

## ✈ Airport Applications

### Inside:

- ✈ **500ACS Hardware**
- ✈ **Microphone Stations**
- ✈ **Courtesy Announcement System<sup>™</sup> (CAS)**
- ✈ **Flight Announcement System<sup>™</sup> (FAS)**
- ✈ **VIS - Synchronized Audio and Visual Messages**
- ✈ **Ambient Analysis System**
- ✈ **Monitor/Test System**

*Communicate Better With Your Customers*  
*- Take Control of Announcement Quality*

### WHAT IS IT?

With the thousands of customers who move through your airport each day - whether they're on business trips, vacations, or guests from foreign countries - you need the 500ACS Announcement Control System from Innovative Electronic Designs to improve communication quality and efficiency.

Easy to install and use, the 500ACS is a multi-function system that includes digital signal processing, powerful software, high-quality microphone stations, and - as always - incredible sound from the leader in audio management tools.

### **Improve Airport Communication With These - and More - Major Features**

- Ethernet communications through the IED 590R computer, compatible with Windows
- Wide bandwidth, low distortion audio to maintain superb sound quality
- IED's 500 and 508 Series microphone stations, flexible and programmable, available in a number of microphone and mounting styles
- Small, high efficiency power amplifiers that provide increased system reliability at a significantly lower operating cost
- Twenty-six hours of storage available for pre-recorded messages
- Flight Announcement System<sup>™</sup> and Courtesy Announcement System<sup>™</sup> software to deliver important information to your customers
- Flight Announcement System available in English, French, Spanish, and German
- Ambient Analysis System automatically increases sound levels *in real time* in areas that become busy and noisy
- Monitor/Test System allows testing all parts of the system from the microphone stations to - and including - the speakers
- Text of all announcements can be displayed simultaneously on Visual Information System<sup>™</sup> (VIS) screens throughout your airport to provide a means of meeting the design requirements of the Americans with Disabilities Act (ADA).



# Airport Applications

## WHAT MAKES UP THE 500ACS PACKAGE?

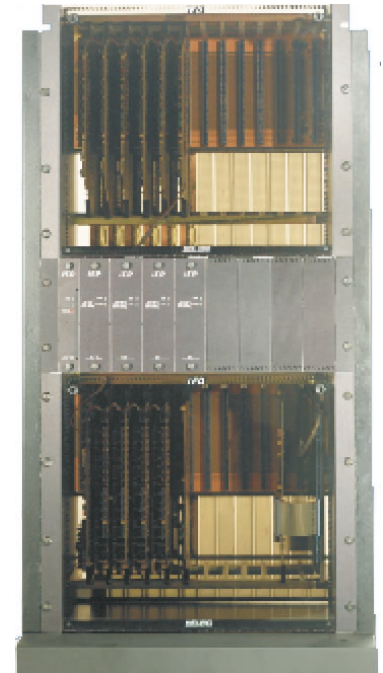
### *The Hardware:*

**500ACS Mainframe** - You get total audio quality with the modular components of the 500ACS mainframe. It contains space for cards so you can build a system based on your needs. Plus the system is expandable for when your needs change. The components include:

- 500C Microphone Station Interface card
- 500R 8-Channel Digital Record/Playback card
- 500D Zone Output card
- 500DHD Dual Hard Drive card
- 500CPU processor card
- Pluggable terminals for ease of installation and service.

**590 Computer** - Pentium processing and Ethernet communications power are standard for the 500ACS with the 590 Computer which contains:

- 631 Announcement Control System Software
- Flight Announcement System Software
- The 590I card to run PA422 communications for the Monitor/Test and Ambient Analysis Systems
- 590A card for test tone output, the 596 audio in/monitor out, and fault closures



**Microphone Stations** - IED's 500 Series microphone stations provide access to the system with efficiency, ease of use, and high quality audio. Use them to:

- Make pages and announcements to individual zones or groups of zones, such as a gate or baggage area, a concourse or even the entire terminal
- Record announcements
- Play pre-recorded messages stored in the 500ACS

And you get more choices in mounting styles, microphone types, expansion capabilities, and programming selections . . . all adaptable to your airport.

**500 Series** - Each 500 series microphone station contains four buttons that you program through the 621 Announcement Control System Software. You can program buttons to make live announcements, record messages, and play back a stored message. The hand-held microphones have a push-to-talk switch which gives an additional selection.

**508 Series** - Has the same capabilities as the 500, but includes an expanded keypad and an LCD display. You can use the 508's keypad to access any zone or zone group, or to play specific messages. It also supports the use of the Flight Announcement System to access and playback pre-recorded flight information.

# ✈ IED Model 500ACS

## Both Series Come in These Microphone Styles:

- Gooseneck
- Hand-held with switch

## And These - Plus Other - Mounting Styles:

- Vertical flush mount
- Horizontal or vertical surface mount (508 series, ergonomically angled for LCD display and ease of keypad use)
- Rack mount
- Desktop
- Locking Door



500DT-G



508VFM-H



500HFM-H

500 Series and 508 Series microphone stations both have backboxes available which allow either surface mounting or flush mounting. The two 45 degree angle boxes for the 508 Series are both surface-mount only.



508SRM-H

Has self-powered monitor speaker with volume control



500FME-H

**Expansion Stations Available**, added to either a 500 or 508 station, for pages and announcements within a single area.



508VFM-H mounted on 508VBB (vertical back box)

Various IED  
microphone  
stations

500ACS Announcement Control System

8000 Series  
Equalizers

540  
Ambient Analysis  
System

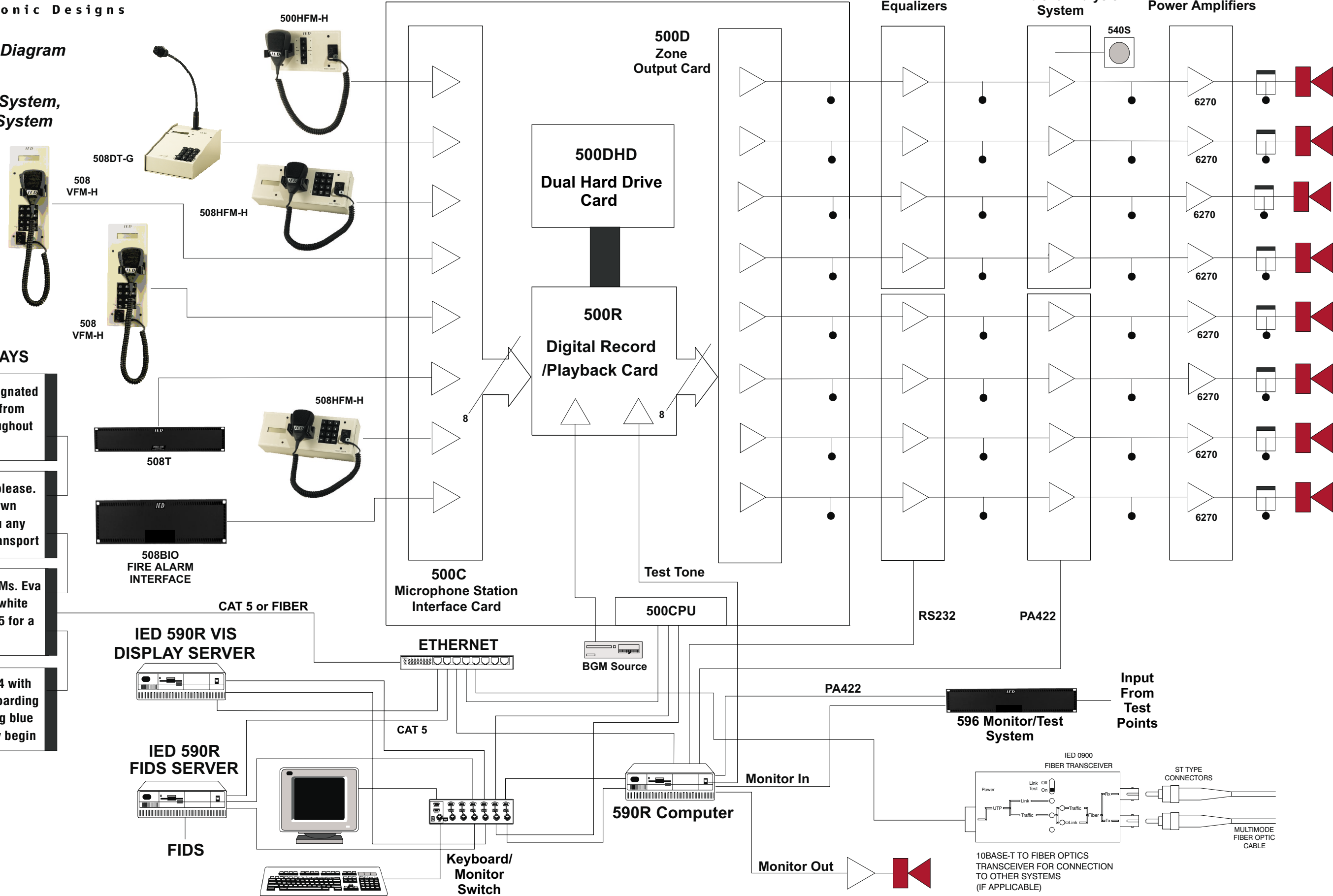
6000 Series  
Power Amplifiers

Typical 500ACS Block Diagram

With 590 Computer,  
540 Ambient Analysis System,  
And 596 Monitor/Test System

**LEGEND**

- Test Point
- ◻ 596GS Speaker Circuit Sensor



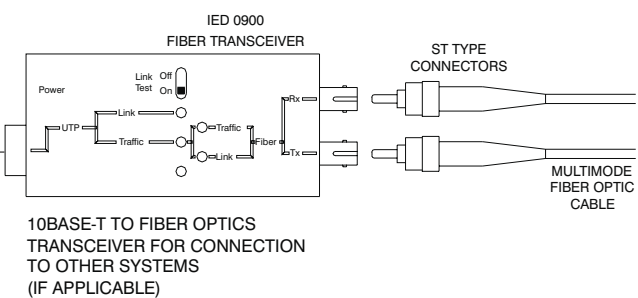
TYPICAL VIS DISPLAYS

Smoking is permitted in designated areas only. Please refrain from smoking while walking throughout the building

May I have your attention, please. All travelers, if any unknown person attempts to give you any item including luggage to transport

Paging Eva Roberts. Paging Ms. Eva Roberts. Please pick up a white courtesy phone and dial 555 for a message

Southwest Airlines flight 254 with service to Chicago is now boarding at Gate 26. Persons holding blue card numbers 70 to 99 may begin





# Airport Applications

## The Software

**IED 621 Announcement Control System** - This is the main software package that allows you to set and monitor all the parameters for your ACS: microphone stations, zones and zone groups, message playback, and settings for the Monitor/Test system.

**The Courtesy Announcement System** - A Windows® application that assists in making courtesy phone and other types of announcements. These announcements can play multiple times until the message is retrieved.

CAS allows you to keep detailed records of when, for whom, and how often an announcement was played. It also maintains an archive of *all* announcements from **all** CAS stations, which you can store or print on demand.

**New Announcement**  
Title

### Announcement Creation

Announcement Type: Individual courtesy phone message  
Destination: Entire Airport  
Message: Call your father at home  
Person who requested the page: Your father  
Paging: Ms. Eva Roberts  
Please pick-up a white courtesy phone and dial 555 for a message.

OK Cancel

**Record and Playback**  
Title

### Recording and Playback

Paging Eva Roberts. Paging Ms. Eva Roberts.  
Please pick-up a white courtesy phone and dial 555 for a message.

Announcement will play to: Entire Airport

Announcement Status: Recording Finished

Repetitions: Total Plays: 3, Time Between Plays: 10 (minutes)

Begin Record Play Stop OK Cancel

Regardless of where you receive requests for pages or make announcements - Airport Information Center, Individual Information Desks, Travelers Aid stations, or Security Office - CAS can simplify and manage the entire process.

**Flight Announcement System** - FAS assembles flight announcements from pre-recorded audio phrases called “takes” based on flight information for the airlines at your airport. It frees airline staff at each gate from making flight announcements, and allows them instead to focus on serving their customers, especially during peak travel times.

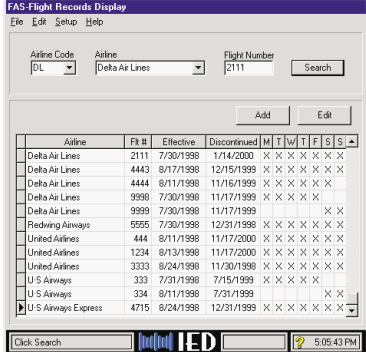
You can make these and other types of announcements with **FAS**:

- Pre-Boarding
- Early-Boarding
- General Boarding
- Final Call
- Arrival
- Baggage Claim
- Gate Change
- Delayed Flight
- Canceled Flight

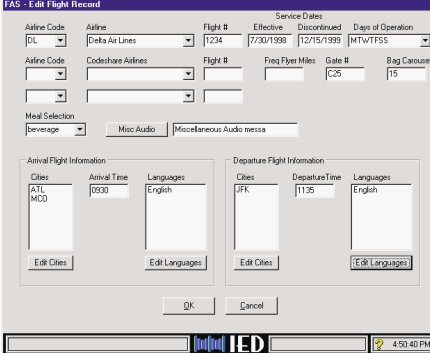
# IED Model 500ACS

Announcements are available in English, Spanish, French, and German, with more languages to be added soon.

FAS also has the ability to query and synchronize to select FID, BID, and MUFIDS systems to automatically update flight records.



Airline	Flt #	Effective	Discontinued	M	T	W	T	F	S	S
Delta Air Lines	2111	7/30/1998	1/14/2000	X	X	X	X	X	X	X
Delta Air Lines	4443	8/17/1998	12/15/1999	X	X	X	X	X	X	X
Delta Air Lines	4444	8/11/1998	11/16/1999	X	X	X	X	X	X	X
Delta Air Lines	9998	7/30/1998	11/17/1999	X	X	X	X	X	X	X
Delta Air Lines	9999	7/30/1998	11/17/1999	X	X	X	X	X	X	X
Redwing Airways	5955	7/30/1998	12/31/1998	X	X	X	X	X	X	X
United Airlines	444	8/11/1998	11/17/2000	X	X	X	X	X	X	X
United Airlines	1234	8/13/1998	11/17/2000	X	X	X	X	X	X	X
United Airlines	3333	8/24/1998	11/30/1998	X	X	X	X	X	X	X
U-S Airways	333	7/31/1998	7/16/1999	X	X	X	X	X	X	X
U-S Airways	334	8/11/1998	7/31/1999	X	X	X	X	X	X	X
U-S Airways Express	4715	8/24/1998	12/31/1999	X	X	X	X	X	X	X



**FAS - Edit Flight Record**

Service Dates: Effective: 7/30/1998, Discontinued: 12/15/1999, Days of Operation: MTWTFSS

Meal Selection: Beverage, Misc Audio, Miscellaneous Audio menu

Flight Information: Airline Code: DL, Flight #: 1234, First Flyer Miles: C25, Gate #: 15, Bag Carousel: 15

Flight Information: Airline Code: Delta Air Lines, Flight #: [blank], First Flyer Miles: [blank], Gate #: [blank], Bag Carousel: [blank]

Meal Selection: Beverage, Misc Audio, Miscellaneous Audio menu

Flight Information: Airline Code: [blank], Flight #: [blank], First Flyer Miles: [blank], Gate #: [blank], Bag Carousel: [blank]

Flight Information: Airline Code: [blank], Flight #: [blank], First Flyer Miles: [blank], Gate #: [blank], Bag Carousel: [blank]

Buttons: Edit Cities, Edit Languages, Edit Cities, Edit Languages, OK, Cancel

The main three components required for FAS are the FAS software, the FAS audio takes, and the IED 508 Series microphone station, which includes a numeric keypad and an LCD readout. The airline staff uses the 508 keypad to enter the prompted information, such as the flight number. The software then processes the data to assemble the proper takes and play the announcement.

The 500ACS may be expanded to include Visual Paging. By adding the Visual Information System (VIS), the exact text of each announcement is displayed - in sync with the audio - on LED graphic displays in the area of the announcement. So even customers outside the gate waiting areas (using a telephone, getting coffee, buying a newspaper, etc.) can still see a flight or other announcement. The VIS also displays announcements in the same multiple languages as the

Ladies and gentlemen. This is the final boarding call for Delta Air Lines flight



Delta  
delta.com

69-09-26 A31  
May 18, 2001

Gate: 17  
Flight: DL 1169  
Destination: Atlanta, GA  
Connecting: Atlanta

Time: 9:15AM  
Status: Boarding  
Rows 15 and Higher

In-Flight Service: Light Snacks and Beverages  
Next Arrival: DL 1261 from Atlanta, GA 9:45

FAS and provides a means of complying with the Americans with Disabilities Act (ADA).

Also, VIS has graphical animation capability to play greetings for special groups and visitors, play advertisements, which will generate revenue for your airport, and provide gate and baggage information displays.

## KEEP IT CLEAR - KEEP IT WORKING

Your 500ACS may also be installed with two additional components that make sure all announcements are heard and that the system is functional at all times.

**540 Ambient Analysis System** - This function continuously monitors noise levels and automatically *in real time* raises the sound of announcements proportionally in areas that become busy and noisy, such as gates and baggage claim areas. Once the noise level decreases, the announcement level returns to normal.

# Created, Developed, and Supported by IED

**596 Monitor Test System** - Diagnostic software that lets you thoroughly test the integrity of the system, from microphone stations to, and including, the speakers and speaker wires. It also allows you to audibly listen to all tested parts of the system.

**6000 Series Power Amplifier** - *Big power in a small space, featuring all plug-in components.* Contains an integral switching-mode power supply that provides for higher efficiency, increased reliability, stability under all load conditions, and improved performance all at significantly lower operating costs. When used in conjunction with the Monitor/Test System, the 6000 Series Power Amplifier can be provided with automatic backup switching in case an amplifier fails.

## IED's 500ACS GIVES YOUR FACILITY TOTAL, QUALITY AUDIO CONTROL THROUGH:

- Mainframe components that allow you to create a system based on your needs today and tomorrow
- Programmable microphone stations in two models and various mounting styles
- Courtesy Announcement System to get messages to your customers
- Flight Announcement System, which assembles and makes all types of flight announcements
- VIS technology that displays word-for-word text of all announcements on screens
- Monitor/Test and Ambient Noise Analysis Systems make sure your equipment works and announcements are heard

### SYSTEM SPECIFICATIONS

#### TEST INPUT TO ANY OUTPUT

Frequency Response (20 Hz - 20 kHz, +4 dBu)	+0,-0.1 dB
Total Harmonic Distortion (20 Hz - 20 kHz, +21 dBu)	<0.02 %
Noise (22 Hz - 22 kHz filters, 50 $\Omega$ source)	<-105 dB
Gain	Unity
Maximum Input	+21 dBu
Maximum Output	+21 dBu

#### MICROPHONE STATIONS

Frequency Response (20 Hz - 20 kHz, +2 dBu)	+0,-0.5 dB
Total Harmonic Distortion (2 kHz - 20 kHz, 10 dB into compression)	<0.05 %
Equivalent Noise Input (22 Hz to 22 kHz filters, 50 $\Omega$ source)	<-98 dB
Maximum Input	+17 dBu
Maximum Output	+5 dBu
Typical Output	+2 dBu
Microphone Station Maximum Gain	18.5 dB
Total System Typical Output	+2 dBu

#### MICROPHONE STATION INPUT THROUGH A/D AND D/A CONVERTER TO ANY OUTPUT

Frequency Response (35 Hz - 7.3 kHz)	+0,-3 dB
Maximum Gain	6 dB
Maximum Input	+14 dBu
Maximum Output	+20 dBu
Total Harmonic Distortion (35 Hz - 7.3 kHz, +14 dBu)	<0.1 %
Equivalent Noise Input (Microphone input to any output, 22 Hz to 22 kHz, 50 $\Omega$ source)	<-98 dB

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