



Featuring intuitive PC system configuration combined with “set-and-forget” convenience, the DSP-30 unites easy-to-use, customizable, two channel digital signal processing (DSP) with a simple preset selection interface that requires only two buttons. It can be used with all amplifiers and is housed in a 1RU, 19” rack mount steel chassis. Sampling frequency is 48 kHz with 24-bit resolution. Dynamic range is greater than 95 dB. Rugged and dependable in the spirit of all QSC professional audio products, the DSP-30 is well suited to a variety of applications including mobile DJ, club PA, and pro touring.

### **Powerful**

The DSP-30’s powerful processor enables a wide range of signal processing functions. Whether you need speaker crossovers, EQ, signal delay, or infrasonic filters, the DSP-30 is as flexible as your system’s needs.

Each channel includes:

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

### **Configurable**

The DSP-30’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. The DSP-30 provides eight fully configurable user presets, selectable from front-panel switches.

### **Cost-effective**

The power and flexibility of the DSP-30 eliminates the need for individual outboard signal processors—reducing cost, space, and installation time for almost any application. Housed in a 1RU, 19-inch rack-mount steel chassis, it can be used with all audio systems.

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

Variable Frequency	Variable Q
Variable Gain	Show Response

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

20.83  $\mu$ sec incremental  
910 msec maximum (total of all delays)

**Compressor**, 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

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

Variable Corner Frequency	Variable Q
Variable Gain	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 for each filter

**RMS and Peak Metering with Clip Indication**

**Add or delete up to 7 additional bands of "EQ" per filter block**

**Visual editing of composite filter response, using cursor controls in graphical display**

**Individual or group bypass of EQ bands per filter block**

**Predictive Delay Feature** — produces less signal distortion than analog compressor/limiters — especially for fast attack times

### 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

Easy PC connection with front panel RS-232

Balanced Neutrik® Combo (XLR and 1/4") inputs and XLR outputs

Power and signal present LEDs with signal level

Numeric display indicates current preset

Eight fully configurable user presets

Preset Browse and Accept buttons with lock-out feature

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

Hard copy printout of configuration layout or parameter settings

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

Download the latest Signal Manager software at [www.qscaudio.com](http://www.qscaudio.com)

### System Requirements

Windows® 98, NT4 (SP6), and 2000 (SP1)\*

SVGA monitor at 800 x 600 (min.); 1024 x 768 recommended

CD-ROM drive

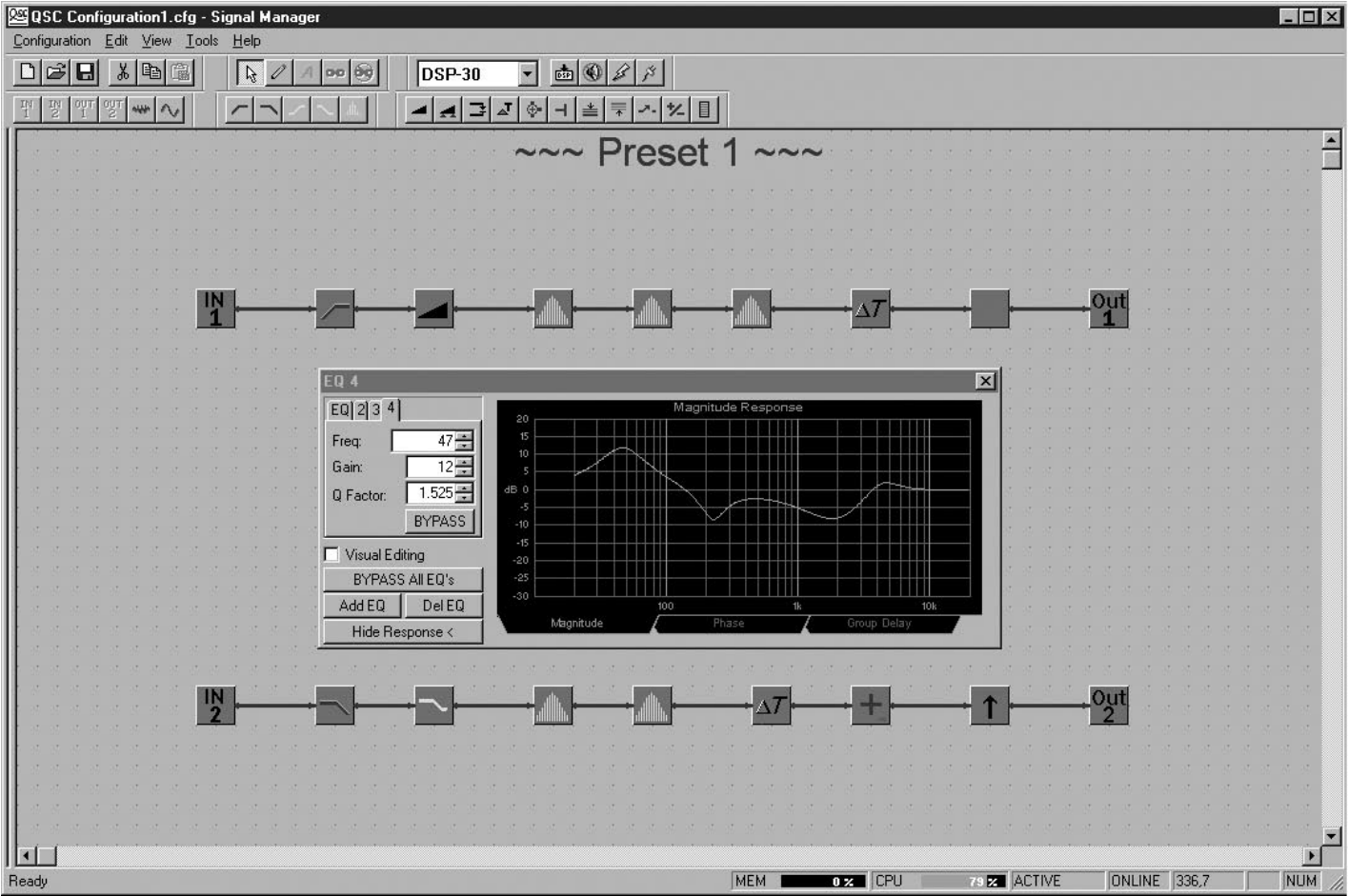
32 MB RAM (min.)

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*



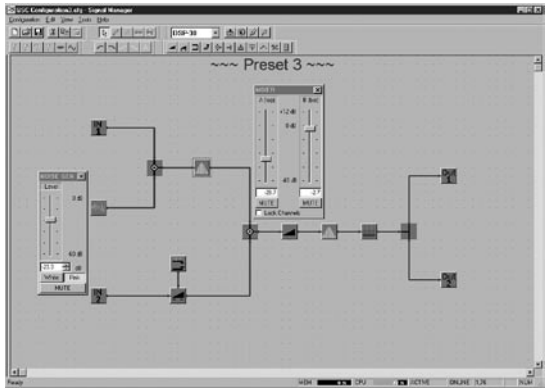
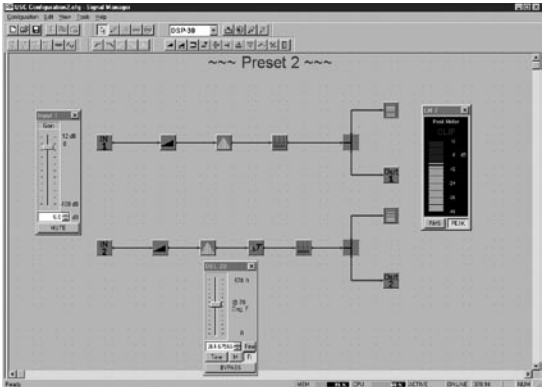
**Signal Manager**

**Advanced “Drag and Drop” Software Configuration**

DSP configuration is made simple with a PC-based “drag-and-drop” software program called Signal Manager. Users 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. 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-30 via an RS-232 serial connection. The software package also offers real-time control and set-and-forget convenience. Once saved, configurations (presets) can be recalled via the DSP-30’s front panel switches-without the need for a computer.

*The DSP is configured with an easy-to-use software interface. Signal processing icons from the toolbox are dropped onto the workspace and the signal path is routed with simple drawing tools.*



Audio Converters	24 bit, 48 kHz		
Frequency Response	20 Hz to 20 kHz $\pm$ 0.4 dB at 1 dB below full scale input voltage (all sensitivities)		
Distortion	< 0.007% THD+N at 1 dB below full scale output (all sensitivities) 20 Hz to 20 kHz		
Throughput Delay	1.00 milliseconds (A/D – DSP – D/A)		
Dynamic Range (AES-17 -60 dB method)	> 95 dB unweighted, 1.5V, 4V and 9V input sensitivities   > 93 dB unweighted, 18V input sensitivities		
Polarity	In-phase or inverted		
Mute	> 95 dB attenuation		
Indicators	Power: 1 blue LED   Channel 1 and Channel 2 signal level: 2 green LEDs   Preset Display: 7 segment LED		
Input Sensitivity	Volts	dBu	dBV
<i>Full scale sine wave RMS before clipping.</i>	1.5	6.0	3.5
<i>Full scale output voltage 9.3 Vrms.</i>	4	14.5	12.0
	9	21.5	19.0
	18	27.5	25.0
<b>Audio Input Connectors</b>			
Program Inputs	2		
Connector	Balanced Neutrik Combo		
Type	Electronically balanced		
Grounding	All shield terminals connected to chassis		
Input Impedance	8.3k ohm balanced, 3.7k ohm unbalanced		
Common Mode Rejection	> 54 dB, 20 Hz – 20 kHz		
Crosstalk (inter-channel within DataPort pair)	> 78 dB separation, 20 Hz - 20 kHz		
<b>Audio Output Connectors</b>			
Program Outputs	2		
Connector	3-pin male XLR receptacle		
Type	Electronically balanced		
Grounding	All shield terminals connected to chassis		
Output Level	Level and units are selectable in software interface		
Maximum Output (full scale)	9.3 Vrms (+21.5 dBu), THD < 1.0%		
Output Pad	-6 dB		
Output Impedance	600 $\Omega$ balanced		
Power Amplifier Interface - compatibility	Works with all professional audio products		
<b>RS-232 Port</b>			
Port Type	RS-232, female		
Cable Type	9-pin serial cable, male-to-female (serial extension cable)		
Maximum Length	25 feet (7.6 meters)		
<b>Contact Closure Inout</b>			
Inputs	1 discrete input (pin #9 of RS-232 port)		
Configuration	Single-ended input, pull LOW (to GND, pin5) for closure detect		
Resistance for closure detect	< 150 $\Omega$		
Resistance for open detect TTL compatible thresholds with 9V DC max input	> 1.9k ohms		
<b>Physical</b>			
Chasis	Steel (chassis and covers)		
Dimensions (HWD)	1.73" (4.39 cm) x 18.9" (48.0 cm) including rack ears x 14.9" (37.8 cm) including rack ears / 13.7" (34.8 cm) excluding rack ears		
Weight - Net / Shipping	9.5 lbs (4.31 kg) / 12.5 lbs (5.67 kg)		
Mounting	May be rack mounted or may be used separate from rack		
Operating Temperature	0° to 50° Celsius		
<b>Internal Power Requirements</b>			
AC Input Voltage	Autodetect 100-240 VAC		
AC Input Current	0.3 A RMS		
Frequency	50 to 60 Hz		
Power Cord	IEC-type detachable 6 ft. cord		