



IOC-HORUS Specifications

Case Material	Powder Coated Steel
Front Panel Material	Brushed Aluminum
Weight (excluding redundant PS)	6.5 kg/ 14.4 lbs
Dimensions (2U rack mounting)	483 x 320 x 89 mm
Voltage (AC)	90V-260V, 47-63 Hz
Power Consumption (Max)	< 120 Watts
Front Panel TFT size/resolution	4.3" / 480 x 272 pixels
Headphone Monitor Jacks	
Max Output Level (Unbalanced) Load = 300 Ohms	+15 dBu
Output Impedance	75 Ω
Dynamic Range (A-weighted, typ)	109 dB
THD+N (1 kHz) @ -2 dBFS	< -100 dB (0.001 %)
Gain Range (software controlled)	-60 dB to +12 dB
Gain Step/Precision	1dB / ±0.05 dB
Connectors	
Sync Cable (LTC/Video Ref) DB15	D-Sub 15Pin
LTC In & Out (via "Sync" Cable)	Balanced XLR
Video Reference In (via "Sync" Cable)	BNC
Word Clock Input (Switchable 75 Ω Termination)	BNC, 0.5Vp-p min
Word Clock Output (Zout = 35 Ω)	BNC, 5Vp-p
AES type/pinout	DB-25/AES59 (Tascam)
MADI types (Coaxial / Optical)	BNC / SC
Headphone Jack 1&2	6.3 mm(1/4")/3.5mm
RAVENNA (GbE)	RJ45

IOM-H-DA8/DA8P Specifications

Max Line Output @ 0 dBFS	+24 dBu +0/-0.5 dB
Frequency Response +0/-0.3dB @ fs = 48000 Hz	6 Hz - 20 kHz
Frequency Response +0/-0.3dB @ fs = 2.8224 MHz (DSD)	NA / 6 Hz - 20 kHz
Frequency Response +0/-3.0dB @ fs = 2.8224 MHz (DSD)	NA / 2 Hz - 50 kHz
Line Output Impedance (Differential)	100 Ω
Dynamic Range (A-weighted, typ)	126 dB
THD+N D/A (1 kHz) @ 0 dBFS (IOM-HORUS-DA8)	< -113dB (0.00022%)
THD+N D/A (1 kHz) @ 0 dBFS (IOM-HORUS-DA8P)	< -115dB (0.00018%)
Interchannel Crosstalk @ 1kHz, typ.	-135 dB
Connector Pinout	DB-25/AES59 (Tascam)

Software Specifications

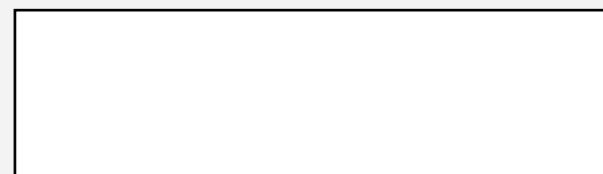
RAVENNA MassCore Driver
Pyramix 8.0 or Higher / Win7 32bit or 64bit

Windows Driver/OS
ASIO 2.2 / Win7 32 or 64bit

Mac Driver/OS
CoreAudio / Mac OS 10.9 or higher (Intel)

RAVENNA - AES67 NETWORK I/O

Extraordinary Connectivity & Total Flexibility



Horus and all Horus options are products of Merging Technologies.

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IOM-H-AD8D/AD8DP Mic-Pre Analog Specifications

Frequency Response +0/-0.5 dB, Line	5 Hz - 75 kHz
Frequency Response +0/-2.0 dB, Line	2.5 Hz - 150 kHz
Frequency Response +0/-0.5 dB, Mic	10 Hz - 100 kHz
Frequency Response +0/-2.0 dB, Mic	5 Hz - 200 kHz
THD+N (1 kHz), Line/Mic at G=0dB	< -115 dB (0.00018 %)
THD+N (20 Hz-20 kHz), Line/Mic at G=0dB	< -112 dB (0.00025 %)
Interchannel Crosstalk @ 1kHz, typ.	-135dB
5° low-end in-channel Ø deviation pt: Line	13 Hz
5° low-end in-channel Ø deviation pt: Mic	35 Hz
Interchannel phase 10 Hz - 100 kHz	< ±0.1°

IOM-H-AD8D/AD8DP Direct Output Specifications

Frequency Response +0/-0.3dB G=40 dB	10 Hz - 50 kHz
THD+N (1 kHz), Mic at G=0dB	< -109 dB (0.00035%)
Dynamic Range (flat 20 Hz-20 kHz)	> 122 dB
Dynamic Range (A-weighted, typ)	124.5 dB
Max Direct Output Level, typ	+18.5 dBu
Direct Output Impedance	100 Ω

IOM-H-AD8D/AD8DP Mic-Pre Amp + ADC Specifications

Mic Pre Max Input (Pad On / Pad Off)	+24 dBu / +13 dBu
Input Impedance (Differential)	1.75 kΩ
Dynamic Range (A-weighted, typ), ref +13 dBu	121 dB
Gain Range (software controlled)	0 dB to +66 dB
Gain Step/Precision	0.5 dB / ±0.2 dB
THD+N Pre + A/D (20 Hz-20 kHz) @ -2 dBFS (AD8D/AD8DP)	< 0.0016 % / 0.001 %
Interchannel Crosstalk @ 1kHz, typ.	< -125 dB
EIN @ >40 dB Gain (150Ω Source Impedance, A-weighted, typ)	-128 dBu
Common Mode Rejection Rate @ 1kHz, typ.	75 dB
Phantom Power (Software Switchable Per Channel)	+48V
Phase Reverse (Software Switchable Per Channel)	YES
Low Cut filter (Software Switchable Per Channel)	-12 dB/octave, 80 Hz

Line Input

Max Line Input for 0 dBFS	+24 dBu
Input Impedance (Differential)	6.5 kΩ
Dynamic Range (A-weighted, typ), ref +24 dBu	122 dB
THD+N Line+A/D (20 Hz-20 kHz) @ -10 dBFS, typ.	-106 dB (0.0005%)
Interchannel Crosstalk @ 1kHz, typ.	-125 dB
Sensitivity Range for 0 dBFS (software controlled)	-42 dBu to +24 dBu
Gain Step/Precision	0.5 dB / ±0.2 dB
Common Mode Rejection Rate @ 1kHz, typ.	75 dB
Connector Pinout	DB-25 / AES59 (Tascam)

IOM-H-ADA8 Mic-Pre + ADC Section Specifications

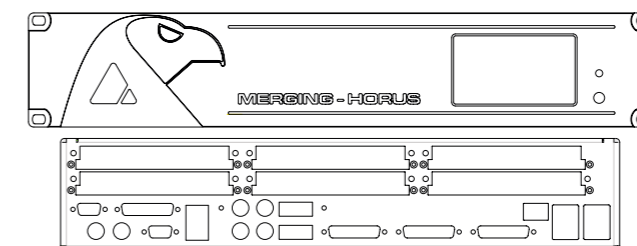
Mic Pre Max Input (Pad On / Pad Off)	+24 dBu / +13 dBu
Input Impedance (Differential, Software Switchable Per Channel)	2 kΩ / 13.6 kΩ
Input Impedance with +48V ON (Diff, Soft. Switchable Per Channel)	1.7 kΩ / 6.8 kΩ
Frequency response +0/-0.3dB @ fs = 48 kHz	10 Hz - 22 kHz
Frequency response +0/-0.3dB @ fs = 96 kHz	10 Hz - 44 kHz
Frequency response +0/-0.3dB @ fs = 192 kHz	10 Hz - 85 kHz
Dynamic Range (A-weighted, typ), ref +13 dBu	119.5 dB
Gain Range (software controlled)	0 dB to +66 dB
Gain Step/Precision	0.5 dB / ±0.2 dB
THD+N Pre + A/D (20 Hz - 20 kHz) @ -2 dBFS	< -102 dB (0.0008 %)
Interchannel Crosstalk @ 1kHz	< -125 dB
EIN @ >40 dB Gain (150Ω Source Impedance, A-weighted)	< -128 dBu
Common Mode Rejection Rate (20 Hz - 20 kHz)	> 60 dB (up to 0 dBFS)
Phantom Power (Software Switchable Per Channel)	+48V
Phase Reverse (Software Switchable Per Channel)	YES
Low Cut filter (Software Switchable Per Channel)	-12 dB/octave, 80 Hz

IOM-H-ADA8 Line Input Section Specifications

Max Line Input for 0 dBFS	+24 dBu
Input Impedance (Differential)	13.6 kΩ
Dynamic Range (A-weighted, typ), ref +24 dBu	120 dB
THD+N Line+A/D (20 Hz - 20 kHz) @ -2 dBFS	< -102 dB (0.0008%)
Interchannel Crosstalk @ 1kHz	< -125 dB
Sensitivity Range for 0 dBFS (software controlled)	-42 dBu to +24 dBu
Gain Step/Precision	0.5 dB / ±0.2 dB
Common Mode Rejection Rate (20 Hz - 20 kHz)	> 60 dB (up to 0 dBFS)
Connector Pinout	DB-25 / AES59 (Tascam)

IOM-H-ADA8 Line Output Section Specifications

Max Output level software switchable for 0 dBFS	+24 dBu / +18 dBu +0/-0.5 dB
Frequency Response +0/-0.3dB @ fs = 48 kHz	6 Hz - 22 kHz
Frequency Response +0/-3dB @ fs = 96 kHz	6 Hz - 44 kHz
Frequency Response +0/-3dB @ fs = 192 kHz	6 Hz - 88 kHz
Output Impedance (Differential)	< 100 Ω
Dynamic Range (A-weighted, typ)	123 dB
THD+N (1 kHz) @ 0dBFS	< -108 dB (0.0004 %)
Interchannel Crosstalk @ 1kHz	< -135 dB
Connector Pinout	DB-25 / AES59 (Tascam)



NETWORKED AUDIO CONVERTER

Welcome to the RAVENNA world.

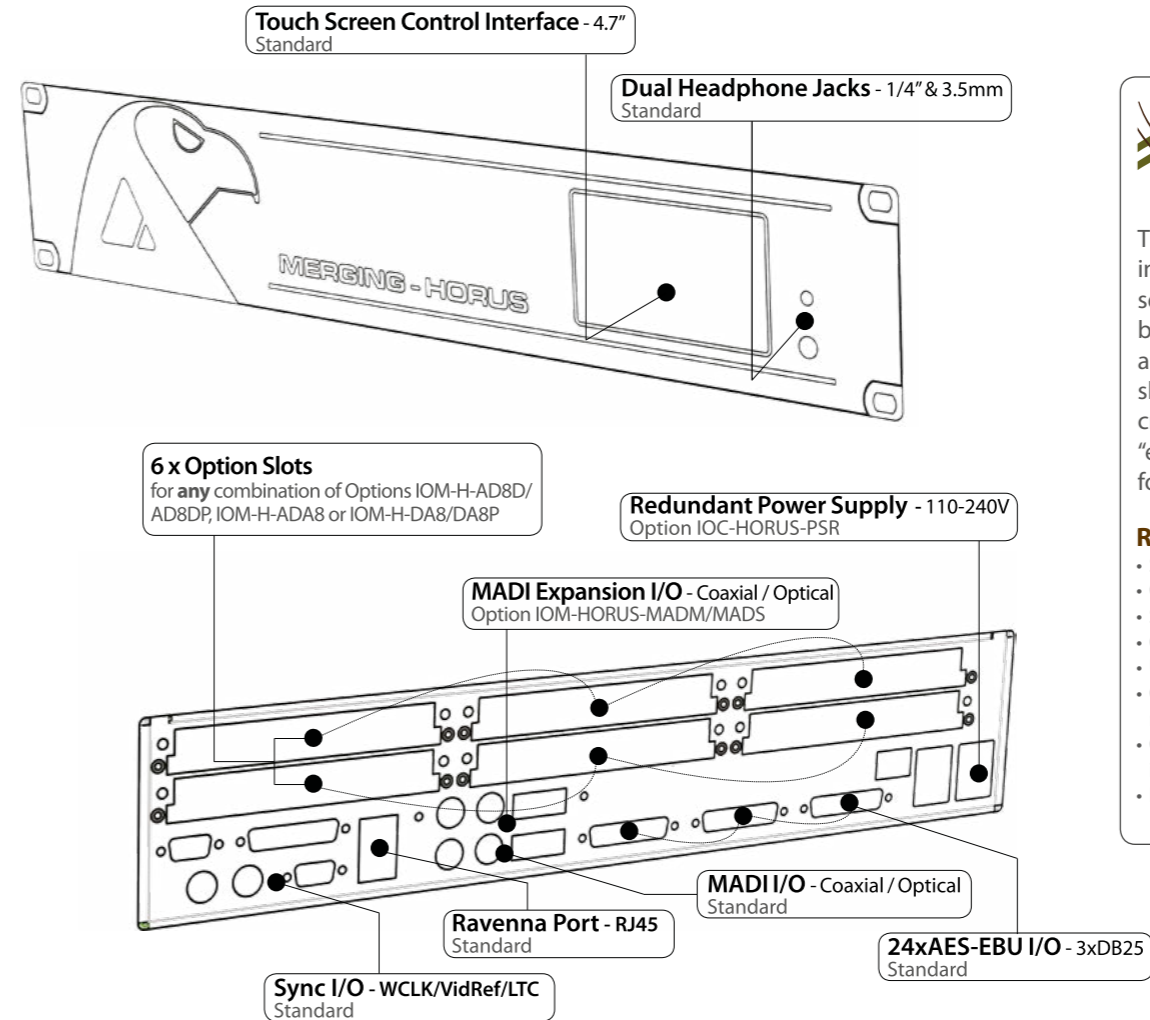


HORUS, your passport to the RAVENNA/AES67 world



If you look closely at the design of modern IP networks and the way information moves around them, you can begin to see a close resemblance to the way in which we navigate the living, breathing world that we inhabit. Subnets become cities and countries and our IP address becomes a passport allowing us to travel where we are permitted within the digitized world.

Enter into the **RAVENNA** world.



The RAVENNA Group consists of industry leading companies who have seen the benefits of using a layer3 based, network oriented, real-time audio format. All RAVENNA partners share the same vision and mission: create a multi-vendor, interoperable "eco-system". Full information can be found on ravenna.alcnetworx.com

RAVENNA Key Features

- Sub-millisecond latency
- Over 400 bidirectional channels @1FS on one CAT5e
- Sample-accurate play-out alignment
- QoS support
- Utilizes standard protocols on IP layer
- Operate on existing networks (PTP-aware switches recommended)
- Operation in shared traffic environment (with QoS in place)
- Easy to configure and maintain RAVENNA networks

The Horus Base Unit

Modular by Design

The ability to choose the amount of I/O that each Horus unit is capable of saves money without diminishing the level of quality. Choose to add any of the option modules to your Horus and create the ultimate audio interface for your studio, whatever the size. Once the Horus is fully loaded with option cards, it is capable of achieving an astonishing **200 inputs and 202 outputs @1FS**.

Route Signal Anywhere

Horus has been designed so that any input can be routed to any amount of outputs as required... or at the same time. With comprehensive routing pages accessible both locally on the touchscreen and by remote access using a standard web browser, Horus is your answer to signal flow management in your studio.

Your RAVENNA passport, no matter where you come from

Pyramix users are of course our first love, but we are offering any DAW/NLE user the opportunity to take advantage of RAVENNA by using the ASIO (PC) / CoreAudio (Mac) drivers bundled with Horus. So, even if your tool of choice was not RAVENNA already, it is now.

Green Built

For power-conscious users, Horus has been meticulously designed in order to keep consumption at an incredible minimum. A Horus running 24 channels of phantom power enabled preamps will only draw about 60W, making it more affordable to run than your kitchen lights. A Horus with a full complement of AD8D pre-amps will be closer to 120W.

IOC-HORUS Key Features

- 200 inputs and 202 outputs @1FS (depending on card options)
- Fully modular design allows any combination of IOM option cards for analog and additional MADI I/O. Full complement of ADA8 provides 48 analog inputs and 48 analog outputs
- Works from 44.1kHz to 192kHz (Premium up to DXD/DSD256)
- Signal routing from any input to any combination of outputs
- Works as MADI/AES AD/DA for "standard" operation, AND
- Works in RAVENNA mode to deliver all I/O through the network
- Front panel touch screen for local access
- Browser-based remote access using any web enabled device
- Dual or redundant power supply option
- Near-zero latency from in to out (<1ms)

The Option Cards

IOM-H-AD8D/AD8DP Key Features

These remotely controlled Mic/Line Input cards with analog direct outputs have set a new benchmark in analog circuitry design. Available in models that work up to 192kHz (AD8D) and DXD/DSD256 (AD8DP)

- 8 x exceptionally transparent, Swiss designed pre-amplifiers
- Remote/Local switch to Line Level on a per channel basis
- Completely remote accessible for all parameter changes
- Phantom Power/Phase/Low Cut switchable per channel
- Analog direct output signal path, post-mic pre, pre A/D
- Better than 120dB dynamic range

IOM-H-ADA8 Key Features

Combines 8 channels of A/D and 8 channels of D/A on a single card (up to 192kHz)

- 8 x exceptionally transparent, Swiss designed pre-amplifiers
- Remote/Local switch to Line Level on a per channel basis
- Completely accessible remotely for all parameter changes

- Phantom Power/Phase/Low Cut/Impedance switchable per channel
- Dynamic range of 120dB (A-weighted, typ) on the Line inputs
- Auto-mute circuitry for "no-pop" power cycling
- Digitally controlled output trims for line up procedures
- Dynamic range of 123dB (A-weighted, typ) on the Line outputs

IOM-H-DA8/DA8P Key Features

The DA8 (up to 192kHz) and the DA8P (up to DXD/DSD256) have consistently shown in testing to be the quietest multichannel D/A conversion modules available anywhere.

- Auto-mute circuitry for "no-pop" power cycling
- Digitally controlled trims for line up procedures
- Dynamic range of 127dB (typ)
- Easy to set dip switches for international operating levels

IOM-HORUS-MADM/MADS

The MADI Expansion card (MADM - Multimode / MADS - Singlemode) doubles the total MADI channel count to 128 inputs and 128 outputs @1FS

"Some call 192kHz 'HD'... We call it standard" - C. Cellier