# **YAMAHA**

## Overview

Distilling core features and performance from the CL series into an all-in-one digital mixing console that is ideal for a wide range of applications such as live sound reinforcement, corporate events, and fixed installations, the QL5 Digital Mixing Console features a 32 + 2 fader configuration in a compact unit that can handle big applications when required.





Rear Panel

### Features

- 32 + 2 fader configuration adapts to a wide range of channel layouts.
- Compact console with large-scale capabilities.
- Input channels: 64 mono, 8 stereo.
- Busses: 16 mix, 8 matrix (Input to Matrix supported).
- Local I/O: 32 in, 16 out.
- Built-in Dugan automixer provides optimum channel balance while allowing the operator to concentrate fully on optimizing the overall sound.
- A large touch-panel display, selected channel controls, and a "Touch and Turn" knob make up an intuitive, efficient control interface.
- Extensive built-in input and output capacity that can handle a variety of applications without the need for stage boxes or other external equipment.
- Bulit-in Dante networking allows for flexible system expansion.
- Up to 24 R series I/O rack units can be connected to each console.
- An innovative "Port to Port" feature allows the console to function as a remote I/O device for any other QL or CL console.
- "Gain Compensation" allows multiple consoles to share and control the same I/O unit.
- Virtual "Premium Rack" with VCM models of the renowned RND Portico 5033 equalizer and Portico 5043 compressor/limiter, plus other VCM equalizers, compressors, and studio-quality effects.
- Virtual "Effect Rack" allows simultaneous use of up to 8 effects from a selection of 46 ambience effects and 8 insertion effects.
- Virtual "GEQ Rack" allows graphic EQ or 8-band PEQ to be inserted into the output buses as required for room equalization and other functions.
- Seamlessly integrated remote control and offline editing via an Apple iPad® or other computing device.
- CL series compatibility: data exchange capability between QL and CL consoles.
- Direct 2-track recording to standard USB flash drives, or serious multitrack recording to a DAW via Dante.
- Multitrack recordings can be used for "virtual sound checks" when performers aren't available.
- Dual Mini-YGDAI card slots provide easy I/O expansion as well as extra processing capabilities.
- Other features: comprehensive Fader Bank section with recallable four custom banks, editable channel names and colors, user defined keys and on-screen user defined knobs, 300 scene memories, input and output delays, ample EQ and dynamics processing, 16 DCA groups, 8 mute groups, 5-in/5-out GPI interface, multiple user key sets, on-screen help, and more.



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# **Specifications**

#### **Functional Specifications**

|                        | Input Mixing<br>Channels      | 64 mono + 8 stereo  |                 | Pan                           | CENTER NOMINAL or LR NOMINAL for monaural input<br>channels in V3.1 or later  |
|------------------------|-------------------------------|---|-----------------|-------------------------------|---|
|                        | Mix Buses                     | 16  |                 | DCA Group                     | 16 (Output DCA support in V3.0 or later)  |
| <b>Mixing Capacity</b> | Matrices                      | 8 (Input to Matrix supported)   | Input Channel   | DCA Rollout                   | No  |
|                        | Stereo Buses                  | 1   | Functions       | MUTE Group                    | 8   |
|                        | Mono Buses                    | 1   |                 | Number of Inserts             | 2   |
|                        | Cue Bus                       | 1 (Second Cue Bus supported in V4.0 or later)   |                 | Direct Out                    | Yes   |
|                        | Analog Input                  | 32  |                 | PEQ                           | 4 Band Full PEQ (RTA overlay support in V3.0 or later, New EQ Algorithms support in V4.0 or later)                              |
|                        | Analog Output                 |   |                 | GEQ                           | Virtual Rack  |
|                        | Dente 1/0                     | 2<br>Driverny / Cases dami  | Output Channel  | Dynamics 1                    | Compressor / Expander / Compander-H / Compander-S   |
|                        | Dante I/O                     |   | Functions       | Output Channel Delay          | No  |
|                        |                               |   |                 | MUTE Group                    | 8   |
|                        | GPI                           |   |                 | Number of Inserts             | 2   |
|                        | Word Clock I/O                |   |                 | Number of                     |   |
|                        | MIDI I/O                      |   | Duamium Daala   | Premium Racks                 | 8   |
| l and                  | USB<br>External               | 1 (File Save/Load, 2 Track Rec/Play)  | Premium kack    | Mountable Device              | RND Portico5033 / RND Portico5043 / U76 / Opt-2A / EQ-1A /<br>Dynamic EQ / Buss Comp 369 (V3.0 or later) / MBC4 (V4.0 or later) |
| Local<br>Connectors    | Redundant PSU<br>Meter Bridge | No  |                 | Number of Effect              | 8   |
|                        | Ethernet                      | Yes   | Effect Rack     | Number of Effect              | 54  |
|                        | Lamp                          | 2   |                 | Flogranis<br>Mauntable Dovice | Fffast ( 21 PandOEO / Flav1EOEO / 9 Pand DEO (1/2 O ar later)   |
|                        | Talkback In                   | No  |                 | Number of CEO Deske           |   |
|                        | Foot Switch                   | No  |                 | Mountable Device              | 0<br>21PandCE0 / Flav1ECE0 / Dugan Automiver / 9Pand PE0  |
|                        | Video Out                     | No  | GEQ Rack        |                               | (V3.0 or later) (RTA overlay support in V3.0 or later, GEQ gain   |
|                        | TC In                         | No  |                 |                               | control from the TOUCH AND TURN knob in V4.0 or later)  |
|                        | Fault Output                  | No  |                 | Number of I/O                 | 64 in / 64 out  |
|                        | Phones                        | 1   | Dante           | Danta Datab from              |   |
|                        | AC Inlet                      | 1 (V-Lock Type)   |                 | Console                       | Yes   |
|                        | Number of Scenes              | 300   |                 | USB Memory                    | X .   |
|                        | Recall Safe                   | Yes   | Recording       | Recording                     | Yes   |
|                        | Focus Recall                  | Yes   |                 | DVS Recording                 | Yes (DVS and Nuendo Live bundled)   |
|                        | Preview                       | Yes (Us ~ 6Us)<br>Yes   |                 | 5.1 Surround<br>Panning       | Yes (V3.0 or later)   |
| Coope Mamory           | Selective Load                | No.   | Broadcast       | Surround Monitor              | Yes (V3.0 or later)   |
| Scene memory           | / Save                        | Yes   | Functions       | Mix Minus                     | Yes (V3.0 or later)   |
|                        | Global Paste                  | Yes   |                 | L-Mono / R-Mono /             |   |
|                        | Event List                    | No  |                 | LR-Mono                       |   |
|                        | Overlay                       | No  |                 | Solo Mode                     | Yes (V4.0 or later)   |
|                        | Isolate                       | No  | Monitor         | Oscillator                    | Sine Wave 1ch / Sine Wave 2ch (V3.0 or later) / Pink Noise  |
|                        | Tactile Control Keys          | No (on-screen)  |                 | D. I.I. D. I                  | / Burst Noise   |
|                        | Gain Compensation             | Yes   |                 | Port to Port                  | Yes   |
|                        | Silk                          | No  |                 | Dual Console                  | NO  |
|                        | Digital Gain                  | Yes (-96dB ~ +24dB)   |                 | Display                       | No  |
|                        | ATT                           | -96dB ~ 0dB   |                 | Timecode Chase                |   |
| Input Channel          | HPF                           | 20Hz ~ 600Hz, -6 or<br>-12dB/oct Selectable   | Other Functions | (Event List)                  | No  |
| Functions              | PEQ                           | 4 Band Full PEQ (RTA overlay support in V3.0 or later,  |                 | Wireless Mic                  |   |
|                        |                               | New EQ Algorithms support in V4.0 or later)   |                 | Monitoring                    | Yes   |
|                        | Dynamics 1                    | Gate / Ducking / Compressor / Expander (Key-in Filter on the<br>Compressor and Expander in V4 0 or later) |                 | RTA                           | Yes (V3.0 or later)   |
|                        | Dynamics 2                    | Compressor / Compander-H / Compander-S / De-esser   |                 | Output Port Delay             | Yes (0ms ~ 1000ms, frame delay support in V3.0)   |
| -                      | Input Delay                   | Yes (0ms ~ 1000ms, frame delay support in V3.0 or later)  |                 |                               |   |
|                        |                               |   |                 |                               |   |

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## **Specifications**

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|                 | Cascade                             | Yes  |  |  |  |
|-----------------|-------------------------------------|--|--|--|--|
| Other Functions | User Level                          | Yes  |  |  |  |
| other Functions | Help File                           | Yes  |  |  |  |
|                 | Channel Link                        | Yes (Output Channel Link support in V3.0 or later)                               |  |  |  |
|                 | Display                             | 10 inch Touch Panel  |  |  |  |
|                 | Faders                              | 32 + 2   |  |  |  |
|                 | Selected Channel<br>Encoders        | Gain, HPF, PEQ (controls for a selected band), Dynamics 1/2(Threshold only), Pan |  |  |  |
|                 | Channel Encoder                     | No   |  |  |  |
|                 | Channel Name /<br>Color Display     | Yes  |  |  |  |
| User Interface  | Custom Fader Banks                  | Yes (customized for each fader section)  |  |  |  |
|                 | User Defined Keys                   | 12 (x 4 banks in V3.0 or later)  |  |  |  |
|                 | User Defined Knobs                  | 4 (on-screen)  |  |  |  |
|                 | Touch and Turn Knob                 | Yes  |  |  |  |
|                 | Monitor Level Knob                  | Yes (on-screen)  |  |  |  |
|                 | iPad Stay                           | Yes  |  |  |  |
|                 | Rack-mounting                       | No   |  |  |  |
|                 | Editor                              | QL Editor (Win/Mac, CSV files import/export in QL Editor V4.0.0 or later)        |  |  |  |
|                 | StageMix                            | QL StageMix (iPad app)   |  |  |  |
| Software        | MonitorMix                          | Yes (V4.00 or later)   |  |  |  |
|                 | Nuendo Live:<br>Control integration | Yes  |  |  |  |
|                 | Console File<br>Converter           | Yes (Win/Mac)  |  |  |  |

#### **Analog Input Specifications**

| Input      | CAIN  | Actual source | For use with Input level     |             | 1       |                  | Connector     |
|------------|-------|---------------|------------------------------|-------------|---------|------------------|---------------|
| terminal   | GAIN  | impedance     | nominal                      | Sensitivity | Nominal | Max. before clip | Connector     |
| INPUT 1-32 | +66dB | 7.5k0         | 50-600Ω Mics<br>& 600Ω Lines | -82dBu      | -62dBu  | -42dBu           | XLR3-31 type* |
|            | -6dB  | 7.0K12        |                              | -10dBu      | +10dBu  | +30dBu           |               |

#### **Analog Output Specifications**

| Output torminal | Actual source | For use with     | GAIN  | Output te | erminals         | Connector       |  |
|-----------------|---------------|------------------|-------|-----------|------------------|-----------------|--|
| output terminal | impedance     | nominal          | SW    | Nominal   | Max. before clip | CONNECTOR       |  |
|                 | 75Ω           | 600Ω Lines       | +24dB | +4dBu     | vt+24dBu         | XLR3-32 type*   |  |
|                 |               |                  | +18dB | -2dBu     | +18dBu           |                 |  |
| DHONES          | 15Ω           | $8\Omega$ Phones | _     | 75mW      | 150mW            | ST Phone Jack** |  |
| FIUNES          |               | 40Ω Phones       | _     | 65mW      | 150mW            |                 |  |

#### **Digital I/O Specifications**

| Terminal          | Format | Data length    | Level      | Audio                            | Connector      |
|-------------------|--------|----------------|------------|----------------------------------|----------------|
| Primary/Secondary | Dante  | 24bit or 32bit | 1000Base-T | 64ch Input /64ch Output @48kHz*1 | etherCON Cat5e |

#### **Digital Output Specifications**

| Terminal    |         | Format                   | Data length | Level | Connector     |
|-------------|---------|--------------------------|-------------|-------|---------------|
| DIGITAL OUT | AES/EBU | AES/EBU Professional Use | 24bit       | RS422 | XLR3-32 type* |

#### **General Specifications**

| Sampling frequency rate   | Internal: 44.1kHz, 48kHz<br>External: 44.1kHz (+4.1667%, +0.1%, -0.1%, -4.0%) ±200ppm<br>48kHz (+4.1667%, +0.1%, -0.1%, -4.0%) ±200ppm |  |  |  |
|---|--|--|--|--|
| Signal Delay  | Less than 2.5 ms OMNI IN to OMNI OUT (@fs=48kHz)   |  |  |  |
| Fader   | 100mm motorized, Resolution=1024steps<br>+10dB to −138dB, – ∞dB all faders   |  |  |  |
| <b>Total harmonic distortion</b> *1<br>INPUT to OMNI OUT Input<br>Gain=Min. | Less than 0.05% 20Hz to 20kHz @+4dBu into 600 $\Omega$   |  |  |  |
| Frequency response<br>CH INPUT to OMNI OUT                                  | +0.5, -1.5dB 20Hz to 20kHz, refer to +4dBu output @1kHz, INPUT to OMNI OUT   |  |  |  |
| <b>Dynamic range</b><br>(maximum level to noise level)                      | 112dB typ., DA Converter,<br>108dB typ., INPUT to OMNI OUT, Input Gain = Min.  |  |  |  |
| Hum & noise level* <sup>2</sup><br>(20Hz to 20kHz), Rs=150Ω                 | –128dBu Equivalent input noise, Input Gain=Max.,<br>–88dBu Residual output noise, ST master off  |  |  |  |
| <b>Crosstalk</b> (@1kHz)<br>Input Gain=Min.                                 | -100dB*3, Adjacent INPUT/OMNI OUT channels   |  |  |  |
| Phantom Power   | +48V   |  |  |  |
| Power requirements  | AC100V-240V, 50/60Hz   |  |  |  |
| Power consumption   | 200W   |  |  |  |
| Dimensions (W x H x D)  | 828mm x 272mm x 563mm (32.6" x 10.7" x 22.2")  |  |  |  |
| Weight  | 21.8kg (48.1lbs)   |  |  |  |
|   |  |  |  |  |

\*1 Total harmonic distortion is measured with a 18dB/Oct filter @80kHz.

\*2 Hum & noise level is measured with a 6dB/oct filter @12.7kHz; equivalent to 20kHz filter with infinite

dB/Oct attenuation.

\*3 Crosstalk is measured with a 30 dB/octave filter @22kHz.

#### I/O Slot (1-2) Specifications

A Mini-YGDAI card can be inserted into slots 1-2. Only slot 1 supports serial interfaces.

#### **Control I/O Specifications**

| Terminal         |     | Format    | Level                         | Connector                      |
|------------------|-----|-----------|-------------------------------|--------------------------------|
| MIDI             | IN  | MIDI      | —                             | DIN Connector 5P               |
|                  | OUT | MIDI      | —                             | DIN Connector 5P               |
|                  | IN  | —         | T TL / 75 $\Omega$ terminated | BNC Connector                  |
| WORD CLOCK OUT - |     | —         | T TL / 75Ω                    | BNC Connector                  |
| GPI (5IN/50UT)   |     | —         | —                             | D Sub Connector 15P (Female)*1 |
| NET WORK         |     | IEEE802.3 | 10BASE-T/100Base-T X          | RJ-45                          |
| LAMP (x2)        |     | —         | 0V - 12V                      | XLR-4-31 type*2                |
| USB HOST         |     | USB 2.0   | —                             | USB A Connector (Female)       |
|                  |     |           |                               |                                |

\*1 Input pin: T TL level, w/ internal pull-up (47kΩ) Output pin: Open drain output (Vmax=12V, maximum sink current /pin=-75mA)

Power supply pin: Output voltage Vp=5V, Max. output current =300mA

\*2 4 pin=+12V, 3 pin=GND, Lamp nominal power: 5W, Brightness (voltage) can be adjusted from the software.

# **YAMAHA**

## Dimensions



## Options

- Gooseneck Lamp
- I/O Rack
- I/O Rack
- Input Rack
- Output Rack
- I/O Rack
- I/O Rack
- L2 Switch
- L2 Switch
- L2 Switch

- Software
- QL Editor
- QL StageMix
- MonitorMix
- Yamaha Console File Converter
- Steinberg Nuendo Live

| Ro8-D    |  |
|----------|--|
| RMio64-D |  |
| RSio64-D |  |
| SWP1-8   |  |

Rio3224-D

Rio1608-D

SWP1-8MMF

LA1L

Ri8-D

SWP1-16MMF



## **Architectural and Engineering Specifications**

The Yamaha QL5 shall be a compact all-in-one Digital Mixing Console that is suitable for a wide range of application including live sound reinforcement, corporate events, and fixed installations. It shall include Dante connectivity as standard to allow flexible system configuration in combination with R series I/O rack units. With 32 + 2 (master) faders it shall provide a mixing capacity of up to 64 mono and 8 stereo inputs, 16 mix buses, and 8 matrix buses (supporting input to matrix). All channel EQ shall allow selection of four different EQ algorithms. 8 Premium Racks shall allow use of a range of software sound processors and effects, including the Rupert Neve Designs Portico 5033 EQ. 8 additional effect racks shall allow use of 54 effect programs. A GEQ rack shall provide graphic EQ facilities as well as use of Automatic Mixer functionality developed in cooperation with Dan Dugan Sound Design. The mixing console shall be compatible with QL Editor, QL StageMix, MonitorMix, and other Yamaha support software running on external computing devices. Physical controllers of the raders shall include the Selected Channel controllers and 12 User Defined Keys. Local I/O shall include 32 microphone/line inputs, 16 line outputs, AES/EBU output, 2 Mini YGDAI slots, GPI ports (5 in/5 out), word clock I/O, MIDI I/O, network port, and USB port. Dimensions shall be 828 (W) x 272 (H) x 563 (D) mm. Weight shall be 21.8 kg.



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# **Block Diagrams**





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## **Block Diagrams**



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