STUDER
by HARMAN

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OnAir 1500
ON-AIR / PRODUCTION DIGITAL MIXING CONSOLE

A lot more broadcasting for a lot less money

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A lot more broadcasting

For a lot less money

The OnAir 1500 has been designed as a flexible console for on-air and production broadcasting applications. It is a compact, rugged and cost-effective solution for a radio studio, small TV studio, small OB truck and production room.

The basic surface can mix up to 6 channels, and includes all the controls necessary for mixing a simple show. Clever use of the simple physical desk controls allows users, with suitable access rights, control of all desk parameters such as snapshots, routing, Aux, N-x levels, EQ. and much else without the need for screen, keyboard or mouse.

Flexibility is increased with the addition of the 6-fader extension bay, creating a split 12 fader surface, or alternatively the additional 6 faders may be remotely placed in a producer's bay or news room.

This bay requires a simple CAT 5 cable to connect to the DSP.

The OnAir 1500 is designed for use straight out of the box, with simple plug and play operation. However, for the more involved owner the system is completely configurable, much like its big brothers the OnAir 3000 and OnAir 2500. The depth of configuration and customization up to the user, and when required can be altered to accommodate a facility's changing needs and growth.

Broadcasting should be fun, not scary, for the DJ and for the Engineer. Though uncomplicated in its surface design, the platform supporting the system allows the console and operation to be tailored to accommodate every level of user.

Every user is different and the OnAir 1500 is designed to accommodate everyone, from the veteran DJ who wants to be able to tailor his desk to fit his exact needs, to making the overnight newcomer totally comfortable as the desk surface is preset and locked to give them just the right amount of control.

Hot FM

Create
The system you need

The OnAir 1500 can be used to mix up to 12 channels. Connection to other Studer OnAir and Vista consoles for I/O sharing and acquisition of remote signals is easy since STUDER RELINK functionality is integrated into the OnAir 1500.

Changeover of desk configuration is made simple by the provision of 4 snapshot memories, which can be instantly recalled through dedicated keys on the control surface. Certain keys may also be customised for quick access to often-required functions.

For communications with other staff in other locations such as reporters or producers, a direct Cat5 connection to the Monitor/Talkback box controller (E943-730000) is provided, allowing easy expansion of the system.

Integral GPIO connections are provided with dedicated red-light facilities for on-air and open mic identification in the control room and studio.

A keyboard, mouse and monitor (not supplied, available through 3rd party providers), may be connected to expand the configuration and operation of the OnAir 1500 system. The system is based on the 'Touch'n'Action' system so familiar to many operators on the OnAir 3000.

Key Features

· 6-fader or 12-channel consoles with Studer NANO SCORE integrated DSP/IO Engine with 100mm faders

· 6-fader add-on expansion module can form a 12-fader desk or be used as a remote fader section

· Flush/rack-mount options available

Flush/Rack-mount option

· Super slim design for ergonomic table top installation.

· OLEDs (Organic LED) in fader strips and central module provide clearest displays.

· Ergonomic, easy-to-learn Touch'n'Action™ user interface.

· Red lights for on-air and open mic indication in control room and studio.

· USB jingle playback and bus recording facilities

· Comprehensive monitoring and talkback with unique headphone split mode and internal speaker

· Standard I/O :
    Inputs: 16 Mic/Line, 4 AES (with SFC), D21m card slot,
    Outputs: 16 Line Out, 4 stereo AES, D21m card slot,
    Control: 8 × GPI, 8 × GPO, Ethernet

· Buses: 1 stereo PGM, 1 stereo RECORD, 1 stereo PFL, 4 N-1 busses (AUX), CR and ST monitoring (stereo)

· I/O Expansion through standard Studer D21m card slots (e.g Analogue, AES/EBU, MADI, A-DAT, TDIF etc)

· Advanced timer functionality

· USB User Identifier for quick console reconfiguration

· Complete integration with Radio Automation Systems, STUDER's CMS Call Management System and STUDER Relink, our proprietary I/O sharing technology. (licences will be required).

· 19'' Rack mount kit/flush mounting available for main surface and also flush mount kit available for extension module.

Monitor/Talkback Module

Meet your jingle player
The OnAir 1500 features unique functionality simply not available in consoles of this size and price

Fitted to the NANO SCore are two USB ports. The one marked REC/PLAY can be used with a normal USB memory stick as a source for audio for playback of standard WAV files created on any PC/MAC or many portable recorders. It can also be used to record audio from the OnAir1500 itself when using the console as a production desk to create jingles and commercials. The integrated audio router may be used to send any of the desk

busses to the USB memory stick. It is thus easy to record only parts of a programme, such as interviews recorded off-air for later live playback, or the DJ mic channel for archive or training, for example.

In addition the USB memory stick may also contain jingles for instant direct playback triggered by the four dedicated jingle player keys on the desk surface.

A second USB port allows connection of up to 8 channels of digital I/O from a DAW system for multitrack playback and recording, from a CAB automated playout system or for logging purposes.

The DATA/LOGIN USB port is used to identify the operator.
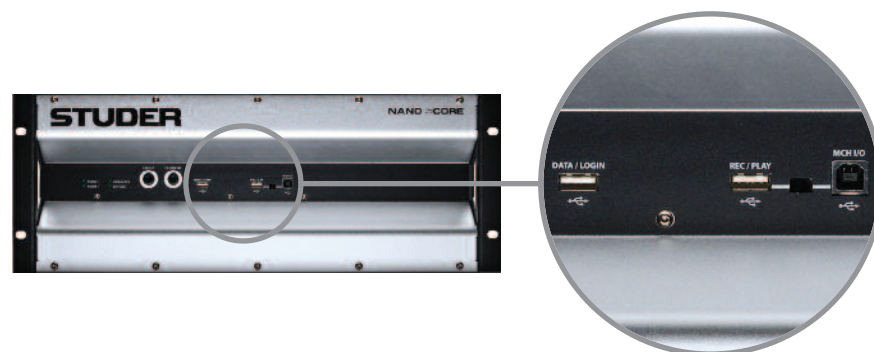
Share the work
The mixer that's ready to integrate

The OnAir 1500 incorporates numerous system applications as standard. (Some of these options require licences).

Integration with Router Control

Like its larger brothers the OnAir 2500 and OnAir 3000, the OnAir 1500 can interface with routing control systems such as VSM, Probel and Monitora, including the ability to transfer source labelling between systems wherever they are generated, and which appear on the channel OLED display for the channel name.

RELINK Integration

The OnAir 1500 can be easily integrated within Studer RELINK (the managed I/O sharing system), which can link numerous Studer consoles in various locations of a Broadcast facility to allow audio source and control data sharing across a wide network.

One of the benefits of the Studer RELINK system in comparison to others is that it is based totally on Studer's existing SCore platform which is an integral part of Studer console architecture, so no additional hardware or breakout boxes are required to complete the network.

Communicating over TCP/IP with each other, any combination of Studer Vista (5, 6, 7, 8 & 9), the OnAir 1500, 2500 and 3000 consoles, as well as Route 6000 can link via RELINK.

RELINK is seamless, scalable and flexible. It can start with a simple link between two Studer consoles, right through to multi-console systems using a two-step topology where all signals are routed through a central Studer Route 6000 system.

A resilient mic take-over mechanism ensures that mic control parameters such as analogue gain, phantom voltage, etc. are not unintentionally changed but require conscious take-over confirmation.
See RELINK Brochure Part No. BD10.266010

Call Management System (CMS)

Naturally integration with Studer's own Call Management System is included. CMS allows the DJ or Producer to handle large numbers of phone lines and callers, be they listeners, external reporters or even gaming and voting events.

Studer's CMS uses VoIP (Voice Over Internet Protocol) technology to supplement or replace expensive physical

telephone hybrids and codecs, possibly replacing all the Codecs in a Broadcast facility with all control under the CMS/OnAir software. A server PC interfaces to standard POTS and ISDN lines, as well as almost any PBX with a VoIP interface.

The CMS software applications have an intuitive and user friendly GUI to easily cover various roles in the Broadcaster's daily business (DJ, Producer, Engineer). Waiting rooms, gaming and voting can all be integrated through the console interface.
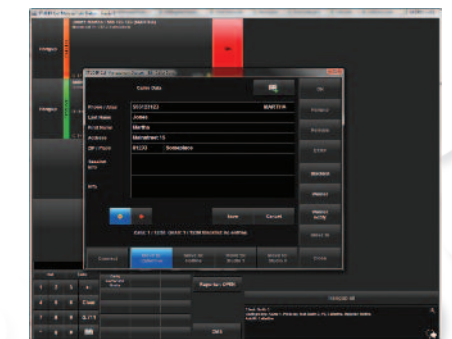
Colour coding

Colour coding surface features allow the user to operate easily and efficiently. People respond to colours much quicker than they do to something they read. Seeing the console rotary controls highlighted in red lets the user know they are adjusting the EQ of a channel, or selecting a bus master that lights up orange tells them they're listening to an auxiliary. Better visual feedback means less mistakes on air!

Bus control

In addition to the dedicated Program and Record busses there are 4 further busses that may be configured as any combination of N-x or general use Auxiliary – you can even choose them to be mono or stereo busses.

Monitoring

A comprehensive monitoring system is available directly on the surface. Headphone Split mode allows the user to listen to two different sources at the same time for programme junction and cueing purposes; one mono'd source through the left and the other mono'd source through the right. Preset buttons also allow one touch control of all monitoring. A second complete monitoring system is available for a second room and may be controlled via the optional remote monitoring and talkback unit.

Soft Keys

Customizing your console has never been easier. 12 soft-assign keys are on the surface, ready to be assigned any feature or function your studio needs. The custom-label keys can be used for features such as snapshot selections, triggering playback of files on the Jingle player, or perhaps an external GPIO you want quick access to.

3rd Party Protocols

Accommodating automation systems and routers is also no problem for the OnAir1500. With 3 major protocols available with a license from Pro-Bel, Monitora, and Ember based systems can be integrated seamlessly. So, whether you're future-proofing your investment or accommodating a new broadcast workflow, the OnAir1500 is ready to go and easy to configure.

CMS

The OnAir 1500 may be used with the Call Management System [CMS] to allow easy and efficient management of telephone calls. Signalling, PFL and talkback are between desk and CMS are provided and you can even see the name of the caller automatically on the channel fader display on the desk if supported by the PTT. Whether it's an Intern organizing callers to go on-air, or managing a live phone conference debate – the system offers all the tools to make an interactive show with listeners a breeze.

Snapshots

Snapshots can be created for easy recall of surface settings and channel configuration. For studios being used for multiple shows and applications, the snapshots allow quick and easy recall ability of settings for each show. A newscaster or journalist can sit down and load a configured snapshot with the surety of a complete and accurate recall of his system setup at the push of a pair of buttons. This gives the possibility for each user of the OnAir1500 having their own customized and familiar surface to work from every day. The studio manager can create global access snapshots which are read only.

Off Air Record

Each channel can be quickly assigned to the Record bus with one touch. Alternatively, engaging the OFF AIR button, the record function assigns the channel to off-air record mode enabling the user to record a phone interview during a commercial break and never leave the desk or change the surface snapshot.

Infinite flexibility
Configured just for you

Packed with functionality for Production, or easy to use for unskilled operators for on-air situations, the OnAir 1500 has the flexibility to cope.

Each input channel has access to 4-band parametric EQ, noise gate, compressor, limiter, expander and de-esser, so can be used in the heart of production or simply to compensate on-air for sibilance from talent or guests.

The 7-segment display indicates time-of-day but can be switched over to act as a manual or a fader –triggered stop watch or count-down timer. If the USB player/ recorder is used, the display can also give information on the current track number and duration.

To avoid accidentally engaging key functions which would disrupt a broadcast, control features may be locked out and configurations saved.

NANO SCORE

Make the right connections

The separate core of the OnAir 1500 contains the audio and control engine. Its straightforward design provides standard sockets making any additional breakout panel unnecessary.

16 XLR inputs are provided for connection of mono or stereo analogue sources, along with 16 XLR outputs for the bus and clean feed (N-X) outputs.

Two separate card slots can be equipped with any optional D21m I/O module, such as SDI, MADI (up to 64 ch in/56 ch out), ADAT, AES, or additional MIC inputs.

The front panel carries two USB ports, one of which is used to identify the console operator from which he can load his configuration and settings. The second port can host a USB stick for recording and playback.

The USB port on the rear is used for connection of keyboard and mouse when used to configure or supplement the operation of the OnAir 1500 in combination with a screen attached to the DVI connector on the core. (A separate PC is not required).

The NANO SCORE connects to the surface via just one Cat5 cable on the rear of the unit, supplying both the data connection and power to the surface. A second Cat5 port connects to the 6-fader extension when fitted, while the Ethernet port allows remote control of the console from a PC over IP or even the internet when a VPN server is also deployed.

An optional external 1U redundant PSU is also available (A943.065000).

Bus Structure
1 stereo PGM (switchable to mono)
1 stereo Record (switchable to mono)
1 stereo PFL
4 N-1 (configurable as AUX) (switchable to mono)
CR and ST monitoring (stereo)

Optional D21m I/O modules

MADI
Provides up to 64 channels of MADI I/O. The MADI card features optical inputs for fibre connections.

ADAT
Optical input for two 8-channel ADAT connections.

AES
16 channels of AES/EBU input and output on two D-Type connectors.

MIC/LINE (Analogue)
A choice of cards providing 4 mic/line inputs with split feed outputs, 8 line inputs, or 8 line outputs, via a 25-way D-Type connector.

TDIF
This card provides two eight-channel TDIF I/O interfaces with 48 kHz, or 44.1 kHz operation with wordclock sync outputs on BNC connectors. Inputs and outputs are provided on standard 25-pin D-type connectors (female).

SDI
Allows the de-embedding and re-embedding of up to 16 SDI audio channels, at up to 3G datarates. The D21m SDI card hosts SRCs (sampling rate converters) for both the audio inputs (de-embedding) and outputs (embedding), so the mixing console can run independently of the video sync used for SDI.

Axia Livewire™
This card provides two Audio over IP interfaces, each carrying 8 stereo audio channels in each direction. Two RJ45 connectors are fitted.
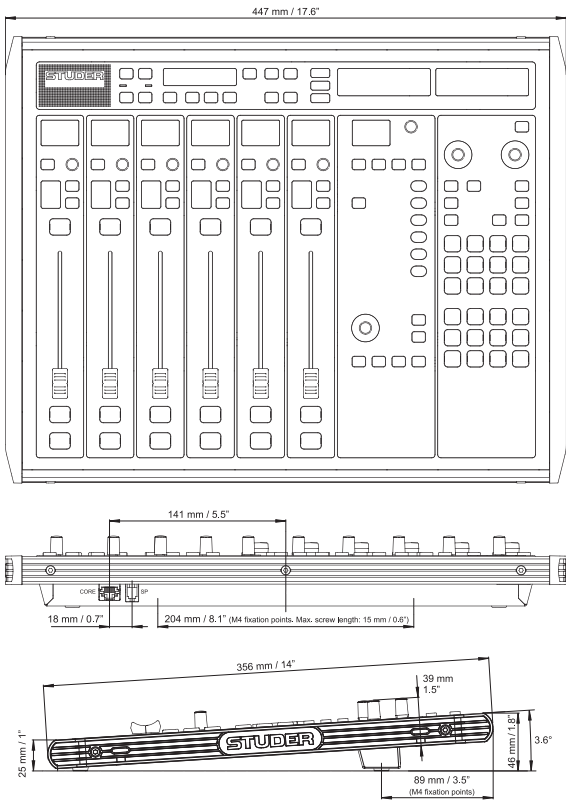
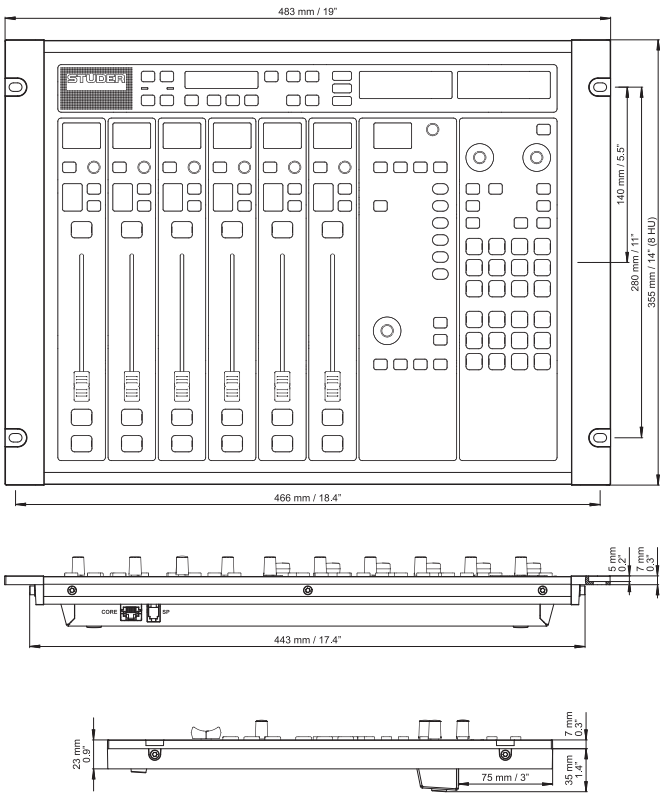Plus many other cards!

Compact StageBox

The Studer Compact Stagebox allows remote expansion of the connectivity of the OnAir 1500 system, providing up to 32 input and 16 output connections over MADI (optional MADI card required for NANO SCORE).
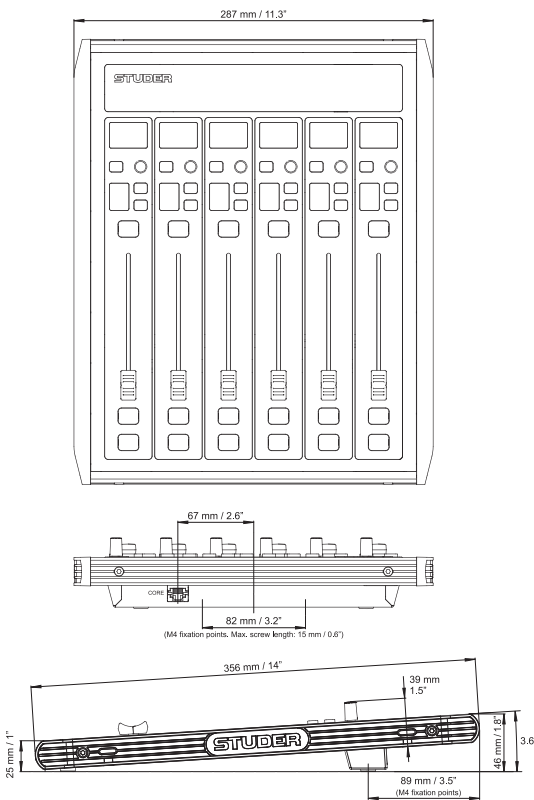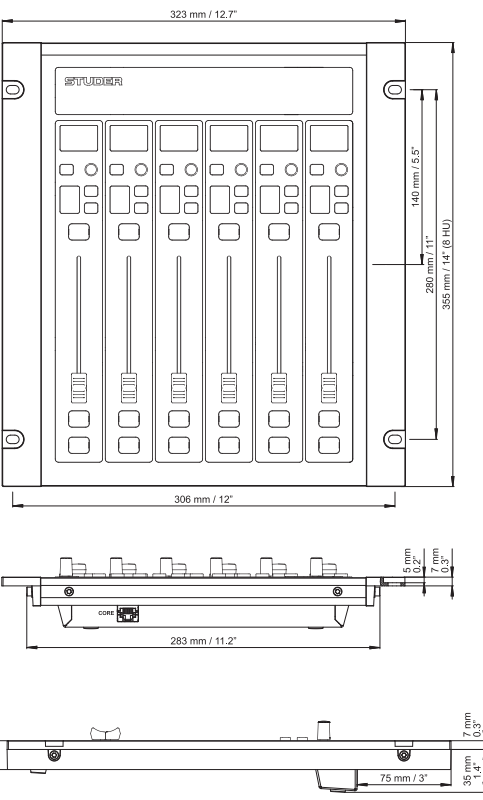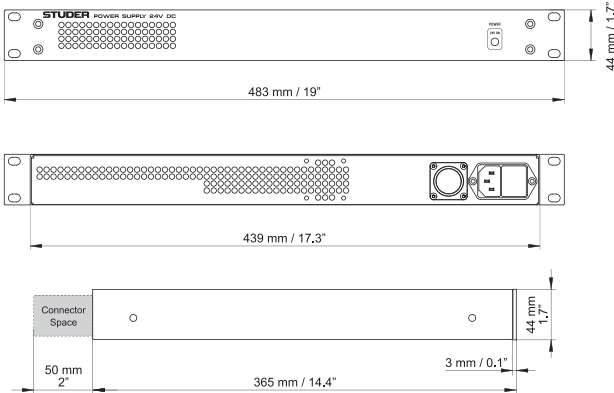
Weights & Dimensions

OnAir 1500 Desk

447 mm / 17.6"

141 mm / 5.5"

CORE

18 mm / 0.7" 204 mm / 8.1" (M4 fixation points. Max. screw length: 15 mm / 0.6")

356 mm / 14"

39 mm 1.5"

25 mm / 1" 46 mm / 1.8" 3.6"

89 mm / 3.5" (M4 fixation points)

75 mm / 3" 35 mm 1.4"

OnAir 1500 Desk - Rack/Table-mount

483 mm / 19"

140 mm / 5.5" 280 mm / 11" 355 mm / 14" (8 HU)

466 mm / 18.4"

CORE

443 mm / 17.4"

5 mm 7 mm 0.3"

23 mm 0.9" 75 mm / 3" 35 mm 1.4" 7 mm 0.3"

6-Fader Extension Module

287 mm / 11.3"

67 mm / 2.6"

CORE

82 mm / 3.2" (M4 fixation points. Max. screw length: 15 mm / 0.6")

356 mm / 14"

39 mm 1.5"

25 mm / 1" 3.6"

89 mm / 3.5" (M4 fixation points)

75 mm / 3" 35 mm 1.4"

6-Fader Extension Module - Table-mount

323 mm / 12.7"

140 mm / 5.5" 280 mm / 11" 355 mm / 14" (8 HU)

306 mm / 12"

CORE

283 mm / 11.2"

5 mm 7 mm 0.3"

23 mm 0.9" 75 mm / 3" 35 mm 1.4" 7 mm 0.3"

Redundant PSU

44 mm / 1.7"

483 mm / 19"

439 mm / 17.3"

Connector Space

44 mm 1.7"

50 mm 2" 365 mm / 14.4" 3 mm / 0.1"

SCore

177 mm / 7"

483 mm / 19"

38 mm / 1.5"

52 mm 2"

42 mm 1.7" 363 mm / 14.3" 2 mm / 0.1"
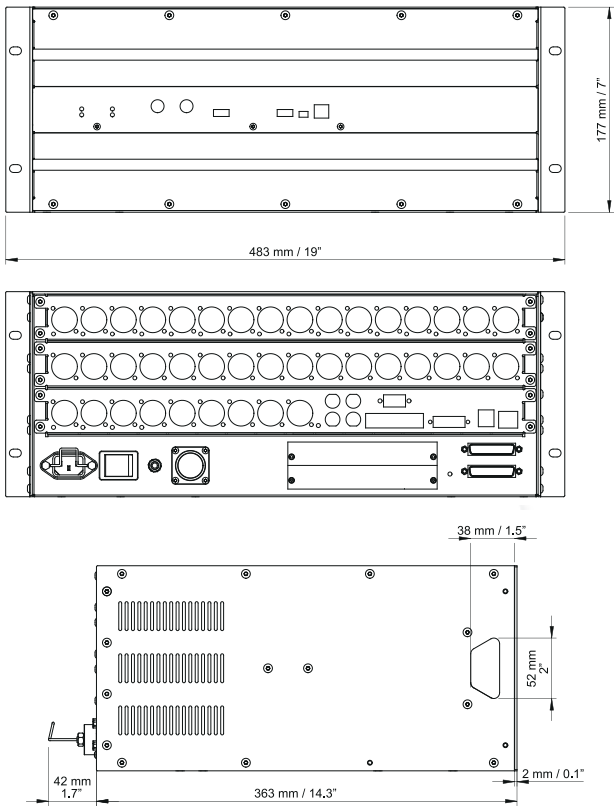
Part Numbers:	
OnAir 1500 6-fader Desk Unit (with NANO SCORE):	E943.706000
6-fader Extension Module	A943.715000
Monitor/Talkback Box:	E943-730000

Weights:	
OnAir 1500 6 fader Desk Unit	3.9Kg
6 fader Extension Module	2.6kg
NANO SCORE	9.2Kg

Technical Specifications

Technical Specifications (preliminary; subject to change without notice)

HQ Mic / Line Inputs	Conditions / Details	Value
General Conditions:	**Gain setting 15 dBu 0 dB$_{FS}$ unless otherwise noted.**	
Impedance	(electronically balanced)	3.6 kW
Gain	for 0 dB$_{FS}$ (adjustable in steps of 1 dB)	−11 to +75 dB
Maximum Input Level	−11 dB gain, R$_{source}$ = 600 Ω	+26 dBu
	0 dB gain, R$_{source}$ = 150 Ω	+15 dBu
Frequency Response	20 Hz to 20 kHz, 40 dB gain	+0 / −0.6 dB
	30 Hz to 20 kHz, 40 dB gain	+0 / −0.3 dB
THD + Noise	1 kHz, −1 dB$_{FS}$	≤ −87 dB
	1 kHz, −9 dB$_{FS}$ (nominal level)	≤ −94 dB
	20 Hz to 20 kHz, −30 dB$_{FS}$	< −102 dB$_{FS}$
Equivalent Input Noise / Noise Figure (NF)	Ri = 200 Ω, gain ≥ 60 dB	−127.6 dBu / NF ≤ 2
Common Mode Rejection Ratio (CMRR)	30 Hz to 20 kHz, all gain settings	> 46 dB
	1 kHz, −11 dB to +26 dB gain	60 dB typ.
Crosstalk	1 kHz (nominal level)	≤ −100 dB
Switchable High-Pass Filter		75 Hz
Input Delay		12 samples 250 μs @ 48 kHz

Line Outputs	Conditions / Details	Value
Impedance	(electronically balanced)	50 Ω
Frequency Response	20 Hz to 20 kHz	+0 dB / −0.3 dB
THD + Noise	−1 dB$_{FS}$, 1 kHz	−90 dB
	−30 dB$_{FS}$, 20 Hz to 20 kHz	−103 dB
Crosstalk	1 kHz	−115 dB
Output Level	RL ≥ 600 Ω; globally adjustable with hardware switches (steps: +24, +22, +20, +18, +15, +12, +9, +6 dBu)	+6 to +24 dBm for 0 dB$_{FS}$
Output Delay		10.4 samples 217 μs @ 48 kHz

AES / EBU Inputs	Conditions / Details	Value
Impedance		110 Ω
Sensitivity		min. 0.2 V$_{RMS}$
SRC Range		22-108 kHz
SRC Delay (if active)	$r_{S\_IN} > r_{S\_OUT} : D = \dfrac{16}{r_{S\_IN}} + \dfrac{32}{r_{S\_OUT}}$ [s] $r_{S\_IN} > r_{S\_OUT} : D = \dfrac{48}{r_{S\_IN}}$ [s]	

AES / EBU Outputs	Conditions / Details	Value
Impedance		110 Ω
Level	into 110 Ω	4.0 VRMS
SRC Range		22-108 kHz

Power Supply	Conditions / Details	Value
Primary Input Voltage Range	Power supply auto-ranging, with power factor correction (PFC); EN/UL approved	100 to 240 V AC ± 10% 50 to 60 Hz
Consumption, Studer OnAir 1500	6-fader desk + Nano SCore	100 W

Ambient Conditions	Details	Value
Operating Temperature Range		−5 to 45 °C / 23 to 113 °F
Relative Humidity	Non-condensing	95%

Weights (approx.)		Value
Studer OnAir 1500	6-fader desk + Nano SCore	−13 kg / 29 lbs

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