



## DATASHEET

# Quantum 852

*Own the room with the powerful new flagship*

## OVERVIEW

The DiGiCo Quantum 852 is a dual engine, 384 channel mixing console with 52 physical faders and 3 x 21.3" LCD high-resolution touchscreens. Combining the extraordinary might of five large-scale FPGAs, the Quantum 852 redefines digital mixing consoles.

## KEY FEATURES

384 Input Channels with full processing

192 Aux/Sub-Group busses with full processing

64 x 64 Matrix with full processing

128 Insertable Mustard processing strips

384 Nodal processing instances

32 Spice Rack Slots

True Solo function

NEW Expanded Channel Control view

User programmable macros (including channel specific buttons)

Dual redundant engines

Assignable channel Layout

Redundant hot-swappable PSUs as standard

Snapshots for seamlessly changing many parameters at once

2 DMI Slots per engine to expand the I/O as desired

Offline software

iPad control

Theatre specific software option



## DiGiCo Quantum

Quantum is developed with seventh-generation FPGA devices that further expand audio processing power and ultimately allows DiGiCo to provide its users with an unrivaled amount of additional flexibility.

Quantum . Power . Connectivity . Flexibility

# TECHNICAL SPECIFICATIONS

## WORKSURFACE

- 40 x 100mm touch-sensitive, motorised faders
- 12 x 60mm touch-sensitive, motorised faders
- 3 x 21.3" LCD high-resolution touchscreens
- 3 x 6.8" fader control touchscreens
- 29 x 1.3" Full colour TFT LCD displays
- 40 x 1.3" Touch sensitive full colour TFT LCD displays
- 3 x 19.2" Custom mounted LCD high-resolution TFT-LCD Meterbridge screens
- 1 x Meterbridge camera
- 2 x ¼" Headphone sockets
- 2 x 3.5mm Headphone sockets
- 2 x Headphone rests
- 1 x USB 2.0 port
- 1 x XLR Talkback input
- 1 x Microphone holder
- Keyboard Light Bar
- Integrated Light Bar

## OPTIONS

- Upgrade to Dual Loop Optocore (HMA, OpticalCon or ST)
- Upgrade to SingleMode Optocore
- Script Tray
- Theatre Specific Software
- Flightcase
- Compatible DMI Cards: ADC / AES / AMM / Aviom / DAC / Dante / Dante64@96 / Hydra 2 / KLANG / MADI B / MADI C / ME / Mic / Waves

## REAR

- 2 x Redundant, hot-swappable PSUs
- 12 x XLR 32 bit Mic/Line Inputs
- 12 x XLR 32 bit Line Outputs
- 6 x XLR AES/EBU Inputs (12 x channels)
- 6 x XLR AES/EBU Outputs (12 x channels)
- 2 x GPI DSub37 (32 inputs)
- 2 x GPO DSub37 (32 outputs)
- 2 x MIDI In/Thru/Out (5 pin DIN)
- 2 x Video BNC Inputs (SDI)
- 2 x Video Outputs (1 x BNC (SDI), 1 x DisplayPort)
- 1 x SMPTE I/O (XLR) plus level control

## Per Engine:

- 1 x MultiMode Optocore Interface (expandable to 2)
- 1 x Waves port as standard
- 2 x DMI Slots (up to 64 I/O per slot)
- 5 x 1Gb Ethernet ports (switched together)
- 8 x MADI BNC I/O @ 48kHz, 4 interfaces at 96kHz
- 2 x USB 2.0 ports
- 1 x USB 3.0 port
- 1 x Word Clock I/O BNC (2 BNCs)
- 1 x DisplayPort Output
- 1 x AES/EBU XLR Sync I/O (2 XLRs)
- 1 x Video Sync BNC Input



# TECHNICAL SPECIFICATIONS

## SIGNAL PROCESSING

### 384 Input Channels (Mono)

- Main & Alternative input
- Analogue Gain
- Phase Inversion Control
- Gain Tracking
- Digital Trim (-40dB to +40dB)
- Variable Delay (0ms to 1.3s)
- DiGiTube
- HPF/LPF (-24dB/Oct)
- 4 Band Parametric EQ / Dynamic EQ
- DYN 1: Compressor, Multiband Compressor, Desser
- DYN 2: Gate, Duck, External Input Compressor
- EQ/Dyn Order Control
- 2 Insert Points per Channel
- Channel Mute & Hard Mute
- Channel Direct Outputs

### 192 Aux/Sub-Group Busses

- Phase Inversion Control
- Digital Trim (-20dB to +60dB)
- Variable Delay (0ms to 1.3s)
- DiGiTube
- Merge Input
- Tone Generator
- HPF/LPF (-24dB/Oct)
- 8 Band EQ: 4 Band Parametric EQ and 4 Band Parametric or Dynamic EQ
- DYN 1: Compressor, Multiband Compressor, Desser
- DYN 2: Gate, Duck, External Input Compressor
- EQ/Dyn Order Control
- 2 Insert Points per Channel
- Channel Mute & Hard Mute

1 LR/LCR/LCRS/5.1 Master Buss (with full processing)

64 input x 64 output Full Processing Matrix

36 Control Groups (CGs)

2 Solo Busses

48 x 32-band Graphic EQ's

64 x Internal Stereo FX Processors

- Delays
- Audio Enhancer
- Choruses
- Pitch Shifters
- Reverbs

32 x Internal Spice Rack Slots

- 6 band Dynamic Multiband Compressor/Expander
- 6 band Dynamic EQ

128 x Mustard Processing Strips

- Tube
- Tube Emulation
- HPF/LPF (-24dB/Oct)
- 4 Band EQ: 2 Band Parametric EQ and 2 Band Parametric EQ or All Pass Filters
- DYN 1: Classic RMS/Peak Compressor, Vintage VCA Compressor, Optical Compressor, FET Limiter
- DYN 2: Gate, Ducker

384 x Nodal Processing

- 4 Band Parametric EQ / Dynamic EQ
- DYN 1: Compressor, Multiband Compressor, Desser
- DYN 2: Gate, Duck, External Input Compressor

DiGiTuBes available on every channel and Buss

Dynamic EQs available on every channel, Buss and Nodal Processor

Multiband Compressors available on every channel, Buss and Nodal Processor

True Solo function

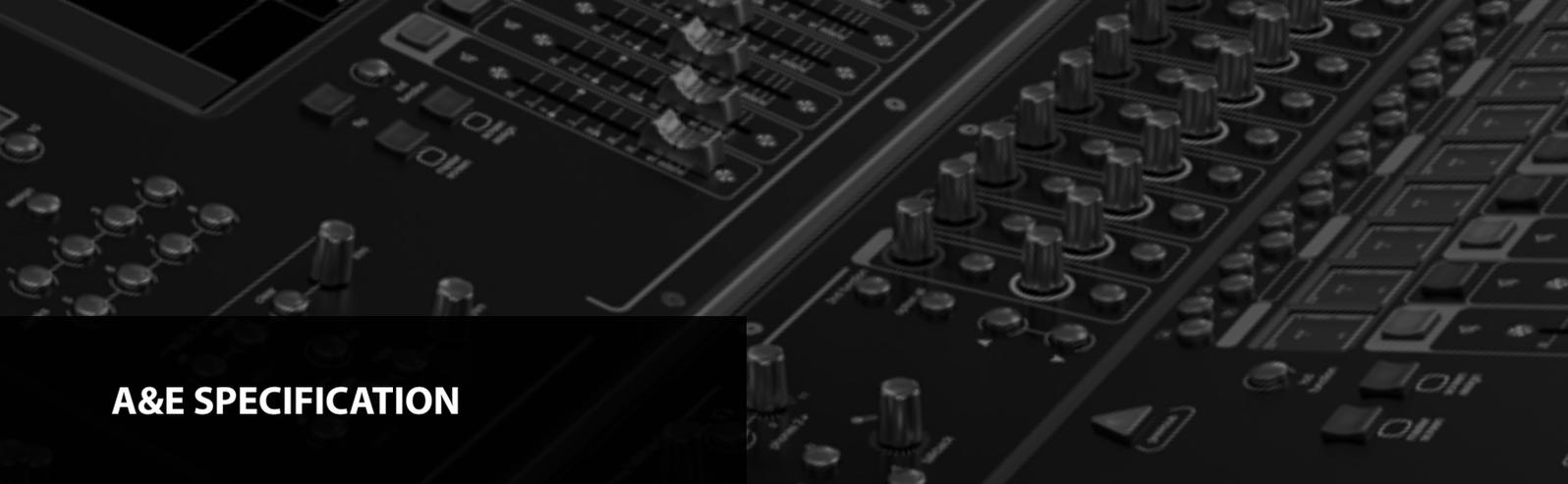
Virtual Soundcheck



In a world as competitive for engineers as it is for console owners, you want the best tools you can lay your hands on. You also want a console and audio tools as well thought out for every major application as they are designed for the art and science of sound engineering.



**QUANTUM 852**



## A&E SPECIFICATION

The DiGiCo Quantum 8<sup>52</sup> shall have 40 faders split into 3 worksurface sections and four dedicated master faders. The left, centre and right worksurface sections shall have 6 layers of 6 banks. The centre worksurface section shall have an additional 12 faders on the upper section. The upper centre faders shall have 4 banks. All faders can be assigned to control any channels of any type. The console shall be capable of 384 input channels, 192 Aux/Sub-group Busses, a LR/LCR/LCRS/5.1 Master Bus, 36 VCA style or mute group style Control Group channels, 2 Solo Busses, and a 64 input x 64 output full processing Matrix. All processing paths shall have full processing including Tube emulation, Dynamic EQ and Multiband Compression. Tube emulation, Dynamic EQ and Multiband Compression shall be available on every channel and Buss on the console. All channel processing shall be internal and FPGA-Based.

An internal FX rack shall allow users to pick from 34 different FX. Up to 64 stereo FX can be added, comprising of up to 32 floating point reverbs and up to 64 delay/chorus/pitch/enhancer effects. An internal set of 48 32-band Graphic EQs shall also be accessible. There shall be an additional processing rack called the Spice Rack, allowing up to 32 mono effects. There shall also be 128 insertable Mustard Processing Strips. The position of these, and of inserts, shall be chosen from pre-processing, pre-EQ/dynamics, mid-EQ/dynamics, pre-fader or post-fader. 384 instances of nodal processing shall also be available. These shall allow EQ and dynamics (including Dynamic EQ and Multiband Compression) to be applied to the aux node of a channel.

Two portrait 21.3" (54.1cm) LCD high-resolution touch screens shall be provided to show the left and right worksurface channels strips plus an expanded channel control view showing all information about the currently selected channel. In the centre there shall be a landscape 21.3" touchscreen showing the master screen. This shall also be able to show channels strips or the expanded channel control view for the centre faders and upper centre faders with the use of onscreen controls and hardware buttons. All three screens shall have a dedicated hardware channel strip, allowing for control over input parameters, filters, EQ, dynamics, insert points, aux sends, and four user assignable encoders and buttons. Each screen shall also have 2 rows of rotary encoders to control various channel parameters. The master section shall have physical controls to allow control over some snapshot functions, basic Solo functions, and a button to control which engine is being viewed. There shall also be 8 layers of 10 user-assignable LCD macro buttons on the worksurface. The user shall also be able to program macros that can be triggered with fader movements, GPI, MIDI and keyboard functions. Each fader shall also have two additional macro buttons ('a' and 'b'). The assignment of these shall change with channel assignment. The master section shall have a USB port. The console shall have three meterbridge screens to show channel metering. The meterbridge shall also have a meterbridge screen to show video feeds and a camera to send video of the user to other consoles.

The rear panel shall have 12 32-bit Mic/Line inputs, 12 32-bit line outputs, 6 AES/EBU inputs (12 channels) and 6 AES/EBU outputs (12 channels). It shall also have 2 DSub37 GPI and 2 DSub37 GPO (32 inputs and 32 outputs), 2 sets of MIDI In, Thru and Out, 2 sets of BNC video inputs, a BNC video output, a DisplayPort output, and a set of XLR SMPTE LTC I/O. It shall also have 2 redundant and hot-swappable power supplies. Each engine shall have a MultiMode Optocore interface, providing 504 additional audio paths at 48kHz and 96kHz. The Optocore connection type shall be chosen from HMA, OpticalCon or ST. They shall also have a Waves port, 2 DMI slots, 5 switched ethernet ports, 8 sets of MAD1 I/O, giving up to 8 MAD1 interfaces or up to 4 redundant MAD1 interfaces at 48kHz or 4 interfaces at 96kHz, 2 USB 2.0 and 1 USB 3.0 ports, 1 DisplayPort output, external Wordclock I/O, AES sync and video sync.

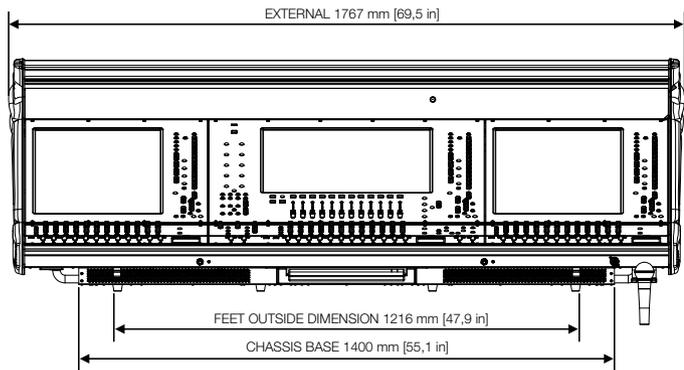
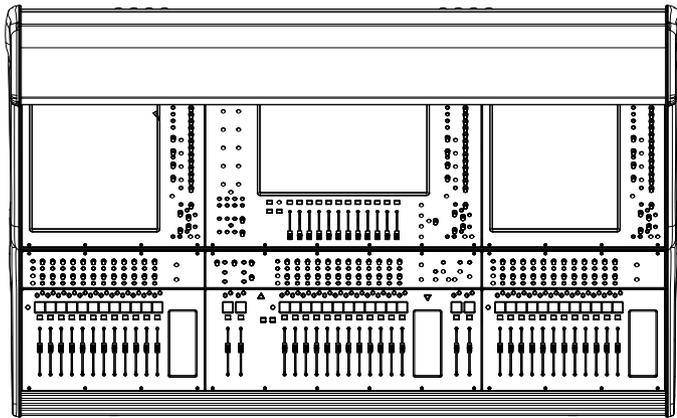
There shall be option to add a second Optocore loop to each engine. This shall give an additional 504 audio paths at 48kHz and 96kHz. The Optocore interface can also be upgraded to SingleMode. There shall be a Theatre Software option that shall provide Auto Update, Aliases, Players, Advanced CG programming tools and Matrix nodal delays.

The dimensions of the Quantum 8<sup>52</sup> shall be: 1767 (w) x 1075 (d) x 607 (h) mm  
The weight of the Quantum 8<sup>52</sup> shall be: 120kg  
The DiGiCo Quantum 8<sup>52</sup> shall be supplied with a dust cover.

In a world as competitive for engineers as it is for console owners, you want the best tools you can lay your hands on. You also want a console and audio tools as well thought out for every major application as they are designed for the art and science of sound engineering.

## LINE DRAWING

All dimensions in mm



### PHYSICAL

Dimensions: 1767mm (w) x 1075mm (d) x 607mm (h)

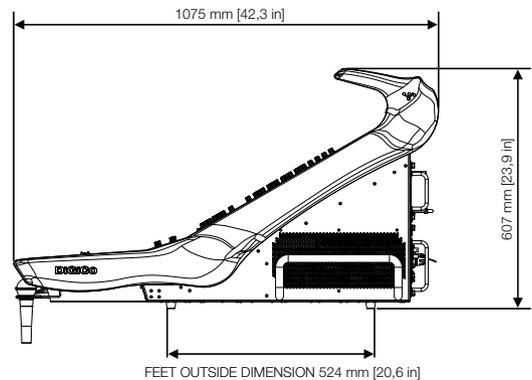
Weight: 120kg (TBCkg with optional flightcase)

Flightcase: TBCmm (w) x TBCmm (d) x TBCmm (h) (Optional)

Power Requirements: TBC

Redundancy: Internal removable engines x 2 and internal hot-swappable PSUs x 2

Product Code: TBC



### AUDIO SPECIFICATIONS

Sample Rate: 48kHz or 96kHz

Processing Delay: TBC

Internal Processing: Up to 40-bit, Floating Point

A>D & D>A: 32-bit Converter Bit Depth

Frequency Response: TBC

THD: TBC

Channel Separation: TBC

Residual Output Noise: TBC

Microphone Input: TBC

Maximum Output Level: +22dBu

Maximum Input Level: +22dBu

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