After three decades of developing pioneering audio products and systems, QSC raises the bar once again, setting a new standard in signal processing with the new DSP-3 Digital Signal Processing Module.

The DSP-3's two channels of independent signal processing deliver more power, flexibility, and features—in short, more of everything you really need in a DSP—for less. Simple to install and compact, the DSP-3 is the advanced and affordable digital signal processing solution for your audio system.

Optimize Your Sound With DSP From QSC

Powerful

The DSP-3's powerful processor allows you to perform a wide range of signal processing functions. Whether you need speaker crossovers, EQ, time delay, or subsonic filters, the DSP-3 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 or noise generation

Save space and weight by plugging the DSP-3 into the back of most DataPort-equipped QSC amplifiers. Or use multiple DSP-3s as a stand-alone, rack-mountable DSP solution.

Configurable

The DSP-3's processing horsepower is dynamically assignable so you are not limited by a fixed signal chain. Simply use the 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-3's eliminates the need for expensive outboard processing gear, reducing cost and installation time for almost any application. The compact DSP-3's also plug directly to the back of most QSC DataPort-equipped amplifiers for use in systems where rack space is a premium.

SIGNAL PROCESSING FUNCTIONS

- **Multiple Parametric Filters**, assignable anywhere in the signal chain:

Variable Frequency	Bypass all EQs
Variable Gain	Add EQ
Variable Q	Delete EQ
Apply Bypass	Show Response

- **Multiple Delays**, assignable anywhere in the signal chain

  20.83 μsec Incremental

  910 msec Maximum

- **Dynamics Processor with Compressor and Expander**, assignable anywhere in the signal chain:

Gain	Release Time
Threshold	Show Response
Ratio	Bypass
Attack Time	

- **Output Peak Limiter**, assignable anywhere in the signal chain:

Gain	Release Time
Threshold	Show Response
Attack Time	Bypass

- **High and Low-Pass Crossover Filters**, assignable anywhere in the signal chain:

  Butterworth 6, 12, 18, 24 dB per octave slope

  Bessel 6, 12, 18, 24 dB per octave slope

  Linkwitz-Riley 12 and 24 dB per octave slope

Apply Bypass	Delete EQ
Bypass all EQs	Show Response
Add EQ	

- **High and Low-Pass Shelf Filter**, assignable anywhere in the signal chain:

Variable Corner Frequency	Bypass all EQs
Variable Gain	Add EQ
Variable Q	Delete EQ
Apply Bypass	Show Response

- **Signal Mute**

- **Attenuation:** 0.1 dB steps

- **Mix Post Crossover Audio** (2→1 Mixer)

- **Signal Splitter**

- **Built-in Noise Generator** (Pink & White)

- **Built-in Variable Frequency Tone Generator**

- **Signal Polarity Reversal**

- **Frequency Response** readout after each filter

- **Clip and Protect Indication** at any point in the signal chain

ADDITIONAL FEATURES

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

- Host interface via RS-232 or QSControl Audio Network System* via CM16a Amplifier Network Monitor

- Electronically balanced inputs

- Contact closure to trigger preset changes

- Post-DSP output signal for daisy-chaining

- Peak, RMS and Clip meter displays

- DataPort "pass-through" compatible with QSControl

- Selectable input sensitivity: 1.5, 4, 9, 18 Vrms; 6, 14.5, 21.5, 27.5 dBu; 3.5, 12, 19, 25 dBV

Software

- "Drag-and-drop" configuration software

- DSP processing power and memory dynamically assignable to signal processing functions

- Graphical representation of DSP resources

- Firmware upgrades downloadable via RS-232

- Hard copy printout of configuration description and parameter settings

* Available in early 2001.
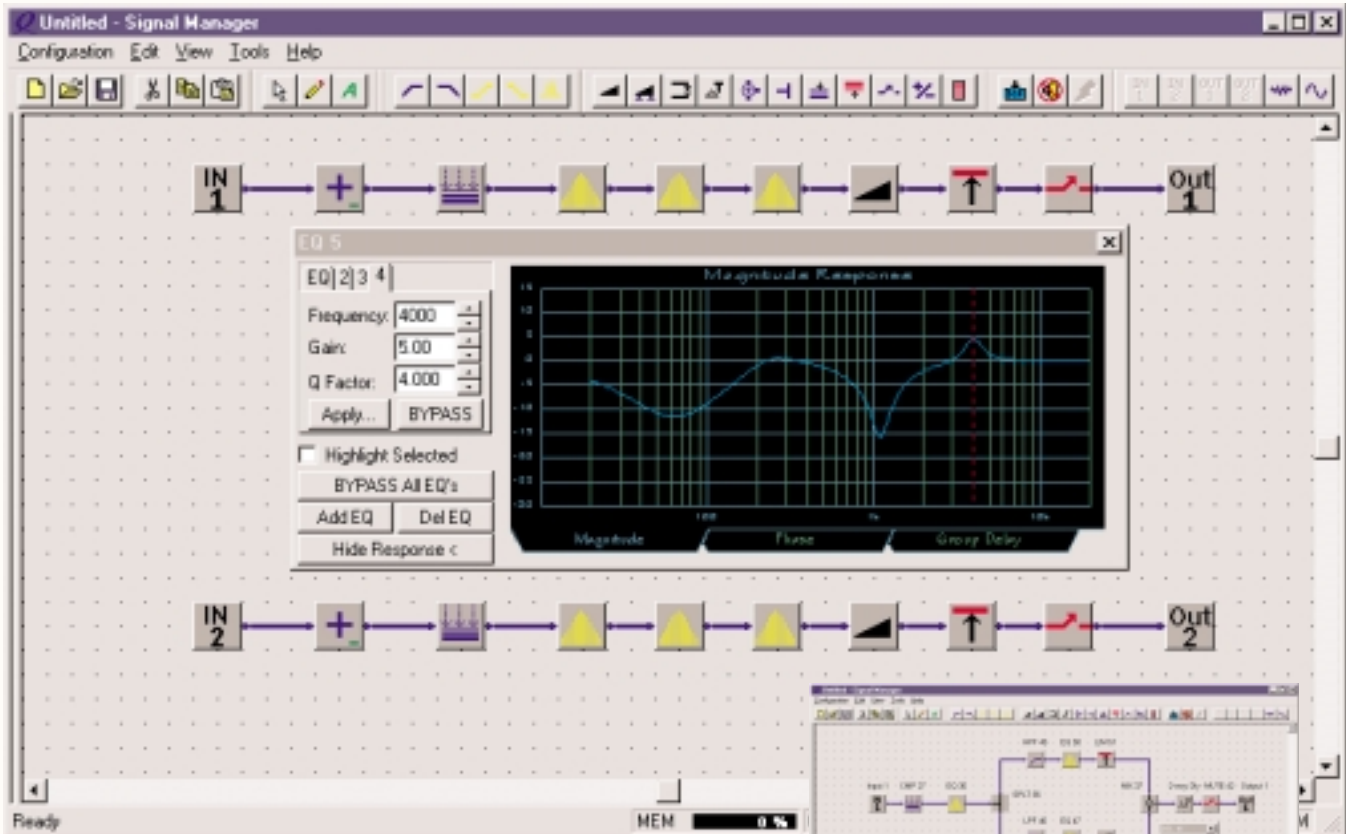
SIGNAL MANAGER

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 assignable 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-3 via an RS-232 serial port or through a QSControl Audio Network System* via 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.
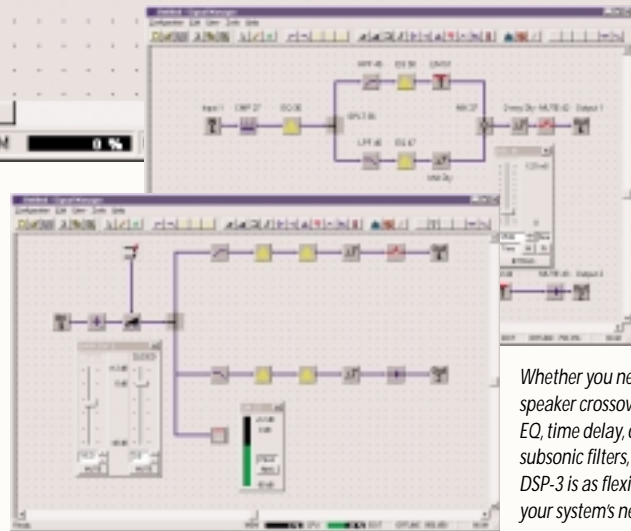
Whether you need speaker crossovers, EQ, time delay, or subsonic filters, the DSP-3 is as flexible as your system's needs.

COMPATIBLE AMPLIFIER MODELS

The DSP-3 mounts directly to the back of these amplifier models via the DataPort:

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

The following models require a Remote Rack Mounting Bracket:

Full Feature	Without Power Limiting
• Four-channel CX Series	• MX
• Four-channel DCA Series	• USA
• PowerLight Series	• PLX
	• RMX
	• Non-QSC amplifiers

Available in early 2001.

DSP-3 SPECIFICATIONS

Characteristics	Specifications
FREQUENCY RESPONSE	
Euro Input	20 Hz to 10 kHz ± 0.3 dB
	20 Hz to 20 kHz ± 0.7 dB
DataPort	20 Hz to 20 kHz ± 0.2 dB
DISTORTION	<0.01% THD+N @ +4 dBu
DYNAMIC RANGE UNWEIGHTED	>93 dB, 20 Hz to 20 kHz for 1.5, 4, 9V input sensitivities
	>88 dB, 20 Hz to 20 kHz for 18V input sensitivities
COMMON-MODE REJECTION	>50 dB, 20 Hz–20 kHz typical
	>40 dB @ 20 kHz worst case
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)	>75 dB separation, 20 Hz to 20 kHz
INPUT CONNECTORS	Two 3-pin Euros (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

Characteristics	Specifications
OUTPUT CONNECTORS	Two 3-pin Euros (for daisy-chaining each audio channel out)
	One HD-15, male amplifier connection
INDICATORS	FRONT:
	Power (one blue)
	Signal (one green)
EXTERNAL POWER REQUIREMENTS	15 VDC, 0.4 A Required only for PowerLight, QSC non-DataPort amplifiers, or non-QSC amplifiers, using remote rack mounting bracket
DIMENSIONS	3.49" (1.37 cm) height
	3.33" (1.31 cm) width without flanges
	4.76" (1.48 cm) width with flanges
	1.21" (0.48 cm) depth
WEIGHT	0.6 lbs (0.27 kg) net
	1 lb (0.45 kg) shipping
CONSTRUCTION	Steel chassis and back cover

DataPort input for use with CM16a Amplifier Network Monitor in QSControl 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.*