Express Cobra

SymNet Express Cobra is a family of 19" rack-mountable digital signal processors (DSP) that are setup and controlled by SymNet Designer software. They are ideal for audio applications such as churches, conference rooms, courtrooms, night clubs and many others. ARC Wall panels easily integrate with Express hardware and provide simple user control of the system.

There are four analog I/O options available for the Express line: 12x4, 4x12, 8x8, and 4x4. Express devices also employ the industry-standard CobraNet® technology to share audio between devices supporting 16 inputs and 16 outputs of CobraNet audio over Ethernet in addition to the analog I/O. Express devices are intended for single device installations as well as installations with modest expansion requirements.

Devices are initially configured through the RS-232 port on the rear panel. This same port is used to connect to external control systems from AMX, Crestron, and others. Once the system is initially configured, Express devices can be addressed and controlled over Ethernet.

Any of the ARC Wall Panels can be connected via CAT5 cable to an RJ-45 jack on the rear panel. One channel of analog audio can be routed to or from the wall panel over the CAT5 cable for simple paging or monitoring needs. Express also includes an RS-485 port for extending the ARC and external control capacity.

Express 12 x 4 Cobra

Express 4 x 12 Cobra

Express 4 x 4 Cobra

Specifications

GENERAL SPECIFICATIONS		AUDIO SPECIFICATIONS	
Processors	2 x Analog Devices SHARC 21161N @ 100 MHz SIMD	Converter Type	24-bit Sigma Delta
Raw processing capacity	200 MIPS, 800 MFLOPS sustained	Sampling Rate	48 kHz, +/- 100 ppm
Analog control inputs	0-5 VDC	Frequency Response	20-20 kHz, +/- 0.5 dB
Recommended external control potentiometer	10k Ohm, linear	A/D dynamic range	> 110 dB, A-weighted
RS-232 host serial I/O	115.2 or 57.6 kbaud, 8 data bits, 1 stop bit, no parity, no flow control wired straight-through, only pins 2, 3, and 5 required	D/A dynamic range	> 110 dB, A-weighted
RS-232 accessory serial I/O	38.4 kbaud (default), 8 data bits, 1 stop bit, no parity, no flow control wired straight-through, only pins 2, 3, and 5 required	Total THD+ Noise	< 0.005% @ 1 kHz, -1 dBFS
RS-485 serial I/O	38.4 kbaud (default) 8 data bits, 1 stop bit, no parity, no flow control wired in parallel with STP cable.	Delay memory	43 mono seconds
Ethernet/CobraNet Cable	Standard CAT5, maximum device to device length = 100 meters	Input impedance	6.67k Ohms, balanced
ARC Cable	Standard CAT5, distance dependent upon load.	Output impedance	204 Ohms, balanced
Maximum devices per SymLink Ring	1	Maximum input level	+29 dBu with 6 dB pad, +23 dBu w/o pad
Maximum SymLink Rings	31	Maximum output level	+24 dBu, 100k Ohms; +21 dBu. 600 Ohms
Maximum stored presets	1000	Mic preamp EIN	-129 dBu typical, 22-22 kHz, A-weighted
		Phantom power (per input)	+48 VDC, 10 mA
		Input CMR	> 70 dB @ 60 Hz
		Channel separation	> 100 dB, in through out @ 1 kHz
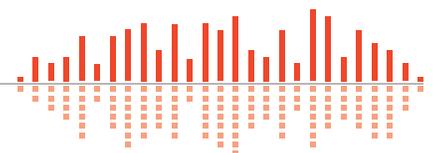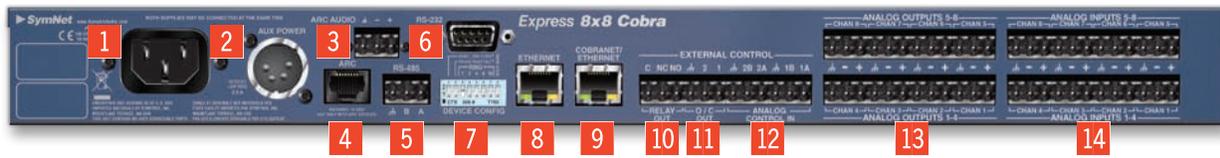
1 Main Power: Accepts power from detachable IEC power cable (100-240 VAC, 50-60 Hz, 60 Watts max).

2 Aux Power: Accepts power from Symetrix model PS-7 or user-supplied auxiliary power connection (24 VDC, 2.5 Amps, 60 Watts max).

3 ARC Audio: Splits a single analog line level audio signal off of the ARC port. Can be wired to a line level analog input or output jack for remote audio over CAT5.

4 ARC: Distributes power and RS-485 data to one or more ARC devices.

5 RS-485: Connects to a Control I/O, ARC-PS, ARC or other Symetrix SymNet family RS-485 controller, wired in parallel (A to A, B to B and GND to GND) using shielded twisted pair. Port Settings: 38.4 kbaud (default), 8 data bits, 1 stop bit, no parity, no flow control.

6 RS-232: Serial communications interface for SymNet Designer on the host PC or a 3rd party accessory controller. (Mode is determined by the "RS-232: Host / Acc" mode switch.) Port Settings (Host): 115 or 57.6 kbaud, 8 data bits, 1 stop bit, no parity, no flow control. Port Settings (Acc): 38.4 kbaud (default), 8 data bits, 1 stop bit, no parity, no flow control.

7 Device Config: Configures the RS-232 port mode, RS-232 port host mode baud rate and Ring Number (device address).

8 Ethernet: 10/100 Base-T Ethernet port for SymNet Designer host control over IP. IP control must be setup from SymNet Designer via RS-232 first for security.

9 CobraNet/Ethernet: 10/100 Base-T Ethernet port for Cobra-Net audio, 16 send and 16 receive channels. (Future software versions may support SymNet Designer host control over IP+CobraNet on this same port.)

10 Relay Out: 1 SPDT relay rated at 3 Amps, 24 VDC, resistive; 0.3 Amps, 60 VDC, resistive and can be wired normally open or normally closed. This relay can also be used for power failure detection or emergency alarm system integration.

11 O/C Out: 2 open collector outputs with a paired common ground pin. O/C outputs go low (0V) when active, and are internally pulled high (5V) when inactive and can drive external LED indicators directly.

12 Control In: 2 analog control inputs able to be used as 2 potentiometer inputs, 2 mechanical rotary encoder inputs, or as 4 switch inputs (+5 VDC reference voltage supplied).

13 Analog Outputs: 4, 8 or 12 analog line level audio inputs with individually software-selectable level of -10 dBV or +4 dBu.

14 Analog Inputs: 4, 8 or 12 analog mic / line level audio inputs with individually software-selectable phantom power and level of -50 dBu, -40 dBu, -20 dBu, -10 dBV or +4 dBu.

Mechanical Data

Item	Specifications	Remarks
Space Required	1U (WDH: 48.3 cm x 27.4 cm x 4.37 cm / 19 in x 10.8 in x 1.72 in). Depth does not include connector allowance.	Allow at least 1 inch additional clearance for rear panel connections. Additional depth may be required depending upon your specific wiring and connections.
Electrical	100 to 240 VAC, 50-60 Hz, 60W maximum.	No line voltage switching required.
Ventilation	Maximum recommended ambient operating temperature is 30 C / 86 F.	Fan on equipment right pulls hot air out of device. Air intake at equipment left. Ensure that the left and right equipment sides are unobstructed (5.08 cm, 2 in minimum clearance). The ventilation should not be impeded by covering the ventilation openings with items such as newspapers, tablecloths, curtains, etc.
Shipping Weight	6 kg (12 lbs.)	

Architect and Engineer Specifications: SymNet Express Cobra.

The series of four DSP audio matrix devices shall include four different configurations of balanced mic/line inputs and balanced line outputs on plug-in barrier-strip connectors. These configurations shall be 12x4, 4x12, 8x8, and 4x4. Each shall be offered with CobraNet compatibility. Additionally each device shall include two analog control inputs, one open collector output, and one relay output on plug-in barrier-strip connectors, ARC interconnect on one RJ-45 connector, ARC Audio on one plug-in barrier strip connector, and 24 VDC backup power on one 4-pin male XLR connector. The devices shall include one RJ-45 connector for CobraNet network audio. Audio inputs and outputs shall be analog, with internal 24-bit A/D & D/A converters operating at a sample rate of 48 kHz. All internal processing shall be digital (DSP). Software shall be provided for creating/ connecting DSP system components within each hardware device. Available system components shall include (but not be limited to) various forms of: mixers, equalizers, filters, crossovers, dynamics/gain controls, routers, delays, remote controls, meters, generators, onboard logic, and diagnostics. Ethernet or serial communications shall be utilized for software control and configuration. After initial programming, processors may be controlled via dedicated software screens, third-party RS-232 control systems, and/or optional analog or RS-485 remote control devices. A designer software application shall operate on a Windows computer, with network card installed, running Windows® 98/2000/XP. **The DSP series shall be CE marked, CSA tested to UL 60065.**

The DSP series shall be SymNet Express Cobra.

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