

Quadrupled Key Assignments At Your Command

4 User Defined Key Banks

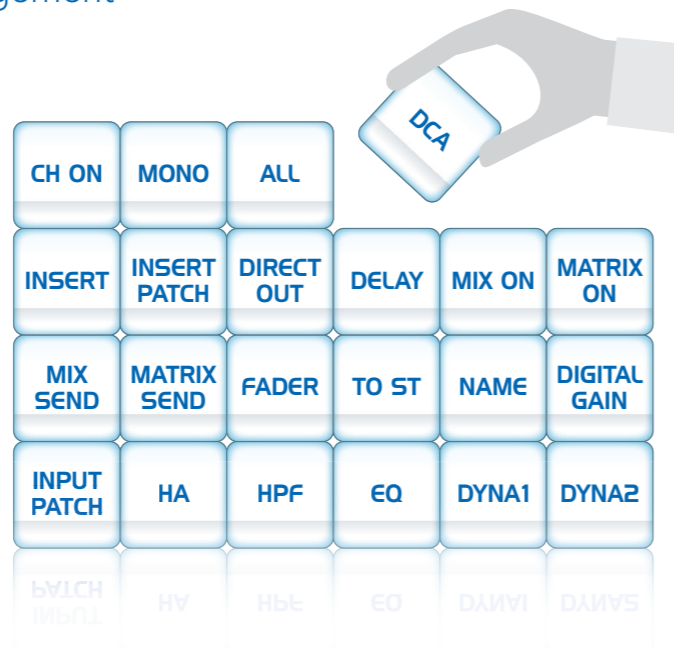
The choices engineers make in assigning functions such as PAGE BOOKMARK, TAP TEMPO, SET BY SEL, or others to the console's User Defined Keys say a lot about their personal way of working. To accommodate an even wider variety of individual requirements, the number of User Defined Key banks has been increased to four. This not only reduces the possibility of running out of keys, but it also allows keys to be grouped by function for improved efficiency.



Details Add Up to Improved Convenience

DCA Assign Selection for Scene Management

DCA assignment has been added to the parameters for Recall Safe, Focus Recall, and Global Paste. Rather than only being selectable with ALL parameters during scene memory management, DCA assignment is now an independent setting. This allows more refined control, such as specifying only Channel Name, Fader, and DCA Assign to be Recall Safe, for example.



Performance You Can Count On, Broadcast or Live



I/O RACK

RMio64-D

DIGITAL MIXING CONSOLE

CL SERIES QL SERIES

Version 3.0



CREATING 'KANDO' TOGETHER

YAMAHA CORPORATION
P.O. BOX 1, Hamamatsu Japan

www.yamahaproaudio.com

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Quietly Unobtrusive, Extraordinarily Versatile

The ideal audio interface should be essentially unnoticeable. That principle is consistent with the Yamaha philosophy of absolute fidelity to the original sound. The sound must not change during format conversion in the digital domain, and no added noise can be tolerated. Performance should not be too dependent on user expertise or skill either. It should be easy to connect devices over any practical distances, and flexibly work around problems.

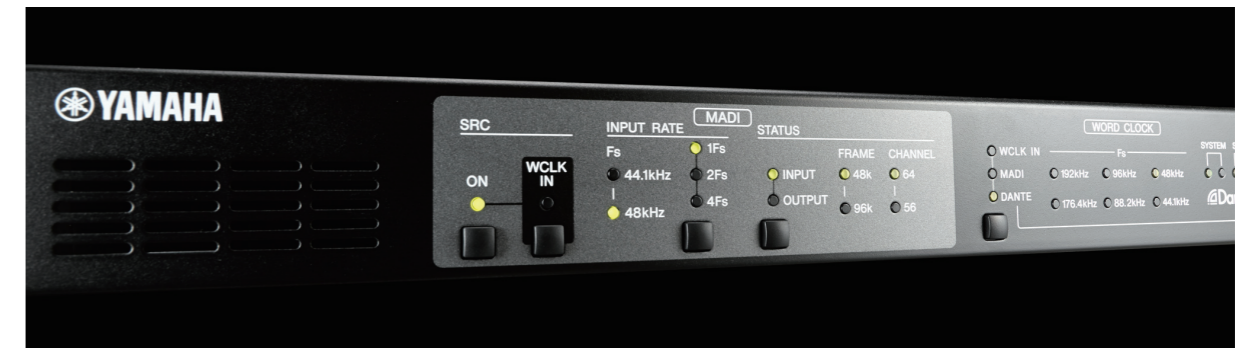
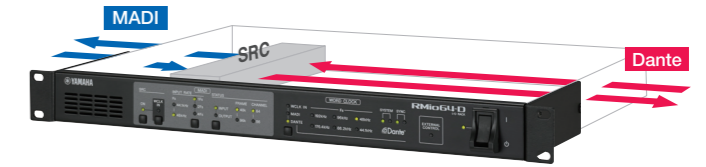
The RMio64-D Dante/MADI conversion I/O rack is here. It supports a wide range of broadcast and live sound applications with extraordinary flexibility, and without getting in the way.



Bridging Formats with Seamless Efficiency

Sampling Rate Converter

Word clock synchronization often becomes an issue when connecting different audio formats, but since the RMio64-D includes built-in sample rate converters on inputs and outputs, you can simply connect it and forget it without having to worry about noise or dropouts.



Better Broadcasts in Surround or Stereo

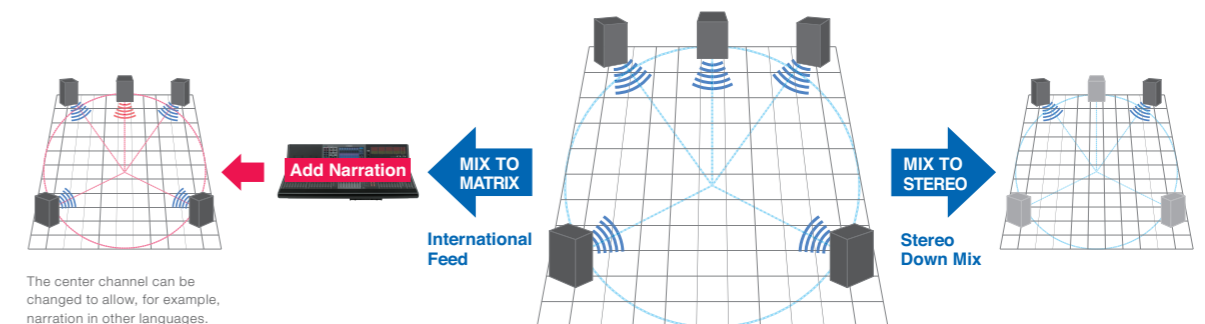
Firmware version 3.0 brings highly anticipated broadcast features to the CL and QL series consoles, adding to their industry-standard operability, superior sonic performance, and solid reliability. Panning and monitoring for 5.1 surround enhance their utility for surround broadcasts, and a new buss compressor is ideal for stereo buss insertion use. CL and QL series console files are interchangeable, so it is easy to choose and combine models to ideally accommodate applications or any complexity or scale.



5.1 Surround Ready and Able

5.1 Surround Panning

The age of digital broadcasting has arrived, bringing new appeal and excitement to music and sports programming in particular. Surround mixing can deliver an enhanced listening experience, with unprecedented presence and immersion. With Version 3.0 CL and QL consoles gain 5.1 surround panning capability with pan control via the touch panel or knobs. Mix to Matrix ideal for international feed production, and Mix to Stereo can be used for stereo mixdown.

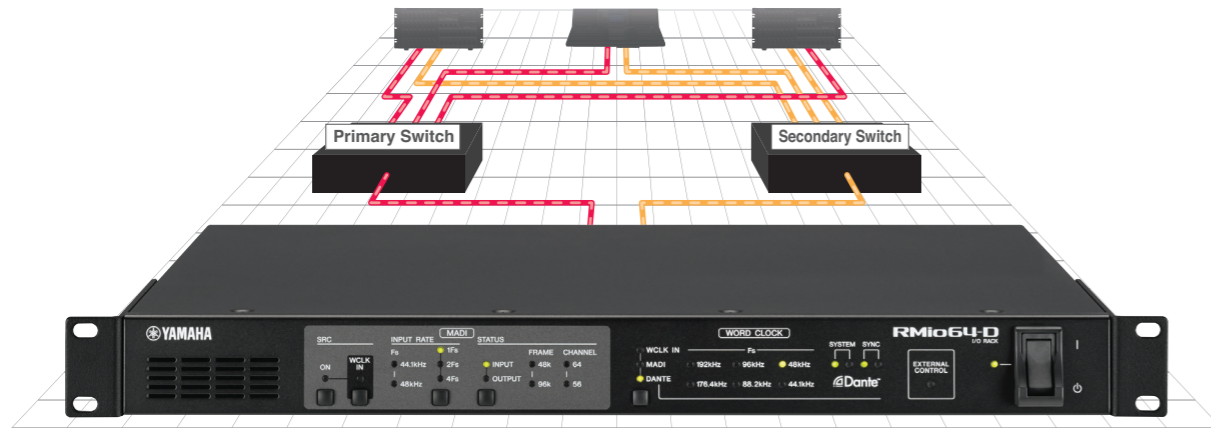


The center channel can be changed to allow, for example, narration in other languages.

Dante Redundancy for Resilient Infrastructure

Dante Redundancy

- Audio interruptions must be avoided at all costs in commercial applications. Dante interfaces feature primary and secondary ports that make it easy to set up redundant connections for maximum reliability. If a cable is accidentally unplugged or a network switch fails, the system will continue to operate without interruption. Alternatively, the dual Dante ports can be used for simple daisy chain connections (redundancy is not available for daisy-chain connections).



MADI Redundancy via Alternative Cable Types

MADI Redundancy

- In addition to Dante network redundancy, redundant MADI connections can be made via optical and coaxial cables so that if the primary input signal is interrupted the system automatically switches to the second connection. Optical cables are ideal for long-distance transmission.

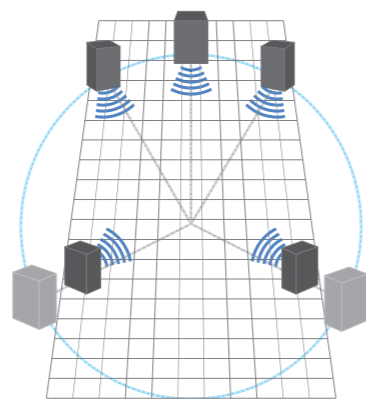


Surround Monitoring Completes the Picture

Surround Monitor

- When it comes to surround production, mixing is only half of the story. Accurate surround monitoring is essential to refine the mix for optimum effect. In addition to surround mixing, firmware version 3.0 brings basic surround monitoring to the CL and QL consoles. 5.1 to stereo downmix capability is included, with adjustment of relative speaker levels and delays for monitor alignment.

*Use an external processor such as the DME series for bass management.

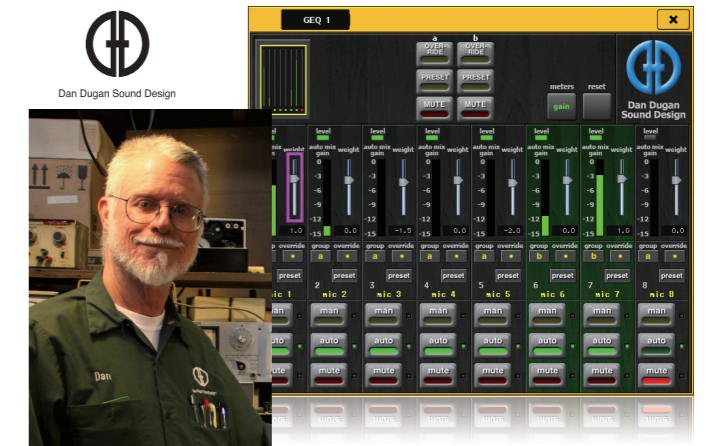


*Appearance may differ in final version

Innovative Automatic Speech Mixing for CL and QL Consoles

Dugan Automatic Mixer in GEQ Rack (included from QL V1.0)

- Through close cooperation with Dan Dugan Sound Design Inc of the USA, renowned for highly regarded automatic microphone mixers based on original and innovative algorithms, Dan Dugan automatic mixing is now included in the CL series consoles (it was included in the QL consoles from V1.0). Gain distribution for up to 16 speech microphone channels is automatically optimized in real time, achieving smooth, natural level control. Feedback and comb filtering are also effectively suppressed, achieving stable, high-quality sound for panel discussion, unscripted talk shows, or similar situations that would otherwise depend on skillful manipulation of multiple faders.



Dual MADi Connectors Offer More than Just Conversion

MADi Split

- Two sets of MADi connections not only facilitate simple conversion between Dante and MADi formats, but MADi signals received via an optical input, for example, can be retransmitted via a coaxial output. So while converting MADi to Dante, the MADi signal can be simultaneously routed directly to another MADi device. This kind of flexibility is one of the RMio64-D strengths.



CL, QL, and R: Tight Integration Plus Nuage Support

Yamaha Integration

- RMio64-D mounting, Dante patching, and SRC settings can all be remotely controlled from a CL or QL series console touch screen (to be implemented in a future update). The RMio64-D is a standout performer on its own, and as part of a Nuage system it offers Direct Monitoring functionality for recording, precision VST System Link synchronization, and remote controllability via Nuage Workgroup Manager system management software.



Classic Sound and State-of-the-Art Performance in One Stereo Buss Comp

Buss Comp 369 in Premium Rack

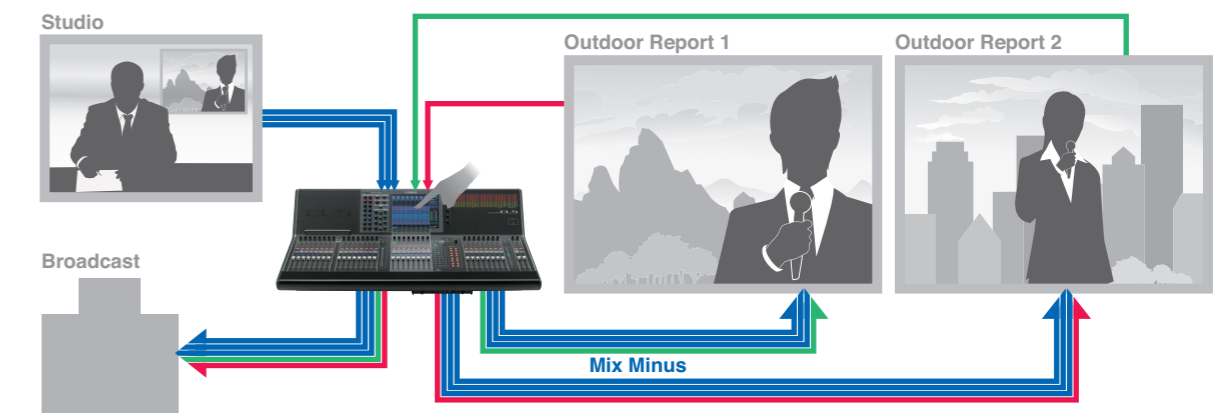
- The K's Lab team at the Yamaha Research & Development Division, under the direction of Toshifumi Kunimoto, has created a new buss compressor. VCM (Virtual Circuitry Modeling) technology has been used to recreate an acclaimed buss compressor from the '70s that is still relied on in broadcast and recording studios around the world, right down to the transformers and discrete circuitry that contribute to its distinctive character. As the name implies, Buss Comp 369 is ideal for inserting on the stereo mix buss for increased loudness, more uniform levels, and warm overall sound. It is an excellent choice for live sound as well as broadcast applications.



Quick, Easy Mix-Minus

Mix Minus (included from CL V2.0)

- Mix-minus, an essential feature for relay broadcast applications, is fully supported. The signal from a specified channel can be quickly and easily omitted from a specified bus to create a clean feed for the location reporter, for example, that does not include his or her own microphone feed.



Specifications

General Specifications

Sampling Frequency	Internal	44.1kHz 48kHz 88.2kHz 96kHz 176.4kHz 192kHz	+4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0%	±50ppm ±50ppm ±50ppm ±50ppm ±50ppm ±50ppm
	External	44.1kHz 48kHz 88.2kHz 96kHz 176.4kHz 192kHz	+4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0% +4.1667%/+0.1%/-0.1%/-4.0%	±200ppm ±200ppm ±200ppm ±200ppm ±200ppm ±200ppm
MADI Channels & Formats	fs=44.1kHz/48kHz: MADI Single fs 44.1/48k frame, 56/64 channels fs=88.2kHz/96kHz: MADI Double fs 44.1/48k frame, 28/32 channels fs=176.4kHz/192kHz: MADI Double fs 88.2/96k frame, 28/32 channels MADI Quad fs 44.1/48k frame, 14/16 channels			
SRC	SRC Lock Range: 38.59kHz – 216kHz Sample Rate Ratio Limit: 6:1			
Dimensions (W x H x D) and Net Weight	480 x 44 x 374 mm, 4.7 kg (18 7/8 x 1 3/4 x 14 3/4 in, 10.4 lb)			
Power Requirements (wattage)	25W			
Power Requirements (voltage and hertz)	US/Canada: 120V 60Hz Japan: 100V 50/60Hz China: 110 – 240V 50/60Hz Korea: 220V 60Hz Others: 110 – 240V 50/60Hz			
Temperature Range	Operating temperature range: 0 – 40 °C Storage temperature range: -20 – 60 °C			
Included Accessories	Owner's Manual, AC power cord			

The contents of this manual apply to the latest specifications as of the printing date. Since Yamaha makes continuous improvements to the product, this manual may not apply to the specifications of your particular product. To obtain the latest manual, access the Yamaha website then download the manual file. Since specifications, equipment or separately sold accessories may not be the same in every locale, please check with your Yamaha dealer.

Digital I/O Characteristics

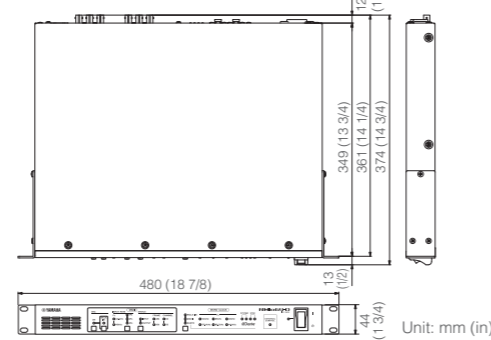
Terminal	Format	Data length	Level	Connector
Primary / Secondary	Dante	24-bit	1000Base-T	etherCON x 2
MADI IN 1 - 64	AES 10-2008 (MADI)	24-bit	ECL	BNC Connector
MADI OUT 1 - 64			-31 – -14dBm	SC Connector
			-20 – -14dBm	SC Connector

Control I/O Characteristics

Terminal	Level	Connector
WORD CLOCK	IN	TTL/75Ω terminated
	IN for SRC	TTL/75Ω terminated
	OUT	TTL/75Ω
System Link Out	1.0±0.2Vp-p/75Ω*	BNC Connector

*AES-3D

Dimensions



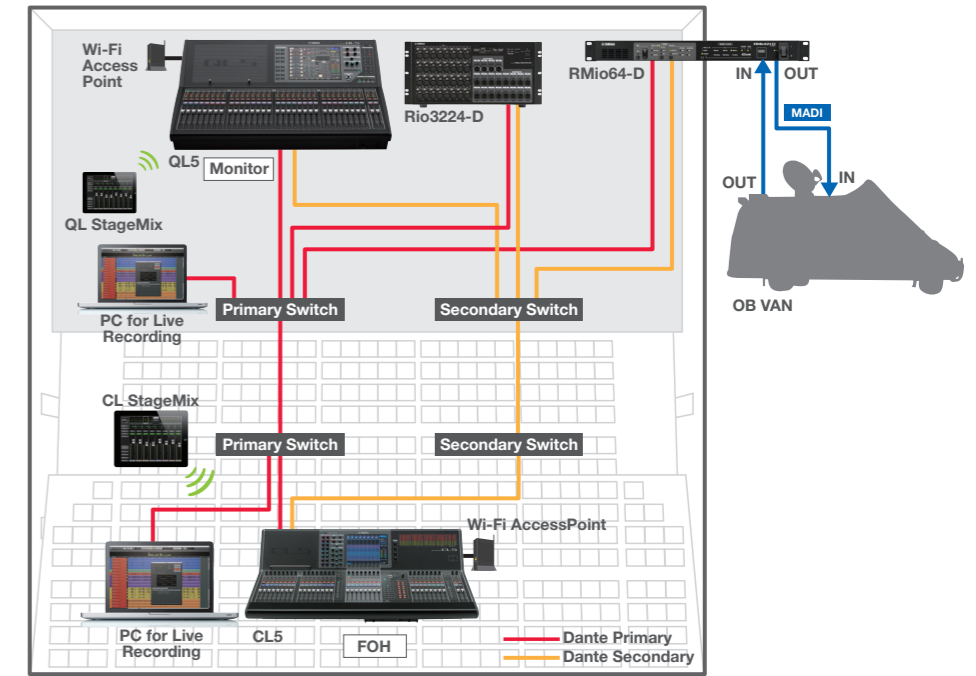
Unit: mm (in)

System Examples

An RMio64-D is used to supply a MADI feed to an OB van.

The live sound system includes a CL console at front of house and a QL console stage side. In addition to providing the monitor mix, the stage side QL console's Port to Port feature allows it to function as an I/O device with capabilities comparable to an R series rack unit, thus reducing overall system size and complexity.

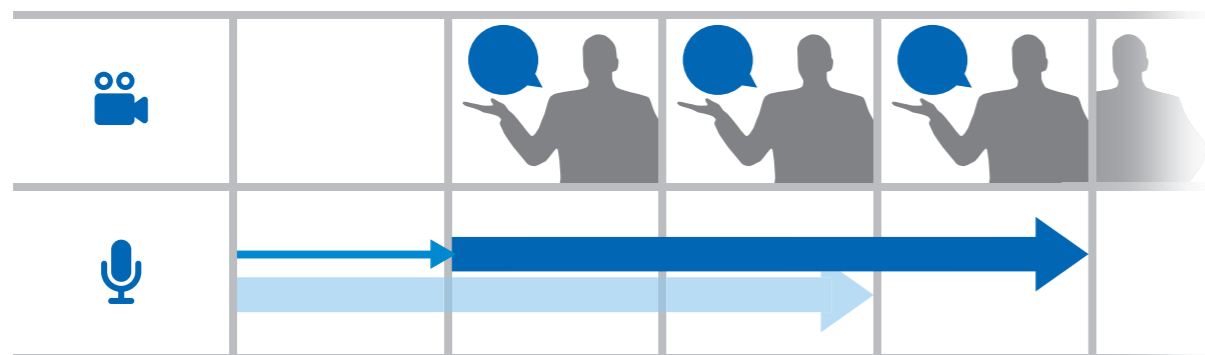
The RMio64-D converts the system's Dante signal to MADI for transmission to the OB van outside the venue. Sample rate conversion built into the RMio64-D effectively resolves word clock synchronization issues.



Frame-increment Control for Perfect Sync

Frame Delay

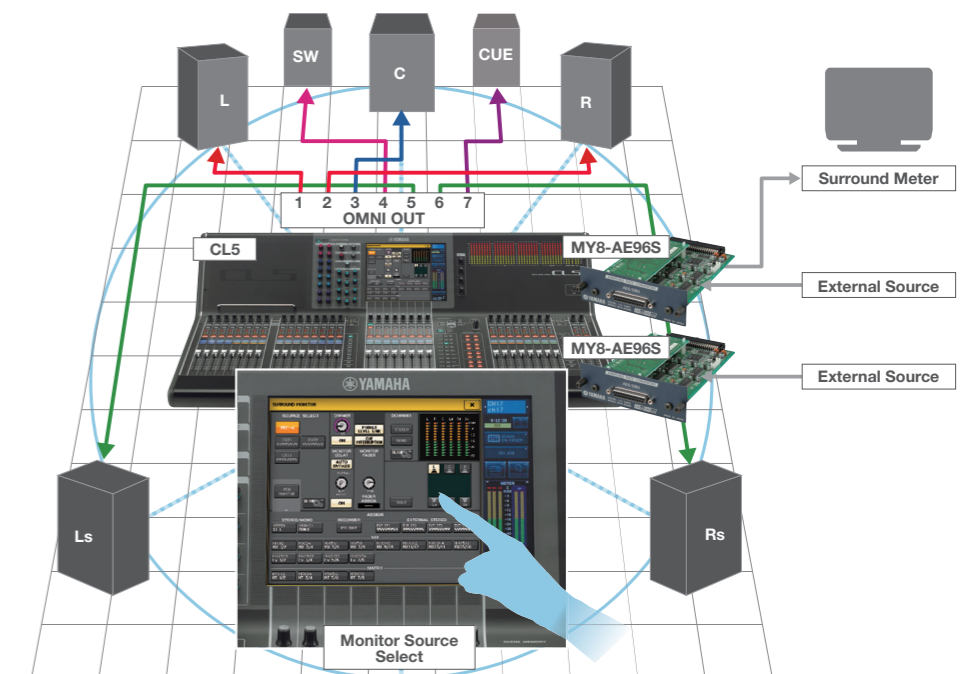
- Video signals often lag behind audio signals, so the capability to delay the audio at the audio mixer to achieve proper synchronization is a necessity. It is now possible to set that delay in frame increments for easy synchronization with a wide variety of video formats.



A Version 3.0 CL or QL console in a surround monitoring system.

Connections to the surround monitor speakers and dedicated cue speaker are made via the console's OMNI OUT connectors or a Mini-YGDAI expansion slot.

External surround sources are fed to the console via a Mini-YGDAI expansion slot so that sources can be switched and monitored via the console. The surround signals can also be fed to an external surround meter via a Mini-YGDAI slot.



Enhanced Tools for Live Sound

The release of the CL series digital mixing consoles was a defining moment in live sound, and numerous updates have raised the bar even higher. Version 3.0 adds 8-band parametric EQ, a real-time analyzer, and other features that add up to unprecedented live sound control. With this upgrade QL series V2.0 has been skipped so that the CL and QL series consoles are at the same V3.0 level. CL and QL series console files are interchangeable, so it is easy to choose and combine models to ideally accommodate live sound FOH and monitoring as well as broadcast relay and recording, from large scale applications to the most basic.

Firmware Upgrade History

V3.0

5.1 Surround Panning | Surround Monitor | Dugan Automatic Mixer in GEQ Rack
Buss Comp 369 in Premium Rack | Frame Delay
8 Band PEQ in GEQ Rack & Effect Rack | Real Time Analyzer | 4 User Defined Key Banks
DCA Assign Selection for Scene Management

V2.0

DCA Roll-Out | Output DCA | Mix Minus | Read Only Scene Memory
Daisy Chain Insert | GR Meter Option on Channel Name Display
AG to DG Link Option for Gain Compensation

V1.7

QL series

Selective Load/Save | HA option for input patching | New Sends On Fader functions
Custom fader bank scene storage | DCA mute option for Pre sends | Improved channel name display
New "black" channel color | Additional metering points | Improved Gain/HPF indication
DCA/MUTE group name display | Improved Channel Link display | Extended Cue adjustment range
Latched or unlatched GPI inputs | Improved I/O device detection

V1.6

Shure ULX-D and Yamaha XMV8280-D/XMV8140-D support
Device's network status monitor on screen

V1.5

Scene Preview support | Help function support | Ri8-D, Ro8-D, NXAMP with NXDT104 etc. support
CUE LEVEL knob on the CUE popup window | HPF attenuation option of -12dB/oct or -6dB/oct

V1.1

Nuendo Live support | GPI functions support | Several User Keys stored inside the console
Improved DANTE SETUP window | Popup for Dante network status

CL series

8 Parametric Bands, No Compromise

8 Band PEQ in GEQ Rack & Effect Rack

- It is now possible to select 8-band Parametric EQ in the GEQ RACK & EFFECT RACK. Most engineers prefer parametric equalizers over graphic types for room measurement and tuning because of the fine frequency and bandwidth control they offer. The 4 parametric bands provided up until now weren't always sufficient, meaning that compromises had to be made in some situations. The new 8-band EQ removes all such limitations, allowing ideally tailored tuning for all environments.



*Appearance may differ in final version

Ears Plus Eyes for Faster, More Effective Tuning

Real Time Analyzer

- Sound engineers depend mostly on their ears when tuning a room, but visual feedback can help to make appropriate decisions more quickly. A real time analyzer (RTA) is now provided in CL/QL Version 3.0 for that reason. The frequency spectrum of cued channels can be shown in the new RTA display as well as in the PEQ or GEQ display to provide visual feedback while adjusting EQ.



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