

FA-1616HB-12G / FA-1616B-12G / FA-1616HB-3G Datasheet

1. Specifications

Basic specifications

Temperature	0°C to 40°C
Humidity	30% to 90% (no condensation)
Power	AC 100 V to 240 V \pm 10% 50/60 Hz
Consumption	<p>FA-1616HB-12G:</p> <p style="padding-left: 40px;">221 VA (219 W) (at AC 100-120 V) 242 VA (225 W) (at AC 220-240 V)</p> <p style="padding-left: 40px;">Max consumption with options</p> <p style="padding-left: 40px;">312 VA (308 W) (at AC 100-120 V) 331 VA (314 W) (at AC 220-240 V)</p> <p>FA-1616B-12G:</p> <p style="padding-left: 40px;">250 VA (248 W) (at AC 100-120 V) 242 VA (225 W) (at AC 220-240 V)</p> <p style="padding-left: 40px;">Max consumption with options</p> <p style="padding-left: 40px;">330 VA (327 W) (at AC 100-120 V) 331 VA (314 W) (at AC 220-240 V)</p>
Dimensions	430 (W) x 480 (D) x 44 (H) mm 480 (W) (Including rack mount brackets)
Weight	Approx. 11.5 kg (including FA-16MOIP/16MOIP-EX)
Consumables (at 24-hour operation)	Power unit: Recommended replacement period: 5 years Cooling fan: P-1677 (x6), Recommended replacement period: 6 years

Technical specifications

Video format	<p>FA-1616HB-12G/ FA-1616B-12G</p> <p>2160p / 60,59.94, 50, 30,29.97,25,24,23.98 (Single-Link, Dual-Link, Quad-Link)</p> <p>1080p / 60,59.94, 50, 30,29.97,25,24,23.98 1080psf / 30,29.97,25,24,23.98 1080i / 60,59.94, 50 720p / 60,59.94, 50, 30, 29.97, 25, 24, 23.98</p> <p>FA-1616HB-3G</p> <p>2160p / 60,59.94, 50 (Quad-Link) 2160p /30,29.97,25,24,23.98(Dual-Link, Quad-Link) 1080p / 60,59.94, 50, 30,29.97,25,24,23.98 1080psf / 30,29.97,25,24,23.98 1080i / 60,59.94, 50 720p / 60,59.94, 50, 30, 29.97, 25, 24, 23.98</p> <p>* Other formats will be supported later.</p>
Video input/output	
FA-1616HB-12G	<p>Input: 12G/6G/3G/HD-SDI 75 Ω Micro BNC (HD-BNC ^(*)) x 8 3G/HD-SDI 75 Ω Micro BNC (HD-BNC ^(*)) x 8</p> <p>Output: 12G/6G/3G/HD-SDI 75 Ω Micro BNC (HD-BNC ^(*)) x 8 3G/HD-SDI 75 Ω Micro BNC (HD-BNC ^(*)) x 8</p>
FA-1616B-12G	Input or output: 12G/6G/3G/HD-SDI 75 Ω BNC x 16
FA-1616HB-3G ^(*)	Input or output: 3G/HD-SDI 75 Ω Micro BNC (HD-BNC ^(*)) x 32

MoIP input/output (FA-16MOIP)	<p>IP media transmission standard: SMPTE ST 2110, SMPTE ST 2022-6 ^(*) SFP28 MSA 25 GbE(RS-FEC) x 4 (ST2022-7 route redundancy)</p> <p>< SMPTE ST 2110 Input/Output > Send only: HD x 16 / UHD x 4 Receive only: HD x 16 / UHD x 4 Send and Receive: HD x 8 / UHD x 4 Video: ST 2110-20 Audio: ST 2110-30 Level B (2K: 16ch, 4K: 32ch) ANC data: ST 2110-40</p> <p>< SMPTE ST 2022-6 Input/Output ^(*) > Send and Receive: HD x 16 / 3G x 14</p> <p><PTP> Version: PTP v2 (two-step mode) Boundary Clock (network switch) connection available</p>
(FA-16MOIP-EX)	Same as above
Color sampling	YCbCr 4:2:2 10-bit
Genlock	Input: BB (NTSC / PAL) or Tri-level Sync 75 Ω BNC x 1 Output: BB (Input-loop-through or generated from PTP) 75 Ω BNC x 1
Timecode ^(*)	Input: LTC (SMPTE 12M) DIN 1.0/2.3 x 1 Output: LTC (SMPTE 12M) DIN 1.0/2.3 x 1
Sync mode	Frame, Line, AVDL, Line (Min)
Converter (optional)	Up-/ Down-/ Cross-converter(FA-16UDC-P2) Gamma conversion, Color space conversion and Dynamic Range conversion with 1D LUT (FA-16HDR-P2) Gamma conversion with 3D LUT (FA-16LUT-P2)
Color processing	Proc Amp: Video level, Chroma Level, Black level, Hue Color Corrector: Balance (RGB) mode, Differential (YCbCr) mode Video Clip: Knee Clip (RGB), YCbCr Clip
SDI audio	Input: 3G/HD-SDI 16-ch 6G-SDI Dual Link 32-ch 12G-SDI 32-ch 48 kHz 16-24 bit Synchronous/Asynchronous audio Output: 3G/HD-SDI 16-ch 6G-SDI Dual Link 32-ch 12G-SDI 32-ch 48 kHz 16/20/24 bit Synchronous/Asynchronous audio
AES/EBU audio (FA-16AES-UBL)	BNC x 4 (AES/EBU input or output) 8-ch Input: 32/44.1/48 kHz 24 bit 75 Ω 1.0 V(p-p) unbalanced Output: 48 kHz 24 bit 75 Ω 1.0 V(p-p) unbalanced
AES/EBU audio (FA-16AES-PNL) ^(*)	BNC x 4 (AES/EBU input or output) 8-ch Input: 32/44.1/48 kHz 24 bit 75 Ω 1.0 V(p-p) unbalanced Output: 48 kHz 24 bit 75 Ω 1.0 V(p-p) unbalanced * FA-16AES-UBL required
Analog audio (FA-16ANA-AUD) ^(*)	25-pin D-sub (female) x 1 Input: 4-ch 600 Ω /Hi-Z balanced Output: 4-ch 100 Ω balanced 24 bit 48 kHz (A/D and D/A conversions and internal processing)

MADI audio (FA-16MADI)	<p>Input: 56/64-ch (PCM) 32/44.1/48 kHz 16-24 bit 75 Ω Micro BNC (HD-BNC ^(*))x 2 56/64-ch (PCM) 32/44.1/48 kHz 16-24 bit SFP x 2 Only one stream is processed within 4 inputs.</p> <p>Output: 56/64-ch (PCM) 48 kHz 24 bit 75 Ω Micro BNC (HD-BNC ^(*))x 2 56/64-ch (PCM) 32/44.1/48 kHz 24 bit SFP x 2 Four ports output the same processed audio streams.</p>
Dante audio (FA-16DNT)	<p>1000BASE-T RJ-45 x 2 (Primary/Secondary)</p> <p>Input: Max. 64-ch 44.1/48 kHz 24 bit</p> <p>Output: Max. 64-ch 48 kHz 24 bit</p>
Audio delay adjust	1ms to 1,000ms
Audio process	Sample rate converter, Gain control, Downmix, Monosum, Remap and Mute
Interfaces	
Ethernet & Control protocols	<p><LAN 1> Web, Ember+ ^(*), SNMP v2c (Monitor only), Remote Control: 100/1000BASE-T RJ-45 x 1</p> <p><LAN 2A/2B> (With FA-16MOIP) NMOS control: 100/1000BASE-T RJ-45 x 2 (Teaming available)</p>
GPI	<p>Round connector (7 input/output)</p> <p>FA-16GPI ^(*): 25-pin D-sub (female) x 1 (10-input, 10-output)</p> <p>FA-16GPI-PNL ^(*): 25-pin D-sub (female) x 1 (10-input, 10-output) FA-16GPI required</p>
Time	<p>Time accuracy per month: ±10 seconds</p> <p>Time keeping: Approx. 60 hours</p> <p>Time correction with NTP Server</p>
Remote Control	FA-10RU (Control of some functions is available.) Sold separately.

^(*) HD-BNC is a trademark of Amphenol Corporation

^(*) Planned for future support

Software Option

FA-164K	<p>4K (UHD) signal processing expansion</p> <p>The following options can automatically add the FA-164K to the system. FA-16MOIP, FA-16UDC-P2, FA-16HDR-P2*, FA-16LUT-P2*</p>
FA-16UDC-P2	<p>Up-/down-/cross-conversion for 2 processors</p> <p>Version 2.00 supports only one license.</p>
FA-16HDR-P2 *	HDR color corrector for 2 processors
FA-16LUT-P2	3D-LUT color processing for 2 processors.

* Planned for future support

Hardware Option (Optional Card and Cable)

FA-16MOIP ^{(*)1}	Encapsulation/decapsulation card of ST 2022-6 ^{(*)2} / ST 2110 standards
FA-16MOIP-EX ^{(*)1}	MolP input/output expansion card (FA-16MOIP required)
FA-16AES-UBL	Digital audio (unbalanced) card.
FA-16AES-PNL ^{(*)2}	Digital audio (unbalanced) expansion panel (FA-16AES-UBL required)
FA-16DNT ^{(*)3}	Dante audio card
FA-16MADI ^{(*)4}	MADI audio card
FA-16ANA-AUD ^{(*)2}	Analog audio (balanced) 4-input / 4-output card
FA-16GPI ^{(*)2}	GPI input/output card
FA-16GPI-PNL ^{(*)2}	GPI input/output expansion panel (FA-16GPI required)

^{(*)1} Note that SFP transceiver modules are not equipped with the product. Please prepare appropriate SFP modules by the user.

Factory tested SFP module:

nVIDIA(Mellanox) MMA2P00-AS

PB_MMA2P00-AS_MMA2P00-ASHT_25GbE_SFP28_MMF_Transceiver.pdf (nvidia.com)

nVIDIA (Mellanox) MMA2L20-AR

PB_MMA2L20-AR_25GbE_SFP28_LR_Transceiver.pdf (nvidia.com)

^{(*)2} Planned for future support

^{(*)3} Cables are not equipped with the product. Please prepare appropriate cables by the user.

^{(*)4} Note that SFP transceiver modules are not equipped with the product. Please prepare appropriate SFP modules by the user.

Factory tested SFP module:

RME (<https://www.rme-audio.de/home.html>) MADI-SFP-MM, MADI-SFP-SM

APAC Opto Electronics Inc. (<https://www.apacoe.com.tw/ja/>) LM38-A3S-TC-N, LS38-A3S-TC-N

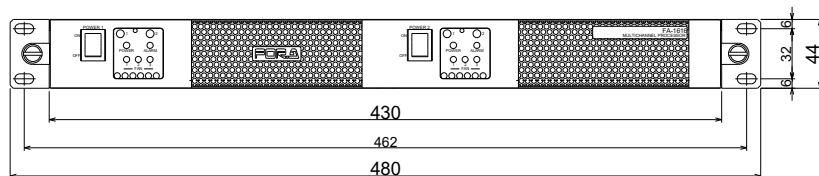
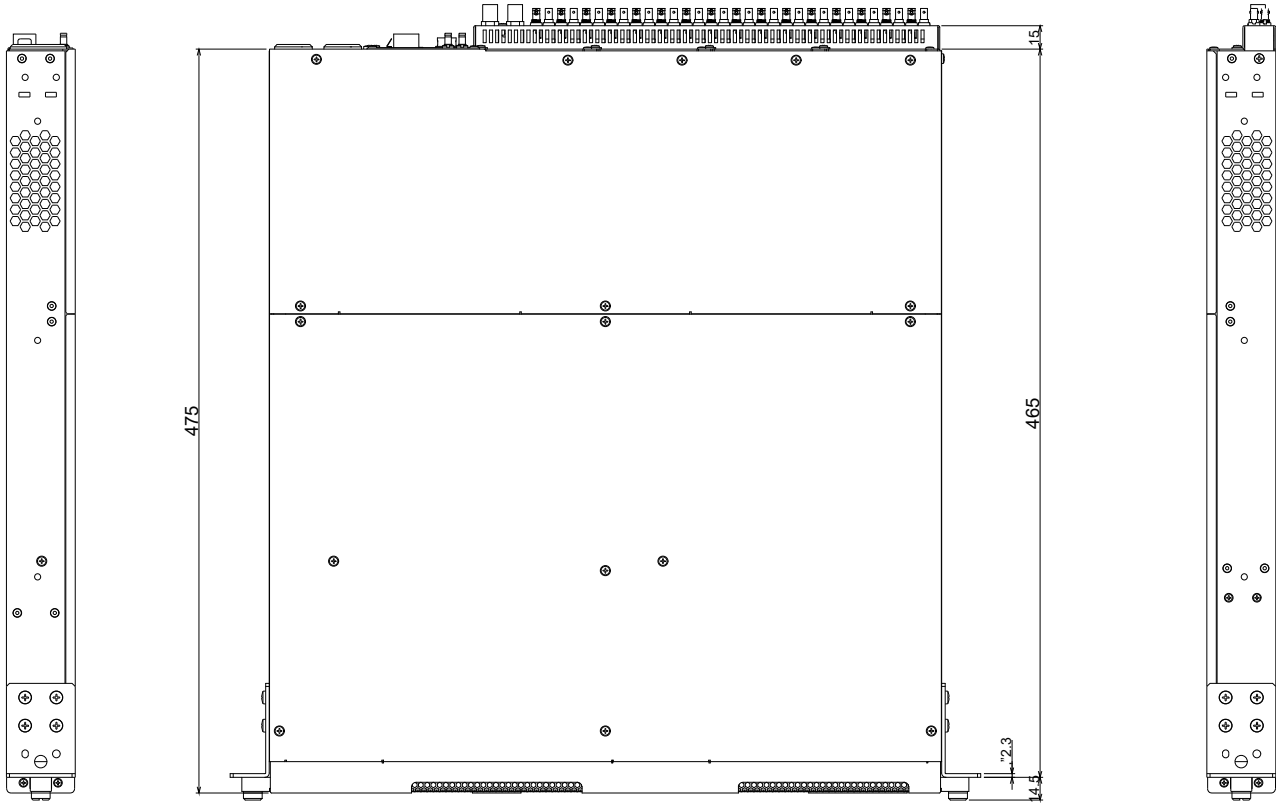
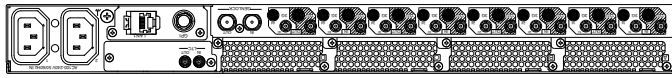
Accessories

AC cord (2 sets), Rubber feet and Packing List sheet

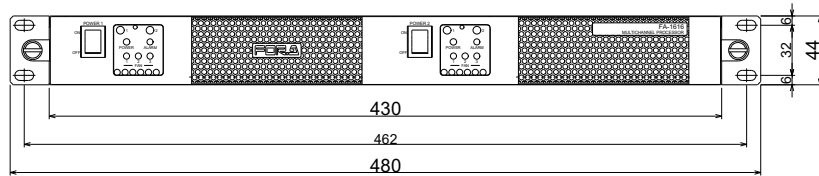
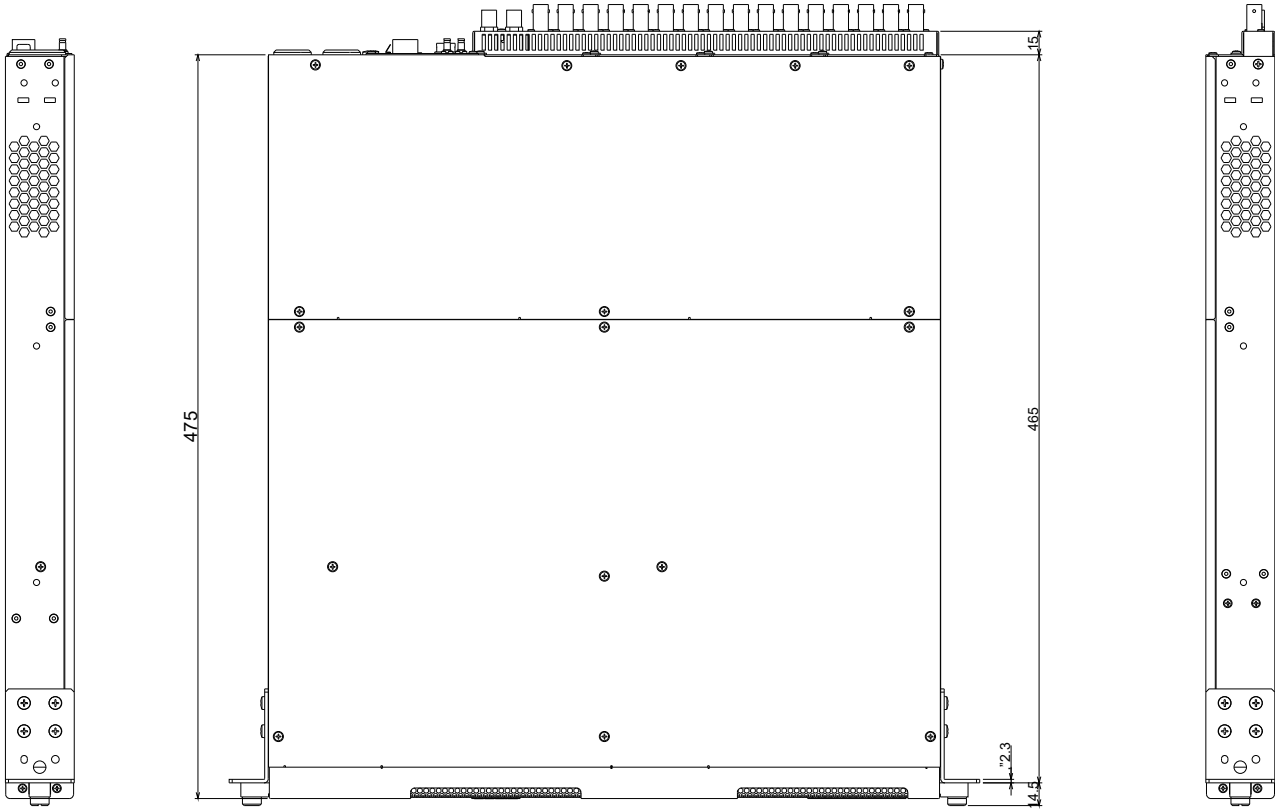
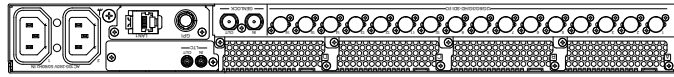
2. External Dimensions

FA-1616HB-12G

(All dimensions in mm.)



FA-1616B-12G



FA-1616HB-3G

