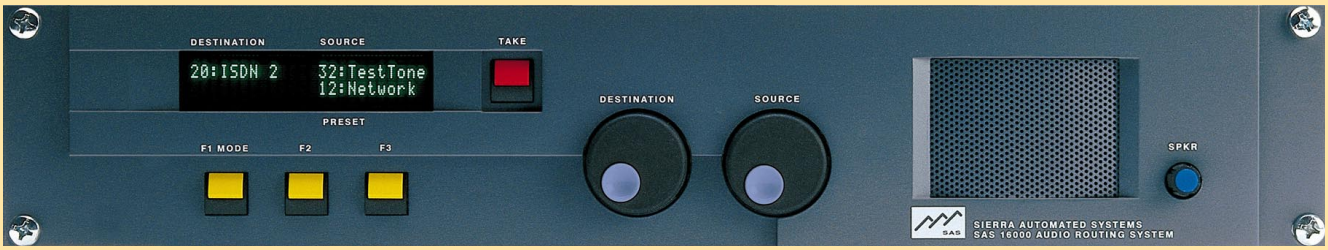
SAS 16000

Audio Routing System

- 32 x 32 in a compact 2 RU package
- Multi-point RS-485 & RS-232 interfaces
- Stereo/mono easily integrated within system
- Many off-the-shelf interconnect options
- Superb analog quality broadcast performance
- Non-volatile system memory
- 118 dB dynamic range
- Alphanumeric front panel controls
- Compatible with all SAS remote control heads
- Built-in audio confidence monitor



THE SAS 16000 AUDIO ROUTING SWITCHER

is a high performance microprocessor based audio switching system designed for professional broadcast facilities. A central switching system provides the flexibility to meet the demands of todays fast paced broadcast environment. Adding or changing sources is greatly simplified. Connect to the central switch, type in a new name and it's available everywhere!

The SAS 16000 brings SAS quality and reliability to the broadcast plant which requires up to a 32 x 32 matrix, all at a very attractive price. Rugged design and construction combine with the latest LSI technology to yield uncompromising performance. We've even included a built-in audio quality assurance monitor.

A BRIEF TECHNICAL DESCRIPTION

The SAS 16000 provides a 32 x 32 matrix in a two rack unit chassis, and includes full system access controls with alphanumeric displays on the front panel. SAS RCS Router Control Software runs on a PC for programming alphanumerics, pushbuttons and other system parameters. Macros and presets are programmable via the RCS.

The 16000 can be configured to operate as a mono, stereo or a mixed mono/stereo system. Adjacent inputs or outputs can be linked as stereo pairs and treated as a single source or destination. Stereo linking provides a flexible and convenient solution for facilities which have both stereo and mono sources and destinations to manage. Alternately, a slave chassis may be added to allow 32 x 32 all-stereo operation.

As a standard protection feature the SAS 16000 CPU is equipped with non-volatile memory for safekeeping of all alphas, pushbutton tables and crosspoint status in the event of power loss.

SAS
SIERRA AUTOMATED SYSTEMS

SAS 16000D

Digital Audio Routing System

- 32 x 32 AES/EBU in a compact 2 RU package
- Multi-point RS-422 & RS-232 interfaces included
- Many off-the-shelf interconnect options
- Superb broadcast quality performance
- Non-volatile system memory
- Alphanumeric front panel controls
- Compatible with all SAS remote control heads
- Built-in audio confidence monitor + analog outputs

THE SAS 16000D DIGITAL AUDIO ROUTING SWITCHER

is a high performance microprocessor based serial digital audio switching system designed for professional broadcast facilities. A switching system can provide the flexibility to meet the demands of today's fast paced broadcast environment. Adding or changing sources is greatly simplified. Connect to the switch, type in a new name and it is available everywhere!

The SAS 16000D brings SAS quality and reliability to the broadcast plant which requires up to a 32 X 32 digital matrix, all at a very attractive price. Rugged design and construction combine with the latest LSI technology to yield uncompromising performance. We've even included a built-in 20 bit analog audio quality monitor complete with balanced stereo analog outputs to feed local test and measurement or recording equipment.

A BRIEF TECHNICAL DESCRIPTION

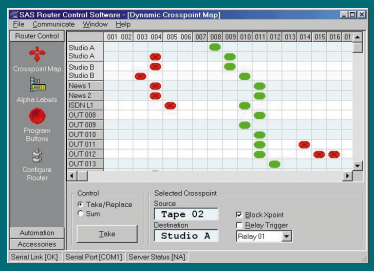
The SAS 16000D provides a 32 X 32 AES/EBU matrix in a two rack unit chassis, and provides full system access controls and alphanumeric displays on the front panel. The system comes complete with SAS RCS Router Control Software. The software runs on a PC to program alphanumerics, remote panel pushbuttons and other system parameters. Macros and presets are also programmable using the RCS.

As a standard protection feature the SAS 16000D CPU is equipped with non-volatile memory allowing for safekeeping of all alphas, pushbutton tables and crosspoint status in the event of power loss.

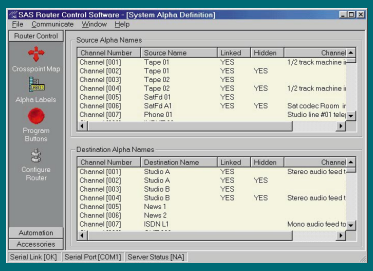
SYSTEM CONTROL

The central control processor provides 2 RS-232 and 16 RS-485 serial ports. One RS-232 port is for connection to a computer for system programming while the other contributes a 'USI' User Serial Interface for connection to an external automation computer or other user system. SAS provides an open protocol for easy interfacing. The 16 isolated RS-485 ports provide points of access for SAS remote control panels.

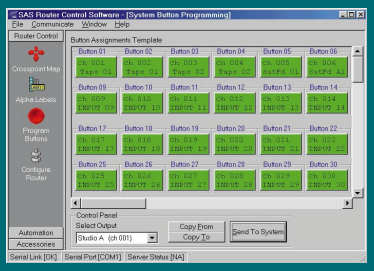
SAS
SIERRA AUTOMATED SYSTEMS



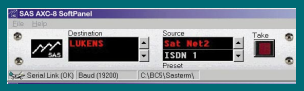
DYNAMIC MATRIX MAP



ALPHA EDITING



PUSHBUTTON PROGRAMMING



AXC-8 SOFT PANEL

ANC-8 SOFT PANEL

PROGRAMMING DISPLAY SCREENS

SYSTEM INTERCONNECT: PLUG-N-PLAY

SAS has made available several pre-made interconnect options to speed installation. The 16000D Series uses gold plated 'micro-ribbon' connectors for quick, reliable connection. Typical installations wire the switcher to blocks on a cross-connect wall for connection to sources and destinations. Plug the off-the-shelf cables in to your choice of cross-connect block and you are ready to wire. Category 3/5 data cables and punch or terminal blocks provide an economical, high performance solution.

SOFT PANELS

The SAS 16000D software package includes pop-up 'soft' panel graphical user interfaces. These virtual control panels are Windows applications which communicate to the SAS router control software (SAS server) over a standard LAN. Both 'photo realistic' and conventional Windows 'pull down' panels are included. These panels are very convenient for locations which are already served by a PC and where a dedicated hardware panel is not required. Newsroom workstations, engineering offices or even the PD's office are all good candidates for these controllers. Remote off-site access is possible if the facility is equipped with a WAN.

REMOTE CONTROL PANELS

The SAS 16000D is compatible with the complete range of SAS remote control panels; console and rack mounted, with full alphanumeric or pushbutton capability. Single output controllers are available in several configurations: alphanumeric 8-character displays with rotary shaft encoder input selection; pushbutton input selection; alpha displays with 'hot punch' pushbuttons; single rack unit 19" controllers; console mount (very small outline) controllers. Multiple outputs may be accessed with remote XY type control panels or from a PC.

MACROS & SNAPSHOTS

Macros (salvos) are used to activate several crosspoint commands as a single event. Each group of commands is programmed using the SAS Router Control Software and assigned a unique name which may be accessed by control panels operating in macro mode. The system also provides the ability to store and recall "snapshots" of the complete matrix crosspoint map.

REMOTE ACCESS

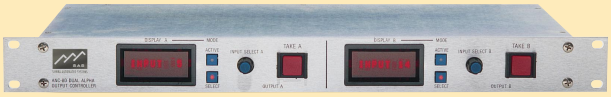
The 16000D supports several remote access options:
'soft panels' operating over a WAN, direct modem connection with remote router control software, access to the on-site computer via remote communication software (e.g. pcAnywhere) and even DTMF over dial up lines. SAS Engineering is readily available to assist with tailoring a remote access configuration.

AUTOMATION

Automation is available using the GPI-1600. The GPI provides relay outputs and optional input triggers for machine interface. The automation software runs on a PC and provides a useful tool for capturing news feeds, triggering digital workstation recording and other events.

ANC-8 SINGLE OUTPUT ALPHA CONTROL PANEL

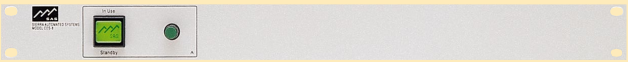
APR-88 SINGLE OUTPUT ALPHA CONTROL PANEL



ANC-8D DUAL OUTPUT ALPHA CONTROL PANEL

APR-88 DUAL OUTPUT ALPHA CONTROL PANEL

AXC-8 ALPHANUMERIC X-Y CONTROL PANEL



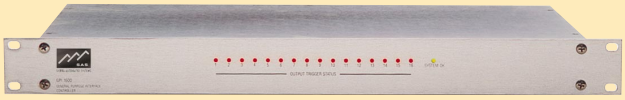
CDS-8R SINGLE OUTPUT ALPHA CONTROL PANEL

PBS-16 PUSHBUTTON SELECT CONTROL PANEL

CDS-8R DUAL OUTPUT ALPHA CONTROL PANEL

PBS-32 PUSHBUTTON SELECT CONTROL PANEL

CDS-8R QUAD OUTPUT ALPHA CONTROL PANEL



GPI-1600 AUTOMATION INTERFACE

CDS-8 CONSOLE DUAL OUTPUT ALPHA CONTROL PANEL

CPI-80 SINGLE OUTPUT ALPHA CONTROL PANEL

APC-88 SINGLE OUTPUT ALPHA CONTROL PANEL

CRS-40 OUTPUT ORIENTED CONTROL PANEL

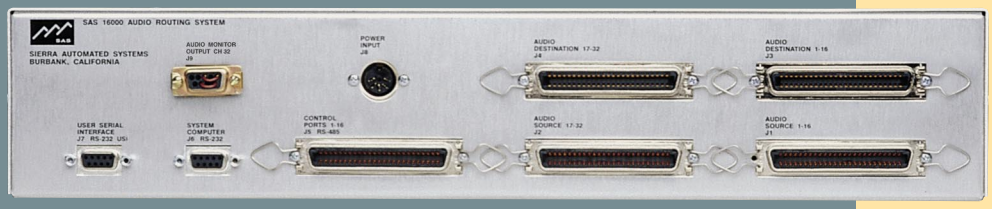
CDS-8 SINGLE OUTPUT ALPHA CONTROL PANEL

CDS-8 DUAL OUTPUT ALPHA CONTROL PANEL

CDS-8DT DESKTOP ALPHA CONTROL PANEL

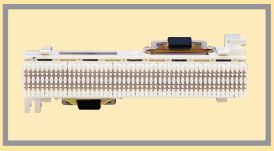
DSS-8 SINGLE OUTPUT ALPHA CONTROL PANEL W/SPKR

SAS 16000D FRONT PANEL

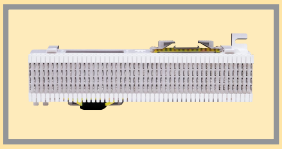


SAS 16000D REAR PANEL

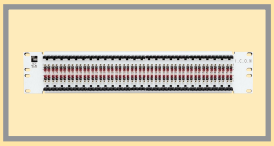
INTERCONNECTION OPTIONS



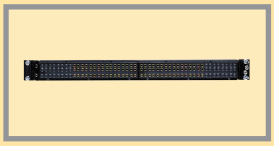
SIEMON MULTI-FLEX BLOCK



TELCO 66 TERMINAL BLOCK



ADC ICON PANEL



PATCH PANEL

SPECIFICATIONS

AES/EBU INPUTS

Input Impedance	110 ohms, balanced, transformer isolated
Input Level	2 to 7 V p-p

AES/EBU OUTPUTS

Source Impedance	110 ohms, balanced transformer isolated
Output Level	5 V p-p
Max Data Rate	12 Mb/s

SERIAL INTERFACE

SAS Remotes	RS-485, 76.8 kiloBaud
Computer	RS-232, 19.2 kiloBaud
USI, User Serial IF	RS-232, 9600 Baud

GENERAL

Power	95-260 VAC ±10%, 40 VA max
Physical Size	3.5" H x 19" W x 16" D (2 EIA rack units)

Sierra Automated Systems reserves the right to change specifications without notice.

SIERRA AUTOMATED SYSTEMS
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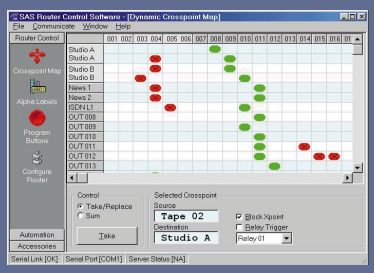
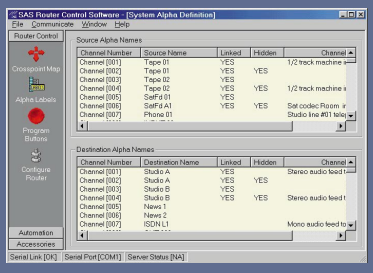
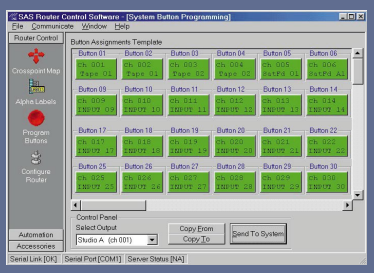


DYNAMIC MATRIX MAP



ALPHA EDITING



PUSHBUTTON PROGRAMMING

AXC-8 SOFT PANEL

ANC-8 SOFT PANEL

PROGRAMMING DISPLAY SCREENS

SYSTEM INTERCONNECT: PLUG-N-PLAY

SAS has made available several pre-made interconnect options to speed installation. The 16000 Series uses gold plated "micro-ribbon" connectors for quick, reliable connection. Typical installations wire the switcher to blocks on a cross-connect wall for connection to sources and destinations. Plug the off-the-shelf cables in to your choice of cross-connect blocks and you're ready to wire. Siemon Multi-Flex blocks and ADC ICON panels are designed specifically for stranded wire. Adapters are available which break out to screw terminal blocks. And, of course, the ever popular "66" blocks are also available.

SYSTEM CONTROL

The central control processor provides 2 RS-232 and 16 RS-485 serial ports. One RS-232 port is for connection to a computer for system programming while the other contributes a (USI) User Serial Interface for connection to an external automation computer or other user system. SAS provides an open protocol for easy interfacing. The 16 isolated RS-485 ports provide points of access for SAS remote control panels.

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REMOTE ACCESS

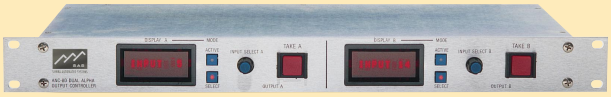
The 16000 supports several remote access options: 'soft panels' operating over a WAN, direct modem connection with remote router control software, access to the on-site computer via remote communication software (e.g. pcAnywhere) and even DTMF over dial up lines. SAS Engineering is readily available to assist with tailoring a remote access configuration.

AUTOMATION

Automation is available using our GPI 1600. The automation software runs on a PC and serves to capture news feeds, roll recording machines and other events. The GPI provides relay outputs and optional input triggers for machine interface.

ANC-8 SINGLE OUTPUT ALPHA CONTROL PANEL

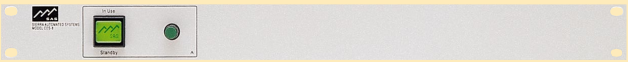
APR-88 SINGLE OUTPUT ALPHA CONTROL PANEL



ANC-8D DUAL OUTPUT ALPHA CONTROL PANEL

APR-88 DUAL OUTPUT ALPHA CONTROL PANEL

AXC-8 ALPHANUMERIC X-Y CONTROL PANEL



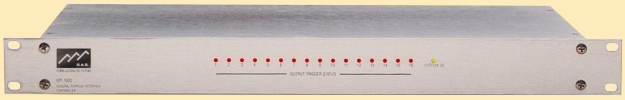
CDS-8R SINGLE OUTPUT ALPHA CONTROL PANEL

PBS-16 PUSHBUTTON SELECT CONTROL PANEL

CDS-8R DUAL OUTPUT ALPHA CONTROL PANEL

PBS-32 PUSHBUTTON SELECT CONTROL PANEL

CDS-8R QUAD OUTPUT ALPHA CONTROL PANEL



GPI-1600 AUTOMATION INTERFACE

CDS-8 CONSOLE DUAL OUTPUT ALPHA CONTROL PANEL

CPI-80 SINGLE OUTPUT ALPHA CONTROL PANEL

APC-88 SINGLE OUTPUT ALPHA CONTROL PANEL

CRS-40 OUTPUT ORIENTED CONTROL PANEL

CDS-8 SINGLE OUTPUT ALPHA CONTROL PANEL

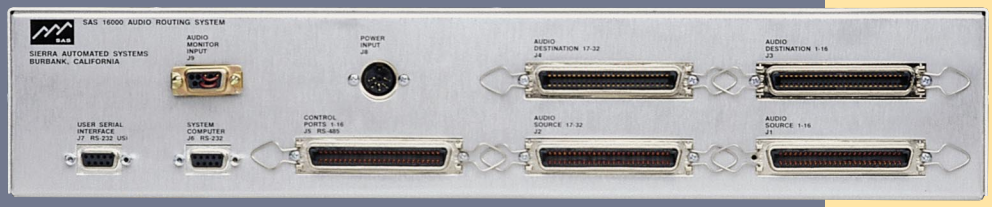
CDS-8 DUAL OUTPUT ALPHA CONTROL PANEL

CDS-8DT DESKTOP ALPHA CONTROL PANEL

DSS-8 SINGLE OUTPUT ALPHA CONTROL PANEL W/SPKR

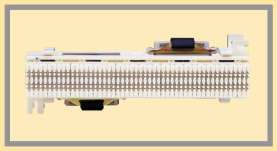
SAS 16000 FRONT PANEL

SAS 16000 SLAVE FRONT PANEL

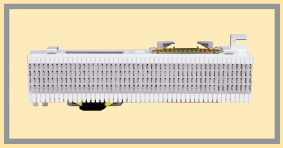


SAS 16000 REAR PANEL

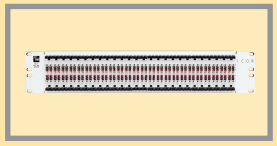
INTERCONNECTION OPTIONS



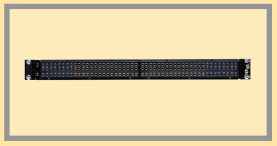
SIEMON MULTI-FLEX BLOCK



TELCO 66 TERMINAL BLOCK



ADC ICON PANEL



PATCH PANEL

SPECIFICATIONS

SYSTEM

Gain	0 dB, ±0.2 dB, 20-20 kHz
Freq. Response	±0.1 dB, 20-15 kHz
	+0/-0.25 dB, 20 kHz
Noise	< -91 dBu, 20 kHz bandwidth
Dynamic Range	> 118 dB
THD	< 0.05%, 20-20 kHz
IM (SMPTE)	< 0.05%
Crosstalk	< -70 dB, 20-20 kHz, adjacent inputs;
	< -100 dB; typical @ 1 kHz

SERIAL INTERFACE

Computer	RS-232, 19.2 kilobaud
External Unit	USI, User Serial IF RS-232, 9600 Baud
SAS Panels	RS-485, 76.8 kilobaud

AUDIO INPUTS

Input Impedance	>40 k ohms, balanced
Max. Input Level	+27 dBu
CMRR	Exceeds 70 dB, 20-20 kHz,
	-90 dB, typical 50/60 Hz

AUDIO OUTPUTS

Source Impedance	60 ohms
Max. Output Level	+27 dBu, 10 k ohm load
	+24 dBm, 600 ohm load

GENERAL

Power	95-260 VAC, ±10%, 40 VA max.
Physical Size	3.5"H x 19"W x 16"D
(each Frame)	(2 EIA rack units)

Sierra Automated Systems reserves the right to change specifications without notice.

SIERRA AUTOMATED SYSTEMS
BROADCAST & COMMUNICATIONS

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