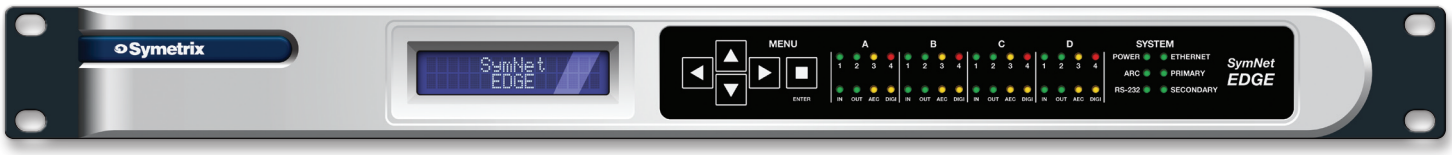

EDGE

SymNet Edge scalable hardware partners with SymNet Composer open architecture software for total design synergy. Networked audio connections use Dante protocol for ultra low latency. Multiple end user control options complete the system.

Features:

- Four configurable I/O card slots, up to 16 channels total of local I/O plus 128 (64x64) channels of Dante network audio.
- Eight logic inputs (or four analog control inputs) and eight logic outputs.
- Redundant Dante network audio ports on an internal gigabit switch eliminates the need for an external switch in many systems. Systems using 10 or more Edge mainframes and/or mainframes separated by distances over 100 meters can be implemented with off-the-shelf gigabit hardware.
- Ethernet for configuration and control, and RS-232 for third party control systems.
- User control by Symetrix ARC wall panels, ARC-WEB web app, SymNet SymVue, third-party touch screens.
- Port for optional redundant external power supply.

Specifications

Processors	1 x Analog Devices SHARC 21489 @ 400 MHz SIMD.	**Logic outputs**	Low (0V) when active, pulled high (5V) when inactive.
Raw processing capacity	400 MIPS, 1.6 GFLOPS.	**Logic output maximum external power supply voltage**	24 VDC.
Sampling Rate	48 kHz, ± 100 ppm.	**Logic output maximum external power supply current sinking**	50 mA.
Frequency Response (A/D/A)	20 Hz – 20 kHz, ± 0.5 dB.	**Logic output maximum output current**	10 mA.
Dynamic Range (A/D/A)	> 114 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.
Channel Separation (A/D/A)	> 108 dB @ 1 kHz, +24 dBu.	**RS-485 serial I/O**	38.4 kbaud (default) 8 data bits, 1 stop bit, no parity, no flow control. May be broken out of ARC port.
Latency (A/D/A)	0.88 mS, inputs routed to outputs.	**Ethernet Cable**	Standard CAT5, maximum device to device length = 100 meters.
Delay memory	80 mono seconds.	**Dante Cable**	Standard CAT6, maximum device to device length = 100 meters.
Analog control inputs	0-3.3 VDC.	**ARC Cable**	Standard CAT5, distance dependent upon load and number of devices.
Recommended external control potentiometer	10k Ohm, linear.	**Maximum devices per system**	32 units per Site File.
		Maximum stored presets	1000.

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SymNet EDGE

Shown with (2) Analog Mic/Line Input and (2) Analog Line Output cards.

1. **Power:** Accepts power from detachable IEC power cable (100-240 VAC, 50-60 Hz, 45 Watts max).
2. **Aux Power:** Locking power plug accepts power from Mean Well power supply part number GS60A24-P1J fitted with a Switchcraft part number 767K plug or suitable 24 VDC / 2.0 Amp auxiliary power source.
3. **ARC:** Distributes power and RS-485 data to one or more ARC devices.
4. **Logic Outputs:** Eight (8) logic outputs with four (4) paired common ground pins. Logic Outputs go low (0V) when active, and are internally pulled high (5V) when inactive and can drive external LED indicators directly.
5. **External Control Inputs:** Four (4) analog control inputs are able to be used as 4 potentiometer inputs or as 8 switch inputs (+3.3 VDC reference voltage supplied).
6. **Dante (Primary):** 1000 Base-T Ethernet port provides 128 (64x64) channels of Dante network audio.
7. **Dante (Secondary):** 1000 Base-T Ethernet port for redundant Dante network audio implementation.
8. **Ethernet:** 10/100 Base-T Ethernet port for SymNet Composer host control and 3rd party accessory controllers over IP. Features auto-crossover sensing for direct device-to-device connections.
9. **RS-232:** Serial communications interface for 3rd party accessory controllers. Port Settings: 38.4 kbaud (default), 8 data bits, 1 stop bit, no parity, no flow control.
10. **I/O Cards (A-D):** Four 4-channel I/O card slots accept any combination of available cards providing up to 16 channels of local I/O. Refer to individual I/O card data sheets for details.

Mechanical Data

Item	Specifications	Remarks
Space Required	1U (WDH: 18.91 in x 9.5 in x 1.72 in / 48.02 cm x 24.13 cm x 4.37 cm). Depth does not include connector allowance.	Allow at least 3 inch additional clearance for rear panel connections. Additional depth may be required depending upon your specific wiring and connections.
Electrical	100-240 VAC, 50/60 Hz, 45 Watts maximum universal input and/or suitable 24 VDC / 2.0 Amp auxillary power source.	No line voltage switching required.
Ventilation	Maximum recommended ambient operating temperature is 30 C / 86 F.	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	13 lbs. (5.9 kg).	
Certifications or Compliance	UL 60065, cUL 60065, IEC 60065, EN 55103-1, EN 55103-2, FCC Part 15, RoHS.	

Architect and Engineer Specifications: SymNet EDGE.

The device shall provide four I/O card slots accepting any combination of available cards providing up to 16 channels of local I/O. All signal processing, mixing and routing functions (including I/O levels) shall be controllable via software. Audio inputs and outputs shall be accessed via rear panel 3.81 mm terminal block connectors. Some I/O cards may utilize other connector types.

Network audio expansion shall be provided by the Dante protocol with a capacity of 128 (64x64) channels. Primary and Secondary Dante network audio connections shall be provided for redundant network implementation. Connectors shall be gigabit RJ45 utilizing CAT6 cable.

A designer software application shall be provided that operates on a Windows computer, with network interface installed, running Windows® XP or higher operating system. Computer connection for configuration shall be via the device's rear panel Ethernet connector. All internal processing shall be digital (DSP). Available DSP 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.

The front panel shall include input and output signal level indicators, I/O card type indicators as well as indicators for POWER, ARC, RS-232, NETWORK, and DANTE (PRIMARY and SECONDARY). Additionally, a front panel LCD shall display certain system parameters as well as allow editing of network parameters and may be programmed as an ARC for custom user control via the front panel UP, DOWN, LEFT, RIGHT and ENTER buttons.

External control shall include dedicated software screens as well as preset selection, I/O level control and muting using the optional ARC wall panel remote controls via industry-standard CAT5 cable with RJ45 connectors. A built-in web server shall provide four instances of ARC-WEB, which allows for user control from nearly any web browser or mobile device. Logic I/O shall consist of eight contact closure or four potentiometer inputs along with eight logic outputs. The logic outputs may be used to drive LEDs directly or control external relays or switchers. All program memory shall be non-volatile and provide program security should power fail. The device shall provide an on board real time clock to facilitate automatic, timed changing of presets and may sync to NTP. Third-party control systems may interface over IP and RS-232 using a published ASCII control protocol.

Audio conversion shall be 24-bit, 48 kHz and internal processing shall be 32-bit or 40-bit floating point, 48 kHz.

The device shall have an IEC power input socket for 120-240 VAC and a captive power input socket for an external 24 VDC supply. The device shall meet UL/CSA and CE safety requirements and comply with CE and FCC Part 15 emissions limits. The device shall be RoHS compliant. The chassis shall be constructed of cold rolled steel and moulded plastic, and mount into a standard 19" 1U EIA rack. The device shall be a **Symetrix SymNet EDGE**.

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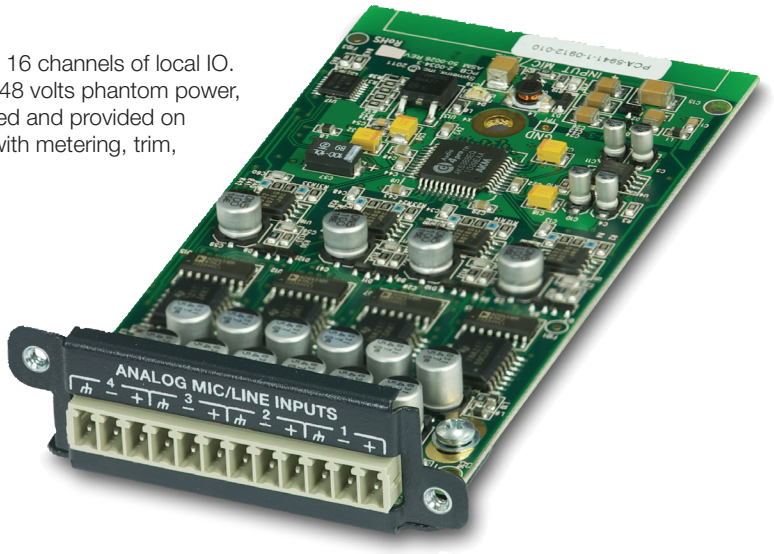
EDGE 4 Channel Analog Input Card

A single Edge frame has four configurable card slots, providing up to 16 channels of local IO. The analog input card provides four channels of mic/line input with +48 volts phantom power, 54 dB of gain and 24 dB of trim. The inputs are electronically balanced and provided on plug-in barrier strip connectors. Control of each input includes gain with metering, trim, mute and signal inversion.



Features:

- Mic/line input card. Up to 4 cards per frame.
- +48 volts phantom power.
- 54 dB of mic pre-amp gain.
- Extended dynamic range of 115 dB.
- Field swappable by certified technicians.

Specifications

Number of Inputs	Four (4) switchable balanced mic or line level.		**CMRR**	> 76 dB @ 1 kHz, unity gain.
Connectors	3.81 mm terminal blocks.		**Input Impedance**	8k Ohms balanced, 4k Ohms unbalanced.
Nominal Input Level	+4 dBu with 20 dB of headroom.		**Phantom Power (per input)**	+48 VDC @ 10 mA maximum.
Maximum Input Level	+23 dBu.		**Dynamic Range**	> 115 dB, A-weighted.
Mic Pre-amp Gain	0, 11.8, 24, 44 or 54 dB switchable with ± 24 dB trim.		**THD + Noise**	< -94 dB, unweighted; 1 kHz @ +22 dBu with 0 dB gain.
Mic Pre-Amp EIN	< -127dB with 150 Ohm source impedance.		**Latency**	0.28 mS.

Mechanical Data

Item	Specifications	Remarks
Shipping Weight	1 lbs. (0.45 kg)	
Certifications or Compliance	EN 55103-1, EN 55103-2, FCC Part 15, RoHS.	

Architect and Engineer Specifications: SymNet EDGE 4 Channel Analog Input Card.

The device shall provide four analog mic/line inputs to an EDGE frame that are adjustable from line to mic level with coarse gain, fine trim and phantom power. Up to four of these devices may be installed in a single EDGE frame for up to sixteen channels of local input. Levels, phantom powers, signal inversions and mutes shall be controllable via software. Audio inputs shall be accessed via rear panel 3.81 mm terminal block connectors.

Audio conversion shall be 24-bit, 48 kHz. The dynamic range shall not be lower than 115 dB, A-weighted with a maximum input level of +23 dBu.

The device shall comply with CE and FCC Part 15 emissions limits. The device shall be RoHS compliant. The mounting plate shall be constructed of cold rolled steel, and mount into a SymNet EDGE frame I/O card slot. The device shall be a **Symetrix SymNet EDGE 4 Channel Analog Input Card**.

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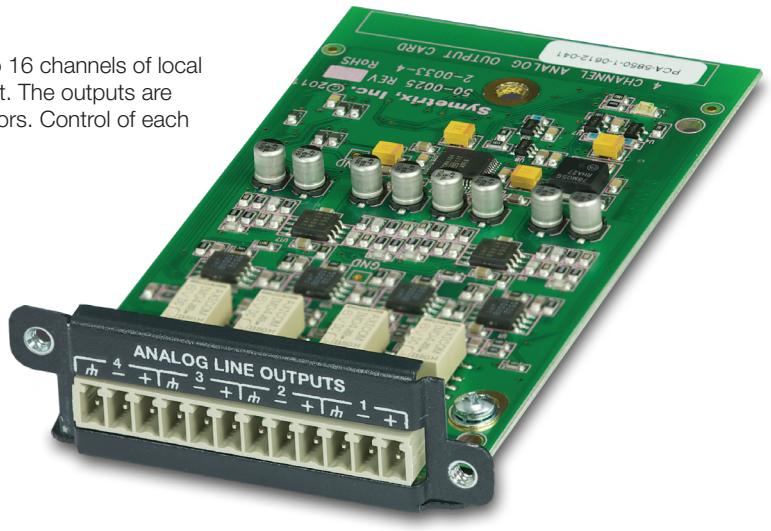
EDGE 4 Channel Analog Output Card

A single Edge frame has four configurable card slots, providing up to 16 channels of local IO. The analog output card provides four channels of line level output. The outputs are electronically balanced and provided on plug-in barrier strip connectors. Control of each output includes gain with metering and mute.



Features:

- Line output card. Up to 4 cards per frame.
- +24 dBu maximum output level.
- +12 dB to off of gain.
- Extended dynamic range of 117 dB.
- Field swappable by certified technicians.

Specifications

Number of Outputs	Four (4) balanced line level.	**Output Impedance**	300 Ohms balanced, 150 Ohms unbalanced.
Connectors	3.81 mm terminal blocks.	**Dynamic Range**	> 117 dB, A-weighted.
Nominal Output Level	+4 dBu with 20 dB of headroom.	**THD + Noise**	< -95 dB, unweighted; 1 kHz @ +22 dBu with 0 dB gain.
Maximum Output Level	+24 dBu (+22.8 dBu into a 2k Ohm minimum load).	**Latency**	0.60 mS.

Mechanical Data

Item	Specifications	Remarks
Shipping Weight	1 lbs. (0.45 kg)	
Certifications or Compliance	EN 55103-1, EN 55103-2, FCC Part 15, RoHS.	

Architect and Engineer Specifications: SymNet EDGE 4 Channel Analog Output Card.

The device shall provide four analog line outputs to an EDGE frame that are adjustable with fine trim. Up to four of these devices may be installed in a single EDGE frame for up to sixteen channels of local output. Levels and mutes shall be controllable via software. Audio outputs shall be accessed via rear panel 3.81 mm terminal block connectors.

Audio conversion shall be 24-bit, 48 kHz. The dynamic range shall not be lower than 117 dB, A-weighted with a maximum output level of +24 dBu.

The device shall comply with CE and FCC Part 15 emissions limits. The device shall be RoHS compliant. The mounting plate shall be constructed of cold rolled steel, and mount into a SymNet EDGE frame I/O card slot. The device shall be a **Symetrix SymNet EDGE 4 Channel Analog Output Card**.

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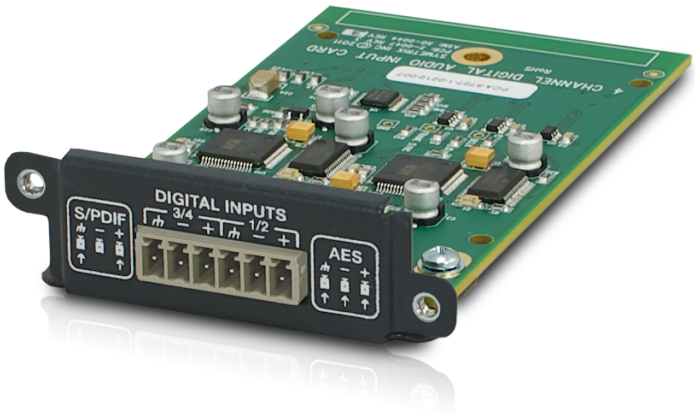
EDGE 4 Channel Digital Input Card

A single Edge frame has four configurable card slots, providing up to 16 channels of local IO. The digital input card provides four channels of digital input in AES or S/PDIF format and 24 dB of trim. The inputs are provided on plug-in barrier strip connectors. Control of each input includes metering, trim, mute and signal inversion.



Features:

- Digital audio input card. Up to 4 cards per frame.
- Supports AES/EBU or S/PDIF.
- Sample rate conversion on all inputs.
- Sync range of 12 to 96 kHz.
- Field swappable by certified technicians.

Specifications

Number of Inputs	Two (2) pairs of switchable AES or S/PDIF format (4 channels total).	**Dynamic Range**	> 128 dB, unweighted.
Connectors	3.81 mm terminal blocks.	**THD + Noise**	< -125 dB, unweighted.
Nominal Input Level	-20 dBFS (+4 dBu with 20 dB of headroom).	**Nominal Sample Rate**	48 kHz.
Maximum Input Level	0 dBFS (+24 dBu).	**Sample Rate Sync Range**	12 to 96 kHz.
Input Impedance	110 Ohms (AES), 75 Ohms (S/PDIF).	**Latency**	2.1 mS @ 48 kHz.

Mechanical Data

Item	Specifications	Remarks
Shipping Weight	1 lbs. (0.45 kg)	
Certifications or Compliance	EN 55103-1, EN 55103-2, FCC Part 15, RoHS.	

Architect and Engineer Specifications: SymNet EDGE 4 Channel Digital Input Card.

The device shall provide two pairs of digital inputs (4 channels total) to an EDGE frame that are adjustable with fine trim and selectable in format between AES or S/PDIF. Up to four of these devices may be installed in a single EDGE frame for up to sixteen channels of local input. Levels, mutes, inversions and formats shall be controllable via software. Audio inputs shall be accessed via rear panel 3.81 mm terminal block connectors.

Audio conversion shall be 24-bit, 48 kHz with ability to accept 12 to 96 kHz using a sample rate conversion. The dynamic range shall not be lower than 128 dB, unweighted with a maximum input level of 0 dBFS (+24 dBu).

The device shall comply with CE and FCC Part 15 emissions limits. The device shall be RoHS compliant. The mounting plate shall be constructed of cold rolled steel, and mount into a SymNet EDGE frame I/O card slot. The device shall be a **Symetrix SymNet EDGE 4 Channel Digital Input Card**.

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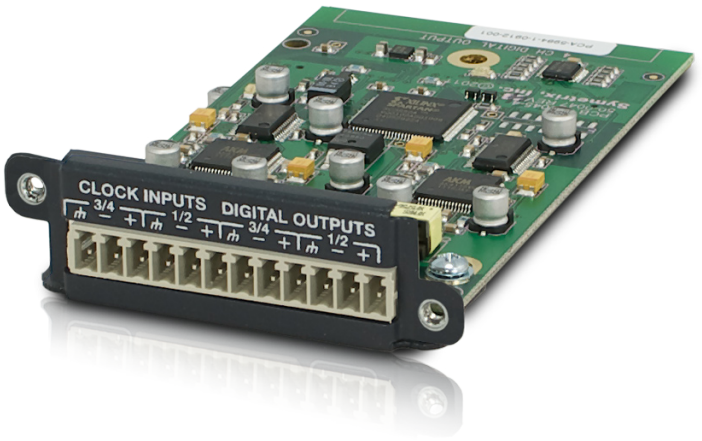
EDGE 4 Channel Digital Output Card

A single Edge frame has four configurable card slots, providing up to 16 channels of local IO. The digital output card provides four channels of digital output in AES or S/PDIF format with clock inputs to sync the outputs to a sample rate of your preference. The outputs are provided on plug-in barrier strip connectors. Control of each output includes gain with metering and mute.



Features:

- Digital audio output card. Up to 4 cards per frame.
- Supports AES/EBU or S/PDIF.
- Nominal output sample rate of 48 kHz.
- Supports external clock input of 12 to 96 kHz.
- Field swappable by certified technicians.

Specifications

Number of Outputs	Two (2) pairs of switchable AES or S/PDIF format (4 channels total).	**Dynamic Range**	> 128 dB, unweighted.
Connectors	3.81 mm terminal blocks.	**THD + Noise**	< -125 dB, unweighted.
Nominal Output Level	-20 dBFS (+4 dBu with 20 dB of headroom).	**Nominal Sample Rate**	48 kHz.
Maximum Output Level	0 dBFS (+24 dBu).	**Sample Rate Sync Range**	12 to 96 kHz.
Output Impedance	110 Ohms (AES), 75 Ohms (S/PDIF).	**Latency**	2.1 mS @ 48 kHz.

Mechanical Data

Item	Specifications	Remarks
Shipping Weight	1 lbs. (0.45 kg)	
Certifications or Compliance	EN 55103-1, EN 55103-2, FCC Part 15, RoHS.	

Architect and Engineer Specifications: SymNet EDGE 4 Channel Digital Output Card.

The device shall provide two pairs of digital outputs (4 channels total) to an EDGE frame that are adjustable with fine trim and selectable in format between AES or S/PDIF. Up to four of these devices may be installed in a single EDGE frame for up to sixteen channels of local output. Levels, mutes, clock sources and formats shall be controllable via software. Audio outputs shall be accessed via rear panel 3.81 mm terminal block connectors.

Audio conversion shall be 24-bit, 48 kHz with ability to accept 12 to 96 kHz using an external clock source. The dynamic range shall not be lower than 128 dB, unweighted with a maximum output level of 0 dBFS (+24 dBu).

The device shall comply with CE and FCC Part 15 emissions limits. The device shall be RoHS compliant. The mounting plate shall be constructed of cold rolled steel, and mount into a SymNet EDGE frame I/O card slot. The device shall be a **Symetrix SymNet EDGE 4 Channel Digital Output Card**.

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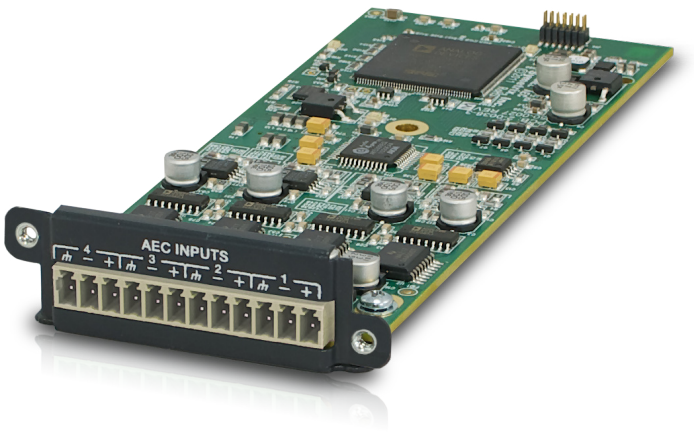
EDGE 4 Channel AEC Input Card

A single Edge frame has four configurable card slots, providing up to 16 channels of local IO. The AEC input card provides four channels of transparent Acoustic Echo Cancellation (AEC), with phantom power, 54 dB of gain and 24 dB of trim. Symetrix' latest generation AEC provides wideband processing with tail lengths up to 250 mS, and covergence times greater that 100 dB/S. Symetrix AEC latency is an industry low 11 mS and near zero bypassed. Each channel of AEC features discreet reference inputs and direct outputs for local reinforcement. AEC processing may be applied to any SymNet system input while still allowing the card's inputs to be used. The inputs are electronically balanced using plug-in barrier strip connectors. Control of each input includes gain with metering, trim, mute, AEC, noise cancellation, non-linear processing, and AGC (Automatic Gain Control).



Features:

- Wideband dedicated processing. Does not consume Edge DSP resources.
- Zero-latency direct outputs and discrete reference inputs per AEC channel.
- AEC processing available to the card's direct inputs or internally routed sources.
- 11 mS AEC latency, up to 250 mS tail length, and greater than 100 dB/S convergence time.
- Field swappable by certified technicians.

Specifications

Number of Inputs	Four (4) switchable balanced mic or line level with dedicated AEC.
Connectors	3.81 mm terminal blocks.
Nominal Input Level	+4 dBu with 20 dB of headroom.
Maximum Input Level	+23 dBu.
Mic Pre-amp Gain	0, 11.8, 24, 44 or 54 dB switchable with ± 24 dB trim.
Mic Pre-amp EIN	< -127dB with 150 Ohm source impedance.
CMRR	> 76 dB @ 1 kHz, unity gain.

Input Impedance	8k Ohms balanced, 4k Ohms unbalanced
Phantom Power	+20 VDC @ 10 mA maximum.
Dynamic Range	> 115 dB, A-weighted.
Latency	0.28 mS (direct), 11 mS (AEC enabled).
THD + Noise	< -94 dB, unweighted.
Tail Length	> 250 mS.
Convergence Time	> 100 dB/S.

Mechanical Data

Item	Specifications	Remarks
Shipping Weight	1 lbs. (0.45 kg)	
Certifications or Compliance	EN 55103-1, EN 55103-2, FCC Part 15, RoHS.	

Architect and Engineer Specifications: SymNet EDGE 4 Channel AEC Input Card.

The device shall provide four switchable balanced mic or line level inputs with dedicated AEC to an EDGE frame with coarse gain, fine trim and phantom power. Up to four of these devices may be installed in a single EDGE frame for up to sixteen channels of local input. Levels, phantom powers, signal inversions and mutes shall be controllable via software. Audio inputs shall be accessed via rear panel 3.81 mm terminal block connectors.

Audio conversion shall be 24-bit, 48 kHz. The dynamic range shall not be lower than 115 dB, A-weighted with a maximum input level of +23 dBu.

The device shall comply with CE and FCC Part 15 emissions limits. The device shall be RoHS compliant. The mounting plate shall be constructed of cold rolled steel, and mount into a SymNet EDGE frame I/O card slot. The device shall be a **Symetrix SymNet EDGE 4 Channel AEC Input Card**.

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