With more than three decades of experience pioneering cutting edge audio products, QSC raises the bar once again with the DSP-4 Digital Signal Processing Module. This compact module offers two channels of independent DSP and attaches to the back of most 2-channel DataPort-equipped QSC amplifiers—without occupying any additional rack space.

Capitalizing on the success of our DSP-3, the second-generation DSP-4 provides several enhancements in functionality and performance while also incorporating the universally popular XLR balanced connectors. These enhancements include new A/D and D/A converters for improved signal-to-noise performance and upgraded software that significantly increases the unit's operational characteristics.

**Optimize Your Sound With DSP From QSC**

**Powerful**

Simple to install, compact, and featuring “set-and-forget” convenience, the DSP-4’s powerful processor enables you to perform a wide range of signal processing functions; and with its new A/D and D/A converters, its noise floor improves. Software refinements for the DSP-4 (which also retrofit to earlier QSC DSP products) include the addition of a true power limiting feature. Further, preset selection is now available via the contact closure input. Whether you need speaker crossovers, EQ, time delay, or subsonic filters, the DSP-4 is as flexible as your system’s needs.

Each channel includes:

- Crossover filtering
- Multiple Parametric EQs
- Shelf filtering
- Multiple Delays (up to 910 ms)
- Compression and limiting
- Precision attenuation
- Mixing
- Tone and noise generation

**Configurable**

The DSP-4’s processing horsepower is dynamically assignable so you are not limited by a fixed signal chain. Simply use QSC’s powerful PC-based Signal Manager software to easily configure multiple processing functions and signal flow with “drag-and-drop” tools.

**Cost-effective**

The power and flexibility of the DSP-4 eliminates the need for expensive outboard processing gear, reducing cost and installation time for almost any application. The compact DSP-4 also plugs directly into the back of most QSC DataPort-equipped amplifiers for use in systems where rack space is a premium.

Save space and weight by mounting the DSP-4 onto the back of most 2-channel DataPort-equipped QSC amplifiers. Or use multiple DSP-4s as a stand-alone, rack-mounted DSP solution.
Hardware

- Two independent channels of DSP
- 48 kHz, 24-bit converters
- No turn-on pops or “zipper” noise
- If the memory or hardware fails, unit turns on muted to prevent driver damage
- Host interface via RS-232 or QSCControl Audio Network System via CM16a Amplifier Network Monitor
- Electronically balanced XLR inputs
- Contact closure to trigger preset changes
- Post-DSP output signal for daisy-chaining
- Peak and RMS meter displays with clip indication
- DataPort pass-through compatible with QSCControl
- Selectable input sensitivity: 1.5, 4, 9, 18 Vrms; 6, 14.5, 21.5, 27.5 dBu; 3.5, 12, 19, 25 dBV
- Output signal gain

Software

- “Drag-and-drop” configuration software
- DSP processing power and memory is dynamically assigned to signal processing functions — eliminating the limitations imposed by fixed signal chain designs
- Graphical representation of DSP resources
- Firmware upgrades via RS-232
- Hard copy printout of signal flow layout or parameter settings

System Requirements

- Windows® 98, NT4 (SP6), and 2000 (SP1)*
- SVGA monitor @ 800 x 600 (min.); 1024 x 768 recommended
- CD-ROM drive
- 32 MB RAM (min.)
- 10 MB free hard disk space (min.)
- Available RS-232 COM port
- Male-to-female 9-pin serial cable (for programming)

* Windows Me not supported
Advanced “Drag-and-Drop” Software Configuration

DSP configuration is made simple with a PC-based “drag-and-drop” software program called Signal Manager. Users can access a DSP “toolbox” and simple drawing tools to configure processing functions and signal flow. DSP processing power and memory is dynamically assigned to signal processing functions and any combination of functions may be configured until the total capacity is used. DSP resources are graphically displayed at the bottom of the screen.

Configurations can be downloaded directly to the DSP-4 via an RS-232 serial port or through a QSControl Audio Network System via a CM16a Amplifier Network Monitor for added simplicity. The software package also offers real-time control and set-and-forget convenience. Configurations can be saved and recalled for future use.

The DSP-4 mounts directly to the back of these models via the DataPort:

Full Feature
- Two-channel CX Series
- Two-channel DCA Series
- PowerLight 2 Series

Version 2 DataPort
- ISA (V2 DataPort – audio only; requires external power supply)

The following models require a Remote Rack Mounting Bracket:

Full Feature (DPX-2 cable required)
- Four-channel CX Series
- Four-channel DCA Series
- PowerLight Series

Without Power Limiting (Requires external power supply)
- MX
- USA
- PLX
- RMX
- Non-QSC amplifiers

Whether you need speaker crossovers, EQ, time delay, or subsonic filters, the DSP-4 is as flexible as your system’s needs.

SIGNAL MANAGER

COMPATIBLE AMPLIFIER MODELS
DSP-4 SPECIFICATIONS

### Characteristics | Specifications
---|---
**FREQUENCY RESPONSE**
XLR Output | 3 dB below full scale input voltage  
20 Hz to 10 kHz ± 0.3 dB  
20 Hz to 20 kHz ± 0.7 dB  
20 Hz to 20 kHz ± 0.2 dB
DataPort | 20 Hz to 10 kHz ± 0.3 dB  
20 Hz to 20 kHz ± 0.7 dB

**DISTORTION** | <0.02% THD+N @ +4 dBu

**DYNAMIC RANGE UNWEIGHTED** | >104 dB 20 Hz to 20 kHz,  
1.5V sensitivity, unweighted  
>106 dB 20 Hz to 20 kHz,  
all other sensitivities, unweighted  
>106 dB 20 Hz to 20 kHz,  
1.5V sensitivity, A weighted  
>108 dB 20 Hz to 20 kHz,  
all other sensitivities, A weighted

**COMMON-MODE REJECTION** | >50 dB minimum 20 Hz to 20 kHz  
>60 dB typical 20 Hz to 20 kHz

**INPUT SENSITIVITY**
(selectable) | 1.5, 4, 9, 18 Vrms  
6, 14.5, 21.5, 27.5 dBu  
3.5, 12, 19, 25 dBV

**CROSSTALK**
(inter-channel w/in DataPort pair) | >62 dB separation, 20 Hz to 20 kHz

**INPUT CONNECTORS** | Two XLR female  
(1 for each audio channel)  
One HD-15 female DataPort*  
One RS-232 female (PC input)  
One Power Jack  
Required only for PowerLight,  
QSC non-DataPort amplifiers, or  
non-QSC amplifiers, using  
remote rack mounting bracket

**OUTPUT CONNECTORS** | Two XLR male  
(for daisy-chaining each audio  
channel out)  
One HD-15, male  
amplifier connection

**INDICATORS** | FRONT:  
Power (one blue)  
Signal (one green)

**EXTERNAL POWER REQUIREMENTS**
(DPX-1 recommended) | 15 VDC, 0.4 A  
Required only for PowerLight,  
QSC non-DataPort amplifiers,  
V2 DataPort (audio only) models,  
or non-QSC amplifiers.

**DIMENSIONS** | 3.5" height  
3.75" width  
1.38" depth

**WEIGHT** | .93 lbs net  
1 lb shipping

**CONSTRUCTION** | Steel chassis and back cover

*DataPort input for use with CM16a Amplifier Network Monitor in QSC/Control audio network systems for remote management of QSC amplifiers and other audio devices.

Specifications subject to change.

---

A Remote Rack Mounting Bracket is available for PowerLight, 4-channel QSC amplifiers, or for non-DataPort-equipped amplifiers. Designed to be bolted to the rear of an amplifier rack, up to four modules can be mounted to each panel, providing up to eight channels of DSP processing in a three rack-unit space.