Prism 8×8

Prism 4×4, 8×8, 12×12, and 16×16 DSPs provide sophisticated state of the art audio signal processing at an excellent price points. The same uncompromising analog and digital design found in the Symetrix top of the line DSPs is available across the Prism family.

The Prism family is the workhorse series in Symetrix's DSP lineup and ideally suited for applications requiring powerful, cost effective advanced signal processing coupled with a standardized means for future expansion.

All Prism models are optionally available equipped with 64×64 Dante channels. Increase a Prism system's analog input and output count using Symetrix Dante-enabled xIn 4, xIO 4×4, xOut 4, xIn 12, and xOut 12 expanders.

Prism's embedded web server displays analog I/O levels, diagnostics, and provides access to ARC-WEB, a remote interface accessible from any smart phone, tablet or computer. The embedded server is accessible using any popular web browser by entering Prism's local LAN, or publicly accessible IP address or its fully qualified domain name into the browser's address field.

SERIES FEATURES

- 8 Analog inputs and 8 analog outputs
- Optional 64×64 ultra-low latency Dante network audio protocol uses standard IT infrastructure
- Industry-leading analog and A/D/D/A performance
- 48 volt phantom mic power
- Configured using Composer® software
- Controlled from W-Series remotes, ARC wall panels, ARC-WEB and T-Series touchscreens
- Embedded web server enables remote metering
- Front panel LCD provides configuration information, system status, and analog audio levels

ARCHITECT & ENGINEER SPECIFICATIONS

The device shall provide eight analog mic/line inputs that are adjustable from line to mic level with coarse gain, fine trim, and phantom power, plus eight analog line outputs that are adjustable with fine trim. Levels, phantom powers, signal inversions and mutes shall be controllable via software. Audio connections shall be accessed via rear panel 3.81 mm terminal block connectors.

Network audio expansion shall be provided by an optional factory installed Dante card with a capacity of 128 (64×64) channels. The connector shall be 1000 Base-T RJ45 utilizing CAT6 cable.

SYSTEM SPECIFICATIONS	
Processor	1 x Analog Devices SHARC 21489 @ 400 MHz SIMD
Raw Processing Capacity	400 MIPS, 1.6 GFLOPS
Sampling Rate	48 kHz
Frequency Response (A/D/A)	20 Hz – 20 kHz, ± 0.5 dB
Dynamic Range (A/D/A)	> 113 dB, A-weighted
THD + Noise	< 95 dB (22.4 kHz BW, un-weighted); 1 kHz @ +15 dBu with 0 dB gain
Channel Separation (A/D/A)	> 110 dB @ 1 kHz, +24 dBu
Latency (A/D/A)	1.04 mS, inputs routed to outputs
Delay Memory	174 mono seconds
Analog Control Inputs	0-3.3 VDC
Recommended External Control Potentiometer	10k Ohm, linear
Logic Outputs	Low (0 V) when active, pulled high (5 V) when inactive
Logic Output Maximum External Power Supply Voltage	24 VDC
Logic Output Maximum External Power Supply Current Sinking	50 mA
Logic Output Maximum Output Current	10 mA
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
Ethernet Cable	Standard CAT5e or CAT6, maximum device-to-device length = 100 m
Dante Cable	Standard CAT6, maximum device-to-device length = 100 m
ARC Cable	Standard CAT5, distance dependent upon load and number of devices. 8 Watts maximum power available
Maximum Devices Per System	128 units per Site File
Maximum Stored Presets	1,000

A designer software application shall be provided that operates on a Windows computer, with network interface installed, running Windows® 7 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: mixers, equalizers, filters, crossovers, dynamics/gain controls, routers, delays, remote controls, meters, generators, onboard logic, and diagnostics. The front panel shall include a LCD and momentary switch. The display shall indicate unit name, IP address, MAC address, Site File

(*continued on next page*)

version, and fault messages and can be switched between system overview and meter displays.

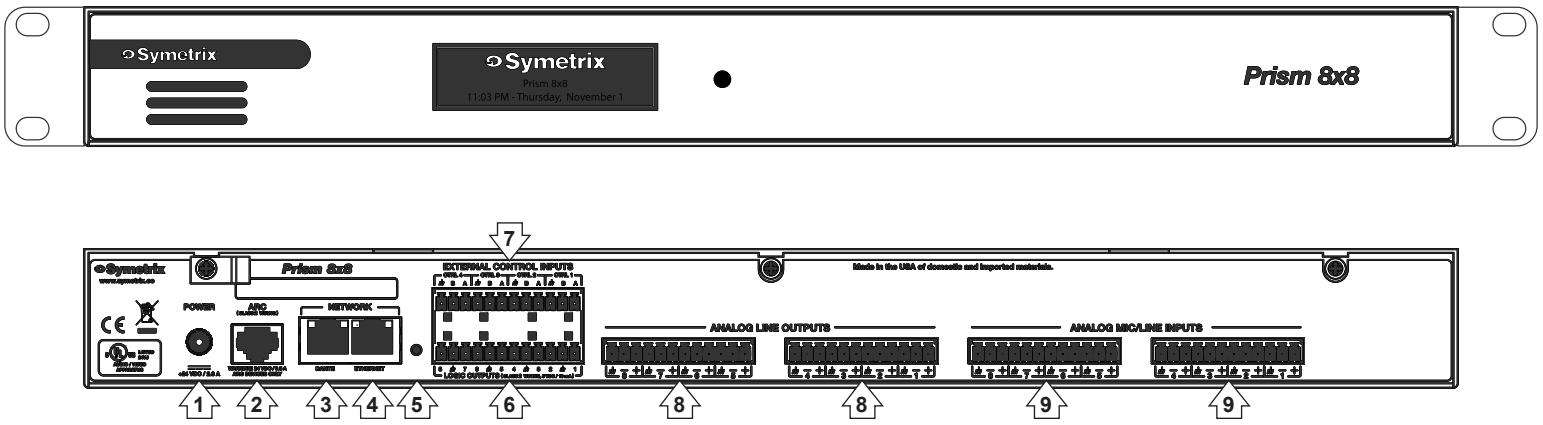
External control shall include dedicated software screens as well as preset selection, I/O level control, and muting using the optional ARC wall panel remote controls via industry-standard CAT5/6 cable with RJ45 connectors. A built-in web server shall provide four instances of ARC-WEB, which allows for user control from nearly any web browser or mobile device. Logic I/O shall consist of eight contact closures 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 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 dynamic range shall not be lower than 113 dB, A-weighted with a maximum input level of +23 dBu and maximum output level of +24 dBu.

The device shall have a power plug that accepts power from Symetrix part number 12-0034, CUI power supply part number SDI65-24-U-P5. 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 mounts into a standard 19” 1U EIA rack.

The device shall be a Symetrix Prism 8×8.

DEVICE DRAWINGS - FRONT AND REAR



1. **Power:** Switching power supply providing 24 VDC @ 1.4 amperes. NOTE: Each power supply will accept a 100-240 VAC input.

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

3. **Dante:** 1000 Base-T Ethernet port provides 128 (64×64) channels of Dante network audio. Requires optional factory installed Dante card.

4. **Ethernet:** 10/100 Base-T Ethernet port for Symetrix Composer host control, third-party accessory controllers over IP, and power. Features auto-crossover sensing for direct device-to-device connections.

5. **Factory Reset Switch:** To be used under the supervision of technical support, it has the ability to reset the unit’s network configuration and completely reset the unit to factory defaults.

6. **Logic Outputs:** Eight (8) logic outputs with four (4) paired common ground pins. Logic Outputs go low (0 V) when active, and are internally pulled high (5 V) when inactive and can drive external LED indicators directly.

7. **External Control Inputs:** Four (4) analog control inputs able to be used as 4 potentiometer inputs or as 8 switch inputs (+3.3 VDC reference voltage supplied).

8. **Analog Line Outputs:** Eight (8) balanced analog line level audio outputs, with individually software-controllable +/- 24 dB of digital trim and mute.

9. **Analog Mic/Line Inputs:** Eight (8) balanced analog audio inputs, with individually software-controllable pre-amp gain (reference levels of -50 dBu, -40 dBu, -20 dBu, -10 dBV, and +4 dBu), +/-24 dB of digital trim, phantom power, signal inversion and mute.

ANALOG INPUTS AND OUTPUTS	
Number of Inputs	Eight (8) switchable balanced mic or line level
Connectors	3.81 mm terminal blocks
Nominal Input Level	+4 dBu
Maximum Input Level	+23 dBu
Mic Pre-amp Gain	0, 12, 24, 44, or 54 dB switchable with ± 24 dB trim
Mic Pre-amp EIN	< -125 dB with 150 Ohm source impedance. 22.4 kHz BW
CMRR	> 79 dB @ 1 kHz, unity gain
Input Impedance	8k Ohms balanced, 4k Ohms unbalanced
Phantom Power	+48 VDC, 10 mA maximum (per input)
Dynamic Range	> 113 dB, A-weighted
THD + Noise	< -100 dB; 22.4 kHz BW, unweighted; 1 kHz @ +15 dBu with 0 dB gain. Course gain is set to +4 dBu
A to D Latency	0.28 mS
Number of Outputs	Eight (8) balanced line level
Connectors	3.81 mm terminal blocks
Nominal Output Level	+4 dBu with 20 dB of headroom
Maximum Output Level	+24 dBu (+22.8 dBu into a 2k Ohm minimum load)
Output Impedance	300 Ohms balanced, 150 Ohms unbalanced
Dynamic Range	> 117 dB, A-weighted
THD + Noise	< -97 dB; 22.4 kHz BW, unweighted; 1 kHz, 0 dB gain +8 dBu output
D to A Latency	0.60 mS

MECHANICAL SPECIFICATIONS	
Space Required	1U (WDH: 18.91 in. x 9.88 in. x 1.72 in. / 48.02 cm x 25.1 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	24V 1.4A, 34W maximum. Symetrix Part Number 12-0034. CUI part number SDI65-24-U-P5.
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	9.4 lbs (4.2 kg)
Certifications and Compliance	Safety: UL 60065, cUL 60065, IEC 60065. EMC: “Class A” device (applies to all of the following) EN 55032, EN 55103-2, EN 61000-3-2, EN 61000-3-3, FCC Part 15, ICES-003 Environmental: RoHS.