AEQ

Audio, Video and Communications for Broadcasters

FORUM IP SPLIT and LITE

Broadcast Digital Audio Mixers

Main Features

FORUM is a family of digital audio mixers for Broadcast applications, specially designed for ON AIR control but adapting to other operational environments.

FORUM IP incorporates all of the necessary features to meet the rigorous demands of the radio and television broadcast industry: automatic monitor muting, cough-muting, fader-start, control and studio signalling, GPIO's interface s to automate functions and equipment control, external communications management, intercom, etc.

FORUM IP can be used in different broadcast environments: auto-control, studio-control, television production, sound production, mixed configurations, integration into large installations, etc.

Simplicity and flexibility are combined in FORUM IP to provide a system with optimal operational features and adapting to workflows from the most basic to the most complex broadcast scenarios.

The control surface can be configured with a minimum of 4 faders and can be expanded to 8 or 12 channels for the LITE version, or up to 24 channels for the SPLIT version.

All the basic functions such as setup, level adjustment, and signal routing has its own specific control for each channel. More advanced settings are grouped into contextual controls, common to all channels, and are accessible through just one or two buttons: straightforward simplicity provides for very dynamic system control and reduce the chances of operator error.

FORUM IP's configuration allows any signal present within the system to be freely assigned to any control channel, and signal distribution configuration is done on the control surface itself.

FORUM IP has built-in memory where each signal's settings are stored: signal distribution for the control surface, output bus routing, setup parameters, effects, etc. This allows the console to be easily adapted to different needs for programming and specific technical requirements and workflows.

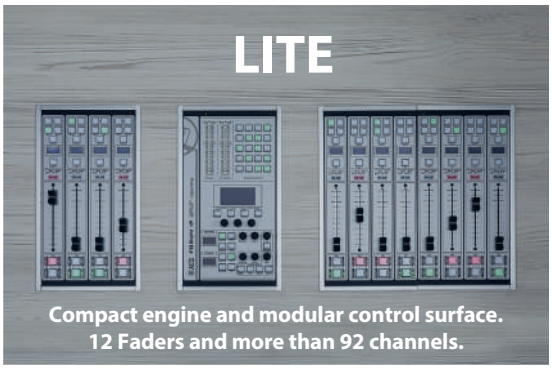
Ethernet control ports provide external connectivity for "FORUM Screen", software for operational assistance and metering and for "FORUM Configuration" setup software. These ports can also be used for the optional "VIRTUAL FORUM" software application that provides AEQ FORUM with a powerful remote control. The AoIP network ports can be shared for control if required.

OUTSTANDING FEATURES

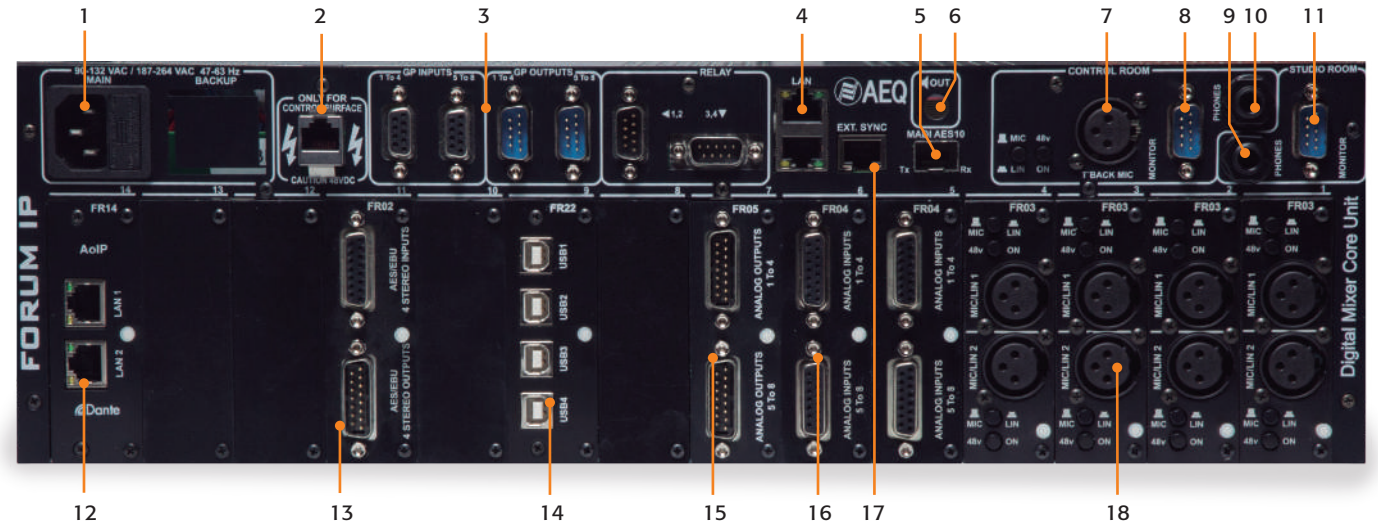
- Compact digital audio mixers with IP connectivity for ON AIR operation in radio and TV studios.
- Audio Processing: three band parametric equalizer, filters and dynamics.
- Up to 32 mixing buses for program outputs, auxiliary, monitoring and clean feed. Possibility to send each input to several outputs without using a mixer bus.
- Optional FORUM SCREEN that facilitates the visualization, simplifies and speeds up the operation and control of i.e. audio parameters, filters and dynamics. Full advantage of the software is obtained when operated on a touch screen.
- Optional VIRTUAL FORUM allows for the remote control from a parallel control surface represented on a computer or Tablet screen.

VERSIONS

Modular surface and audio engine, with up to 24 faders and more than 180 channels.

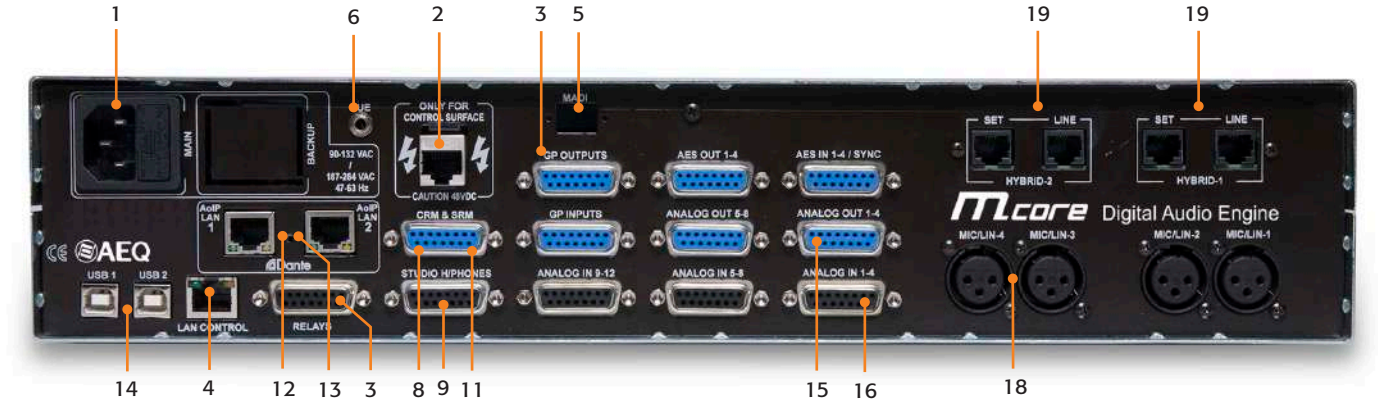


Compact engine and modular control surface. 12 Faders and more than 92 channels.



1 *AC Power Input*
2 *Control surface connection*
3 *GPIOs*
4 *Ethernet control ports*
5 *MADI Multi-Channel Fiber-Optic Comms Port*
6 *CUE Speakers output*
7 *Talk Back Microphone*
8 *Control Room Monitoring*
9 *Studio Headphones*
10 *Control Headphones*

11 *Studio Monitoring*
12 *AoIP Multichannel Module*
13 *Digital Input / Output Modules*
14 *USB Module*
15 *Analogue Output Modules*
16 *Analogue Input Modules*
17 *Time Sync Port*
18 *MIC / LINE Input Modules*
19 *Digital TELCO Hybrid Modules*



General connectivity

One of main advantages of the design of the FORUM IP is translated into a simple installation and configuration.

FORUM IP´s flexible I/O capabilities allow the unit to interface with external devices for cough muting, remote control, ON-AIR lights, etc. by using its 8 opto-coupled GPI/Os and 4 relay-operated control outputs. Additionally, there are up to 250 additional Virtual GPI/O's available for control and automation functions.

FORUM IP´s Engines have built-in outputs for both studio and control room headphones and dedicated monitors for studio and control-room. The Engines also has built-in Ethernet ports for configuration and remote control. AES10 MADI interface is available as an option.

FORUM IP SPLIT specific connectivity

Forum IP SPLIT has an audio engine chassis in 19" 3U format with modular structure. The top area includes input and output connectors, common to any configuration and additional self-control and talkback microphone input. At the bottom, 14 slots are provided to install multiple analogue and digital audio, IP multichannel and phone hybrid I/O interface boards.

FORUM IP LITE specific connectivity

Forum LITE has a compact 19" 2U audio engine chassis. A fixed input and output configuration has been defined which is suitable for most usage scenarios. However, several options can still be added, such as AoIP and MADI connectivity, phone hybrids and redundant power supply.

FOUR CHANNELS MODULE

Controls by channel

AEQ FORUM control surface is built using independent 4-fader modules, allowing from a basic 4 or 8-channel configuration up to 24 channels (FORUM IP SPLIT) and 12 channels (FORUM LITE).

All of FORUM IP´s fader channel assignments are completely user-definable. Signals available can be freely assigned to be controlled through a specific fader channel at one instance and from another fadcer channel at another moment of the day or programming. This facilitates unique signal to channel distribution, and allows FORUM IP to easily adapt to different programming requirements and to suit the different operator needs. Several signals can also be grouped to be managed from a single fader channel.

In addition, signal/channel configurations can be stored on memory banks. This provides flexibility in operation when an operator may have to quickly recall a configuration and change the operational layout and workflow of the console.

FORUM IP offers excellent operational capabilities and flexibility in a small footprint.

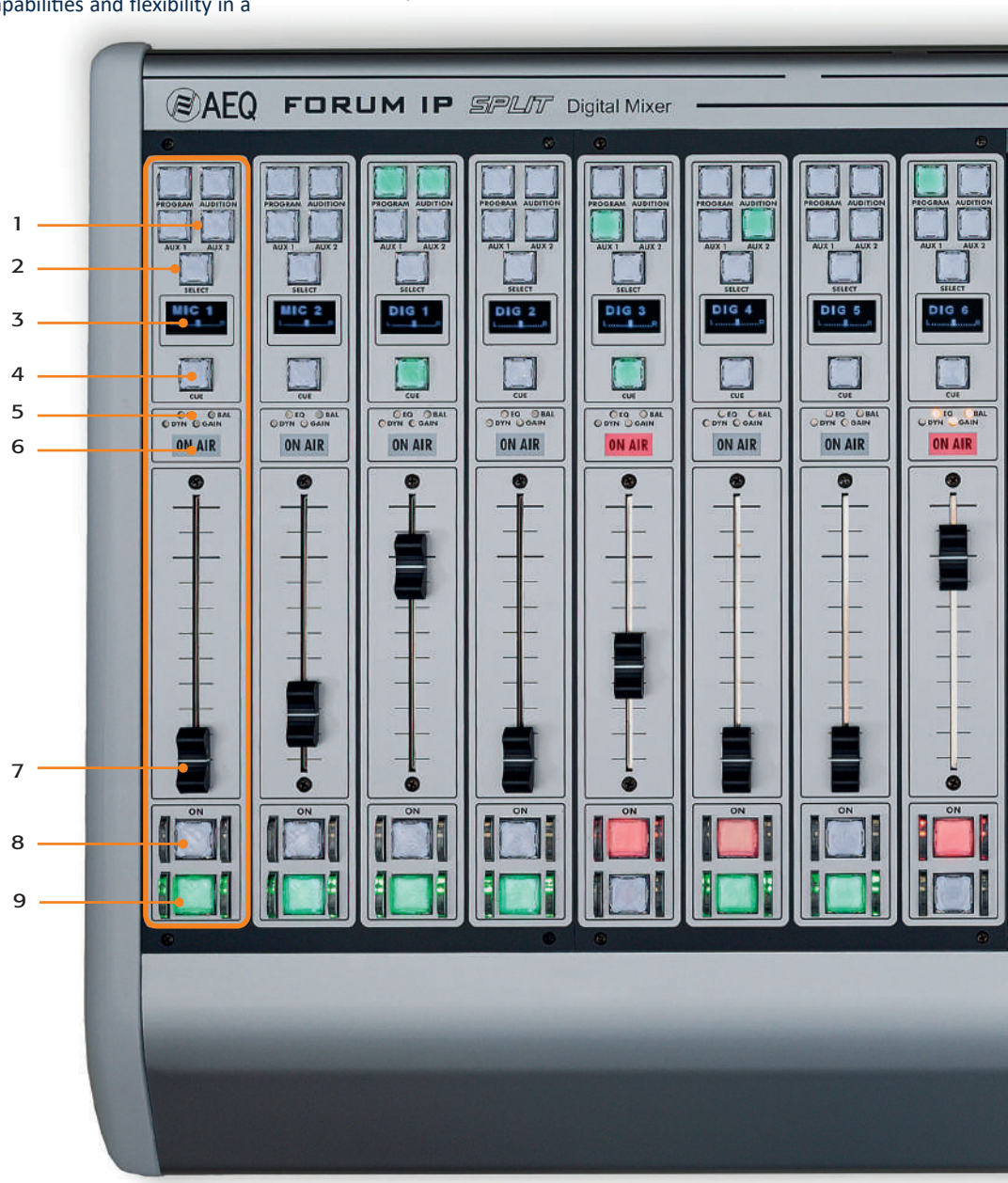
In addition to signals present on the control surface which can be mixed, processed, and sent to any output channel, FORUM IP can adjust levels and route hidden signals up to the maximum input / output capacity of each Engine and system configuration.

At the top of each section there are 4 routing buttons and one channel selection button which are used to assign common advanced configuration parameters: (gain, dynamics, equalization and balance).

A display screen is also present, showing the channel name and status as well as the balance/panorama level. Beneath it, a CUE button is located, along with 4 LEDs which indicate activity or non-nominal settings for equalization, balance, dynamics and gain. Finally, an illuminated ON-AIR status indicator is provided.

The channel section is completed with the fader itself and the channel ON/OFF buttons.

1. *Four routing buttons.*
2 *Advanced channel configuration button.*
3 *Channel display: shows channel name, status, and balance/panorama level.*
4 *CUE button.*
5 *Activated processes / non nominal settings indicators.*
6 *Channel's ON-AIR indicator.*
7 *100 mm fader.*
8 *Channel activation buttons.*
9 *Programmable channel-keys: according to the configuration, they can operate as an OFF channel-muting key, A/B switch in dual channels, Talk Back button for 4-wire channels or using other special configurations.*



CONTROL AND MONITORING MODULE

VU-Meters

The control surface also includes two integrated, high precision digital stereo VU-meters, which can be assigned to the master outputs, or using the CUE keys, to any selected signal.

Programmable Keys

FORUM IP allows the user to program pre-defined special functions such as: defining GPIs and GPOs, controlling hybrids and codecs, sending signals to the VU-meters, or setting up additional intercom or talkback routing. 20 programmable keys are provided to assign such programmed functions to be activated and deactivated.

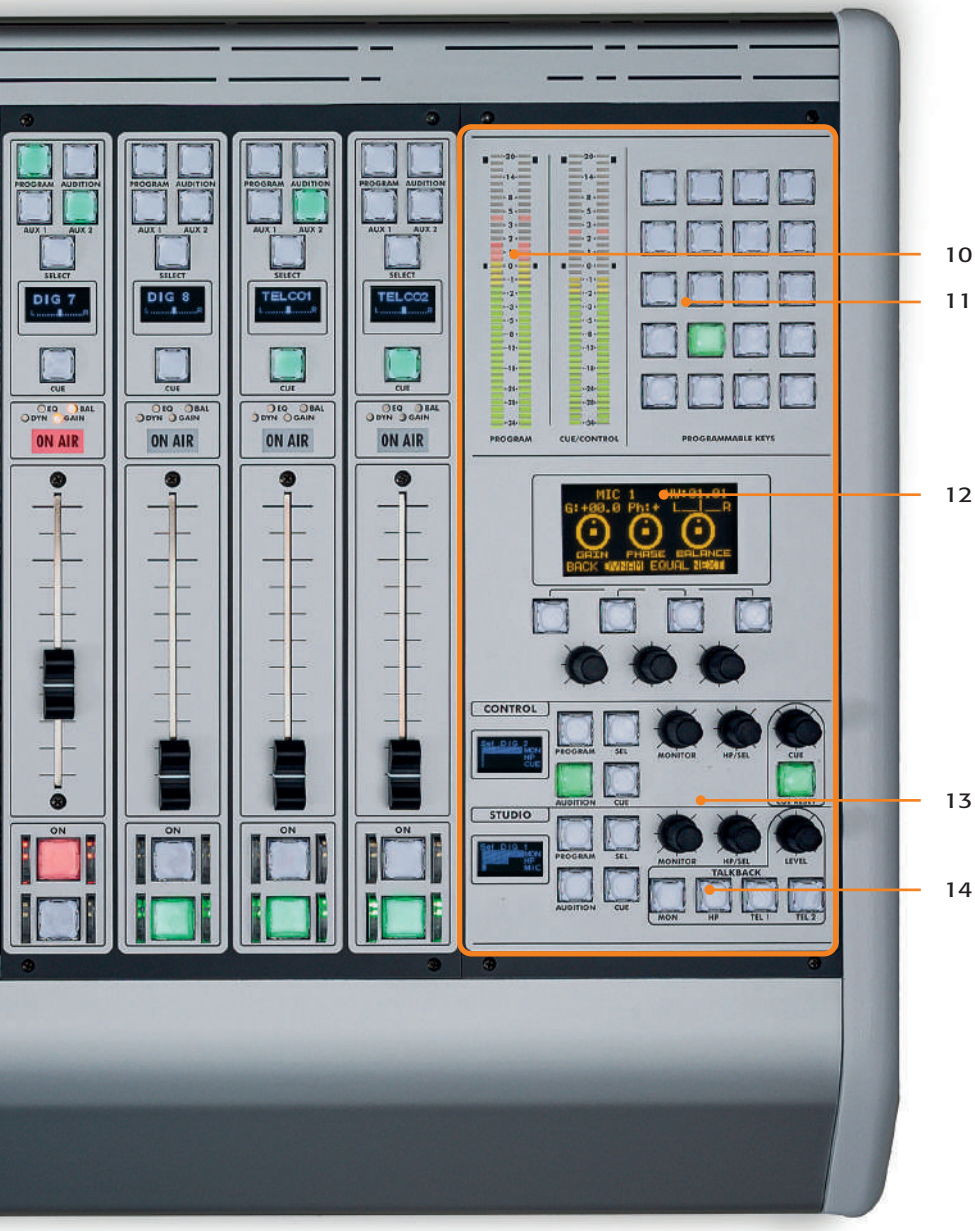
Advanced Configuration Display and Controls

Each of FORUM IP´s fader channels has an advanced settings button. Configuration is carried out through the integrated multi-function display in the monitor and the control section of the console. The rotary encoders associated with the display are used to scroll through the contextual graphics menus.

General functionality includes adjustment and instant activation of audio effects: equalization, filters, limiters, etc., memory management and configuration, general effects disconnection, timer, stopwatch, phase change, test signal insertion, etc.

The optional FORUM SCREEN software application allows the operator to carry out these tasks remotely.

10 *VU-Meters.*
11 *Programmable keys.*
12 *Advanced configuration display and controls.*
13 *Studio and control monitoring.*
14 *Talk-back.*



Control and Studio Monitoring

FORUM IP has two sections for the independent monitoring of the control room and the studio. There are separate level controls for control-room monitors, studio monitors and headphones, as well as FORUM IP´s CUE speaker 3,5mm jack. FORUM IP´s studio and control room monitor sections have an independent display for each one, where source selections and relative levels are shown.

FORUM IP includes independent and centralized control of ON-AIR signalling, control of signals assigned to speakers and headphones and adjustment of their levels, cough muting, PFL cuts, etc.

Talk-back

The talk-back level adjustment and pre-defined intercom keys are located at the bottom right corner of the control module:

FORUM IP has independent pre-set intercom/talkback paths between the console and the studio for monitors and headphones. Additional intercom paths can be created to make easier all the communications within the system. For example, the talk-back microphone signal can be sent to individual hybrid and audio codec feedback.

Also, other intercom locations can be programmed onto any of the 20 programmable keys located in the upper right-hand corner of the control module. The talk-back microphone can be also configured as the auto-control microphone.

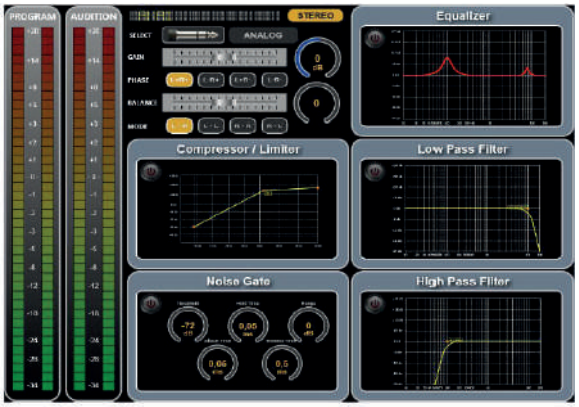
FORUM SCREEN: CONTROL AND DISPLAY SOFTWARE

This software has been designed to be displayed on conventional or touch-screen PC. Suitable for Windows or iOS operating systems, Forum Screen will bring us an easy way to monitor and adjust parameters remotely. Both on an iPad or a PC, it allows for convenient display of the most important console parameters (vu-meters, Phase-correlation, clock and timer, ON AIR and phone status) on an external screen.

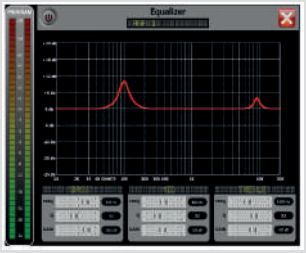
The most important vu-meters are located at the left and shown in maximum resolution. They have fixed names: PROGRAM, AUDITION, AUX 1 and AUX 2.

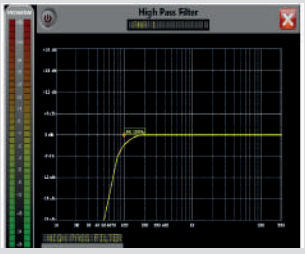
The rightmost vu-meter block displays level of the first three multiplex buses (with configurable label) and CUE. MPX1 and MPX2 vu-meters represent TX and RX in different bars. The rest of them are stereo.

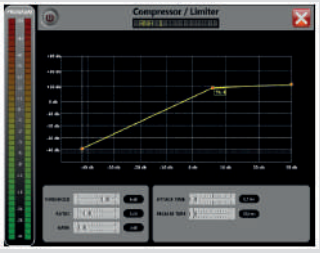
Besides, using this software, adjustments to each channel can be performed from the external terminal. A touch screen is especially convenient here. This way, when a SELECT advanced channel configuration key is pressed, FORUM SCREEN switches to the advanced configuration screen for that channel, where access for modification of the input channel's detailed parameters is provided (such as input selection, gain, phase, balance and mode), without never losing the main vu-meters.



Also, processes (EQ, low-pass and high-pass filters, compressor / limiter and noise gate) can be edited. By touching its graphic representation, the configuration screen for that process is presented. These are great options and helps speeding-up the console configuration tasks. Last, there are also options to speed-up the console configuration tasks.







FORUM VIRTUAL: YOUR CONTROL SURFACE ON A PC OR A TABLET

This application is a fantastic additional feature for the FORUM IP console. The Forum Virtual SW replicates every detail of the control surface on a Windows or iOS device (either a PC or a tablet), allowing for its control in parallel or alternatively to its surface and, thus providing dual or remote management.

It is, in fact, a virtual copy including the whole range of physical controls available in the physical FORUM IP control surface, as well as most advanced functions in its main menu.

You will have full control over FORUM IP without the need to be physically close to the device. You can activate and put “On-Air” fader channels, move the faders, activate and modify eq., gain, balance or pan., save and load memory settings, activate the programmable keys or presets and even handle the phone calls if the console has been equipped with either the fully integrated digital telephone hybrids or external ones.

The vu-meters, control and monitoring section and 8 faders are presented in each screen. There are fader page keys at its top area in order to operate other faders.

MODULAR CONTROL SURFACE

FR CTRL: CONTROL AND MONITORING MODULE

- Flush-mounted or “sunk” into your technical furniture desktop.
- One per mixing console.
- Can be installed separate or grouped adjacent with the fader modules.

FR CH: FADER MODULE

- Flush-mounted or “sunk” into your technical furniture desktop.
- It can be installed separate or grouped adjacent with other fader modules and a control and monitoring module.
- 4 channels per module.
- Largest configuration: 6 modules per console for the SPLIT version or 3 modules for the LITE version.

DESKTOP MODULAR CONTROL SURFACE

There are two desktop chassis formats available, equipped with a control & monitoring module and several fader modules in order to complete the configuration.

FR SDT 12: DESKTOP CHASSIS FOR 12 FADERS

Equipped with 3 fader modules plus 1 control & monitoring one.

FR SDT 16: DESKTOP CHASSIS FOR 16 FADERS

Equipped with 4 fader modules plus 1 control & monitoring one.

CONTROL SOFTWARE APPLICATIONS

Software applications valid for PC or iPad, with or without touch screen, running on Windows or iOS operating systems. Hardware is not included.

FORUMSCREEN

Operation assistance application: when idling, it displays the console’s main parameters. When a channel is selected, it eases the activation and adjustment of that channel’s advanced features and processes. Also, it speeds up the configuration process.

VIRTUALFORUM

Exact representation on a PC of the console’s control surface. It can substitute the physical controls or be operated in parallel.

FR CORE ENGINE: FRAME WITH COMMON I/O MODULES

19” 3U chassis with 14 slots to install input and output cards at the back.
It also includes the following connections, available also at the back:
- MIC/LINE input for talk-back and self-control.
- Studio and control room speaker and headphone outputs.
- 8 GPI (inputs) and 8 GPO (outputs) (both opto-coupled) and 4 relay-operated GPO outputs.
- 2 Ethernet 10/100 T ports.
- 1 external time sync port.

FR FSA: optional redundant power supply for FR CORE.

Additional internal power supply module with standard universal 100-240V 50/60Hz AC input.

OPTIONAL INPUT AND OUTPUT MODULES FOR FR CORE ENGINE

Analogue and digital input output modules in several formats to be inserted into the 14 back slots of FR CORE. Note that FR11 is internal and doesn't occupy a slot.

FR02: DIGITAL INPUT/OUTPUT MODULE:
- 4 AES/EBU Digital stereo inputs.
- 4 AES/EBU Digital stereo outputs.
- SRC on all inputs.
- AES/EBU and SPDIF digital audio formats are supported.

FR03: MICRO/LINE INPUT MODULE:
- 2 MICRO or LINE inputs - switch or menu selectable.
- 48-volt Phantom Power ON/OFF - switch or menu selectable for each input.
- Up to 4 of these modules can be installed per console.

FR04: ANALOGUE INPUT MODULE:
- 8 electronically balanced line-level mono inputs.
- Configurable as 4 stereo inputs.

FR05: ANALOGUE OUTPUT MODULE:
- 8 electronically balanced line level mono outputs.
- Configurable as 4 stereo outputs.

FR11: SYNCHRONOUS MULTICHANNEL AUDIO LINK AES 10 MADI:
Handles up to 64 audio channels in each direction allowing FORUM IP to communicate with another console or a router hundreds of meters away using a simple pair of fiber-optic lines. Two bi-directional fiber-optic ports (input and output).
The SFP port is built into the console and does not occupy an I/O slot. This module cannot be used simultaneously with the FR14 module (AoIP).

FR14: MULTICHANNEL AoIP NETWORK LINK, DANTE™ or AES67:
Incorporates 32 AoIP input channels to the console, while publishing 32 audio outputs to be used by any other device in the network.
- Two RJ45 connectors (operating either in redundant or Daisy chain modes).
- Up to two cards of these can be installed in a console. It can't be used simultaneously with FR11.

FR21: BLANK INPUT/OUTPUT MODULE COVER:
Covers unused input and output module slots on the rear of the chassis.

FR22: USB DIGITAL INPUT/OUTPUT MODULE:
- 4 USB Digital stereo Inputs/Outputs.
- SRC on all inputs.
- "USB audio standard device" implementation for computer operating systems.

FR33: DIGITAL TELEPHONE HYBRID MODULE:
- Telephone line connector.
- Telephone set connector.
- Up to two of these cards can be installed in a console.

MOTOR M_CORE: FIXED CONFIGURATION FRAME

19" 2U chassis with the following connections:

Power and control
- Surface control and power supply connection.
- General power supply connection (redundant power supply is optional).
- 8 general purpose control inputs (GPI), 8 outputs (GPO), plus 4 relay outputs.
- Ethernet connection to connect the console to other devices.

Basic audio Inputs and Outputs :

Inputs:
- 4 mic./line mono inputs, switchable from the control surface. Phantom power supply, also switchable from the control surface.
- 2 USB (I/O) digital stereo inputs.
- 4 AES/EBU digital stereo inputs that can be configured as SPDIF.
- 12 analogue inputs (can be configured as mono inputs or as 6 stereo inputs).

Outputs:
- 2 USB (I/O) digital stereo outputs.
- 4 AES/EBU digital stereo outputs that can be configured as SPDIF.
- 8 analogue outputs (can be configured as mono inputs or as 4 stereo outputs, or, alternatively as 3 stereo outputs and one secondary headphone output).

Dedicated control and monitoring outputs:
- Analogue stereo outputs for control, studio, CUE and studio primary headphone monitoring.
- Analogue stereo outputs for amplified control headphones, jack ¼".

OPTIONAL MODULES FOR M_CORE ENGINE

Internal power supply redundancy, inputs and outputs in several formats.

MCORE FA: REDUNDANT POWER SUPPLY MODULE
Additional internal power supply module with standard universal 100-240V 50/60Hz AC input.

MCORE HYB: DUAL DIGITAL PHONE HYBRID MODULE
Internal card with two digital phone hybrids with DSP echo cancellation.

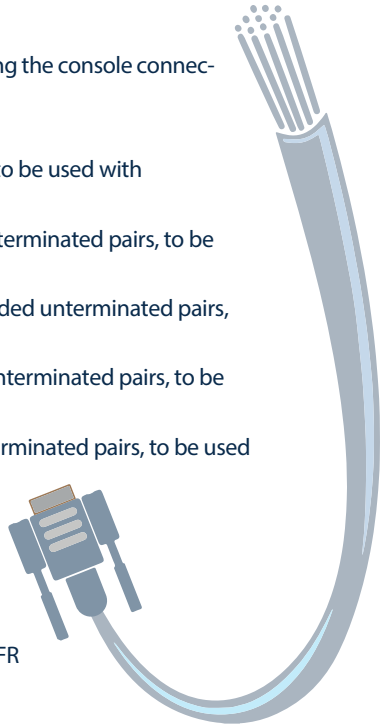
MCORE MADI: MADI MODULE
Carries 64 audio channels in each direction to communicate the console with a router up to 2km away using a simple fiber optics pair.

MCORE DANTE 16: 16 CHANNELS AoIP MODULE
Optional digital multichannel link. 16 bidirectional channels over two Ethernet cables for connection with DANTE digital multichannel audio networks. It can be used to interconnect to other consoles, matrices or AoIP multichannel devices. The two Ethernet connectors are installed from factory in the Core.

MCORE DANTE 32: 32 CHANNELS AoIP MODULE
Optional digital multichannel link. 32 bidirectional channels over two Ethernet cables for connection with DANTE digital multichannel audio networks. It can be used to interconnect to other consoles, matrices or AoIP multichannel devices. The two Ethernet connectors are installed from factory in the Core.

WIRING ACCESSORIES

In order to facilitate a quick connection of the console in any installation, audio and data cables using the console connectors can be provided.



DB15M GPIO: male DB15 connector with 6-meter long unterminated wire for GPI, GPO or relays to be used with M_CORE engines.
DB15M AU: male DB15 connector with 6-meter long cable including 4 balanced and shielded unterminated pairs, to be used for 4 inputs in FR CORE or 4 inputs or outputs in M_CORE engines.
2 DB15M AU: two male DB15 connectors with 6-meter long cable including 8 balanced and shielded unterminated pairs, to be used for 8 inputs in FR CORE or 8 inputs or outputs in M_CORE engines.
DB15F AU: female DB15 connector with 6-meter long cable including 4 balanced and shielded unterminated pairs, to be used for 4 outputs in FR CORE engines.
DB9F AU: female DB9 connector with 6-meter long cable including 2 balanced and shielded unterminated pairs, to be used for 2 monitoring outputs in FR CORE engines.
DB9M GPI: male DBP connector with 6-meter long unterminated wire to be used for GPI in FR CORE engines.
DB9F GP0: female DB9 connector with 6-meter long unterminated wire to be used for optically-coupled GPO in FR CORE engines.
DB9F RY: female DB9 connector with 6-meter long unterminated wire for relay-operated GPO in FR CORE engines.

ADDITIONAL EQUIPMENT WITH AoIP INPUT AND OUTPUTS

NETBOX Audio interfaces

Netbox interfaces allow the in or out of audio channels from remote locations to the AoIP Network. These network nodes increase the overall amount of local and remote audio channels with IP network connectivity.

NETBOX 32 AD

Features 16 mono analogue (or 8 stereo pairs) + 8 stereo digital channels. Thanks to its large input / output capacity, it is especially suited for central control and link rooms, or to expand the number of analogue and digital audio channels in large mixing consoles.

NETBOX 8 AD

Provides 8 input and 8 output channels, distributed in 4 analogue mono plus 2 digital stereo connections. Stereo digital signals can be configured to comply with AES/EBU or SPDIF standards. The second digital stereo one can also be switched to a USB connector in order to facilitate the connection to a workstation. It can be useful to connect the console to recording cabins, booths or other auxiliary areas.

NETBOX 4 MH

Provides4 micro / line inputs, 4 line outputs and 4 stereo headphone outputs. Includes 4 GPI and 4 GPO, as well as additional GPIOs for signaling boxes such as Studiobox. It can be powered using PoE.

OTHER DANTE INTERFACES

You can use 3rd parties devices in order to increase the I/O capacity of the console.

Functionality

- Cough muting, studio and control room ON-AIR signalling, fader start, remote PFL, talk-back, automatic speaker cut-off.
- N-1 output configuration.
- Integrated external equipment control (AEQ hybrids and codecs) via programmable key section.
- Option of pre-fader / post-fader behaviour for all routing.
- Control communications via 10/100 Ethernet connection using.
- TCP/IP protocol.
- Selectable boot-up using last used settings or default settings.
- System signals can be assigned to any control channel.
- System settings are stored on the on-board memory: 1 default basic factory configuration and 6 user defined configurations.

General Features

- Control and locutory monitoring, CUE, headphones and configurable vu-meters for all signals in the system.
- 4 direct-routing buttons on each channel.
- Pre-fader CUE monitor output.
- Silent operation thanks to convection cooling. FORUM IP is ideally suited for self-operated applications.
- Two built-in stereo headphone outputs. Also, a stereo line output can be assigned to a pair of secondary headphones.
- 2 stereo VU meters.
- Test tone generator.
- Clock (allows for external synchronization), timer and stopwatch.
- Redundant power supply (optional).

Common Engines Connectivity

- Integrated studio and control room speaker and headphone outputs.
- Integrated CUE output.
- Phantom power and electronic balancing on microphone inputs.
- Electronically balanced analogue line inputs and outputs.
- Transformer balanced digital inputs and outputs.
- Sample Rate Converters (SRC) on digital inputs.
- Supports AES/EBU, S-PDIF and USB digital formats.
- MADI bi-directional fiber-optic connection for 64 digital audio channels (optional).
- IP Connection through AoIP Multi-channel using DANTE™ / AES67.
- 8 GPI and 8 GPO (opto-isolated) and 4 GPO relay outputs.

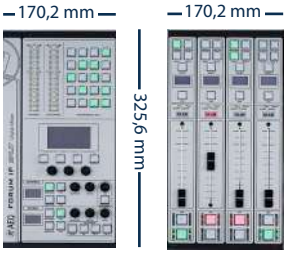
System Processing Capabilities

- 48 kHz, 24 bit internal sampling frequency.
- ± 18 dB gain control (analogue and digital signals).
- Selectable balance/panorama control on all channels.
- Selective phase inverter.
- Audio processing for 20 stereo signals.
- Pre-defined audio processing that allows manual adjustment.
- Available audio effects: 3-band parametric equalizer, high pass and low pass filters, compressor/limiter, and noise gate.
- Audio gain adjustment for up to 128 inputs, including those embedded.

Control surface modules physical specifications

FLUSHMOUNT SURFACE

4-fader and control / monitoring modules (**with side trims sizes**):
Width: 190,2 mm (6 3/4").
Depth: 345,6 mm. (13 5⁄8").
Height: 50 mm (2 ").



Flushmount dimensions according to configuration:

1 Module	3 Modules	5 Modules	7 Modules
Width: 176 mm	Width: 517 mm	Width: 857 mm	Width: 1198 mm
Depth: 332 mm	Depth: 332 mm	Depth: 332 mm	Depth: 332 mm

2 Modules	4 Modules	6 Modules
Width: 346,2 mm	Width: 687 mm	Width: 1028 mm
Depth: 332 mm	Depth: 332 mm	Depth: 332 mm

DESKTOP CHASSIS

For three fader modules plus one control and monitoring module:
Width: 702 mm
Depth: 456,3 mm
Height: 66,2 mm

For 4 fader modules plus one control and monitoring module:
Width: 872,4 mm
Depth: 456,3 mm
Height: 66,2 mm

FR CORE engine specific features

Extractable modules for easy maintenance.

Inputs and outputs

- Admits up to 14 multiple input and output modules, 4 of them can be dual micro-line, two digital phone hybrid and two AoIP.
- Additional integrated micro-line input for talkback and self-control.
- Multichannel modules: AoIP through 1 or 2 optional 32-channel Dante AES67 modules. Alternatively, MADI through optional internal 64 I/O module.

Width: 482,6 mm. (19").
Height: max. 3 uds de rack, 135 mm (5 3/8").
Depth: 310 mm (12 ¼").

M_CORE engine specific features

Basic inputs and outputs

- 4 mono micro / line inputs
- 2 digital stereo USB inputs / outputs
- 4 digital stereo AES / EBU (SPDIF switchable) outputs
- 12 analogue inputs and 8 outputs (individually configurable as stereo pairs).

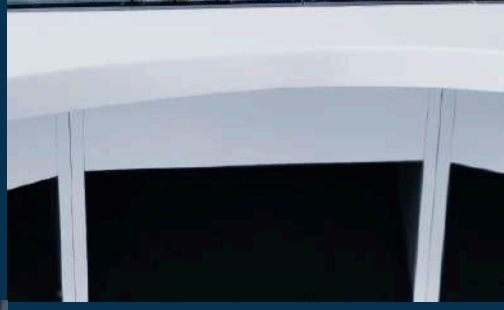
Optional inputs and outputs

- Dual internal digital phone hybrid with two line connectors and another two for the SET.
- Multichannel modules: 16 or 32 bidirectional channels through internal AoIP Dante AES67 module. Alternatively, MADI through optional internal 64 I/O module.

Width: 482 mm (19").
Height: 2U rack = 89 mm. (3 ½").
Depth: 330 mm. (13").

FLEXIBLE

EASY TO USE



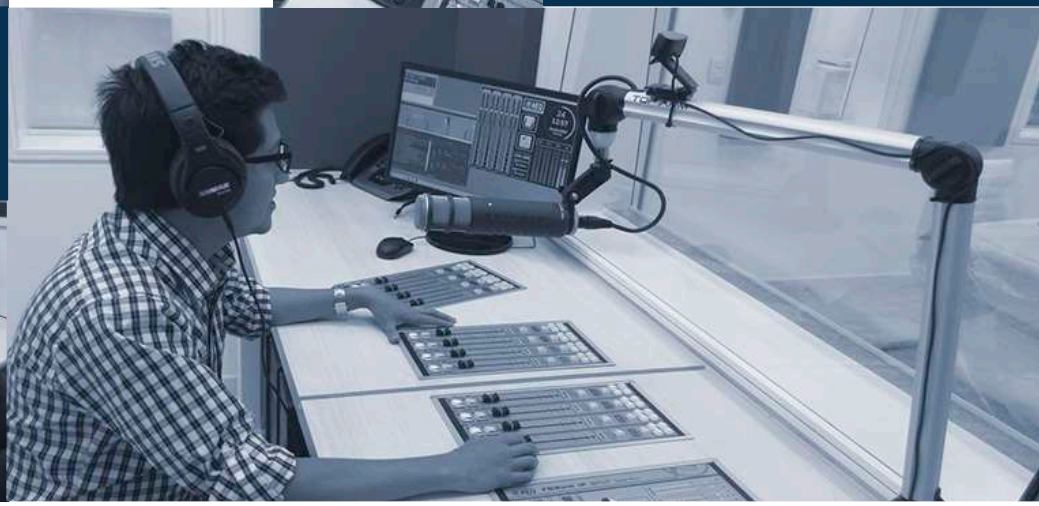
REMOTE SUPPORT

WORLDWIDE

PLUG & PLAY

INTUITIVE SOFTWARE

NATIVE IP



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