

[Video]

-Video Processing

4:2:2 (Y/Pb/Pr), 8-bit

-Number of Video Channels

12 channels

-Video Input Formats

HDMI IN 1--6

480/59.94i, 480/59.94p, 720/59.94p, 1080/59.94i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p
*1

576/50i, 576/50p, 720/50p, 1080/50i, 1080/50p, 1080/25p *2

1080/23.98p, 1080/24p

VGA (640 x 480/60 Hz), SVGA (800 x 600/60 Hz), XGA (1024 x 768/60 Hz)

WXGA (1280 x 800/60 Hz), SXGA (1280 x 1024/60 Hz)

FWXGA (1366 x 768/60 Hz), SXGA+ (1400 x 1050/60 Hz)

UXGA (1600 x 1200/60 Hz), WUXGA (1920 x 1200/60 Hz)

* The refresh rate is the maximum value of each resolution.

* Conforms to CEA-861-E, VESA DMT Version 1.0 Revision 11.

* 1920 x 1200/60 Hz: Reduced blanking

* The input interlaced video signal is converted to progressive video signal by internal processing.

*1 Frame Rate = 59.94 Hz, 60 Hz

*2 Frame Rate = 50 Hz

SDI IN 1--6

720/59.94p *1, *3

720/50p *1, *4

1080/59.94i, 1080/59.94p, 1080/60p, 1080/29.97p, 1080/30p *2, *3

1080/50i, 1080/50p, 1080/25p *2, *4

1080/23.98p, 1080/24p *2

* The input interlaced video signal is converted to progressive video signal by internal processing.

*1 Output Format = 720p

*2 Output Format = 1080i or 1080p

*3 Frame Rate = 59.94 Hz, 60 Hz

*4 Frame Rate = 50 Hz

-Video Output Formats

HDMI OUT 1--3, SDI OUT 1--3:

720/59.94p *1, *4

720/60p *1, *5

720/50p *1, *8

1080/59.94i *2, *4

1080/60i *2, *5

1080/50i *2, *8

1080/59.94p *3, *4

1080/60p *3, *5

1080/29.97p *3, *6

1080/30p *3, *7

1080/50p *3, *8

1080/25p *3, *9

1080/23.98p *3, *10

1080/24p *3, *11

*1 Output Format = 720p

- *2 Output Format = 1080i
- *3 Output Format = 1080p
- *4 Frame Rate = 59.94 Hz
- *5 Frame Rate = 60 Hz
- *6 Frame Rate = 29.97 Hz
- *7 Frame Rate = 30 Hz
- *8 Frame Rate = 50 Hz
- *9 Frame Rate = 25 Hz
- *10 Frame Rate = 23.98 Hz
- *11 Frame Rate = 24 Hz

USB STREAM:

- 1080/59.94p, 720/59.94p, 640 x 480/59.94p *1
- 1080/60p, 720/60p, 640 x 480/60p *2
- 1080/29.97p, 720/29.97p, 640 x 480/29.97p *3
- 1080/30p, 720/30p, 640 x 480/30p *4
- 1080/50p, 720/50p, 640 x 480/50p *5
- 1080/25p, 720/25p, 640 x 480/25p *6
- 1080/23.98p, 720/23.98p, 640 x 480/23.98p *7
- 1080/24p, 720/24p, 640 x 480/24p *8

*Uncompressed format (YUY2) and Compressed format (Motion JPEG) supported.

- *1 Frame Rate(USB Out) = 59.94 Hz
- *2 Frame Rate(USB Out) = 60 Hz
- *3 Frame Rate(USB Out) = 29.97 Hz
- *4 Frame Rate(USB Out) = 30 Hz
- *5 Frame Rate(USB Out) = 50 Hz
- *6 Frame Rate(USB Out) = 25 Hz
- *7 Frame Rate(USB Out) = 23.98 Hz
- *8 Frame Rate(USB Out) = 24 Hz

-Stream and Record formats

- 720/59.94p *1, *3
- 720/60p *1, *4
- 720/50p *1, *7
- 1080/59.94p *2, *3
- 1080/60p *2, *4
- 1080/29.97p *2, *5
- 1080/30p *2, *6
- 1080/50p *2, *7
- 1080/25p *2, *8
- 1080/23.98p *2, *9
- 1080/24p *2, *10

- *1 Output Format = 720p
- *2 Output Format = 1080p
- *3 Frame Rate (Stream/Record) = 59.94 Hz
- *4 Frame Rate (Stream/Record) = 60 Hz
- *5 Frame Rate (Stream/Record) = 29.97 Hz
- *6 Frame Rate (Stream/Record) = 30 Hz
- *7 Frame Rate (Stream/Record) = 50 Hz
- *8 Frame Rate (Stream/Record) = 25 Hz
- *9 Frame Rate (Stream/Record) = 23.98 Hz
- *10 Frame Rate (Stream/Record) = 24 Hz

File Format: MP4

Codec:

H.264, target bitrate up to 20,000 kbps

AAC LC, 16 bits, 48 kHz, stereo, target bitrate up to 384 kbps

File Format: WAV

Codec:

Linear PCM, 16 bits, 48 kHz, stereo

-Video Player

File Format: MP4 (H.264, AAC), Average bit rate of 20,000 kbps or less, Maximum 1080p60

-Still Image:

Bitmap File (.bmp) Maximum 1920 x 1080 pixels, 24-bit color, uncompressed.

PNG File (.png) Maximum 1920 x 1080 pixels, 24-bit color

JPEG File (.jpg, .jpeg) Maximum 1920 x 1080 pixels, 24-bit color

* It can be stored up to 16 files in the internal memory.

* It can be exported in the SD Card and USB flash drive.

* PNG alpha channel supported.

-Video Effects

Transition: Cut, Mix (Dissolve/Fade/Nam), WIPE (8 types), SPLIT (2 types)

Composition: PinP x 4 (Square, Circle, Diamond), Keyer x 4 (Luminance Key, Chroma Key), DSK x 2 (Luminance Key, Chroma Key, Alpha Key, External Key)

Others: Multi-View (3 types), Flip horizontal, Flip vertical, Still Image capture, Still Image playback, Output fade (Audio, Video: White or Black), Test pattern output, Stream Delay

[Audio]

-Audio Processing

Sample rate: 24 bits, 48 kHz

-Number of Audio Channels

42 channels

-Audio Formats

USB STREAM (input/output): Linear PCM, 24 bits, 48 kHz, 2 ch

Bluetooth (input): Linear PCM, 24 bits, 48 kHz, 2 ch

HDMI IN: Linear PCM, 24 bits, 48 kHz, 2 ch

HDMI OUT: Linear PCM, 24 bits, 48 kHz, 8 ch

SDI IN: Linear PCM, 24 bits, 48 kHz, 2 ch (Conforms to SMPTE 299M)

SDI OUT: Linear PCM, 24 bits, 48 kHz, 8 ch (Conforms to SMPTE 299M)

-Audio Player

File format: WAV (Linear PCM, 16 bits, 48 kHz/44.1 kHz, stereo)

* It can be stored up to 16 tracks in the internal memory.

-Audio Effects

Channel Effects: High pass filter, Echo canceller, Anti-feedback, Noise gate, De-esser, Compressor, 4-Band equalizer, Voice changer, Delay, Auto mixing

Master Effects: Reverb, 4-Band equalizer, Compressor/Limiter, Loudness Auto Gain Control, Adaptive Noise Reduction, Low Frequency Cut, 15-Band GEQ, Delay

Others: Output fade, Test tone output

[Common Section]

-Recording Media

SDHC/SDXC card (sold separately)

USB Memory (sold separately)

* SDXC card is required for video recording.

-Other Functions

Scene Memory (32 types)

Macro Control (100 types)

Sequencer Control

Panel lock function

EDID Emulator

Auto Switching

Auto Input Detect

Smart Tally

Remote Camera Control (Up to 12 units)

External Rec Control

[Connectors]

-Video Input Connectors

HDMI IN 1--6: HDMI type A x 6

* HDCP Supported

* Multi-format Supported

SDI IN 1--6: BNC type x 6

* Conforms to SMPTE 424M (SMPTE 425M-AB), 292M

-Video Output Connectors

HDMI OUT 1--3: HDMI type A x 3

* HDCP Supported

SDI OUT 1--3: BNC type x 3

* Conforms to SMPTE 424M (SMPTE 425M-AB), 292M

USB STREAM: USB Type-C (TM)

-Audio Input Connectors

Analog:

AUDIO IN 1--6: Combo type (XLR, 1/4-inch TRS phone), phantom power DC 48 V (unloaded maximum), 14 mA (maximum load)

AUDIO IN 7/L, 8/R: RCA phono type

Digital:

USB STREAM: USB Type-C (TM)

Bluetooth

HDMI IN 1--6: HDMI type A x 6

SDI IN 1--6: BNC type x 6

-Audio Output Connectors

Analog:

AUDIO OUT 1--4: XLR type
AUDIO OUT 5--6: RCA phono type
PHONES: Stereo 1/4-inch phone type, Stereo miniature phone type

Digital:

USB STREAM: USB Type-C (TM)
HDMI OUT 1--3: HDMI type A x 3
SDI OUT 1--3: BNC type x 3

-Other Connectors

USB HOST: USB A type (for USB flash drive)
USB STREAM: USB Type-C (TM) (for remote control from PC and iPad)
Bluetooth: for remote control from iPad
CTL/EXP 1, 2: 1/4-inch TRS phone type (for remote control from foot switch and expression pedal)
TALLY/GPIO: DB-25 type (Female)(Tally/GPO: 16, GPI: 8)
RS-232: DB-9 type (Male) (for Remote Control)
DIRECT STREAM: RJ45, 1000BASE-TX (for Live Streaming and Remote Control)
Reference IN/THRU: BNC type * Black Burst (Sync to frames), Bi-Level, Tri-Level

[Audio Input/Output Characteristics]

-Input Level

AUDIO IN 1--6: -64--+4 dBu (Maximum: +24 dBu)
AUDIO IN 7/L, 8/R: -10 dBu (Maximum: +10 dBu)

-Input Impedance

AUDIO IN 1--6: 30 k ohms
AUDIO IN 7/L, 8/R: 7 k ohms

-Output Level

AUDIO OUT 1--4 (XLR): +4 dBu (Maximum: +24 dBu)
AUDIO OUT 5--6 (RCA): -10 dBu (Maximum: +10 dBu)
PHONES: 92 mW + 92 mW (32 ohms)

-Output Impedance

AUDIO OUT (XLR): 600 ohms
AUDIO OUT (RCA): 1 k ohm
PHONES: 56 ohms

-Residual Noise Level (IHF-A, typ.)

-92 dBu (All faders: Min)
-89 dBu ([MAIN] Fader: Unity, Input faders: Unity only one AUDIO IN 1 Connector, Analog gain: Min)
-62 dBu ([MAIN] Fader: Unity, Input faders: Unity only one AUDIO IN 1 Connector, Analog gain: Max)
* Input 150 ohms terminate
* Output Connector: AUDIO OUT 1--4 Connectors (XLR)

-101 dBu (All faders: Min)

-100 dBu ([MAIN] Fader: Unity, Input faders: Unity only one AUDIO IN 1 jack, Analog gain: Min)
-75 dBu ([MAIN] Fader: Unity, Input faders: Unity only one AUDIO IN 1 jack, Analog gain: Max)
* Input 150 ohms terminate
* Output Connector: AUDIO OUT (RCA) Connectors

[Others]

-Bluetooth

Ver 4.2

Profile Support: A2DP (Audio), GATT (MIDI over Bluetooth Low Energy)

Codec: SBC (Support to the content protection of the SCMS-T method)

-Display

Graphic Type, 7", Wide VGA (800 x 480 dots), backlite LCD (Color/Touch screen)

-Power Supply

AC Adaptor

-Current Draw

3.0 A

-Power Consumption

69 W

-Operation Temperature

+0 to +40 degrees Celsius

+32 to +104 degrees Fahrenheit

-Dimensions

437 (W) x 304 (D) x 109 (H) mm

17-1/4 (W) x 12 (D) x 4-5/16 (H) inches

482 (W) x 304 (D) x 109 (H) mm

19 (W) x 10 (D) x 4-1/16 (H) inches

* When rack mount angles are fitted.

-Weight (excluding AC adaptor)

5.3 kg

11 lbs 11 oz

-Accessories

Startup Guide

Leaflet "USING THE UNIT SAFELY"

AC adaptor

Power cord

Rack-mount angle x 2

Rack-mount angle mounting screw x 6

-Options (sold separately)

Footswitch: BOSS FS-5U, FS-6, FS-7

Expression Pedal: EV-5, EV-30, BOSS FV-500L, FV-500H

* 0 dBu = 0.775 Vrms

* This product is a Class A digital device under FCC part 15.