

# Technical Specifications

<b>Inputs</b>	<b>Mic/Line Inputs</b>	Balanced, XLR and 1/4" TRS jack, fully recallable
	Input Sensitivity (XLR / TRS)	-60 to +5dBu / -50 to +15dBu
	Analogue Gain	-5 to +60dB, 1dB steps
	Maximum Input Level (XLR / TRS)	+19dBu / +29dBu
	Input Impedance (XLR / TRS)	> 5kΩ / > 10 kΩ
	THD + N, Unity gain 0dB	0.0005% -89 dBu (20-20kHz, Direct Out @0dBu 1kHz)
	THD + N, Mid gain +30dB	0.001% -83dBu (20-20kHz, Direct Out @0dBu 1kHz)
	Phantom Power	+48V

<b>Stereo Line Inputs</b>	
ST1, ST2 connector	Balanced, 1/4" TRS jack, half normalised
ST3 connector (not Qu-SB)	Unbalanced, stereo 3.5mm Mini Jack
Input Sensitivity (ST1, ST2 / ST3)	Nominal +4dBu / 0dBu
Trim	+/-24dB
Maximum Input Level (ST1,ST2 / ST3)	+22dBu / +18dBu
Input Impedance	> 7kΩ

<b>Outputs</b>	<b>Mix1-10 and LR Out</b>	Balanced, XLR
	<b>Group and Matrix Out (not Qu-SB)</b>	(1/4" TRS Matrix Out on Qu-SB)
	Output Impedance	< 75Ω
	Nominal Output	+4dBu = 0dB meter reading
	Maximum Output Level	+22dBu
	Residual Output Noise	-90 dBu (muted, 20-20kHz)
	<b>Stereo Alt Out &amp; 2Trk Out (not Qu-SB)</b>	Balanced, 1/4" TRS jack
	Source (Alt Output / 2Trk Output)	Patchable / LR post-fade
	Output Impedance	< 75Ω
	Nominal Output	+4dBu = 0dB meter reading
	Maximum Output Level	+22dBu
	Residual Output Noise	-90 dBu (muted, 20-20kHz)
	<b>AES Digital Output (not Qu-SB)</b>	2 channel, 48kHz sampling rate, XLR 2.5Vpp balanced terminated 110Ω

<b>dSNAKE</b>	<b>Inputs</b>	Patchable to CH1-32, ST1, ST2, ST3
	<b>Outputs</b>	Patchable from Mix1-10, LR, Grp1-8, MTX1-4 Compatible with AudioRacks AR2412, AR84, AB168 Compatible with ME personal mixing system

<b>System</b>	Measured balanced XLR in to XLR out, 0dB gain, 0dBu input
Dynamic Range	112 dB
Frequency Response	+0/-0.5dB 20Hz to 20kHz
Headroom	+18dB
Internal operating Level	0dBu
dBFS Alignment	+18dBu = 0dBFS (+22dBu at XLR output)
Meter Calibration	0dB meter = -18dBFS (+4dBu at XLR out)
Meter Peak indication	-3dBFS (+19dBu at XLR out), multi-point sensing
Meter Signal indication	-48dBFS (-26dBu at XLR out)
Meter Type	Fast (peak) response
Sampling Rate	48kHz +/-100PPM
ADC, DAC	24-bit Delta-Sigma
Latency	1.2 ms (local XLR in to XLR out) 0.7 ms (local XLR in to AES out)
Operating Temperature Range	0 deg C to 35 deg C (32 deg F to 95 deg F)
Mains Power	100-240V AC, 50/60Hz
Max Power Consumption Qu-16/24/32/Pac/SB	82W/120W/150W/55W/49W

<b>USB Audio</b>	<b>Qu-Drive</b>	USB A
	Stereo Record	2 channel, WAV, 48kHz, 24-bit, patchable
	Stereo Playback	2 channel, WAV, 44.1 or 48kHz, 16 or 24-bit, to ST3
	Multitrack Record	18 channel, WAV, 48kHz, 24-bit, patchable
	Multitrack Playback	18 channel, WAV, 48kHz, 24-bit
	<b>USB Audio Streaming</b>	USB B, Core Audio compliant
	Send (upstream) Qu-16/24/32/Pac/SB	24/32/32/32 channel, WAV, 48kHz, 24-bit
	Return (downstream) Qu-16/24/32/Pac/SB	22/30/32/32 channel, WAV, 48kHz, 24-bit

<b>Dimensions &amp; Weights</b>	<b>Qu-16</b>	Width x Depth x Height: Desk mounted 440 x 500 x 186 mm (17.4" x 19.7" x 7.4") Rack mounted 483 x 472 x 190 mm (19" x 18.6" x 7.5") Packed in shipping box 610 x 680 x 350 mm (24" x 27" x 13.8") Unpacked weight 10 kg (22 lbs) Packed weight 13.5 kg (30 lbs)
	<b>Qu-24</b>	Width x Depth x Height Desk mounted 632 x 500 x 186 mm (24.9" x 19.7" x 7.4") Packed in shipping box 670 x 790 x 350 mm (26.4" x 31.1" x 13.8") Unpacked weight 14 kg (31 lbs) Packed weight 18 kg (40 lbs)

<b>Control</b>	Faders Qu-16, 24, 32	100mm motorised
	Touch Screen Qu-16, 24, Pac	5" TFT, 800x480 resolution
	Touch Screen Qu-32	7" TFT, 800x480 resolution
	SoftKeys	4 (Qu-16), 10 (Qu-24, 32), 15 (Qu-Pac)
	Mute Groups / DCA Groups	4 / 4
	Network	TCP/IP Ethernet for MIDI and iOS apps

<b>Input Processing</b>	CH1-32, ST1, ST2	Local, dSNAKE, or USB
	ST3	Local, dSNAKE, or USB Stereo
	USB Global Source	Qu-Drive or USB B Streaming
<b>Stereo Linking</b>		Odd/even input pairs
Parameters linked		EQ, dynamics, insert, delay, assignments, sends, Ducker
Link options		Preamp, polarity, sidechains, fader/mute, pan
<b>Polarity</b>		Normal/Reverse
<b>High Pass Filter</b>		12dB/octave 20Hz - 2kHz
<b>Insert</b>		FX or Ducker
<b>Delay</b>		Up to 85ms
<b>Gate</b>		Self key Sidechain
Threshold / Depth		-72dBu to +18dBu / 0 to 60dB
Attack / Hold / Release		50us to 300ms / 10ms to 5s / 10ms to 1s
<b>PEQ</b>		4-Band fully parametric, 20-20kHz, +/-15dB
Band 1, Band 4		Selectable Shelving (Baxandall), Bell
Band 2, Band 3		Bell
Bell Width		Non-constant Q, variable, 1.5 to 1/9th octave
<b>Compressor</b>		Self key Sidechain
Threshold / Ratio		-46dBu to 18dBu / 1:1 to infinity
Attack / Release		300us - 300ms / 100ms - 2s
Knee		Soft/Hard
Types		Peak Manual, RMS Manual, SlowOpto, PunchBag
<b>Channel Direct Out to USB</b>		Follow Fader, follow Mute (global options)
Source select (global)		Post-Preamp, Pre-EQ, Post-EQ, Post-Delay

<b>Mix Processing</b>	<b>Insert</b>	Assign FX into Mix channels
	<b>Delay</b>	Up to 170ms
	<b>GEQ</b>	Constant 1/3 oct, 28 bands 31Hz-16kHz, +/-12dB Gain
	<b>PEQ</b>	As Input PEQ
	<b>Compressor</b>	As Input Compressor
<b>AMM</b>	Available on	CH1-16
	Mode	Gain Sharing
	Sidechain Filter HPF / LPF	12dB/octave 20Hz - 2kHz / 120Hz - 20kHz
	Priority	-15dB to +15dB per channel
<b>Ducker</b>	Available on	CH1-32, ST1-3, Group
	Trigger Source	Selectable from any Input or Output
	Mode	Single or Ganged
	Threshold / Depth	-72dBu to +18dBu / 0 to 60dB
	Attack / Hold / Release	Fast, Medium, Slow

<b>FX</b>	Internal FX	4x RackFX engine, Send->Return or Inserted
	Types	Reverbs, Delays, Gated Reverb, ADT Chorus, Symphonic Chorus, Phaser, Flanger
	4 dedicated Stereo FX returns	Fader, Pan, Mute, Routing to Mix/LR, 4-Band PEQ

<b>Audio Tools</b>	<b>PAFL</b>	PFL or stereo in-place AFL, 0 to -24dB Trim, 85ms Delay
	<b>Talkback</b>	Assignable to any mix, Gain, 48V, 12dB/oct HPF
	<b>Signal Generator</b>	Assignable to any mix, Sine / White/Pink/Bandpass Noise
	<b>RTA</b>	31-Bands 1/3 octave 20-20kHz, follows PAFL source

<b>Qu-32</b>	Width x Depth x Height Desk mounted 850 x 500 x 186 mm (33.5" x 19.7" x 7.4") Packed in shipping box 1000 x 680 x 350 mm (39.4" x 26.8" x 13.8") Unpacked weight 20 kg (44 lbs) Packed weight 24 kg (53 lbs)
<b>Qu-Pac</b>	Width x Depth x Height Desk mounted 440 x 174 x 181 mm (17.4" x 6.9" x 7.1") Rack mounted 483 x 174 x 177 mm (19" x 6.9" x 7") 4U Packed in shipping box 620 x 310 x 310 mm (24.4" x 12.2" x 12.2") Unpacked weight 6.6 kg (14.5 lbs) Packed weight 8.5 kg (18.7 lbs)
<b>Qu-SB</b>	Width x Depth x Height Desk mounted / stagebox use 435 x 174 x 162 mm (17.2" x 6.9" x 6.4") Packed in shipping box 550 x 270 x 270 mm (21.7" x 10.6" x 10.6") Unpacked weight 4.5 kg (9.9 lbs) Packed weight 5.7 kg (12.7 lbs)