



CAPITOL IP 8 AND 12 FADERS

Ultra-Compact Digital Audio Console for Radio and Television

CONTROL AND FLEXIBILITY

AT THE HIGHEST LEVEL





Main Features

CAPITOL IP is a family of digital audio mixing consoles for Radio and Television, specially designed for ON-AIR broadcast control and adaptable to different working scenarios.

The AEQ CAPITOL IP incorporates all of the features necessary at the majority of stations: IP Multi-channel audio networking, automatic monitor mute, cough muting, fader-start, control signalling, interface signalling and control for automation of external equipment, external communications management, intercom, etc.

Thanks to its design and reduced footprint, AEQ CAPITOL IP adapts perfectly to any environment: auto-control, traditional studio-control room, production, production, mixed configurations, integration with larger systems, etc..

Simplicity and power of control are combined in CAPITOL IP to cover both basic and advanced operational needs. CAPITOL IP is available in two versions of control surfaces: 8 and 12 faders.

Each of CAPITOL IP's basic and activation functions, such as setup, level adjustment, and signal routing have their own specific controls for each channel. Less frequently used settings are grouped into contextual controls common for all channels and are accessible by just one or two key-strokes: simplicity and intuitive use provides for very dynamic system control and also greatly reduces operator error.

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



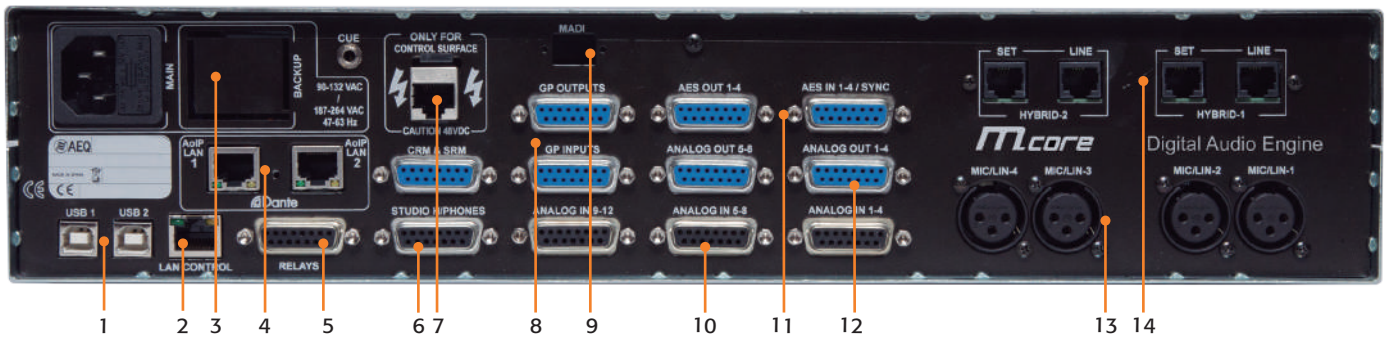
CAPITOL IP has a built-in memory bank where each signal's settings are stored: control surface signal distribution, output bus routing, setup off-set parameters, effects, etc. This allows the console to easily be adapted to different programming needs and unique technical requirements.

The Ethernet connector enables external connectivity for the optional software applications "CAPITOL SCREEN" and "VIRTUAL CAPITOL IP" that provides the mixer with a powerful remote control. If the console has AoIP connectivity, it has two more Ethernet ports: A Primary AoIP port and a Secondary AoIP port that allows for redundant AoIP Networks.



OUTSTANDING FEATURES

- AEQ CAPITOL IP is a digital audio mixing console specifically designed for broadcast ON AIR applications.
- Audio processing: 3 band equalizers, high pass and low pass filters, compressor/limiter and noise gate.
- Up to 32 (or 16 Stereo) summing buses for program, auxiliary, monitoring and clean feed outputs. Possibility to send directly from each input to several outputs without using the sum bus.
- Capitol Screen, through a touch screen PC or iPad PC simplify the control of the surface, thanks to its monitoring parameters and indicators.
- Virtual Capitol option, allows the surface remote control from an app that faithfully reproduces every detail of the control surface and the operational features.



- 1 USB digital audio Inputs/Outputs
- 2 LAN
- 3 Optional redundant Power supply
- 4 Optional Audinate DANTE™ /AES67 AoIP Digital audio multi-channel Network connectivity
- 5 Relay GPOs
- 6 Monitor Output
- 7 Control surface connection

- 8 Opto-coupled GPIOs
- 9 Optional MADI Digital audio multi-channel connection
- 10 Analog Inputs
- 11 AES/EBU Inputs/Outputs
- 12 Analog Outputs
- 13 Mic/Line Inputs
- 14 Optional dual line digital telephone hybrid

CONNECTIVITY

CAPITOL IP is using the Compact Audio Engine Mcore as the main I/O unit. MCORE is an independent audio engine for inputs, outputs and processing, with mixing, dynamics, equalization and filter functions. It was conceived to provide a fixed number of necessary Inputs and Outputs and only offers a few options to make it fully operational out of the box and very cost efficient. Options are redundant power-supply, dual digital telephone hybrid and AoIP connectivity through DANTE™/AES67 or MADI I/Os.

A major design consideration of the CAPITOL IP was ease of installation and configuration. CAPITOL IP's flexible I/O capabilities allows it to be interfaced with external devices for cough muting, device remote control, ON-AIR lights, etc. through its General-Purpose Inputs and Outputs. CAPITOL IP is well prepared with a total of 8 opto-coupled GPI/O's and 4 GPO's through relay contacts. Further, an additional set of in excess of 240 Virtual GPI/O ports are configurable through the powerful CAPITOL IP Setup Application.

For monitoring and control, the CAPITOL IP audio engine has a set of pre-defined I/O's for Control room Headphones, Studio primary and secondary Headphones, Control, Studio and CUE monitors. CAPITOL IP also has a built-in Ethernet port for configuration and control through Software applications for Windows based PC's.

SURFACE VERSIONS



8 FADER DESKTOP CHASSIS



12 FADER DESKTOP CHASSIS



8 FADER FLUSH-MOUNTED CHASSIS



12 FADER FLUSH-MOUNTED CHASSIS

The CAPITOL IP 8 and 12 fader version control surfaces can be presented in two different finishes; either mounted in a desktop chassis with white wooden side-trims and hand rest, providing the control surface with an ergonomic inclination for the operator or; without desktop chassis, to be flush-mounted or counter-sunk, integrated with the furniture counter-top.



Control Surface (channels)

CAPITOL IP's control surface provides 8 or 12 fader channels and an area dedicated for signal adjustments, programming, monitoring and talkback.

All of CAPITOL IP's input signal channel distribution is completely user-definable. System signals can easily be assigned and re-assigned to the channel faders; a particular channel can control any given signal at any moment. This enables the dynamic and flexible signal distribution on the control surface and allows CAPITOL IP to adapt to different programming requirements and to suit different operational needs. In addition, different channel assignments can be stored in memories that can later be recalled and loaded to suit different operators or operational workflows.

CAPITOL IP packs a tremendous amount of power and flexibility into its small footprint.

In addition to signals present on the control surface and that can be mixed, processed, and sent to any output channel,

CAPITOL IP can adjust the level and routing of all its available physical channels, including those that are not "visible", i.e. not assigned to any specific channel.

At the top of each channel section there are 2 routing buttons and 1 channel selection button that is used to assign the channel to the common controls for the advanced configuration parameters: (gain, dynamics, equalization, balance, and send to Auxiliar channels or Telephones).

Next is an OLED display screen which shows the channel's name and status as well as the balance level. Beneath, a CUE button along with a LED that indicates activity or applied process, i.e. equalization, filters, dynamics and gain.

Finally, the last two elements are the channels ON/OFF button that at the same time serves as the channel ON-AIR status indicator and the 100 mm (4") fader.



- 1 2 main routing switches.
- 2 Channel selection switch for advanced configurations.
- 3 OLED Display: shows channel name, status, and balance/panorama level.

- 4 CUE switch.
- 5 Active process Indicator.
- 6 Channel ON/OFF switch and ON-AIR status indicator.
- 7 100 mm (4") fader.

VU meters

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

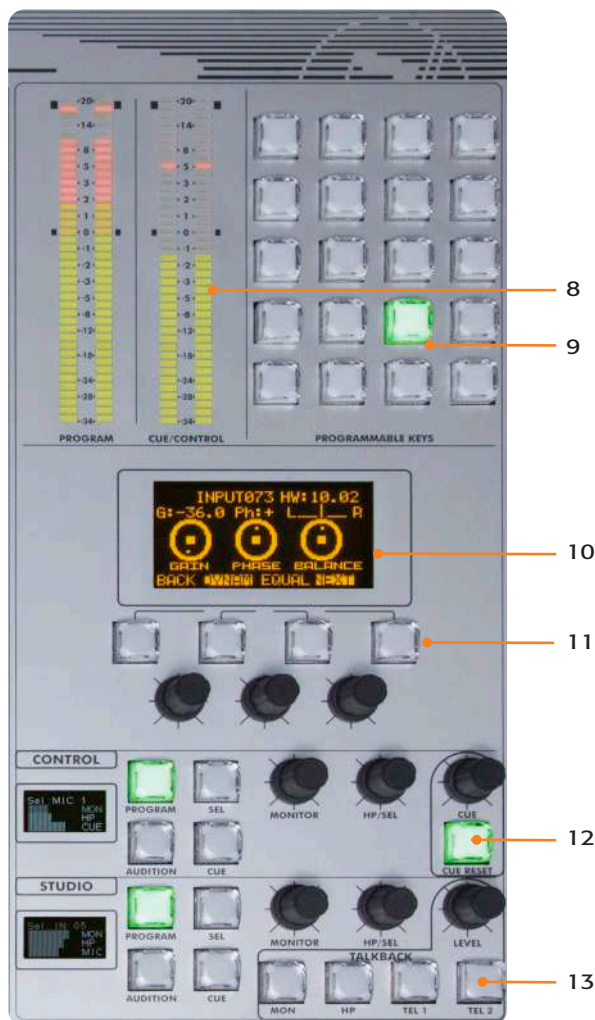
Programmable keys

AEQ CAPITOL allows the user to program pre-defined special functions such as: GPI's and GPO's, controls for hybrids and audiocoders, sending signals to the VU meters, or setting up additional intercom routing. 20 programmable keys are also provided to assign programmed functions and to enable/disable such functions during operations.

Advanced configuration display & controls

Each CAPITOL's fader channels have 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 encoders and switches associated with the display are used to scroll through the contextual graphic menus.

General functionality includes adjustment and instantaneous activation of audio processing: equalization, filters, limiters, etc., memory management and configuration, general effects disconnect, timer, stopwatch, phase change, test signal insertion, etc., CAPITOL SCREEN app can manage these functions externally.



Monitoring

CAPITOL IP has two sections for the independent monitoring of the control room and the studio. There are separate level controls for control room speakers (monitors), studio speakers (monitors), and headphones, as well as CAPITOL IP's additional CUE monitoring output that is available on the MCore 2RU engine.

The studio and control room monitor sections have an OLED display each where selections can be visualized. CAPITOL IP also includes independent and centralized control of ON-AIR signalling for the signals assigned to speakers and headphones and their levels, cough muting, CUE mute, etc.

Talk-back

In the lower right corner of the control module is the talkback level regulator and the pre-defined intercom keys: There are two 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, a talk-back microphone signal can be sent to individual hybrid and audio codec returns.

In addition, other intercom destinations can be programmed through the programmable keys located in the top right corner of the control module. The Control-room talkback microphone is also used as the main microphone when the console is in self- or auto-control operation.

- 8 VU meters.
- 9 Programmable keys.
- 10 Multi-function display.
- 11 Selection buttons and rotary encoders associated to the multi-function display.
- 12 Control, Studio, and talk-back monitoring.
- 13 Four PTT buttons for direct intercom/talk-back.



CAPITOL SCREEN : CONTROL AND DISPLAY SOFTWARE

This software has been designed to be displayed on conventional or touch-screen Displays. Capitol Screen is compiled for Windows or iOS operating systems and provides an easy way to monitor and adjust parameters remotely. Proportions a very convenient display and handling of the most important console parameter such as Vu-meters, Phase-correlation, clock and timer, ON AIR, phone status, etc.



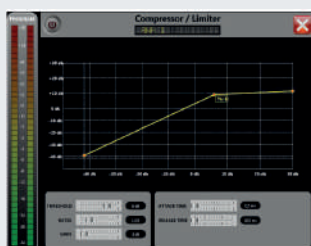
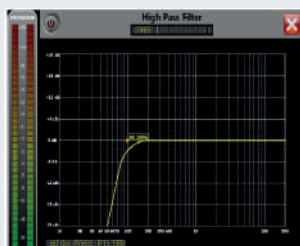
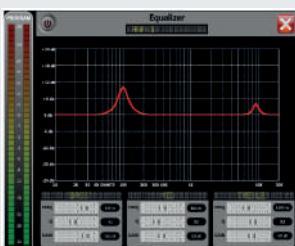
The most important vu-meters are located at the left and shown in maximum resolution. They have fixed names: PROGRAM, AUDITION, AUX 1 and AUX 2.

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.

Apart from the pure monitoring of status and signals, specific adjustments for each channel of the console can be performed from the device that is running the application. A touch screen is especially convenient here. This way, when a SELECT advanced channel configuration key is pressed, CAPITOL 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 ever losing sight of the main vu-meters.



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



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

This application is a fantastic additional feature for the CAPITOL IP console. The Capitol 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 CAPITOL IP control surface, as well as most advanced functions in its main menu.

You will have full control over CAPITOL IP without the need to be physically close to the device. You can activate and turn fader channels “ON-AIR”, move the faders, activate and modify eq, gain, balance or pan., save and load memory settings, activate the programmable keys or pre-sets 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 additional faders.





System Components

DESKTOP CHASSIS CONTROL SURFACE

CA TT: 8 FADERS DESKTOP CHASSIS CAPITOL IP SURFACE



CA12 TT: 12 FADERS DESKTOP CHASSIS CAPITOL IP SURFACE



FLUSH-MOUNTED CHASSIS CONTROL SURFACE

CA CS: 8 FADERS FLUSH-MOUNTED CHASSIS CAPITOL IP SURFACE



CA12 CS: 12 FADERS FLUSH-MOUNTED CHASSIS CAPITOL IP SURFACE



CONTROL APPLICATIONS

Software applications compiled for Windows or iOS operating systems and provides an easy way to monitor and adjust parameters as well as the full remote control of the console system. Can be used on standard or touch-screen displays. Hardware not included.



SW Application dedicated to assist the Console Operation: In Idle, this provides a very convenient display and handling of the most important console parameter such as Vu-meters, Phase-correlation, clock and timer, ON AIR, phone status, etc. If a channel advanced configuration is activated, the application allows for a convenient interface to modify advanced functions and processing. It also speeds up any change of configuration.

This App shows an exact representation of the control surface. To operate the console remotely, or in parallel with its control, simply use the "Virtual Capitol" app.

VIRTUAL CAPITOL





AUDIO ENGINE OR CORE UNIT : M_CORE

In 2RU frame all the processing power and the audio I/O connectivity is concentrated:

Power and Control

- Surface power and control connection.
- General power supply. Redundant power supply (optional).
- 8 opto-coupled GPI's, 8 opto-coupled GPO's and 4 GPO's with relays.
- The Ethernet connector enables external connectivity.

Standard Inputs and Outputs:

Inputs:

- 4 mic./line mono inputs, configurable, switching from the console surface.
- Phantom power supply, configurable from the surface.
- 2 USB (I/O) digital stereo inputs.
- 4 AES/EBU digital stereo inputs, that can be configured as SPDIF.
- 12 analog inputs (can be configured as individual stereo pairs).

Outputs:

- 2 USB (I/O) digital stereo outputs.
- 4 AES/EBU digital stereo outputs that can be configured as SPDIF.
- 8 opto-coupled GPI's, 8 opto-coupled GPO's and 4 GPO's with relays.

Dedicated Control and monitoring outputs:

- Analog stereo outputs for Control, Studio, CUE and Studio primary Headphone monitoring.
- Analog stereo outputs for amplified Control Headphones, jack ¼".



M_CORE OPTIONAL MODULES

Internal power redundancy modules, inputs and outputs in various formats.

MCORE FA: REDUNDANT POWER SUPPLY

Optional redundant power supply module, auto-range 100-240 V. 50/60Hz. Easily installed in the audio engine or "Core Unit".

MCORE HYB: DUAL LINE DIGITAL TELEPHONE HYBRID MODULE

Internal board with dual line digital telephone hybrids. Electrical echo cancellation by DSP. Easily installed in the audio engine or "Core Unit".

MCORE MADI: MADI MODULE

Handles up to 64 audio channels in each direction allowing CAPITOL IP to communicate with another console or a router up to 2000 meters away using a simple pair of fiber-optic links.

MCORE DANTE 16: 16 CHANNELS IP MODULE

Audinate DANTE™/AES67 multi-channel IP Audio networking connectivity. Handles up to 16 bidirectional audio channels allowing CAPITOL IP to communicate with other AoIP networked consoles or devices. The audio engine or "Core Unit" is fitted from factory with the necessary external Ethernet connectors.

MCORE DANTE 32: 32 CHANNELS IP MODULE

Audinate DANTE™/AES67 multi-channel IP Audio networking connectivity. Handles up to 32 bidirectional audio channels allowing CAPITOL IP to communicate with other AoIP networked consoles or devices. The audio engine or "Core Unit" is fitted from factory with the necessary external Ethernet connectors.

COMMERCIAL KITS FOR ORDER

- 1 CAPITOL IPTT Ultra-compact digital audio console with silver colour control surface desktop format and associated audio chassis. Includes:
 - CA TT: 8 FADERS CONTROL SURFACE INTEGRATED IN A DESKTOP CHASSIS.
 - M_CORE: AUDIO ENGINE.
- 2 CAPITOL IP12TT Ultra-compact digital audio console with silver colour control surface desktop format and associated audio chassis. Includes:
 - CA12 TT: 12 FADERS CONTROL SURFACE INTEGRATED IN A DESKTOP CHASSIS.
 - M_CORE: AUDIO ENGINE.
- 3 CAPITOL IPCS Ultra-compact digital audio console with silver colour flush-mounted control surface and associated audio chassis. Includes:
 - CA CS: 8 FADERS FLUSH-MOUNTED CONTROL SURFACE.
 - M_CORE: AUDIO ENGINE.
- 4 CAPITOL IP12CS Ultra-compact digital audio console with silver colour flush-mounted control surface and associated audio chassis. Includes:
 - CA12 CS: 12 FADERS FLUSH-MOUNTED CONTROL SURFACE.
 - M_CORE: AUDIO ENGINE.

These sets do not include the optional M_CORE modules: Dante 16-channel AoIP, Dante 32-channel AoIP, dual telephone hybrid, power redundancy, CAPITOL SCREEN and VIRTUAL CAPITOL applications, nor the cabling accessories, which, when required, must be ordered additionally.



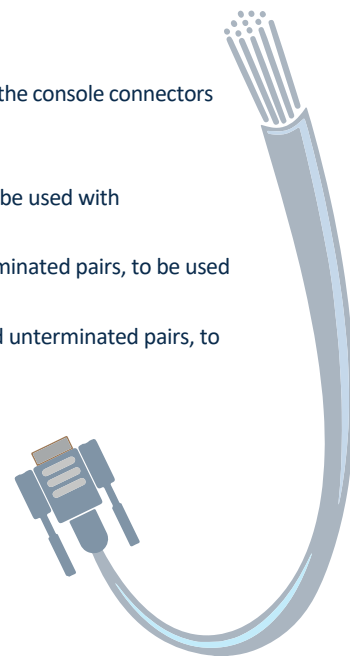
WIRING ACCESSORIES

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.



ADDITIONAL EQUIPMENT WITH AoIP INPUT AND OUTPUTS

NETBOX Audio interfaces

Netbox interfaces allow the input or output 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.

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 8 AD



NETBOX 4 MH

Provides 4 micro / line inputs, 4 line outputs and 4 stereo headphone outputs. Includes 4 GPI and 4 GPO, as well as additional GPIOs for signalling 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 mute, studio and control room ON-AIR signalling.
- Fader-start, remote PFL, talk-back, automatic speaker mute.
- N-1 output configuration.
- Integrated external equipment control (AEQ hybrids and codecs) via programmable key section.
- Optional 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

- All system signals configurable for monitoring in Control, Studio, CUE Headphones and VU-meters.
- 2 direct-routing buttons on each channel.
- Monitor output for pre fader listening.
- Silent operation by convection cooling.
- CAPITOL IP is ideally suited for self-operated applications.
- 2 integrated headphone outputs. In addition, a stereo line output can be stereo line output to secondary headphones.
- 2 precision stereo VU meters.
- Test tone generator.
- Clock, timer and stopwatch.
- Redundant power supply (optional).

Common Engines Connectivity

- Analog stereo outputs for Control, Studio, CUE and Studio primary Headphone monitoring.
- Output for CUE.
- 4 mic./line mono inputs, configurable with phantom power.
- 12 analog inputs/8 analog outputs (can be configured as individual stereo pairs).
- 4 AES/EBU digital stereo inputs and 4 AES/EBU digital stereo outputs that can be configured as SPDIF.
- Sampling rate converters for the digital inputs.
- 2 USB (I/O) digital stereo inputs/outputs.
- 8 opto-coupled GPI's, 8 opto-coupled GPO's and 4 GPO's with relays.

Optional Connectivity

- Dual line Digital Telephone Hybrid with two RJ-11 Line connectors and two RJ-11 connectors for Telephone SET.
- Multichannel: Two Ethernet connectors for Audinate DANTE™/AES67 AoIP networking connectivity, providing 16 or 32 bi-directional audio channels. Bi-directional MADI fiber-optic interface handling up to 64 digital inputs and outputs.

System processing capabilities

- 48 kHz, 24-bit internal sampling frequency.
- ± 18 dB gain control (analog and digital signals – including signals not visible on control surface).
- Selectable balance/panoramic control on all channels.
- Selective phase reverse.
- 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.
- Up to 128 audio inputs audio gain adjustment.

Physical specifications

DIMENSIONS AND WEIGHT

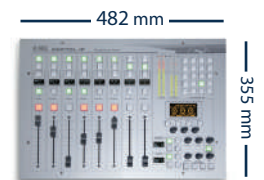
M_ CORE ENGINE

Width 482 mm (19").
Height 2 RU. 89 mm. (3 ½").
Depth 330 mm. (13").
Weight 5.2 to 6 Kg (11.5 a 13.2 lbs) depending on options.



CONTROL SURFACE: CA CS

Width 482 mm (19").
Height 8 RU. 355 mm (14").
Depth 40 mm (1.58").
Weight 4 Kg (9 lbs).
Cut-out for counter sinking:
Width 445 mm (17,52").
Height 335 mm. (13,20").



CONTROL SURFACE: CA12 CS

Width 622 mm (24,5").
Height 8 RU. 355 mm. (14").
Depth 40 mm (1.58").
Weight 5,1 Kg (11,475 lbs).
Cut-out for counter sinking:
Width 585 mm (23").
Height 335 mm. (13,20").



CONTROL SURFACE: CA TT

Width 560 mm (22,04").
Height 455 mm. (17,92").
Depth 75 mm (2,95").
Weight 6,3 Kg (14 lbs).



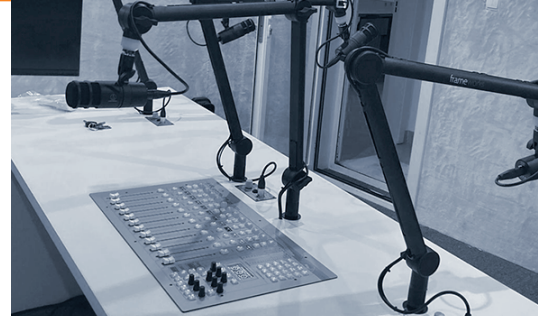
CONTROL SURFACE: CA12 TT

Width 700 mm (27,5").
Height 455 mm. (17,92").
Depth 75 mm (2,95").
Weight 7,6 Kg (16,8 lbs).





COMPACT



EASY TO USE



REMOTE SUPPORT



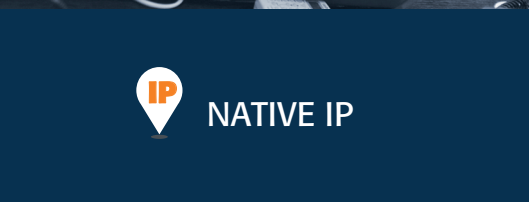
WORLDWIDE



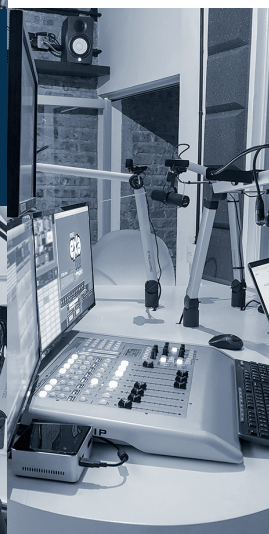
PLUG & PLAY



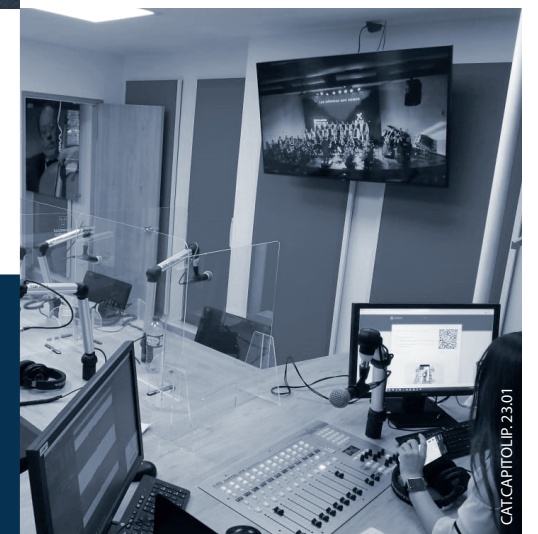
INTUITIVE SOFTWARE



NATIVE IP



REMOTE
CONTROL



ON AIR

ON AIR
USE

AEQ - HEADQUARTERS

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