



QSCControl.net, QSC’s next generation network audio system, achieves the seamless integration of the company’s signal transport, control, processing, and monitoring technologies. QSCControl.net brings together QSC’s digital, power amplification and loudspeaker products into a unified system that enables the user to administrate it all via a fully integrated graphical user interface. The new generation RAVE devices are designed to operate under the company’s QSCControl.net platform.

RAVE 522aa

The RAVE platform meets the processing and signal transport needs of audio systems over an Ethernet network. The RAVE 522aa units combine two distinct QSC technologies within a single hardware unit. Configurable DSP, and CobraNet™ audio transport are seamlessly integrated into one powerful single RU package.

Through QSCControl.net, QSC’s BASIS and next-generation RAVE and DSP products can be networked together and controlled from a single software interface. In addition, multiple networked computers can be set up to control and monitor all of the units simultaneously.

Fixed Latency DSP

Users of most other configurable DSP systems are familiar with a variable latency inherent in the processing configuration. Add more processing blocks and you also add delay, whether you want it or not. QSC’s DSP engine is unique in having a short and fixed processing latency through the DSP subsystem. When the A/D and D/A converters are included, the total analog-to-analog latency of a single unit is a negligible 2.354 milliseconds. QSC’s fixed latency DSP is configurable DSP that stays fast and predictable from one configuration to the next.

For more information, visit www.qscontrol.net

*CobraNet is a trademark of Cirrus Logic, Inc.
THX is a trademark of THX Ltd.*

Inputs		DSP	Outputs	
Analog	CobraNet		Analog	CobraNet
8 line level	16 x 32	24 x 24	8 line level	32

Features

- Configurable DSP functions and signal paths
- Fixed latency DSP engine
- Ethernet controllable
- CobraNet audio transport with new intuitive GUI
- Two Ethernet ports – CobraNet and control can be run over a single cable or be divided between the two ports. The CobraNet port is 100Base-T. The control port is 10Base-T
- Each unit can store eight design configurations that can be changed on the fly
- Snapshots can recall config or block and/or parameter settings
- THX™ approved for professional cinema applications

DSP functions include, but are not limited to:

- Matrix mixer – any size, up to 24 x 24
- Automixers – gain sharing
- Routers – any size, up to 24 x 24
- Gain controls – any channel count, up to 24
- Graphic equalizers
- Filters – high-pass, low-pass, all-pass, shelf, parametric, parametric shelf, Butterworth high and low-pass, Linkwitz-Riley high and low-pass, Bessel-Thomson high and low-pass
- Crossovers – Linkwitz-Riley, Butterworth, Bessel-Thomson in-phase, Bessel-Thomson symmetrical, 2-way, 3-way, and 4-way general purpose adjustable
- Compressors, peak limiters, AGC’s, gates, dynamics processor
- Duckers – up to 8 channels, up to 60 seconds fade in and fade out times, priority mix
- Pink noise, white noise, sine generators
- Delays
- Macros – user-definable custom blocks with password protection

PERFORMANCE

Dynamic Range (AES-17, -60 dB method, all sensitivities)	In	Out	Thru
Unweighted	> 115 dB	> 112 dB	> 112 dB
A weighted	> 118 dB	> 115 dB	> 115 dB
Distortion (20 Hz – 20 kHz, all sensitivities)			
+4 dBu (maximum)	< 0.009% THD+N	< 0.009% THD+N	< 0.009% THD+N
2 dB below clip (maximum)	< 0.009% THD+N	< 0.009% THD+N	< 0.009% THD+N
Crosstalk (20 Hz – 20 kHz)			
Inter-channel (maximum)	> 75 dB		
Inter-channel (typical)	> 90 dB		
Intra-channel (maximum)	> 85 dB		
Intra-channel (typical)	> 100 dB		
Frequency Response			
20 Hz – 20 kHz (maximum)	+/- 0.5 dB		
20 Hz – 20 kHz (typical)	+/- 0.2 dB		
Audio Converters	24 bit, 48 kHz, in and out		
Mute	Infinite attenuation		
Delay	Standard CobraNet™ latency		Low latency
RAVE to Network <i>Analog input through full DSP chain to CobraNet output</i>	7.104 milliseconds		4.438 milliseconds
Network to RAVE <i>CobraNet input through full DSP chain to analog output</i>	6.313 milliseconds		3.646 milliseconds
RAVE to RAVE <i>Analog input through full DSP chain, over CobraNet network, through full DSP chain, to analog outputs</i>	8.083 milliseconds		5.417 milliseconds
RAVE in stand-alone mode <i>Analog input through full DSP chain to analog outputs</i>	2.354 milliseconds (default group delay)		

INPUTS/OUTPUTS

Program Inputs	8 inputs
Connector type	3-pin "phoenix style" (a.k.a. "euro style") detachable terminal blocks
Type	Electrically balanced
Grounding	All shield terminals connected to chassis
Pinout	1:+ / 2:- / 3:CHASSIS GND
Input Impedance (nominal)	Balanced: 10k ohms / Unbalanced: 10k ohms
Common-mode Rejection	20 Hz – 20 kHz (minimum): > 54 dB / 20 Hz – 20 kHz (typical): > 60 dB
Input Sensitivities (variable)	Vrms: 1.5, 3, 9, 18 / dBu: 5.7, 11.8, 21.3, 27.3 / dBV: 3.5, 9.5, 19.1, 25.1
Program Outputs	8 outputs
Connector Type	3-pin "phoenix style" (a.k.a. "euro style") detachable terminal blocks
Type	Electrically balanced
Grounding	All shield terminals connected to chassis
Pinout	1:+ / 2:- / 3:CHASSIS GND

CONTROL INPUTS/OUTPUTS

Relay Outputs	2 discrete floating relay switch outputs
Connector Type	3-pin "phoenix style" (a.k.a. "euro style") detachable terminal blocks
Configuration	Electromechanical relay
Pinout	1:NC / 2:NO / 3:COM
Switching Capacity (nominal)	1A 30 VDC
Logic Outputs	4 discrete outputs
Connector Type	2-pin "phoenix style" (a.k.a. "euro style") detachable terminal blocks
Configuration	Single-ended, TTL compatible
Pinout	1:+(Signal) / 2:-(CHASSIS GND)
Omni Inputs	6 discrete inputs for TTL logic, voltage control or passive resistance
Connector Type	2-pin "phoenix style" (a.k.a. "euro style") detachable terminal blocks
Configuration	Single-ended, ground referenced
Pinout	1:+(Signal) / 2:-(CHASSIS GND)
Normal Operating Range	Reads signals between 0-5 V nominally
Potentiometer Operation	Use 10k ohms for full range
Voltage Tolerance	+/- 48 V
Current Output	0.5 mA with 10k pot (for passive resistive controls)
RS-232 Port	Female DB9 connector (setup and diagnostics purposes only)
QSCControl Port	Neutrik Ethercon RJ45 ruggedized data connector
CobraNet Port	Neutrik Ethercon RJ45 ruggedized data connector
Indicators	
QSCControl Status	Yellow Link, Tx, Rx, front panel / Green Link, Tx, Rx, rear panel
CobraNet Status	Yellow Link, Tx, Rx, front and rear panel
Power	Blue, front panel
Diagnostic	Red, front panel
LCD Data Display	2 line x 16 character, backlit, front panel