



# FORUM

## AEQ FORUM



**SIMPLY DIGITAL**

**Now with two sizes of chassis: Up to 12 and 20 Faders**

**COMPACT DIGITAL AUDIO MIXER  
FOR RADIO AND TELEVISION**



# Product Overview

The **FORUM Compact Digital Audio Mixing Console** represents the culmination of AEQ's many years of technological development and experience producing the highest quality digital consoles for the broadcast industry. It is based upon our ARENA Digital Console found in use at hundreds of high-level studios. Our valued customers asked us for a powerful, versatile, yet simple product to digitally replace analog consoles found in most radio and television studios today. FORUM offers just that – an unprecedented feature set, extremely simple installation and configuration, coupled with intuitive and totally agile operation.



## Main Features

The **FORUM** is a self-contained digital audio mixing console specifically designed to meet the most rigorous demands of the radio and television broadcast industry. Its flexible design allows it to readily be adapted to any ON-AIR application.

FORUM incorporates all of the features necessary for use in environments requiring: automatic monitor speaker cut-off, cough muting, fader start, control signaling, interface signaling for automation of external equipment, external communications management, intercom, etc.

Thanks to its self-contained modular design and reduced footprint, FORUM adapts perfectly to any environment: auto-control, studio control, television production, sound production, mixed configurations, integration in large installations, etc.

One of the primary features which sets the FORUM apart is its internal routing capability: any combination of 64 inputs/outputs of analog, digital, or microphone, plus an additional 64 input / output signals via a MADI multi-channel link.

Simplicity and control are combined in FORUM to satisfy ease of operation - from the most basic to the most advanced requirements. The control surface can be configured with a minimum of 4 faders, and easily expanded to 8 or even 12 channels. (up to 16 and 20 channels with the FRGRAND chassis).

Each of FORUM's basic functions such as setup, level adjustment, and signal routing have their own specific control for each channel, while lesser used settings are grouped into contextual controls common to all channels and are accessible by just one or two button pushes: simplicity and ease of use makes for very dynamic system control with little chance of operator error.



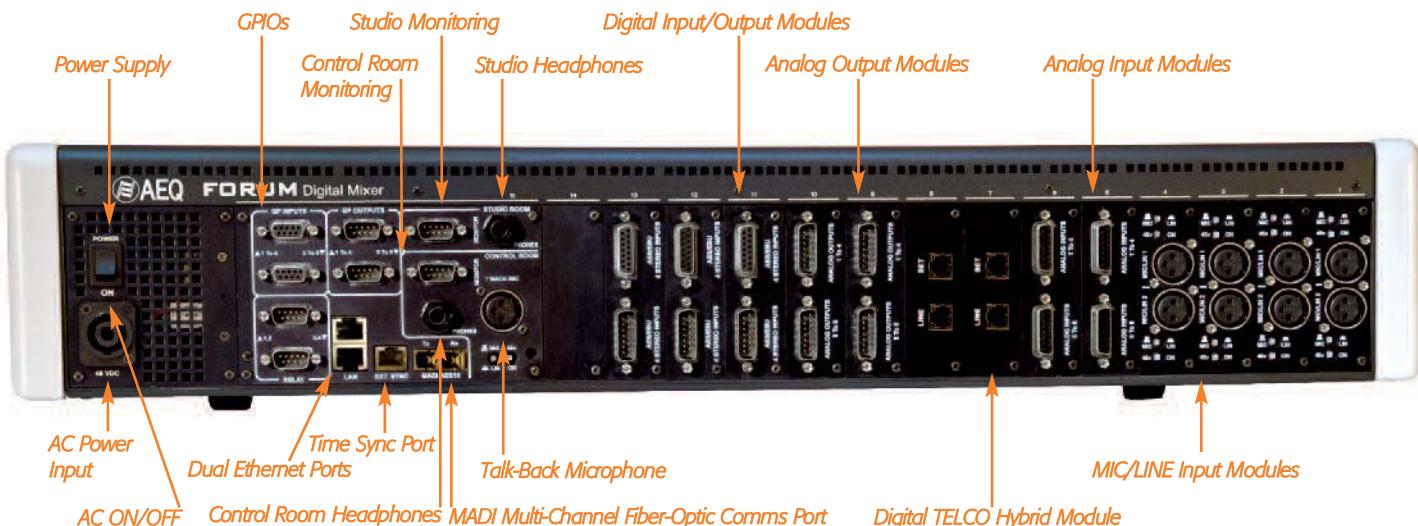
FORUM's configuration allows any signal present within the system to be freely assigned to any control channel, and signal distribution configuration is done on the control surface itself.

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

Two Ethernet connectors enables external connectivity for the "AEQ FORUM Configuration" software application. Further, these ports can also be used for the optional software application "VIRTUAL FORUM", that provides the AEQ FORUM with a powerful remote control.



# Connectivity & Flexibility



A major consideration in the design of the FORUM was its ease of installation and configuration. Hence it is self-contained and has a low profile format – it can be countersunk flush into a work surface, or simply placed on top of it.

FORUM's flexible I/O capabilities allows for the interfacing with external devices for cough muting, device remote control, ON-AIR lights, etc. by using its 8 monitor inputs (GPI), 8 control outputs (GPO), and 4 output control relays.

For monitoring and control, FORUM's mainframe has built-in outputs for both studio and control room headphones and speakers, and a microphone input for auto-control or coordination.

FORUM's mainframe also has two built-in Ethernet ports for configuration and control.

For general purpose audio inputs and outputs, FORUM can be fitted with a bi-directional MADI fiber-optic interface capable of handling up to 64 digital inputs and outputs. FORUM also has 14 slots to accommodate input / output modules including: digital, analog, microphone/line, and TELCO hybrids.

To facilitate cabling, optional audio and data cables with mating DB connectors are available.



Low profile self-contained format – can be used on top of or embedded into the work surface.



# Control Surface (Channels)

FORUM's control surface is modular. Each fader module contains 4 independent faders. The control surface can accommodate a basic 4 fader, an intermediate 8 fader, or a fully populated 12 fader channel configuration. (up to 16 and 20 channels with the FRGRAND chassis).

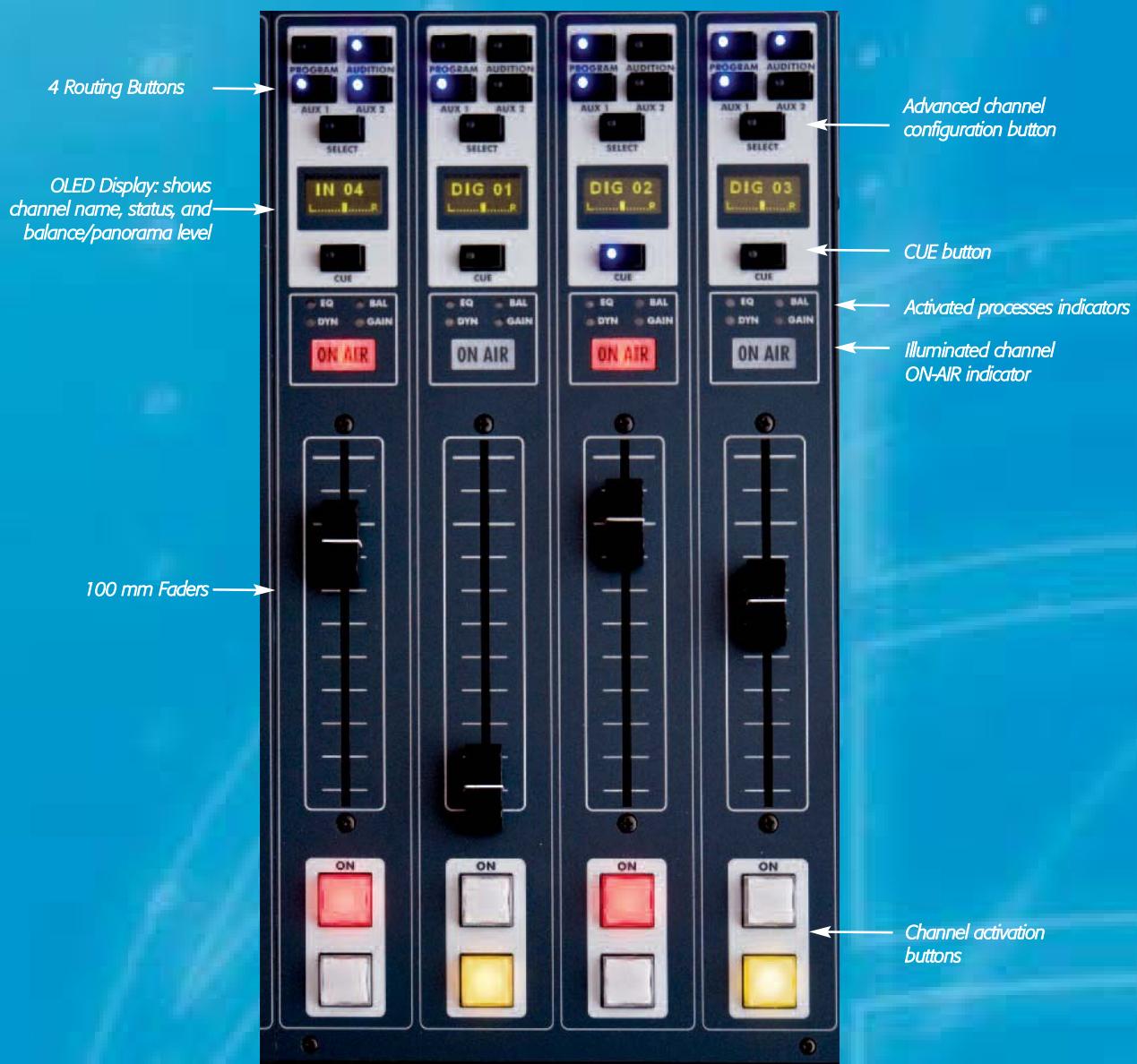
All of FORUM's signal channels are completely user-definable. System signals can be assigned to channels so a particular channel can control one signal now, and a different signal later on. This facilitates unique signal to channel distribution, and allows FORUM to easily be adapted to distinct programming requirements and to suit different operator's needs.

In addition, signal/channel configurations can be stored in memory allowing any configuration to easily be recalled for use in a particular scenario or by a particular operator.

FORUM packs a tremendous amount of power and flexibility into its small footprint. In addition to signals present on the control surface which can be mixed, processed, and sent to any output channel, FORUM can adjust the level and routing of up to 128 x 128 embedded audio signals.

At the top of each channel section are 4 routing buttons and 1 channel selection button which are used to assign common advanced configuration parameters: (gain, dynamics, equalization and balance).

Next is an OLED display screen which shows the channel's name and status as well as the balance level. Beneath it is a CUE button, along with 4 LEDs which indicate activity or instability on equalization, balance, dynamics, gain, and finally an illuminated ON-AIR status indicator. The channel section ends with the fader itself and the channel's on/off buttons.



# Control Surface (Settings, Programming, Monitoring and Talk-Back)

## ADDITIONAL FUNCTIONALITY

FORUM allows the user to program pre-defined special functions such as: defining GPIOs and GPOs, controlling hybrids and codecs, sending signals to the VU meters, or setting up additional intercom routing. 15 programmable keys are provided to enable/disable the programmed function assigned to that key.

## ADVANCED CONFIGURATION DISPLAY AND CONTROLS

Each of FORUM's fader channels has an advanced settings button. Configuration is carried out by using the multi-function integrated OLED display in the monitor and control section on the right side of the console. The rotary encoder associated with the display is used to scroll through the contextual graphics menus.

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

## MONITORING

The control surface also has two integrated high precision digital stereo VU meters, each of which can be assigned to display either Master 1 or Master2/CUE outputs.

FORUM has two sections for the independent monitoring of the control room and the studio. There are separate level controls for control room speakers, studio speakers, and headphones, as well as FORUM's built-in CUE speaker. FORUM's studio and control room monitor sections each have an OLED display where selections can be seen.

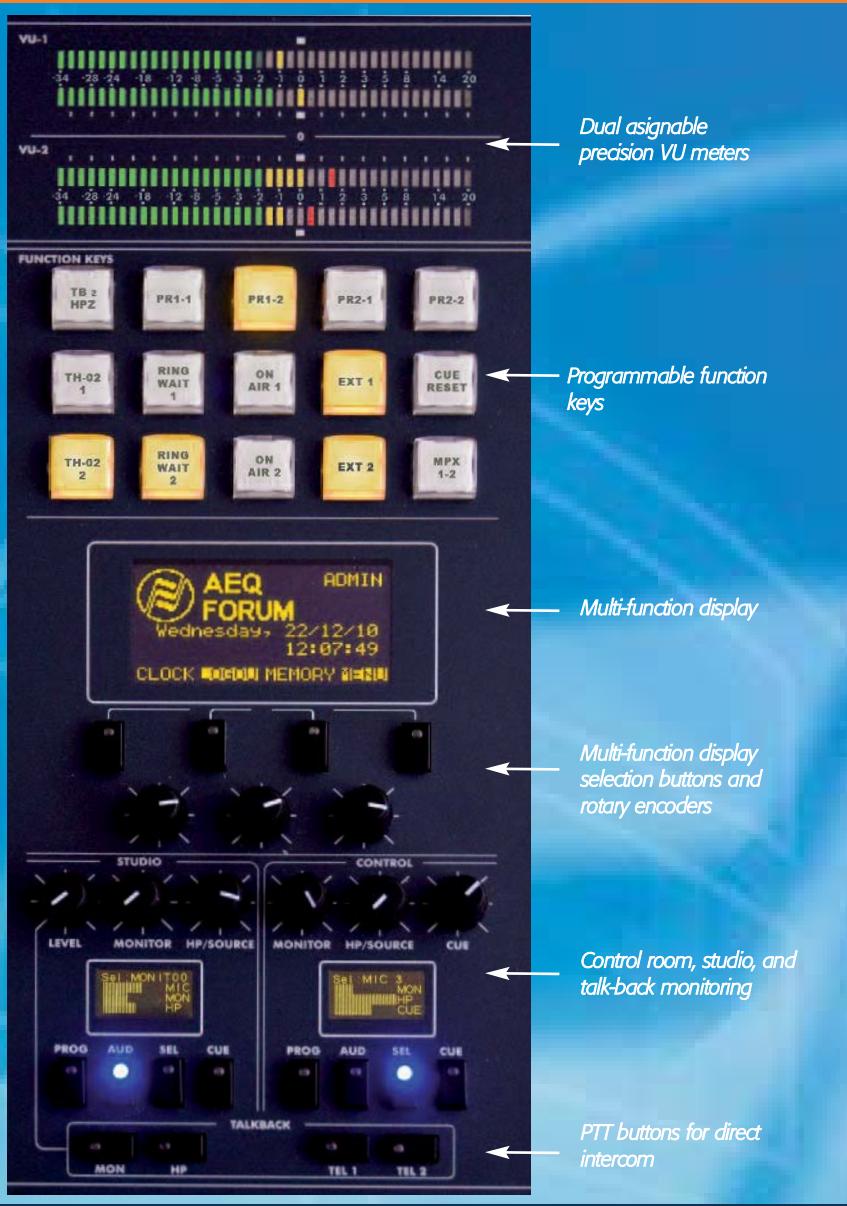
FORUM includes independent and centralized control of ON-AIR signaling, signals assigned to speakers and headphones and their levels, cough muting, PFL cuts, etc.

## TALK-BACK

FORUM has independent pre-set intercom paths between the console and the studio for speakers and headphones.

Additional intercom lines can be established to facilitate management of communication within the system. For example, you can send the talk-back microphone signal to individual hybrid and audio codec returns.

The talk-back microphone can be also used as the auto-control microphone if so designated.





# System Components

AEQ's FORUM Digital Console was designed to be completely modular to simplify system expansion and allow modifications to accommodate your changing work environment and system demands. Modularity also greatly simplifies maintenance since virtually all modules are hot-swappable and can be moved or replaced without affecting the broadcast signal.

## FR01/FRGRAND: BUILT-IN COMPONENT FEATURES

### MAINFRAME

The standard frame FR1 will accommodate up to 12 faders. Channels are grouped into 4 faders per module, and up to 3 fader modules per control surface, along with the monitoring and control module.



monitoring and control module.

Both frames, and in addition to the built-in inputs and outputs, have slots for 14 audio input and output modules, each of which can be configured according to the user's specific requirements and working situation. An integrated CUE speaker is also included.

### INTERNAL DC POWER MODULE AND STANDARD EXTERNAL POWER SUPPLY



Internal DC power module and standard external Power Supply,

auto-ranging 100-240 V. 50/60 Hz. Noiseless ventilation through natural convection.

### BUILT-IN INPUTS AND OUTPUTS

Features found on the rear of FORUM's chassis include:

- MIC/LINE input for talk-back and auto-control
- Studio and control room speaker and headphone outputs
- 8 GPI (inputs) and 8 GPO (outputs) (both opto-isolated) and 4 GPO relay outputs.
- 2 Ethernet 10/100 T ports.
- 1 external time sync port.



### CONTROL SURFACE MONITOR AND CONTROL SECTION



- Two stereo VU meters.
- 15 programmable "soft keys".
- OLED multi-function display and associated rotary encoder selectors.
- Independent studio and control room speaker sections.
- Intercom to studio and external lines.

## ADDITIONAL COMPONENTS

### FRCH: FADERS MODULES

**(1, 2 or 3 are required per console with FR1 Chassis - up to 5 with the FRGRAND)**

4 channels per module - includes:

- 100 mm faders with CHANNEL ON/OFF and CUE buttons.
- built-in multi-function OLED display on each channel displays type of input, channel name, and balance/panorama.
- 4 hotkeys for routing to prevalent outputs.
- Advanced configuration access button.



### FR20: BLANK FADER MODULE COVER

Covers unused fader module areas on the control surface.

### FR11: MADI MODULE

Handles up to 64 audio channels in each direction allowing FORUM 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 chassis with ports are built into the console and does not occupy an I/O slot.

### FR90: OPTIONAL REDUNDANT POWER SUPPLY

2 RU chassis containing dual hot-swappable power supply modules.

### ANALOG AND DIGITAL INPUT AND OUTPUT MODULES

(14 maximum per console)

#### FR03: MICRO/LINE INPUT MODULE

- 2 MICRO or LINE inputs - switch selectable.
- 48 volt Phantom Power ON/OFF - switch selectable on each input.



#### FR04: ANALOG INPUT MODULE

- 8 line level mono inputs, electronically balanced.
- Configurable as 4 stereo inputs.



#### FR05: ANALOG OUTPUT MODULE

- 8 line level mono outputs, electronically balanced.
- configurable as 4 stereo outputs.



#### FR02: DIGITAL INPUT/OUTPUT MODULE

- 4 AES/EBU Digital stereo inputs.
- 4 AES/EBU Digital stereo outputs.
- SRC on all inputs.
- Digital Áudio formats supported AES-EBU or SPDIF.



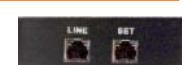
#### FR22: USB DIGITAL INPUT/OUTPUT MODULE

- 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.



#### FR21: BLANK INPUT/OUTPUT MODULE COVER

Covers unused input and output module slots on the rear of the chassis.

## OPTIONAL SOFTWARE

### VIRTUAL MIXER PC APPLICATION "VIRTUAL FORUM"

Windows PC Software with the full functionality of the AEQ FORUM control surface. Allows the operator to work in parallel or temporarily substitute the hardware control surface. Can be operated locally or remotely over a data network.



### STATUS VISUALISATION SOFTWARE "FORUM SCREEN"

Windows PC Software with the FORUMS' most important signals through Vu-/peak- meters including signalling routed channels, Microphone On-Air lights, Telephone lines (hybrid) status, System clock and date.



## CABLING ACCESSORIES

To make your installation smooth and easy, the console can be ordered with our pre-made data and audio cables. The standard cables comes in the length of 4 m with DB type connectors on the console side and open-end on the other. The un-terminated end can be soldered into your patch panel, have terminals lugs installed, or used in a punch-down block.

### FR CAB GPI

DB9 male connector for GPIOs.

### FR CAB GPO

DB9 female connector for GPOs or relay contacts.

### FR CAB MON

DB9 female connector for 2 monitoring outputs.

### FR CAB INP

Male DB15 connector for 4 inputs channels.

### FR CAB OUT

Female DB15 connector for 4 output channels.



*Cables terminated with connectors on both ends and of other lengths can be supplied upon request.*

## TECHNICAL SPECIFICATIONS

### Functionality

- Cough mute, studio and control room ON-AIR signaling, 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 for all routing.
- Control communication 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 in the on-board memory: 1 default basic factory configuration and 6 user defined configurations.

### General Features

- Configurable monitoring for all system signals.
- 4 direct-routing buttons on each channel.
- Easily removable control surface modules for easy maintenance.
- Built-in pre-fader monitor speaker.
- Silent operation by convection cooling. FORUM is ideally suited for self-operated applications.
- Integrated talk-back microphone input.
- Built-in headphone outputs.
- 2 precision stereo VU meters.
- Test tone generator.
- Clock (allows for external synchronisation), timer and stopwatch.
- Redundant power supply (optional).

### Inputs And Outputs

- Supports a maximum of 14 input/output modules: 4 can be dual MICRO / LINE modules, and 2 can be digital hybrids.
- Integrated MICRO/LINE input for talk-back and self-operation.
- Integrated studio and control room speaker and headphone outputs.
- Integrated CUE output with built-in speaker.
- Phantom power and electronic balancing on microphone inputs.
- Electronically balanced analog line inputs and outputs.
- Transformer balanced digital inputs and outputs.

- Sample Rate Converters (SRC) on digital inputs.

- Supports AES/EBU and S-PDIF digital formats.

- MADI bi-directional fiber-optic connection for 64 digital audio channels (optional).

- 8 GPI and 8 GPO (opto-isolated) and 4 GPO relay outputs.

### System Processing Capabilities

- 48 kHz, 24 bit internal sampling frequency.
- ± 12 dB gain control (analog 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 equalizer, high pass and low pass filters, compressor/limiter, and noise gate.
- Audio gain adjustment for up to 128 inputs, including those embedded.

### Physical Characteristics

Self-contained chassis FR1 with the following dimensions:

- Width: 702 mm (27 5/8").
- Depth: 548 mm (21 1/2").
- Height: 135 mm (5 3/8").
- Weight: ~15 kilos (~33 lbs) (depending upon configuration).

Self-contained chassis FRGRAND with the following dimensions:

- Width: 1042 mm (41 1/8").
- Depth: 548 mm (21 1/2").
- Height: 135 mm (5 3/8").
- Weight: ~22 kilos (~48 lbs) (depending upon configuration).



# FORUM

## AEQ FORUM

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