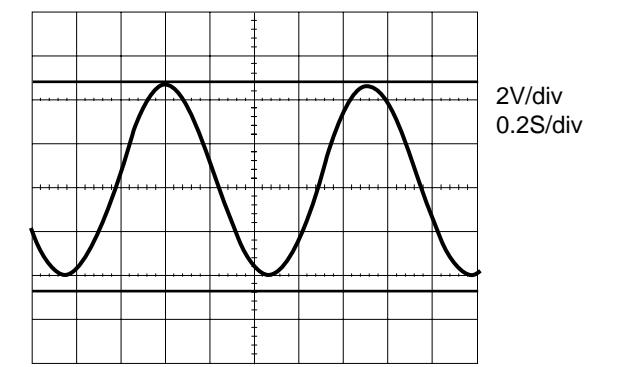
⑦2 IC101 PIN 39  
⑦3 IC101 PIN 40  
⑦4 IC101 PIN 37  
⑦5 IC101 PIN 41  
MODE: P1L PB



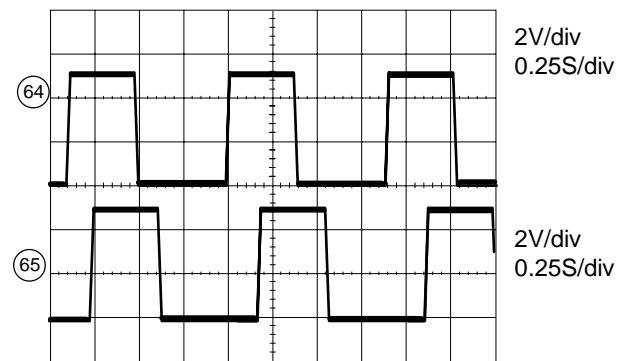
⑧5 CN103 PIN 4  
⑧6 IC104 PIN 27  
MODE: P1 PB



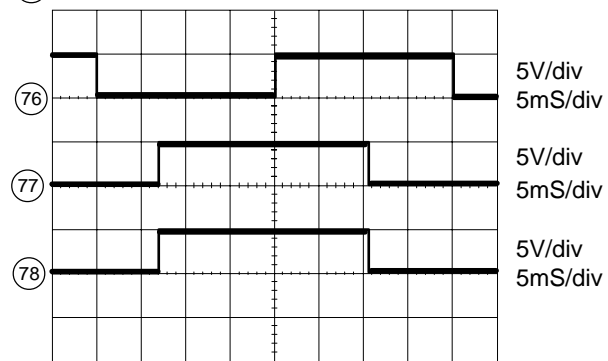
⑨4 C463 (-)  
NORMAL TO H  
CHECK LAND



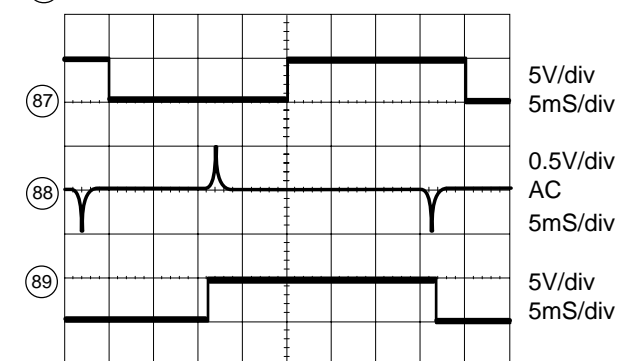
⑥4 IC101 PIN 70  
⑥5 IC101 PIN 69  
MODE: P1 PB



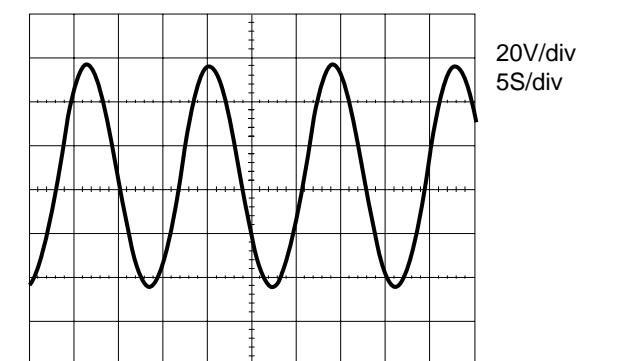
⑦6 IC101 PIN 39  
⑦7 IC101 PIN 43  
⑦8 IC101 PIN 44  
MODE: SP REC



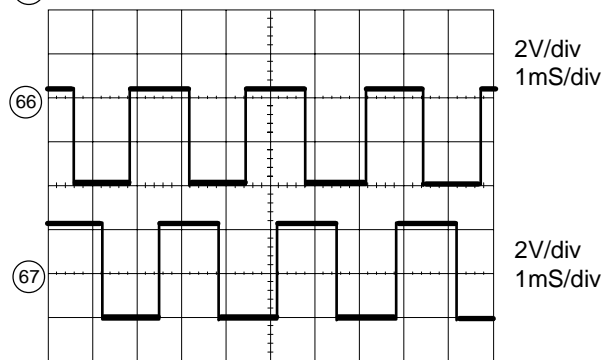
⑧7 IC101 PIN 39  
⑧8 IC104 PIN 4  
⑧9 IC104 PIN 15  
MODE: P1 PB



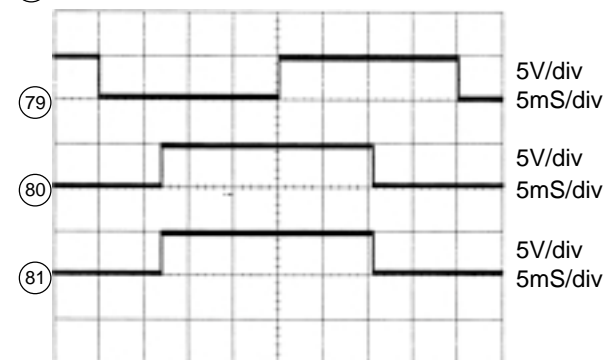
⑨5 C77 <-> L452 (6 pin)  
(AE HEAD)



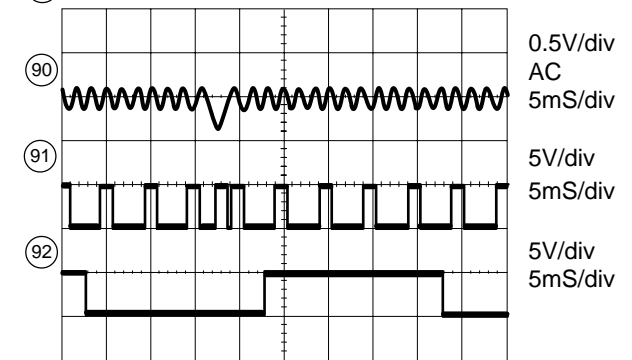
⑥6 IC101 PIN 48  
⑥7 IC101 PIN 49  
MODE: P1 PB



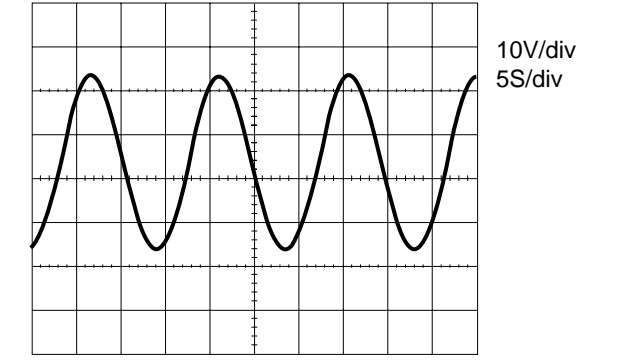
⑦9 IC101 PIN 39  
⑧0 IC101 PIN 43  
⑧1 IC101 PIN 44  
MODE: LP REC



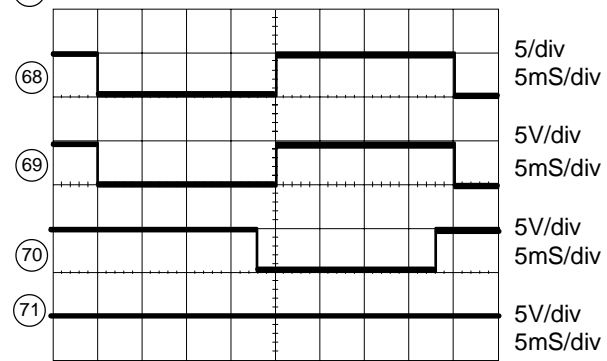
⑨0 IC106 PIN 16  
⑨1 IC106 PIN 1  
⑨2 IC101 PIN 39  
MODE: P1 PB



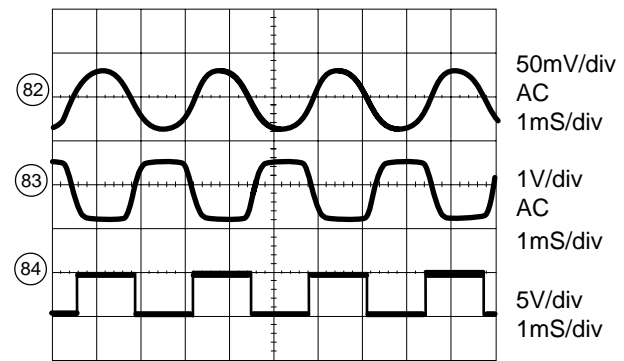
⑨6 C483 <-> L454 (5 pin)  
(FE HEAD)



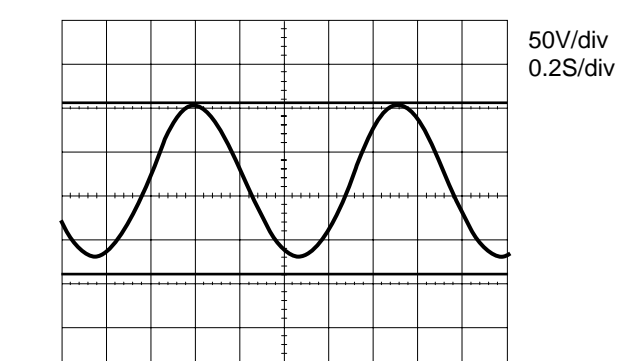
②8 IC101 PIN 39  
②8 IC101 PIN 40  
②8 IC101 PIN 32  
②8 IC101 PIN 41  
MODE: P1 PB



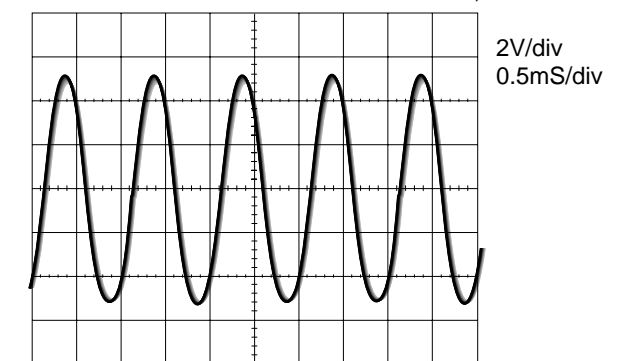
⑧2 CN103 PIN 6  
⑧3 IC104 PIN 26  
⑧4 IC104 PIN 23  
MODE: P1 PB



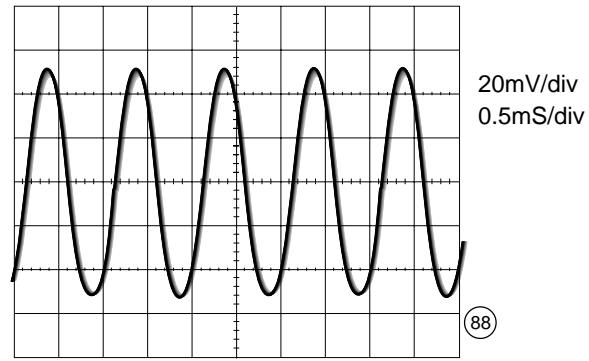
NORMAL AUDIO <VIDEO SECTION>  
⑨3 C450 (-)  
NORMAL TO V  
CHECK LAND



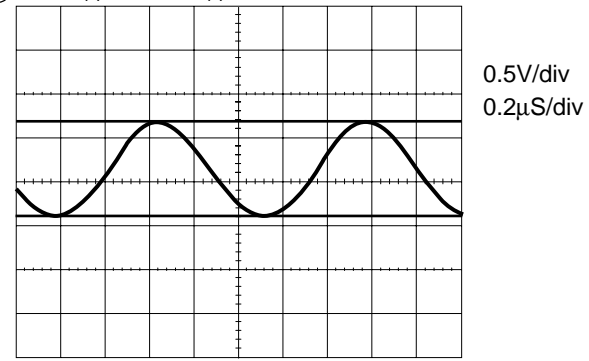
<HI-FI SECTION>  
⑨7 IC551 PIN 11, 13  
MODE: HIFI PB  
TEST TAPE: TTV-P7, TTV-N10



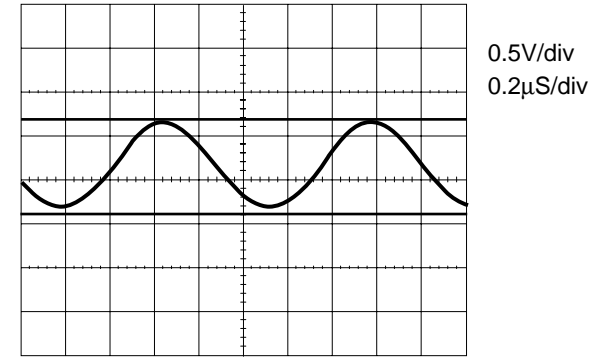
⑨⑧ IC551 PIN 38,39,45,47  
MODE: EE  
INPUT: 1kHz, -8dBm



<MPX SECTION>  
NON-NICAM and ZWEITON  
⑩④ C995 (-) or C956 (-) INPUT: 1kHz : 27kHz/div

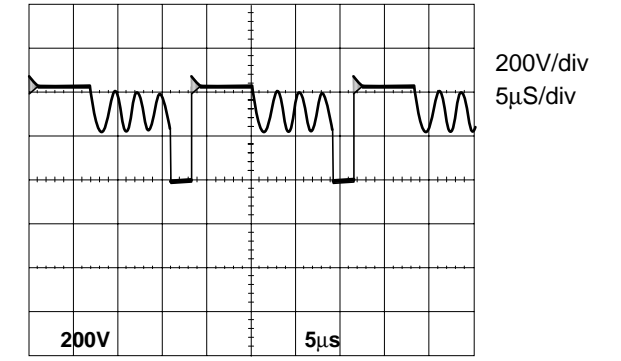


ZWEITON ST or BIL <EH ONLY>  
⑩⑤ C956 (-) ( Right CH) INPUT: 1kHz : 27kHz/div

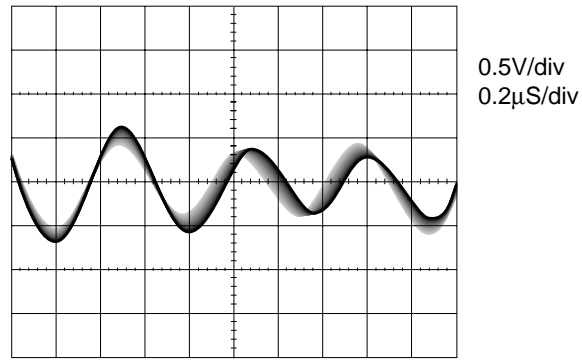


<POWER SECTION>

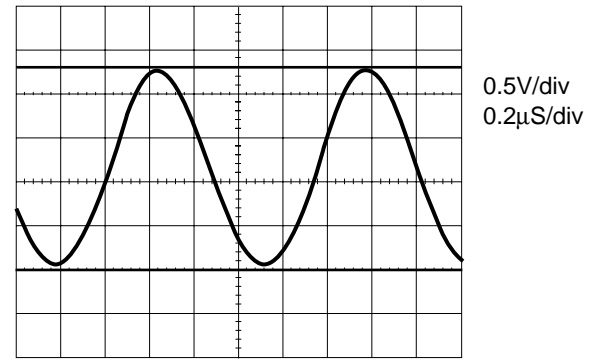
⑪① IC1 PIN 3 MODE: Power ON



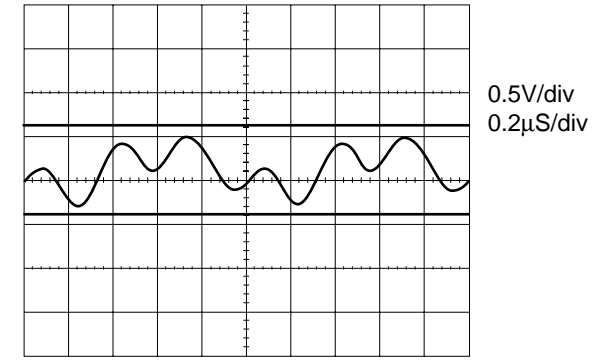
⑨⑨ IC551 PIN 22  
MODE: REC SP/LP  
(No signal)



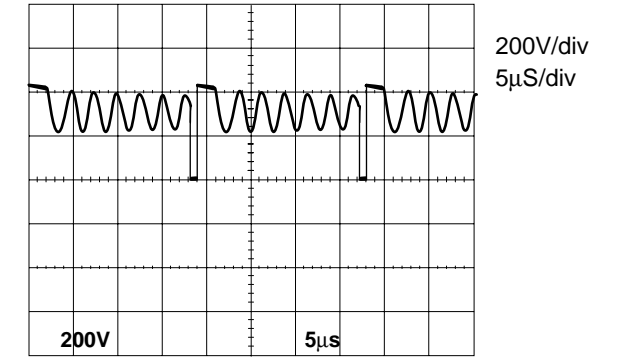
NICAM ST or BIL or MONO  
⑩⑥ C956 (-) (Right CH) INPUT: 1kHz : 0dBm



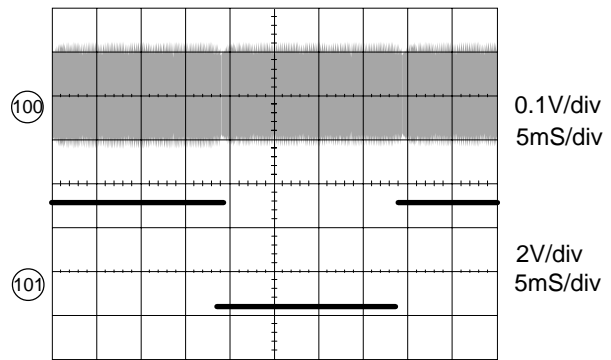
ZWEITON ST (non BIL) <EH ONLY>  
Switched AUTO → MONO on OSD Menu  
⑩⑥ C955 (-) or C956 (-) INPUT: 3 kHz : 27kHz/div



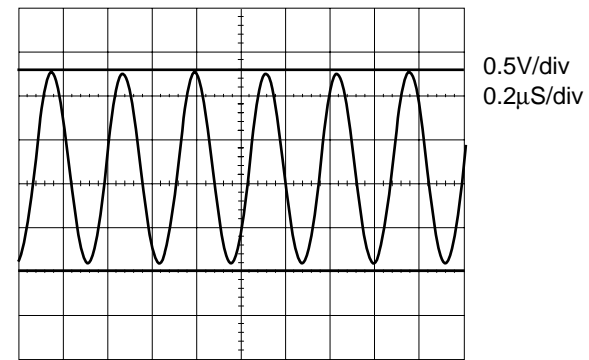
⑪① IC1 PIN 3 MODE: Power SAVE



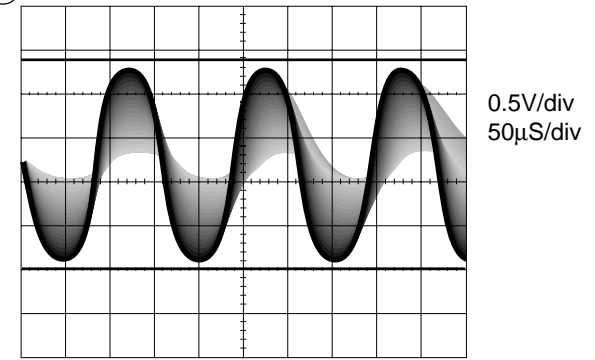
⑩⑩ IC551 PIN 25  
⑩① CN302 PIN 13 MODE: HIFI PB (TTV-P7)



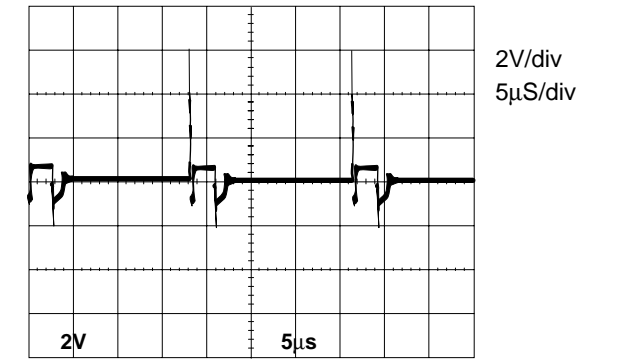
NICAM ST or BIL or MONO  
⑩⑥ C955 (-) (Left CH) INPUT: 3kHz : 0dBm



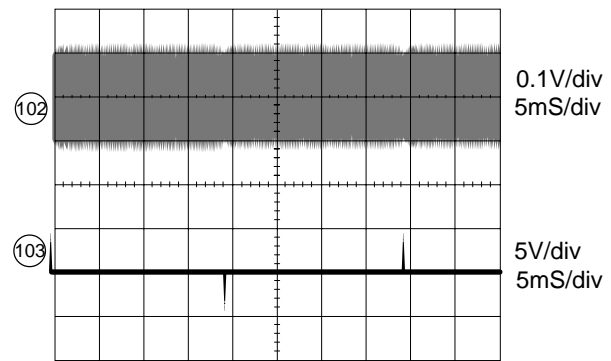
<SOUND IF>  
NICAM : SYSTEM I <K ONLY>  
⑪⑩ IC901 PIN47 or C963 INPUT: 6.552MHz



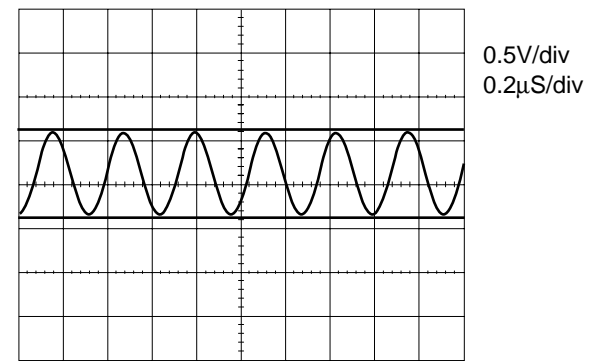
⑪② IC1 PIN 2 MODE: Power ON



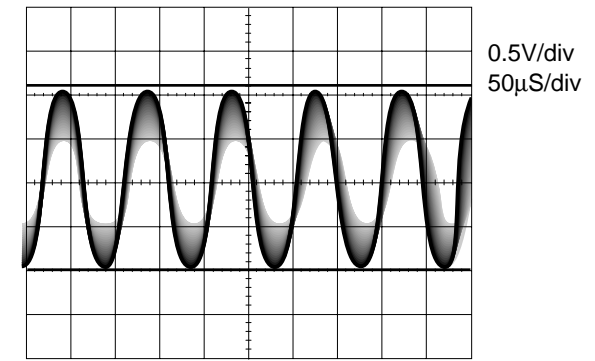
⑩② IC551 PIN 25  
⑩③ IC551 PIN 28 CHECK LAND



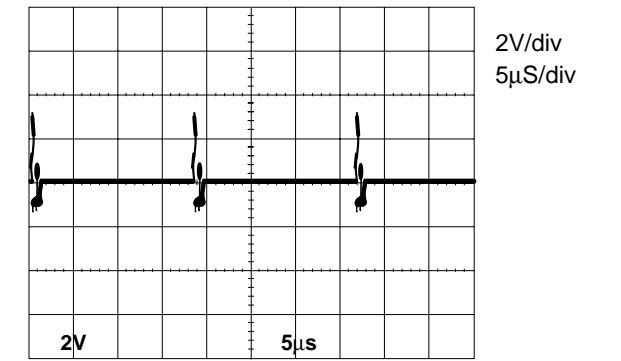
ZWEITON ST or BIL <EH ONLY>  
⑩⑦ C995 (-) (Left CH) INPUT: 3kHz : 27kHz/div



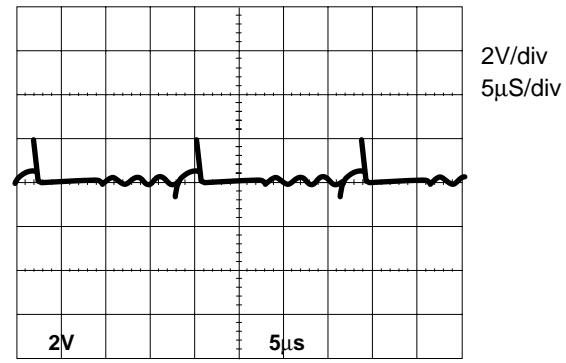
NICAM : SYSTEM BG <EH ONLY>  
⑪⑩ IC901 PIN47 or C963 INPUT: 5.85MHz



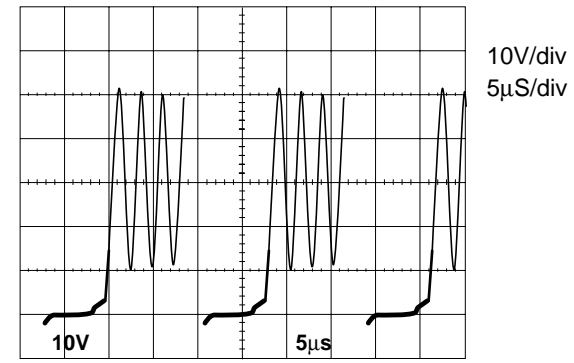
⑪② IC1 PIN 2 MODE: Power SAVE



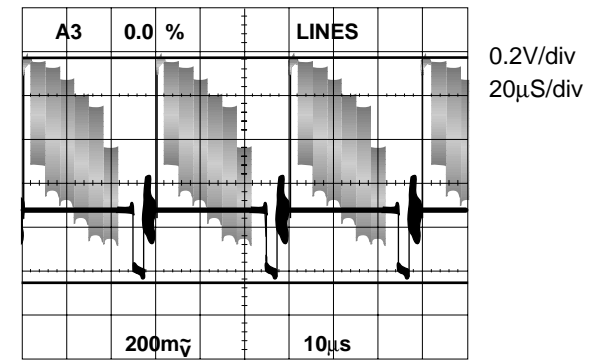
①⑬ IC1 PIN 1 MODE: Power ON



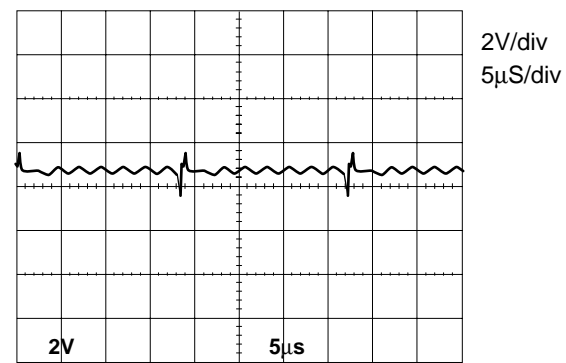
①⑮ PT1 PIN 14 MODE: Power ON



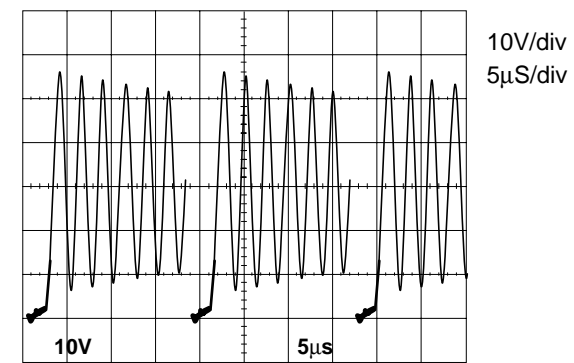
①⑰ IC851 PIN 13 (PDC V)



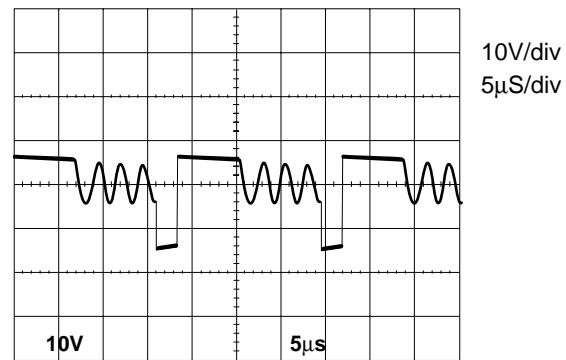
①⑬ IC1 PIN 1 MODE: Power SAVE



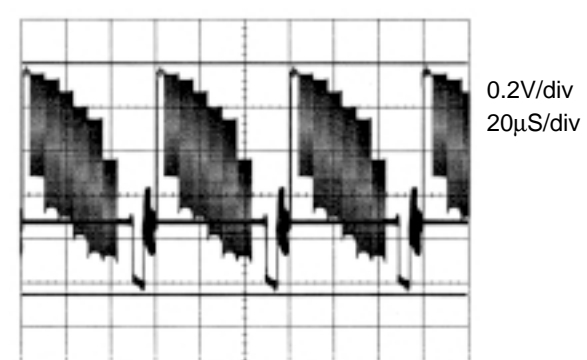
①⑮ PT1 PIN 14 MODE: Power SAVE



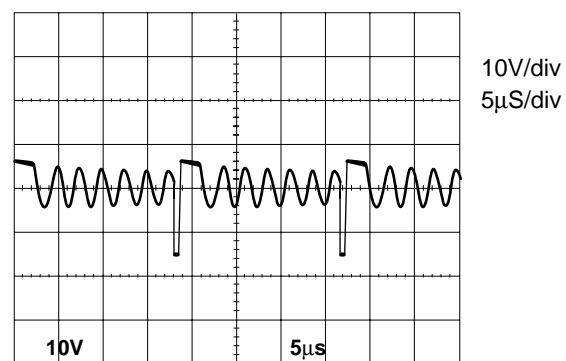
①⑭ PT1 PIN 12 MODE: Power ON



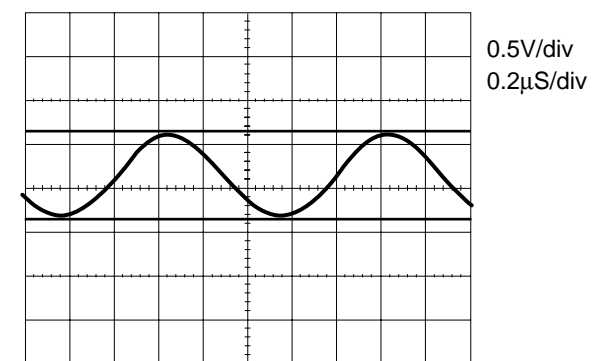
<TUNER SECTION>  
①⑱ C812 (-) TU V CHECK LAND



①⑭ PT1 PIN 12 MODE: Power SAVE

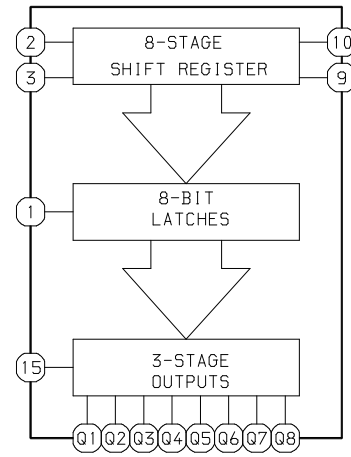


①⑲ Q811 Collector (TU V) CHECK LAND



IC BLOCK DIAGRAM

IC, TC4094BF

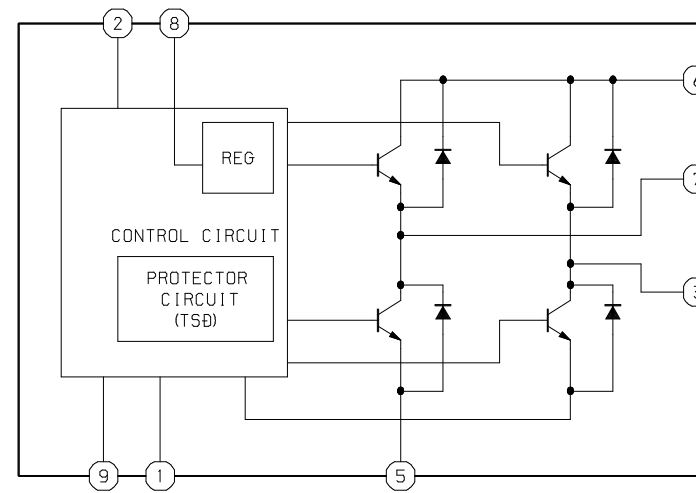


CL	OE	ST	D	PO		SO	
				Q1	Qn	Q5	Q' S
	H	H	L	L	Qn-1	Q7	NC
	H	H	H	H	Qn-1	Q7	NC
	H	L	X	NC	NC	Q7	NC
	L	X	X	HZ	HZ	Q7	NC
	H	X	X	NC	NC	NC	Q5
	L	X	X	HZ	HZ	NC	Q5

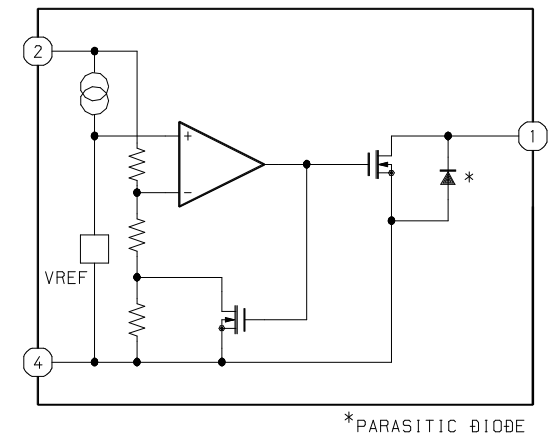
CL: CLOCK  
 OE: OUTPUT ENABLE  
 ST: STROBE  
 D: DATA  
 PO: PARALLEL OUTPUTS  
 SO: SERIAL OUTPUT

X: DON'T CARE  
 NC: NO CHANGE  
 HZ: HIGH IMPEDANCE

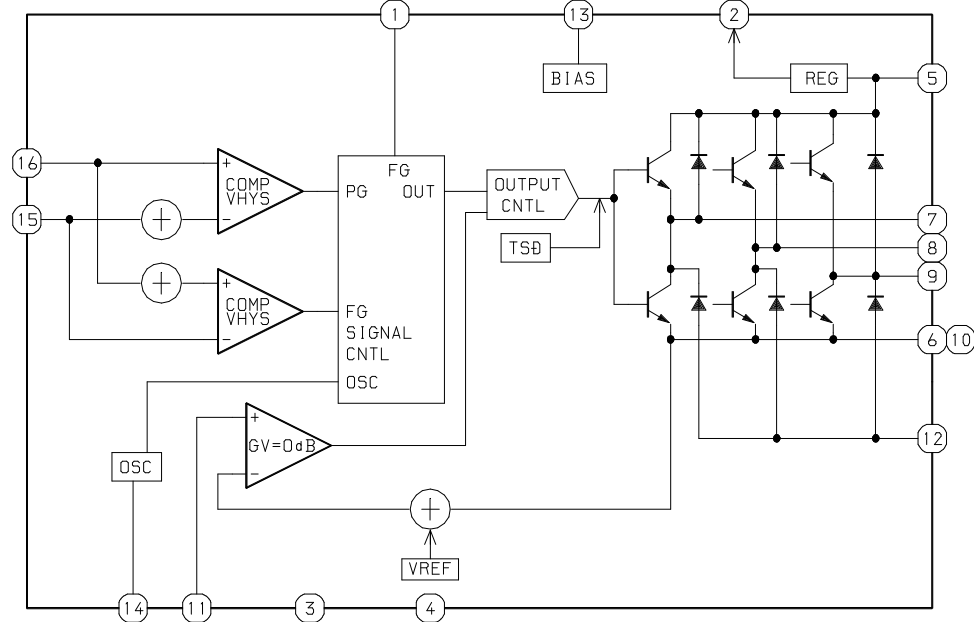
IC, TA7291S



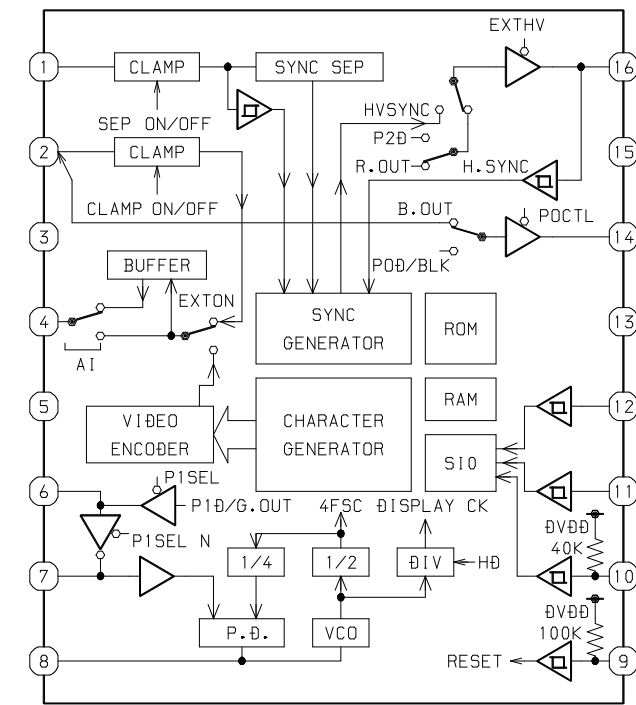
IC, S-80827ANNP-E00



IC, TB6515AP



IC, TC90A24F-406



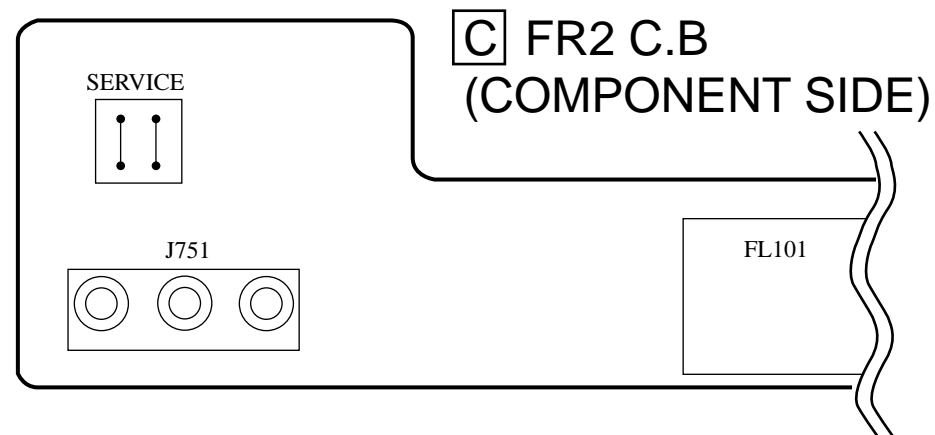
## SERVICE MODE

### 1. Starting the Service Mode

Short the service jumpers on the front C.B to start the service mode. Each time it is shorted, the mode changes follows.  
Service Mode 1 → 2 → 3 → Normal Mode

### 2. Releasing the Service Mode

If the mode switching operation is performed after starting, the normal mode is entered after mode 3 (the service mode is released). The service mode is also released when the power cord is unplugged from the AC outlet and plugged in again.

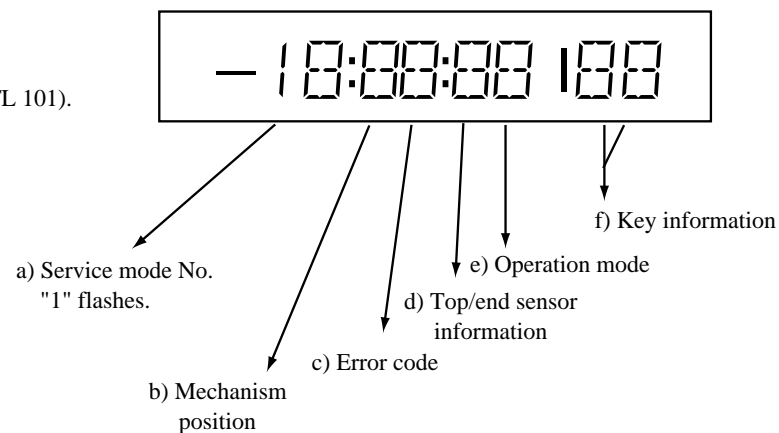


### 3. Overview

#### 1. Service Mode 1

The following data is displayed in the FL display (FL 101).

- Service mode No.
- Mechanism position
- Error code
- Top/end sensor data
- Operation mode
- Key data



#### a) Mechanism Position

Code	Operating Mode Contents
0	LOADING/UNLOADING
2	THREADING/UNTHREADING
4	REVERSE (PINCH ON)
6	FORWARD (PINCH ON)/STAND BY
8	STOP (WITH MAIN BRAKE)
A	FF/REW 1 (HIGH SPEED)
C	FF/REW 2 (LOW SPEED)
F	OTHER POSITIONS

#### b) Error Code

Error Code	Contents Of Errors	State
0	NORMAL	-
1	DRUM ERROR	WHEN DRUM FG DOES NOT CHANGE OVER 2SEC
2	T-REEL ERROR	WHEN T-REEL DOES NOT CHANGE OVER 6SEC
3	S-REEL ERROR	WHEN S-REEL DOES NOT CHANGE OVER 6SEC
4	LOADING/UNLOADING ERROR	WHEN IT CAN'T FINISH CASSET IN/OUT WITHIN 5 SEC
5	THREADING/UNTHREADING ERROR	WHEN IT CAN'T NEXT POSITION FOR LOAD WITHIN 6SEC
9	PROTECT ERROR	WHEN PRT OR M-PRT IS "L" OVER 1SEC AT POWER ON

When a mechanism error has occurred, the error code will remain displayed for one hour. Also, if other mechanism errors have occurred, the error display will be changed. After making repairs, reset the error code using the method noted below.

During P-ON, drop the microcomputer's reset pin 76 to GND (approximately 1 second).

#### c) Top/End Sensor Information

Code	Top/End Information
0	TAPE TOP AND END DETECTION
1	TAPE TOP DETECTION
2	TAPE END DETECTION
3	NORMAL

#### d) Operation Mode

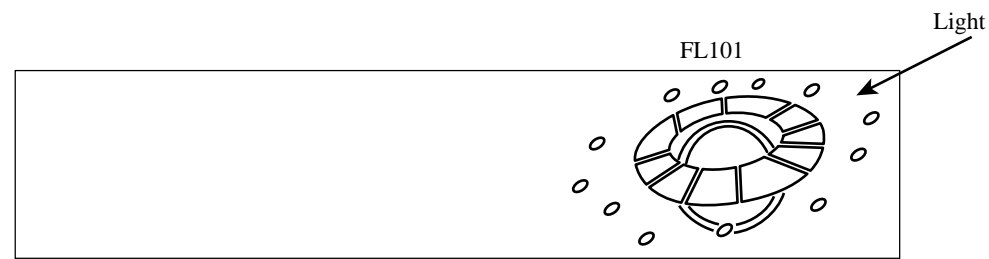
Code	Operating Mode Contents
0	STAND BY
1	WHEN 5 MINUTES HAVE ELAPSED IN THE STAND-BY MODE, THE DRUM'S ROTATION STOPS AND THIS IS DISPLAYED
2	REW
3	REV
4	FF
5	CVE
6	PLAY
7	STILL/SLOW
8	X2 PLAY
9	TAPE IN P-OFF
A	REV PLAY
B	REV STILL/REV SLOW
C	REC
D	REC PAUSE
E	P-OFF EJECT
F	P-ON EJECT

#### e) Key data (with remote controller key)

Code	Key Name
00	POWER
48	EJECT
15	PLAY
F6	DIMMER
1A	STOP
17	PAUSE
14	REC
40	CH (+)
41	CH (-)
89	OT PB
64/65/66/69/6A/6C/6D/74/75/76/79/7A/7C/7D	SH FWD RVS
*THE DISPLAY WILL DIFFER DEPENDING UPON THE SPEED	
B6	THEATER
FF	KEY OFF

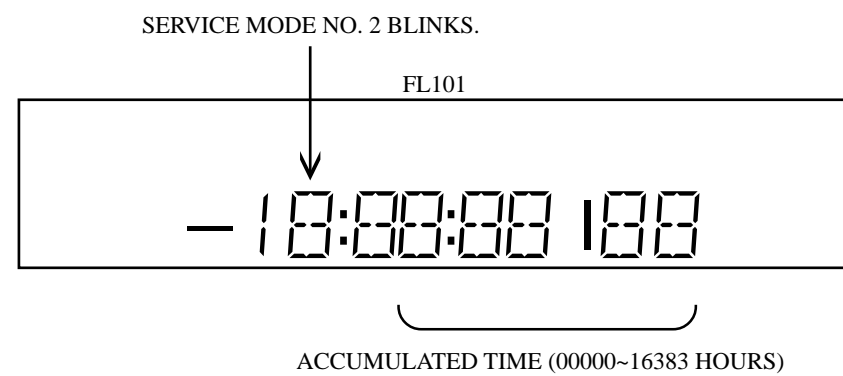
Remote key input other than those listed above can be checked with the FL light shown in the figure below.

## ELECTRICAL ADJUSTMENT



### 2. Service Mode 2

Display for the drum's revolution time (Displayed in decimal number)



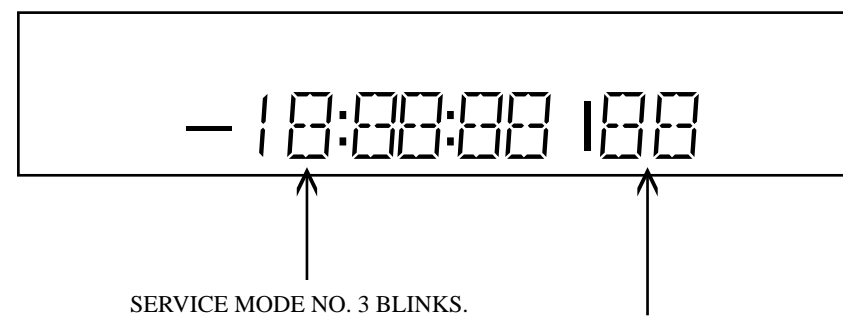
To Reset accumulated time:

Accumulated time is reset by pressing CLEAR key for more than 2 seconds or by replacing E2PROM

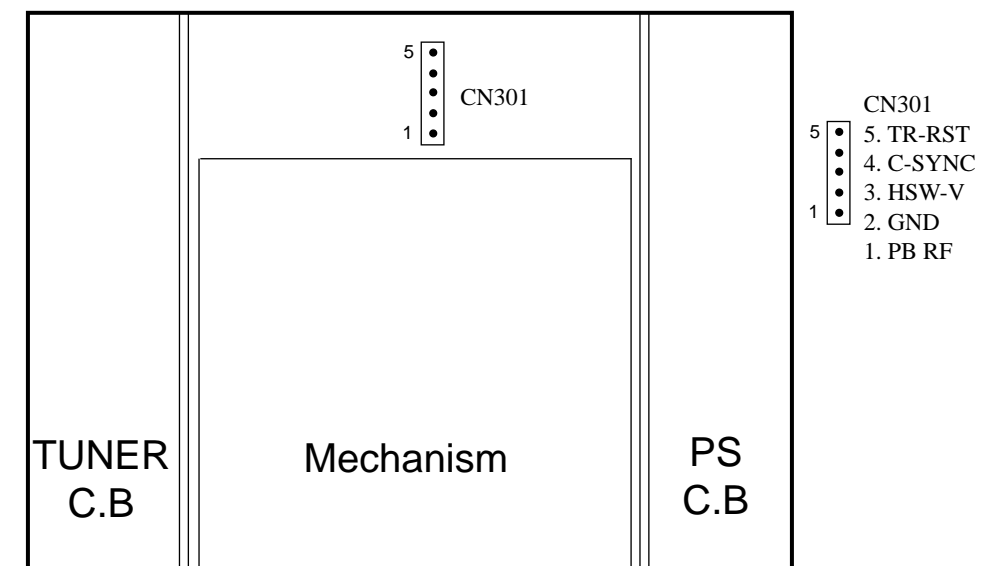
\* Do not reset in normal repairing.

### 3. Service Mode 3

The clock is advanced at 60 times the normal speed. When this mode is used to check clock.



### TOP VIEW



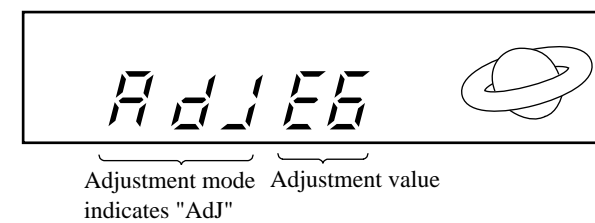
NOTE : Adjust switching position after reassembling mechanism assy.

#### 1. Switching Position Adjustment

MODE: PB TTV-P1  
Oscilloscope: CH-1: CN301 3 HSW-V  
CH-2: CN301 4 C-SYNC

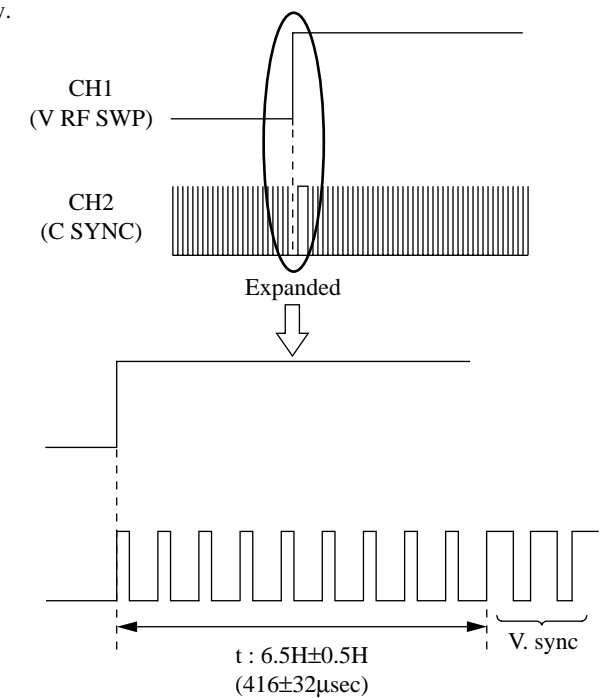
#### Adjustment Method

- 1) Set the tracking to the center.
- \* Short TR-RST (CN301 5) to GND. (CN301 2)  
An indication appears on the FL display tube indicating that the machine is in the adjustment mode.



- 2) Press "A-TR" key in the remote controller, to activate HSW adjustment. FL display will now indicate flashing "Adj".

FL display indicates cassette tape controller after HSW adjustment is finished.



- 3) Check "t" value with the oscilloscope.

Change the adjustment value using the CH(+),(-) keys of main unit until "t" specification is satisfied.

- 4) To cancel the adjustment mode, press STOP key or turn OFF the power.



## IC DESCRIPTION

IC, TMP93CW76F-1A78, TMP93CW76F-1A77

Pin No.	Pin Name	I/O	Description				
1	LOAD	O	Output terminal to loading motor rotation control.				
				STOP	Forward	Reverse	Break
2	UNLOAD	O	LOAD	L	H	L	H
			UNLOAD	L	L	H	H
3	$\overline{\text{S-SENS}}$	I	Tape top direction signal. L: when detected.				
4	$\overline{\text{E-SENS}}$	I	Tape end detection signal. L: when detected.				
5	SAFTY	I	Write protect/enable switch detection. L: record enable.				
6	NC	-	Not used.				
7~19	S0~S12	O	FDP segment signal.				
20~29	T9~T0	O	FDP timing signal.				
30	VFDP	-	Negative voltage (-) power supply for FDP.				
31	VDD	-	Power supply +5V.				
32	JOG VD	O	Pseudo vertical sync signal.				
33	CAP LIM	O	I-LIMIT control signal output. PWM: during slowmotion mode.				
34	CAP PWM	O	Capstan control PWM output.				
35	DRUM PWM	O	Drum control PWM output.				
36	REC-V/A	O	Video/Hi-Fi head amplifier record ON signal. H: during record.				
37	HSW-A	O	H-Fi head amplifier select signal.				
38	NA REC	O	Normal audio record ON signal. H: during record.				
39	HSW-V	O	Video head amplifier select signal.				
40	C-ROT	O	Chroma rotaion signal.				
41	H-SEL	O	Video head amplifier select signal. H: when LP Head.				
42	RMC OUT	O	Remote control signal output.				
43	REC CTL	O	Ctl writing signal output. PULSE: during record.				
44	PB CTL IN	I	CTL head pulses are input during playback.				
45	DEG/PG IN	I	Drum FG/PG input.				
46	RMC IN	I	Remote control signal input.				
47	$\overline{\text{WAKE}}$	I	Power failure detection input. H: power is off. L: power is on.				
48	CFGA IN	I	Capstan FG-A input.				
49	CFGB IN	I	Capstan FG-B input.				
50	C-SYNC	I	Compositr.				
51	D-ENV	I	Video head playback output comparision signal.				
52	SDA-R	I/O	I2C bus data signal. (video/hifi/MPX/RF).				
53	SCL-R	O	I2C bus clock signal. (video/hifi/MPX/RF).				
54	SDA-T	I/O	I2C bus data signal. (canal/tuner/vps.pdc/E2PROM).				
55	SCL-T	O	I2C bus clock signal. (canal/tuner/vps.pdc/E2PROM).				
56~58	KEY IN 1~3	I	Key read-out A/D input.				
59	A LEVEL	I	Hi-Fi envelope detection input. (Analog input).				
60	V LEVEL	I	Video envelope detection input for audio tracking (Analog input).				
61	AFT	I	AFT voltage read-out A/D input.				
62	AGC	I	AGC voltage read-out A/D input.				

Pin No.	Pin Name	I/O	Description
63	DEC	I	CANAL decoder detection input. L: when detected.
64	ADGND	-	A/D GND
65	ADREF	-	A/D reference voltage.
66	SPDATA	I	Serial data signal from TC4021.
67	TXD	O	Serial data signal for TC4094 & OSD IC.
68	CLK	O	Serial clock signal for communication with TC4094 and OSD.
69	T-REEL	I	Take up reel rotation detection input.
70	S-REEL	I	Supply reel rotation detection input.
71	XT/2	O	Terminal for check of system clock.
72	GND	-	GND.
73	X1	-	External 16MHz crystal for main clock is connected to this terminal.
74	X2	-	
75	Not use	-	Connetcted to power supply.
76	RESET	-	CPU reset input.
77	XT1	-	External 32.768 kHz crystal for sub clock is connected to this terminal.
78	XT2	-	
79	TSET1	O	Connected to power TEST2.
80	TSET2	I	Connected to power TEST1.
81	NC	-	Not used.
82	SNSR CTL	O	TOP/END sensor LED drive signal.
83	STRB1	O	TC4094 chip select signal.
84	STRB2	O	TC4021 chip select signal.
85	OSD RESET	O	Reset for OSD IC signal.
86	A MUTE	O	Audio mute signal. H: mute.
87	OSD STRB	O	OSD IC chip select signal.
88	T-POWER	O	Timer power supply ON signal. L: power off. H: power on.
89	P-BU	O	RF power supply ON signal. L: power off. H: power on.
90	$\overline{\text{P-ON}}$	O	REG power supply ON signal. L: power off. H: power on.
91	$\overline{\text{P-CA}}$	O	CANAL power supply ON signal. L: power off. H: power on.
92	M-PRT	I	Motor-power monitoring input.
93	P-STBY	O	Power supply control signal. STBY5V.
94	CAP RVS	O	Capstan inverted signal. L: normal rotation. H: reverse rotation.
95	$\overline{\text{PCBTEST}}$	I	Test mode starting up input.
96	$\overline{\text{CAON}}$	I	Picture input from TV detection input during save mode.
97	$\overline{\text{HF DET}}$	I	Hi-Fi detection signal input. L: whwn detected.
98~100	CAM C, B, A	I	Mechanism mode switch C, B, A.

IC, MSP3417D

Pin No.	Pin Name	I/O	Description
1,21~22,27,28	TP (NC)	–	Test Pin.
2, 19, 26, 32	NC	–	Not connected
3	D CTR OUT1 (NC)	O	Digital control output1.
4	D CTR OUT0(NC)	O	Digital control output0.
5	ADR SEL	I	I2C Bus adress select.
6	STANDBYQ	I	Standby (Low active).
7	I2C CL	I/O	I2C clock.
8	I2C DA	I/O	I2C data.
9~15	TP (NC)	–	Test pin.
16	DVSUP	–	DIGITAL POWER SUPPLY +5V.
17	DVSS	–	DIGITAL GROUND.
18	TP (NC)	I	Test pin.
20	RESETQ	I	Power-on reset.
23	VREF2	–	Reference ground 2 high voltage part.
24	DACM R	O	Speaker out, right.
25	DACM L	O	Speaker out, left.
29	VREF1	–	Reference ground 1 high voltage part.
30	SC1 OUT R	O	Serial output 1 right.
31	SC1 OUT L	O	Serial output 1 left.
33	AHVSUP	–	Analog power supply 8.0 V.
34	CAPL M	–	Volume capacitor MAIN.
35	AHVSS	–	Analog ground.
36	AGNDC	–	Analog reference voltage high voltage part.
37 ~ 40	NC	–	Not conncted.
41	SC1 IN L	I	Scart input 1 in, left.
42	SC1 IN R	I	Scart input 1 in, right.
43	VREFTOP	–	Reference voltage IF A/D converter.
44	MONO IN	I	Mono input.

IC, TC4021BF

Pin No.	Pin Name	I/O	Description
1	IN8	I	MESECAM/PAL detection input.
2, 11, 12	NC	–	Not use.
3	SPDATA	O	Serial data signal.
4 ~ 7	IN4 ~ 1	I	Shuttle switch signal input 4 ~ 1.
8	GND	–	GND.
9	STRB	I	TC4021 chip select signal.
10	CLK	I	Serial clock signal.
13, 14	IN5, 6	I	Jog switch signal input 1, 2.
15	IN7	I	Power monitoring input.
16	VCC	–	Power supply +5V.

IC, SDA5650P–DIP–14

Pin No.	Pin Name	I/O	Description
1	VSS	–	Ground (0V).
2	SCL	I	Serial clock input of I <sup>2</sup> C Bus.
3	SDA	I	Serial data input of I <sup>2</sup> C Bus.
4.	CSO	I	Chip select input determining the I <sup>2</sup> C-Bus addresses: 20H/21H, (low) 22H/23H, (high).
5	VCS	O	Video Composite Sync output from sync slicer used for PLL based clock generation.
6	$\overline{\text{DAV}}$	O	Data available output active low, when VPS data is received.
7	EHB	O	Output signaling the presence of the first field active high.
8	TI	I	Test input; activates test mode when pulled high. Connect to ground for operating mode.
9	PD1	O	Phase detector/charge pump output of data PLL (DAPLL).
10	PD2	I/O	Connector of the loop filter for the SYSPLL.
11	VCO	I	Input to the voltage controlled oscillator #1 of the DAPLL.
12	IREF	I	Reference current input for the on-chip analog circuit.
13	CBVS	I	Composite video signal input.
14	VDD	–	Positive supply voltage (+5V nom).

# VOLTAGE CHART

IC 101 (TMP93CW76F)

PIN NO.	EE	REC	PB
1	0	0	0
2	0	0	0
3	0.7	4.9	4.9
4	0.7	4.9	4.9
5	5.0	0	5.0
6	-22	-29	-29
7	-23	-16	-9
8	-23	-26	-26
9	-20	-9	-9
10	-27	-19	-20
11	-20	-23	-20
12	-23	-5.6	-13
13	-25	-16	-16
14	-25	-23	-27
15	-25	-26	-27
16	-25	-16	-13
17	-21	-19	-20
18	-25	-23	-23
19	-30	-26	-30
20	-27	-26	-27
21	-27	-26	-27
22	-27	-26	-27
23	-27	-26	-27
24	-27	-26	-27
25	-27	-26	-27
26	-27	-25	-27
27	-27	-25	-27
28	-27	-25	-27
29	-27	-25	-27
30	-30	-30	-30
31	5.0	5.0	5.0
32	0.1	0.1	0
33	0.6	2.1	2.1
34	0.1	2.6	2.5
35	0.1	2.7	2.7
36	0	5.0	0
37	2.5	2.5	2.5
38	0	4.9	0
39	2.5	2.5	2.7
40	2.5	2.5	2.5
41	0	0	0
42	0	0	0

PIN NO.	EE	REC	PB
43	0.2	3.0	0
44	0.1	2.5	2.6
45	0.1	1.2	1.2
46	4.0	5.1	5.1
47	0	0	0
48	4.4	2.2	2.2
49	0.4	2.2	2.2
50	0.7	0.5	0.5
51	0.6	0.2	0
52	4.7	5.1	5.1
53	5.0	5.1	5.1
54	5.0	5.0	5.0
55	5.0	5.0	5.0
56	5.2	5.1	5.1
57	5.2	5.1	5.1
58	3.9	3.9	3.9
59	0	0.1	0.9
60	0.3	0	2.6
61	2.6	2.7	2.6
62	2.7	2.7	2.7
63	5.2	5.2	5.1
64	0	0	0
65	5.2	5.2	5.1
66	5.0	5.0	5.0
67	0.1	0.1	0
68	5.0	4.9	5.0
69	0.1	0.9	0
70	5.0	2.8	0
71	5.1	5.1	5.1
72	0	0	0
73	2.0	2.0	2.0
74	2.0	2.0	2.0
75	5.1	5.0	5.0
76	5.0	5.0	5.0
77	2.1	2.1	2.0
78	2.7	2.6	2.6
79	0	0.2	0
80	0	0.2	0
81	0.2	0.2	0
82	4.5	4.5	4.6
83	0	0	0
84	0	0	0

PIN NO.	EE	REC	PB
85	5.1	5.1	5.0
86	0	0	0
87	4.8	4.8	4.8
88	5.0	5.0	5.0
89	5.0	5.0	5.0
90	0	0	0
91	0	0	0
92	4.8	4.8	4.8
93	5.0	4.9	4.9
94	5.0	0	0
95	5.2	5.1	5.1
96	0	0	0
97	0	0	0
98	0	0	0
99	0	5.0	5.0
100	0	0	0

IC 102 (S-80827ANNP-EDQ)

PIN NO.	EE	REC	PB
1	5.0	5.0	5.0
2	5.0	5.0	5.0
3	0	0	0
4	0	0	0

IC 103 (S-24C08AFJA)

PIN NO.	EE	REC	PB
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	5.0	5.0	5.0
6	5.0	5.0	5.0
7	0	0	0
8	5.0	5.0	5.0

IC 104 (LA7123)

PIN NO.	EE	REC	PB
1	0	0	0
2	2.5	2.5	2.5
3	0.8	0.8	1.2
4	2.5	2.5	2.5
5	2.5	2.5	2.5
6	2.5	2.5	2.5

PIN NO.	EE	REC	PB
7	0	1.8	0
8	0	1.2	0
9	0	0	0
10	0	5.0	0
11	0	4.4	0
12	0	3.0	0
13	0	0	0
14	5.0	5.0	5.0
15	4.3	2.0	2.6
16	2.5	2.5	2.5
17	2.5	2.5	2.5
18	2.5	2.5	2.5
19	2.5	2.5	2.5
20	2.5	2.5	2.5
21	2.5	2.5	2.5
22	5.0	5.0	5.0
23	0	2.2	2.2
24	2.5	2.5	2.5
25	2.5	2.5	2.5
26	2.5	2.5	2.5
27	4.4	2.2	2.2
28	2.5	2.5	2.5
29	0	0	0
30	0	0	0

IC 105 (TA7291S)

PIN NO.	EE	REC	PB
1	0	0	0
2	14.7	14.4	14.4
3,4	0	0	0
5	0	0	0
6	14.7	14.4	14.4
7	0	0	0
8	14.7	14.4	14.4
9	0	0	0

IC 106 (TB6515AP)

PIN NO.	EE	REC	PB
1	0	1.2	1.3
2	1.4	1.4	1.4
3	0	0	0
4	0	0	0
5	14.7	14.4	14.4

PIN NO.	EE	REC	PB
6	0	0	0
7	14.6	11.0	11.1
8	14.6	11.0	11.1
9	14.6	11.0	11.1
10	0	0	0
11	0.1	2.6	2.7
12	0	0	0
13	5.1	5.2	5.2
14	3.2	3.3	3.2
15	0.6	0.6	0.6
16	0.8	0.7	0.7

IC 107 (TC4094BF)

PIN NO.	EE	REC	PB
1	0	0	0
2	0	0	0
3	5.0	4.9	5.0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	2.3	2.1	2.5
10	2.6	2.7	2.5
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	5.0	5.0	5.0
16	5.0	5.0	5.0

IC108 (TC4094BF)

PIN NO.	EE	REC	PB
1	0	0	0
2	2.3	2.3	2.3
3	5.0	4.9	5.0
4	5.0	4.9	5.0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	2.2	2.2	2.4
10	2.6	2.7	2.6

PIN NO.	EE	REC	PB
11	0	0	0
12	0	0	0
13	0	0	0
14	5.0	5.0	5.0
15	5.0	5.0	5.0
16	5.0	5.0	5.0

Q103, 104 (2SC2412KR)

PIN	EE	REC	PB
E	0	0	0
C	0	0	0
B	0.6	0.6	0.6

Q108 (2SC2412KR)

PIN	EE	REC	PB
E	0	0	0
C	0	0	0
B	0.7	0.6	0.8

Q101 (2SA952K)

PIN	EE	REC	PB
E	5.1	5.1	5.1
C	5.1	5.0	5.0
B	4.4	4.4	4.4

Q110 (KRC104S)

PIN	EE	REC	PB
E	0	0	0
C	15.3	15.1	15.1
B	0	0	0

Q109 (2SB1443)

PIN	EE	REC	PB
E	15.3	15.1	15.1
C	13.7	12.9	12.9
B	15.3	15.1	15.1

Q107 (KRC104S)

PIN	EE	REC	PB
E	0	0	0
C	26.3	25.9	25.9
B	0	0	0

Q102 (2SB1443)

PIN	EE	REC	PB
E	26.4	25.9	25.9
C	13.1	12.1	12.2
B	26.3	25.9	25.9

Q113 (2SC2412K)

PIN	EE	REC	PB
E	0	4.4	0
C	5.0	5.0	5.0
B	0	5.0	0

Q105 (PT493F)

PIN	EE	REC	PB
E	0	0	0
C	0.7	4.9	4.8

Q106 (PT493F)

PIN	EE	REC	PB
E	0	0	0
C	0.7	5.0	5.0

Q111 (KRC104S)

PIN	EE	REC	PB
E	0	0	0
C	0	0	0
B	0	0	0

Q112 (KRC104S)

PIN	EE	REC	PB
E	0	0	0
C	0	0	0
B	0	4.8	0

D114 (LED, GL451V)

PIN	EE	REC	PB
A	1.2	1.2	1.2
K	0	0	0

S102 (SW, LEAF REC SWITCH)

PIN	EE	REC	PB
1	5.0	0	5.0
2	0	0	0

PS 101 (SNSR, GP1S566)

PIN NO.	EE	REC	PB
1	1.2	1.2	1.2
2	0	0	0
3	5.0	2.5	2.5
4	0	0	0

PS 102 (SNSR, GP1S566)

PIN NO.	EE	REC	PB
1	1.2	1.2	1.1
2	0	0	0
3	0	2.5	2.5
4	0	0	0

CN101

PIN NO.	EE	REC	PB
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	5.1	5.1	5.1
6	0	0	0
7	5.1	5.1	5.1
8	0	0	0
9	5.1	5.1	5.1
10	5.1	5.1	5.1
11	5.1	5.1	5.1
12	5.1	5.1	5.1
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0

CN102

PIN NO.	EE	REC	PB
1	0	0	0
2	3.9	0	0
3	0	0	0
4	5.0	5.0	5.0
5	0	0	0

PIN NO.	EE	REC	PB
6	5.0	5.0	5.0
7	4.9	4.9	4.9
8	5.0	5.0	5.0
9	5.0	530	530
10	5.1	5.1	5.1
11	0	0	0
12	0	0	0
13	5.1	5.1	5.1
14	5.1	5.1	5.1
15	0	0	0

IC 702 (TC4021)

PIN NO.	EE	REC	PB
1	5.0	5.0	5.0
2	5.0	5.0	5.0
3	5.0	5.0	5.0
4	5.0	5.0	5.0
5	5.0	5.0	5.0
6	5.0	5.0	5.0
7	5.0	5.0	5.0
8	0	0	0
9	0	0	0
10	4.9	4.09	4.9
11	0	0	0
12	5.0	5.0	5.0
13	5.0/0	5.0/0	5.0/0
14	5.0/0	5.0/0	5.0/0
15	5.0	5.0	5.0
16	5.0	5.0	5.0

Q752, 754 (KRC104S)

PIN	EE	REC	PB
E	0	0	0
C	5.1	5.1	5.1
B	0	0	0

IC701 (NJL68H380)

PIN	EE	REC	PB
1	5.1	5.1	5.1
2	0	0	0
3.	5.1	5.1	5.1

Q701 (2SD1858)

PIN	EE	REC	PB
E	0	0	0
C	4.4	4.4	4.4
B	0	0	0

Q702 (2SC2412KR)

PIN	EE	REC	PB
E	0	0	0
C	4.4	4.4	4.4
B	0	0	0

Q751 (2SD1858)

PIN	EE	REC	PB
E	0	0	0
C	3.8	3.8	3.8
B	0	0	0

Q756 (2SC2412KR)

PIN	EE	REC	PB
E	0	0	0
C	3.8	3.8	3.8
B	0	0	0

Q602 (KRA104S)

PIN	P OFF	P ON	PB	PB WIDE
E	14.0	13.8	13.6	13.6
C	0	0	13.5	13.5
B	14.0	13.6	0	0

Q603 (KRC104S)

PIN	P OFF	P ON	PB	PB WIDE
B	0	0	8.8	8.8

Q601 (KRC104S)

PIN	P OFF	P ON	PB	PB WIDE
C	0	0	11.4	0
B	0	0	0	5.0

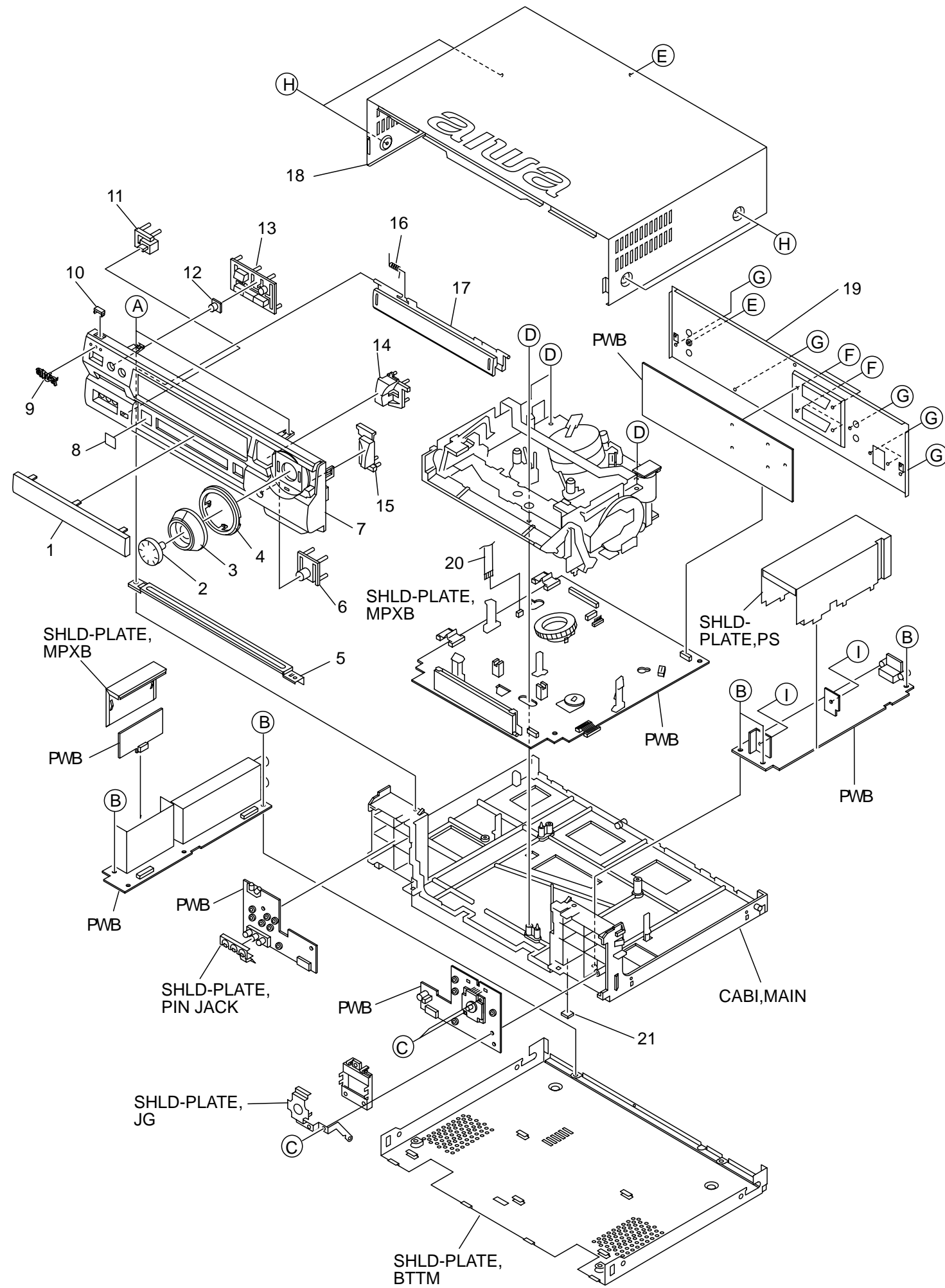
D603 (HZS12A1)

PIN	P OFF	P ON	PB	PB WIDE
C	0	0	11.8	10.1

D605 (ISS184)

PIN	P OFF	P ON	PB	PB WIDE
ANODE	0	0	11.4	6.7
CATHODE	0	0	10.8	6.2

PB WIDE=OSD MENU ASPECT RATIO ----16:9



# MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-JU1-026-010		WINDOW,DSPLY<EH>	19	8A-JU1-024-010		PANEL,REAR<EH>
1	8A-JU1-006-010		WINDOW,DSPLY<K>	19	8A-JU1-004-010		PANEL,REAR<K>
2	8Z-JU2-013-010		KNOB,RTRY JOG	20	88-907-141-110		FF-CABLE, 7P 1.25 140MM
3	8Z-JU2-012-010		KNOB,RTRY SHUTTLE	21	81-JUK-045-010		FELT,FOOT 8-8
4	8A-JU1-011-010		CAP, RING	A	87-067-758-010		BVT2+3-12 W/O SLOT
5	8Z-JU1-215-010		HLDR,STAY	B	87-067-579-010		TAPPING SCREW, BVT2+3-8
6	8Z-JU2-015-010		KEY,REC 2	C	87-B10-089-410		VT2+3-12 W/O GOLD
7	8A-JU1-001-010		CABI,FR	D	87-078-070-010		BVIT3B+4-12
8	8A-JU1-018-010		PLATE,BBE	E	87-067-716-010		TAPPING SCREW, BVTT+3-6
9	87-B00-002-010		BADGE,AIWA 30 ABS SIL	F	87-078-180-010		BVT2+3.5-12(BLK)
10	8Z-JU1-016-010		WINDOW,LED	G	87-067-660-010		TAPPING SCREW, BVT2+3-8
11	8Z-JU2-014-010		KEY,DEMO 2	H	87-067-761-010		TAPPING SCREW, BVT2+3-10
12	8A-JU1-010-010		BTN,PB	I	87-067-703-010		TAPPING SCREW, BVT2+3-10
13	8A-JU1-007-010		KEY,POWER				
14	8A-JU1-008-010		KEY,CONT				
15	8A-JU1-009-010		KEY,PAUSE				
16	84-JP9-202-010		SPR-T,DOOR				
17	8A-JU1-025-010		DOOR,CASS<EH>				
17	8A-JU1-005-010		DOOR,CASS<K>				
18	8Z-JU1-003-010		CABI,STEE				

## COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink

**アイワ株式会社** 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)  
**AIWA CO.,LTD.** 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111