

Overview

The control surface with single large touch panel display and 26 faders enables you to perform general operation on the RIVAGE PM system. A CS-R10-S can be added to a RIVAGE PM system to provide dual-console control and flexibility. Dual power supply units are built in for high reliability.



Rear Panel

Features

- Fader configuration: 26 (12+12+2) faders.
- Touch Screen: 15" x 1
- Local I/O: 8 in, 8 out.
- Yamaha's industry-standard Selected Channel concept, providing direct access to parameters of any channel selected via its SEL key.
- Up to 8 RPIO units can be connected to each TWINLANE ring. (Maximum 16 units in one RIVAGE PM system)
- Up to 48 Rio units can be mounted in one RIVAGE PM system.
- Up to 2 DSP engine units can be connected within one RIVAGE PM system.
- Up to 2 control surfaces can be connected within one RIVAGE PM system.
- Seamlessly integrated remote control and offline editing via computer software.
- Wireless remote control of a RIVAGE PM system is possible via an iPad app.
- Individual wireless MIX/MATRIX mixing can be simultaneously performed by up to 10 different iPad, iPhone, iPod touch, or Android devices (V4.0 or later)
- Data exchangeable using Console File Converter.
- Direct 2-track recording to standard USB flash drives, or serious multitrack recording to a DAW via Dante.
- Multitrack recordings can be used for "virtual sound check" when the performers aren't available.
- Expansion Slots: MY Slots: 2
- GPI Interface: 8-in/8-out
- Other features: comprehensive Fader Bank section with recallable custom banks, editable channel names and colors, user defined keys and user defined knobs, 1000 scene memories, input and output delays, ample EQ and dynamics processing, 24 DCA groups, 12 mute groups, multiple user defined key and knob, and more.
- Dimensions (W x H x D): 1128 x 417 x 848 mm
- Net weight: 67 kg

Specifications

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Functional Specifications

| | | | |
|-------------------------|------------------------------|----------|---|
| Local Connectors | Analog | In | 8 (SILK) |
| | | Out | 8 |
| | Digital | AES IN | 4 (AES/EBU) |
| | | AES OUT | 4 (AES/EBU) |
| | Expansion Slot | MY | 2 |
| | GPI | IN | 8 |
| | | ONT | 8 |
| | Word Clock | | Only Out |
| | MIDI | | In / Out |
| | USB | File | 4 |
| | | Rec/Play | 1 |
| | Redundant PSU | | Built-in dual power supply |
| | Meter Bridge | | On screen |
| | Lamp | | 3 |
| | Talkback In | | Yes |
| Scene Memory | Tactile Control Keys | | Yes |
| | Display | | 15 inch Touch Panel x2 |
| | Centralogic Section | | Yes |
| User Interface | Faders | | 12+12+2 |
| | Selected Channel Encoders | | All Parameters |
| | Channel Encoder | | Yes |
| | Channel Name / Color Display | | Yes |
| | Custom Fader Banks | | Yes (6 x 5 on each bay) (V4.0 or later) |
| | User Defined Keys | | 12 (x 4 banks) |
| | User Defined Knobs | | 4 (x 4 banks) |
| | Touch and Turn Knob | | Yes (1) |
| | Monitor Level Knob | | Yes (2: A and B) |
| | Wooden Arm Rest | | Yes |
| | Editor | | RIVAGE PM Editor |
| Software | StageMix | | RIVAGE PM StageMix |
| | Console File Converter | | Yes |

Specifications

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General Specifications

| | | |
|--------------------|-----------------------------|---|
| User Interface | | 100 mm touch-sensitive motorized fader (resolution=1024 steps) × 26 15" multi-touch screen (high brightness, wide view angle) x 2 |
| Power Requirements | | 100-240 V, 50/60 Hz |
| Power Consumption | | 380 W |
| Dimensions | W x H x D | 1128mm x 417mm x 848mm (44.4" x 16.4" x 33.4") (including the rubber feet) |
| Weight | | 67kg (147.7lbs) |
| NC Value *1 | | FAN speed LOW: NC=15 / HIGH: NC=25 |
| Temperature Range | Operating Temperature Range | Min: 0°C, Max: 40°C |
| | Storage Temperature Range | Min: -20°C, Max: 60°C |
| Accessories | | System set up guide, AC power cord x 2, Dust cover Gooseneck Lamp LA1L x 3 |
| Optional Items | | Mini-YGDAI card |

*1 Measured 30 cm horizontally away and vertically up from the unit (front pad).

Audio Specifications

At the time of measurement, all levels are set to nominal. Output impedance of the signal generator is 150Ω.

Frequency Response

Fs=44.1kHz, 48kHz, 88.2kHz, 96kHz @20Hz-20kHz, reference to the nominal output level @ 1kHz

| Inputs | Outputs | RL | Conditions | Min. | Typ. | Max. | Unit |
|-------------|--------------|------|--------------|------|------|------|------|
| OMNI IN 1-8 | OMNI OUT 1-8 | 600Ω | GAIN: +66 dB | -0.8 | 0.0 | 0.5 | dB |

Total Harmonic Distortion *1

Fs=44.1kHz, 48kHz, 88.2kHz, 96kHz

| Inputs | Outputs | RL | Conditions | Min. | Typ. | Max. | Unit |
|--------------|--------------|------|--|------|------|------|------|
| OMNI IN 1-8 | OMNI OUT 1-8 | 600Ω | +4 dBu@20 Hz-20 kHz, GAIN:+66 dB | | | 0.12 | % |
| OMNI IN 1-8 | OMNI OUT 1-8 | 600Ω | +4 dBu@20 Hz-20 kHz, GAIN:-6 dB | | | 0.05 | % |
| Internal OSC | OMNI OUT 1-8 | 600Ω | Full scale output@1 kHz | | | 0.02 | % |
| Internal OSC | PHONES | 8Ω | Full scale output@1 kHz, phones level control: max | | | 0.2 | % |

*1 An 80kHz, 18dB/octave low pass filter is used to measure total harmonic distortion.

Hum & Noise *1

Fs=44.1kHz, 48kHz, 88.2kHz, 96kHz

| Inputs | Outputs | RL | Conditions | Min. | Typ. | Max. | Unit |
|-------------|--------------|------|---|------|------------|------|------|
| OMNI IN 1-8 | OMNI OUT 1-8 | 600Ω | RS= 150Ω, GAIN: +66 dB Master fader at nominal level and one Ch fader at nominal level. | | -128 EIN*2 | | dBu |
| | | | | | -62 | | dBu |
| OMNI IN 1-8 | OMNI OUT 1-8 | 600Ω | RS= 150Ω, GAIN: -6 dB Master fader at nominal level and one Ch fader at nominal level. | | -90 | -85 | dBu |

| | | | | | | | |
|------------|--------------|------|--|--|-----|-----|-----|
| All Inputs | OMNI OUT 1-8 | 600Ω | RS= 150Ω, GAIN: -6 dB Master fader at nominal level and all OMNI IN 1-8 faders at nominal level. | | | -76 | dBu |
| - | OMNI OUT 1-8 | 600Ω | Residual output noise, ST master off. | | -92 | | dBu |
| - | PHONES | 8Ω | Residual output noise, phones level control min. | | | -88 | dBu |

*1 An IHF-A filter is used to measure hum & noise level.

*2 EIN stands for Equivalent Input Noise.

Dynamic Range *1

Fs=44.1kHz, 48kHz, 88.2kHz, 96kHz

| Inputs | Outputs | RL | Conditions | Min. | Typ. | Max. | Unit |
|-------------|--------------|------|---------------------|------|------|------|------|
| OMNI IN 1-8 | OMNI OUT 1-8 | 600Ω | AD +DA, GAIN: -6 dB | | 114 | | dB |
| - | OMNI OUT 1-8 | 600Ω | DA Converter | | 116 | | dB |

*1 An IHF-A filter is used to measure dynamic range.

Crosstalk *1

@1 kHz Fs=44.1kHz, 48kHz, 88.2kHz, 96kHz

| From/To | To/From | Conditions | Min. | Typ. | Max. | Unit |
|------------|---------------------------|---|------|------|------|------|
| OMNI IN n | OMNI IN (n-1) or (n + 1) | OMNI IN 1-8 adjacent inputs, GAIN:-6 dB | | | -100 | dB |
| OMNI OUT n | OMNI OUT (n-1) or (n + 1) | OMNI OUT 1-8, input to output | | | -100 | dB |

*1 A 22kHz, 30 dB/octave low pass filter is used to measure crosstalk.

Specifications

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Analog Input Characteristics *1 *2 *3

| Input Jack | GAIN | Input Impedance | Source Impedance | Input Level | | | Connector |
|-------------|--------|-----------------|---------------------------|-----------------|------------------|------------------|----------------------------|
| | | | | Sensitivity*4 | Nominal | Max. before Clip | |
| OMNI IN 1-8 | +66 dB | 10kΩ | 50-600Ω Mics & 600Ω Lines | -82dBu (61.6μV) | -62dBu (0.616mV) | -42dBu (6.16mV) | XLR-3-31 type (Balanced)*5 |
| | -6 dB | | | -10dBu (245mV) | +10dBu (2.45V) | +30dBu (24.5V) | |
| TALKBACK | +54 dB | 10kΩ | 50-600Ω Mics & 600Ω Lines | -70dBu (245μV) | -50dBu (2.45mV) | -30dBu (24.5mV) | XLR-3-31 type (Balanced)*5 |
| | -6 dB | | | -10dBu (245mV) | +10dBu (2.45V) | +30dBu (24.5V) | |

*1 0dBu= 0.775 Vrms for all specifications

*2 All AD converters are 24bit linear.

*3 OMNI IN jacks 1-8 and the TALKBACK XLR jack feature +48V DC phantom power which is switchable for each jack individually from the unit's software.

*4 Sensitivity is defined as the input level required to produce an output of +4dBu (1.23V) or the nominal output level when all faders and level controls are set to maximum.

*5 Connectors are balanced. (1= GND, 2= HOT, 3= COLD)

Analog Output Characteristics *1 *2 *3

| Output Jacks | Output Impedance | Load Impedance | Max Output Level Select Switch *4 *5 | Output Level | | Connector |
|----------------------|------------------|----------------|--------------------------------------|----------------|------------------|--|
| | | | | Nominal | Max. before Clip | |
| OMNI OUT 1-8 | 75Ω | 600Ω Lines | +24dB (default) | +4dBu (1.23V) | +24dBu (12.3V) | XLR-3-32 type (Balanced)*7 |
| | | | +18dB | -2dBu (0.616V) | +18dBu (6.16V) | |
| | | | +15dB | -5dBu (0.436V) | +15dBu (4.36V) | |
| PHONES A, B (1/2 *3) | 15Ω | 8Ω Phones | - | 75mW*6 | 150mW | Stereo Phone Jack (TRS) (Unbalanced)*8 |
| | | 40Ω Phones | - | 65mW*6 | 150mW | |

*1 0dBu= 0.775 Vrms for all specifications

*2 All DA converters are 24bit linear.

*3 PHONES A, B 1/2 (CS-R10), PHONES A/B (CS-R10S)

*4 The unit features an internal switch to change the maximum output level.

*5 The 24dBu switch position can be changed for fee so that the output level will be + 20dBu.

*6 These measurements were obtained when the PHONES A/B LEVEL knobs are set 10 dB lower than the maximum.

*7 Connectors are balanced. (1= GND, 2= HOT, 3= COLD)

*8 Connectors are unbalanced. (Tip=LEFT, Ring= RIGHT, Sleeve= GND)

Digital Input & Output Characteristics

| Jack | Format | Data Length | Level | Connector |
|-----------------------------------|---------|-------------|-------|----------------------------|
| AES/EBU IN 1/2, 3/4, 5/6, 7/8 *1 | AES/EBU | 24bit | RS422 | XLR-3-31 type (Balanced)*2 |
| AES/EBU OUT 1/2, 3/4, 5/6, 7/8 *1 | AES/EBU | 24bit | RS422 | XLR-3-32 type (Balanced)*2 |

*1 Features sampling rate converters.

Input SRC

Supported input frequency (conversion source): 44.1 kHz-4%-200ppm - 96 kHz+4.1667%+200 ppm

Output SRC

Supported output frequency (conversion destination): 44.1 kHz-4%-200ppm - 96 kHz+4.1667%+200 ppm

*2 Connectors are balanced. (1= GND, 2= HOT, 3= COLD)

Control I/O Characteristics

| Terminal | | Format | Level | Connector |
|------------------|-----|--------------|---------------------|----------------------|
| WORD CLOCK | OUT | - | TTL/75Ω | BNC |
| MIDI | IN | MIDI | - | DIN 5P |
| | OUT | MIDI | - | DIN 5P |
| USB 1-4 | | USB 2.0 Host | USB | USB A (Female) |
| RECORDING *1 | | USB 2.0 Host | USB | USB A (Female) |
| VIDEO OUT | | - | DVI-D | DVI |
| NETWORK [PC] | | IEEE802.3 | 10BASE-T/100BASE-TX | etherCON CAT5 *2 *3 |
| To ENGINE IN/OUT | | - | 1000BASE-T | etherCON CAT5e *3 *4 |
| GPI *5 | | - | - | D-sub 25pin (Female) |
| LAMP 1-3 | | - | 0V-12V | XLR-4-31 type *6 |

*1 Supported file formats are WAV and MP3.

*2 CAT5 or higher cables are used for connections.

*3 STP cables are recommended for connections.

*4 CAT5e or higher cables are used for connections.

*5 Input pin

CH1-7 TTL level (input voltage 0-5V)

CH8 Photo coupler (input voltage 0-24V, low level: 1V or lower, high level: 5V or higher)

Output pin

CH1-7 Open drain output (max supply voltage 12V, max. sink current/pin 75mA)

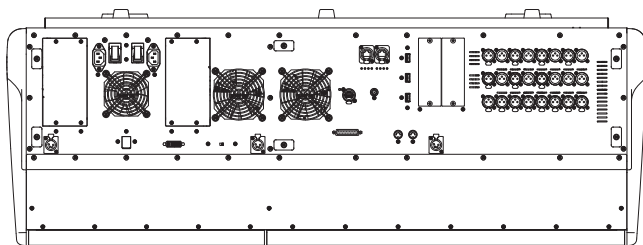
CH8 Relay contact (max. 1A/30VDC)

Power supply pin

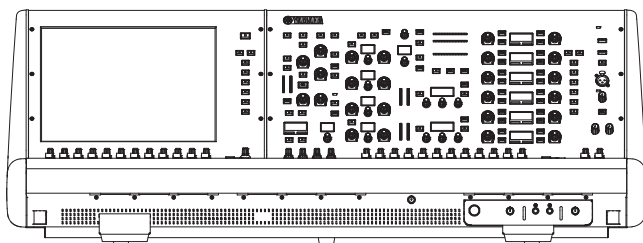
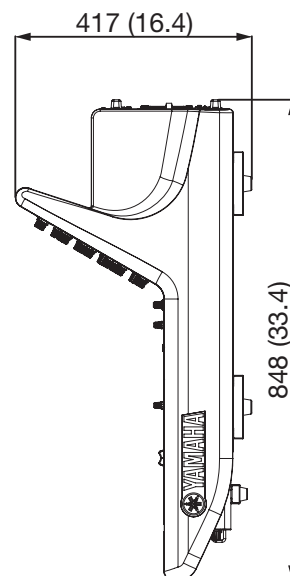
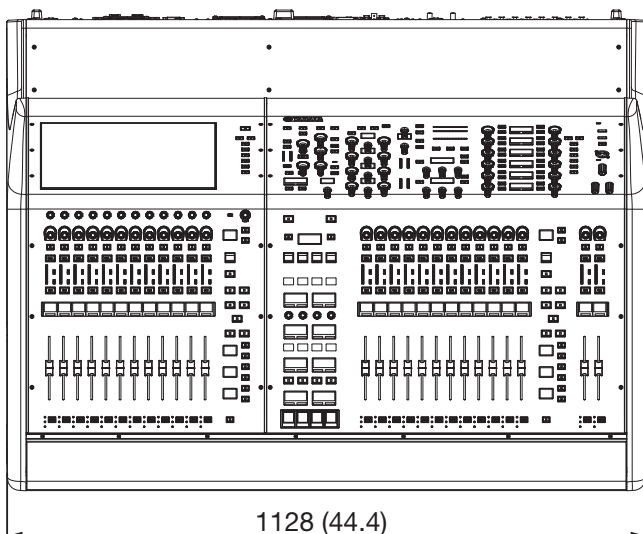
Output voltage 5 V±5%, max. output current 600mA

*6 4-pin=+12V, 3-pin=GND; Up to 5 W is supported for lamp rating.

Dimensions



Unit: mm (inch)



RIVAGE PM Components

- Control Surface CS-R10 / CS-R10-S / CSD-R7 / CS-R5 / CS-R3
- Signal Processor DSP-RX / DSP-RX-EX / DSP-R10
- I/O Rack RPio622 / RPio222 / Rio3224-D2 / Rio1608-D2 / RSio64-D / RMio64-D / Ri8-D / Ro8-D
- Audio Interface Card RY16-ML-SILK / RY16-DA / RY16-AE / HY256-TL / HY256-TL-SMF / HY144-D / HY144-D-SRC / HY128-MD

Software

- RIVAGE PM Editor
- RIVAGE PM StageMix
- Yamaha Console File Converter
- Steinberg Nuendo Live

Architectural and Engineering Specifications

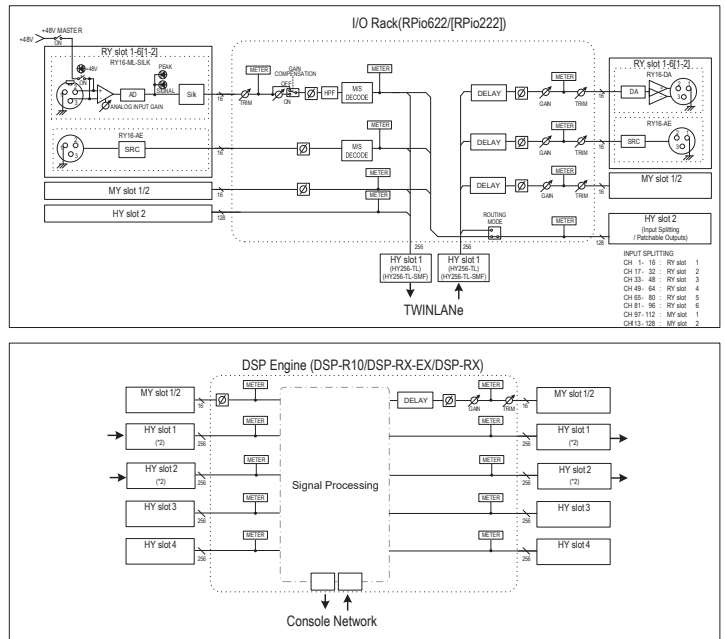
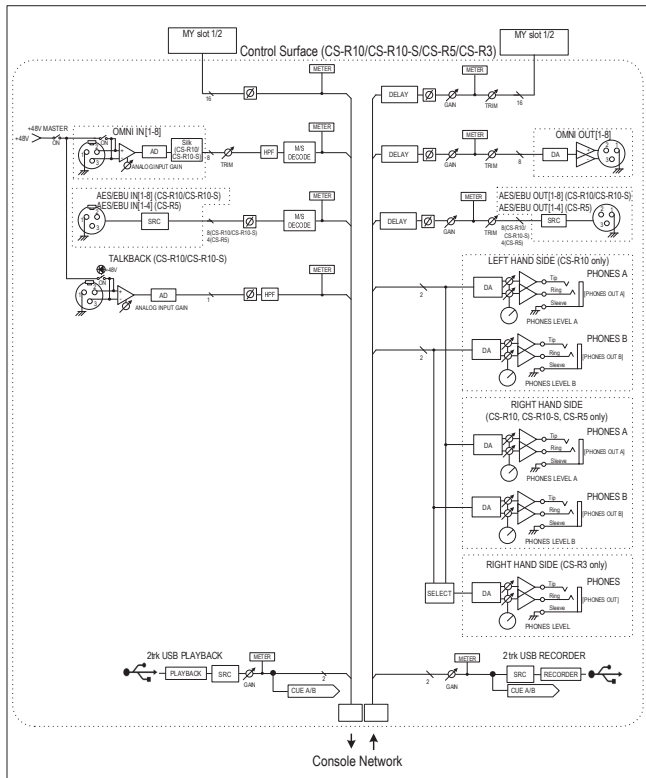
The Yamaha CS-R10-S shall be a control surface for use with the Yamaha RIVAGE PM10 Digital Mixing System. CS-R10-S shall adopt TWINLANe network connectivity and it shall build a console network with low latency. Selected Channel shall provide direct access to parameters of any channel selected via its SEL key. It shall include 12 faders in the left section and 12 fader in the right section plus 2 master faders. All the faders are touch-sensitive 100mm motorized faders. The CS-R10-S shall provide functions for fast, efficient mixing via an intuitive interface. It shall include a 15" touch-screen Multi Function Display. Physical controllers other than faders shall include the Selected Channel controllers, 12 x 4 banks User Defined Keys, 4 x 4 banks User Defined Knobs, and 2 Touch and Turn knob provides directly and intuitively controllability. Local I/O shall include 8 analog microphone/line inputs and 8 outputs, 4 AES/EBU inputs and output (with SRC), GPI ports (8 in/8 out), word clock I/O, MIDI I/O, network port, 5 USB (1 for 2-track recording), and Video Out (DVI-D). It shall be Dual redundant power supply and power consumption shall be 380 W. Dimensions shall be 1128 (W) x 417 (H) x 848 (D) mm. Weight shall be 67 kg.

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Block Diagrams

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Control Surface, I/O Rack, DSP Engine

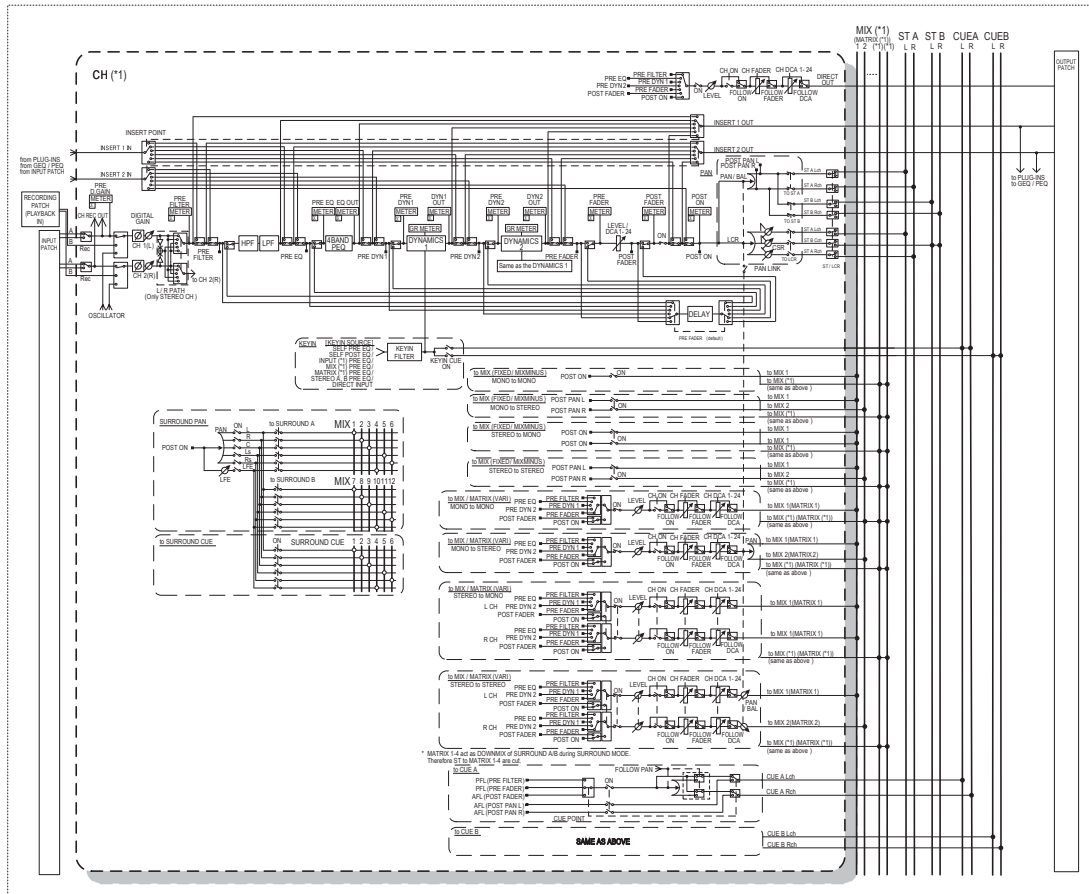


(*)2) Supported cards: TWINLANE network cards and other HY cards

Block Diagrams

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CH (*1)



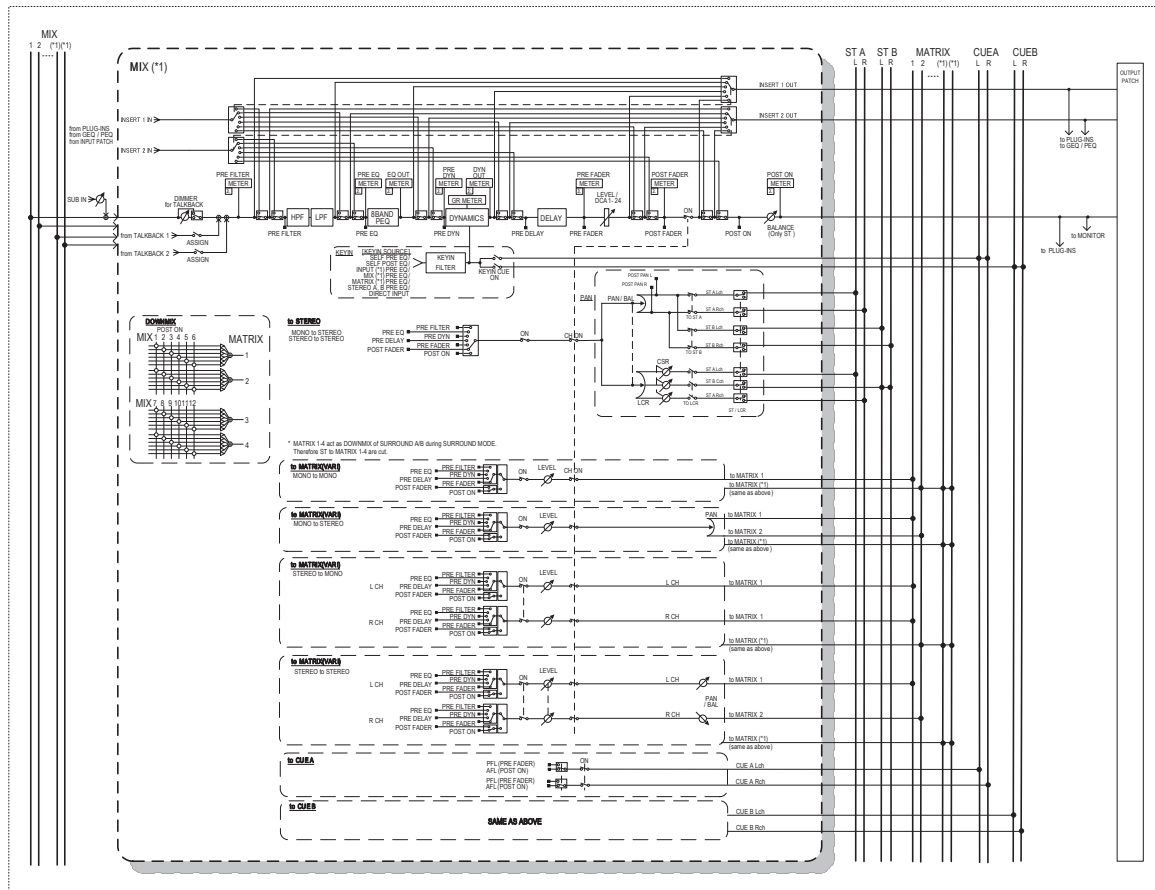
(*1) The number of channels varies depending on the model. Refer to the following information.

- CSD-R7: INPUT 1-144, MIX 1-60, MATRIX 1-36
- DSP-R10: INPUT 1-144, MIX 1-72, MATRIX 1-36
- DSP-RX-EX: INPUT 1-288, MIX 1-72, MATRIX 1-36
- DSP-RX: INPUT 1-120, MIX 1-48, MATRIX 1-24

Block Diagrams

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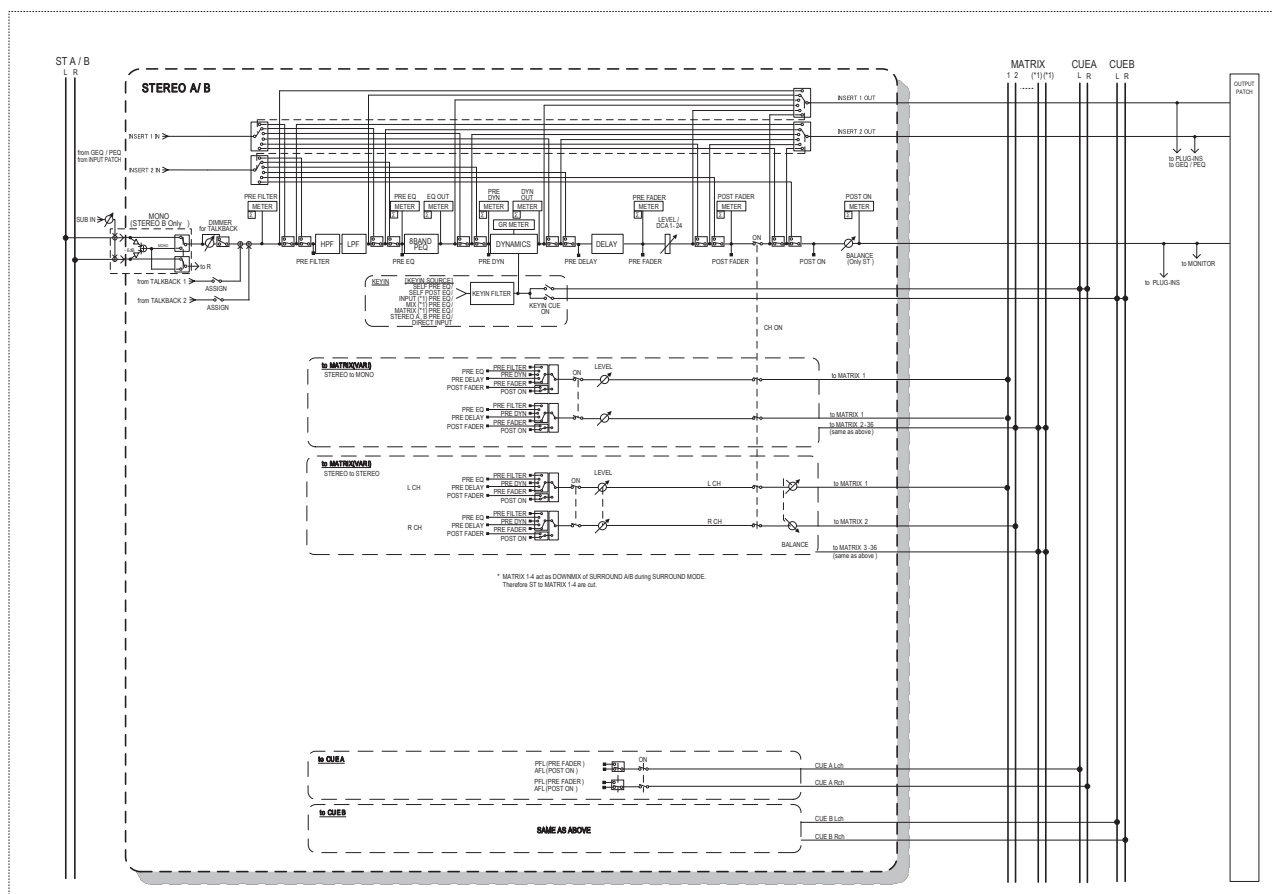
MIX (*1)



(*1) The number of channels varies depending on the model. Refer to the following information.

DSP-RX: INPUT 1-144, MIX 1-60, MATRIX 1-36
 DSP-R10: INPUT 1-144, MIX 1-72, MATRIX 1-36
 DSP-RX-EX: INPUT 1-288, MIX 1-72, MATRIX 1-36
 DSP-RX: INPUT 1-120, MIX 1-48, MATRIX 1-24

STEREO A/B



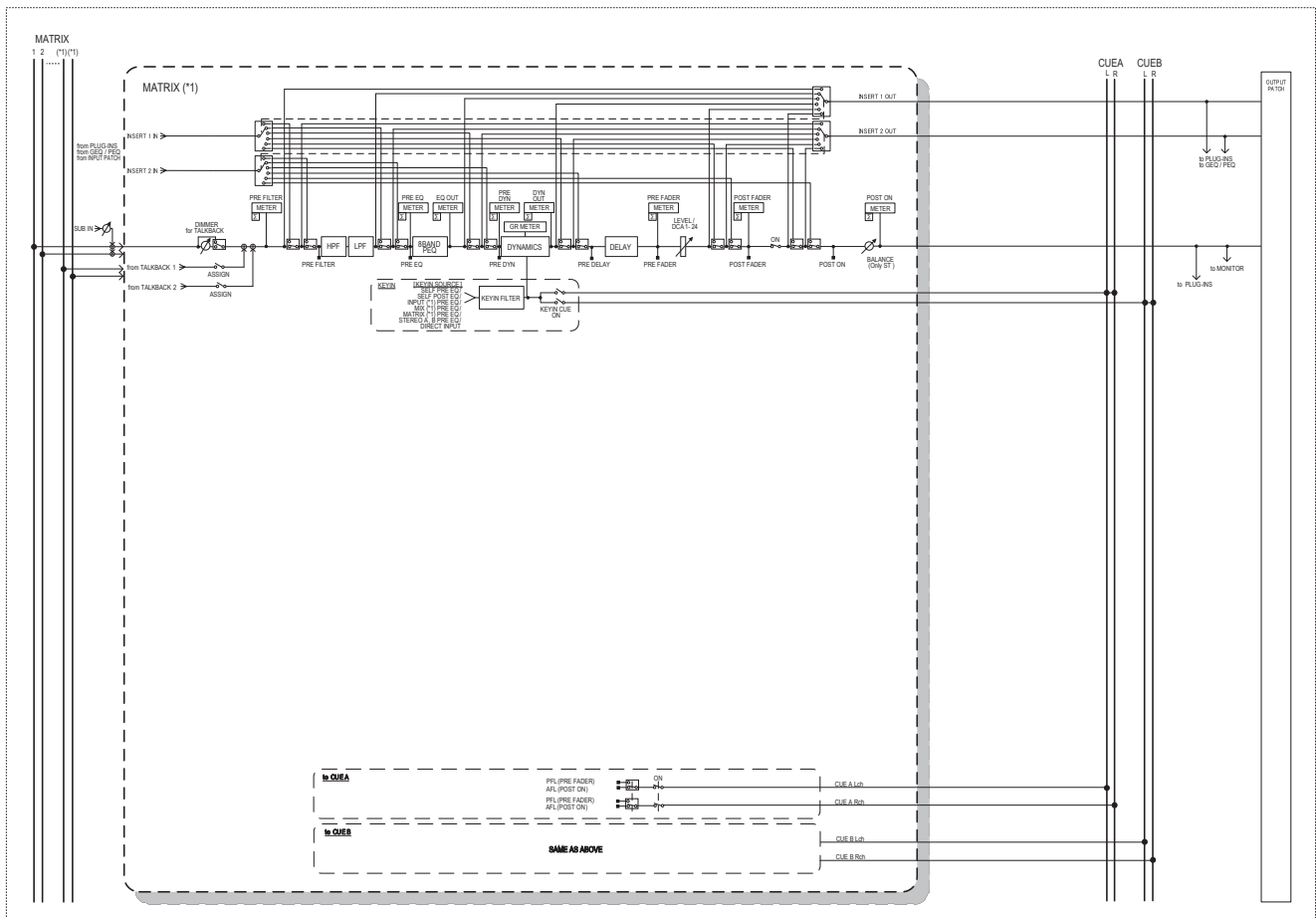
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 DSP-R10: INPUT 1-144, MIX 1-72, MATRIX 1-36
 DSP-RX-EX: INPUT 1-288, MIX 1-72, MATRIX 1-36
 DSP-RX: INPUT 1-120, MIX 1-48, MATRIX 1-24

Block Diagrams

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MATRIX (*1)

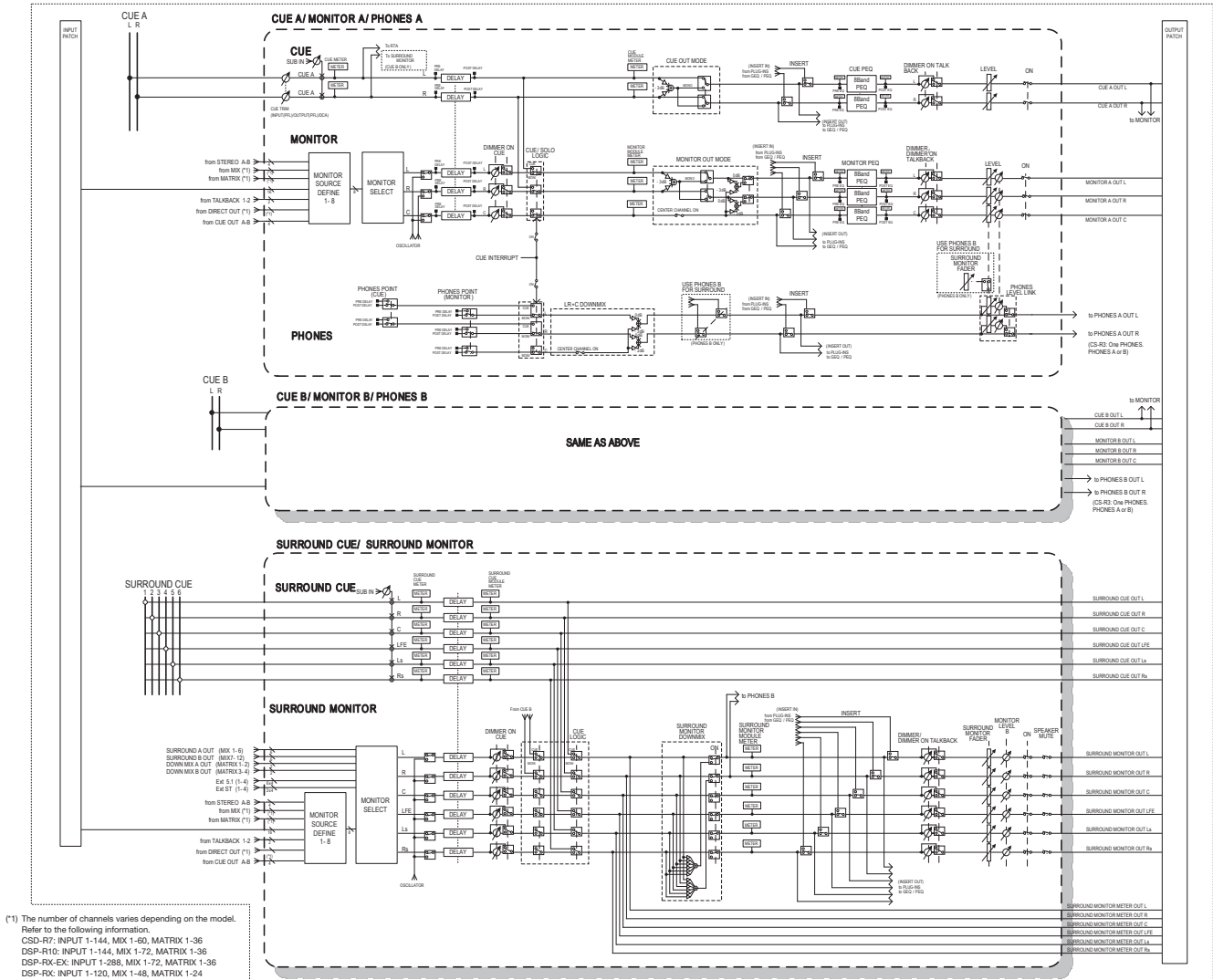


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 DSP-R10: INPUT 1-144, MIX 1-72, MATRIX 1-36
 DSP-RX-EX: INPUT 1-288, MIX 1-72, MATRIX 1-36
 DSP-RX: INPUT 1-120, MIX 1-48, MATRIX 1-24

Block Diagrams

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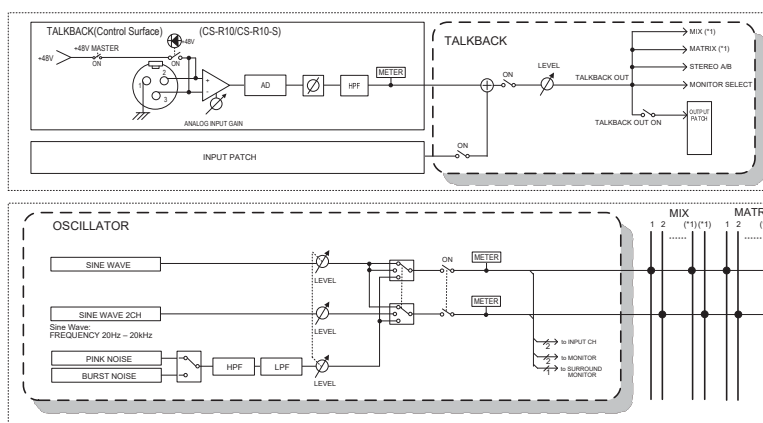
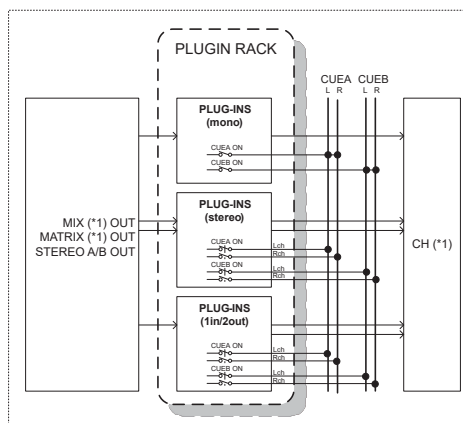
CUE/MONITOR/MISC.

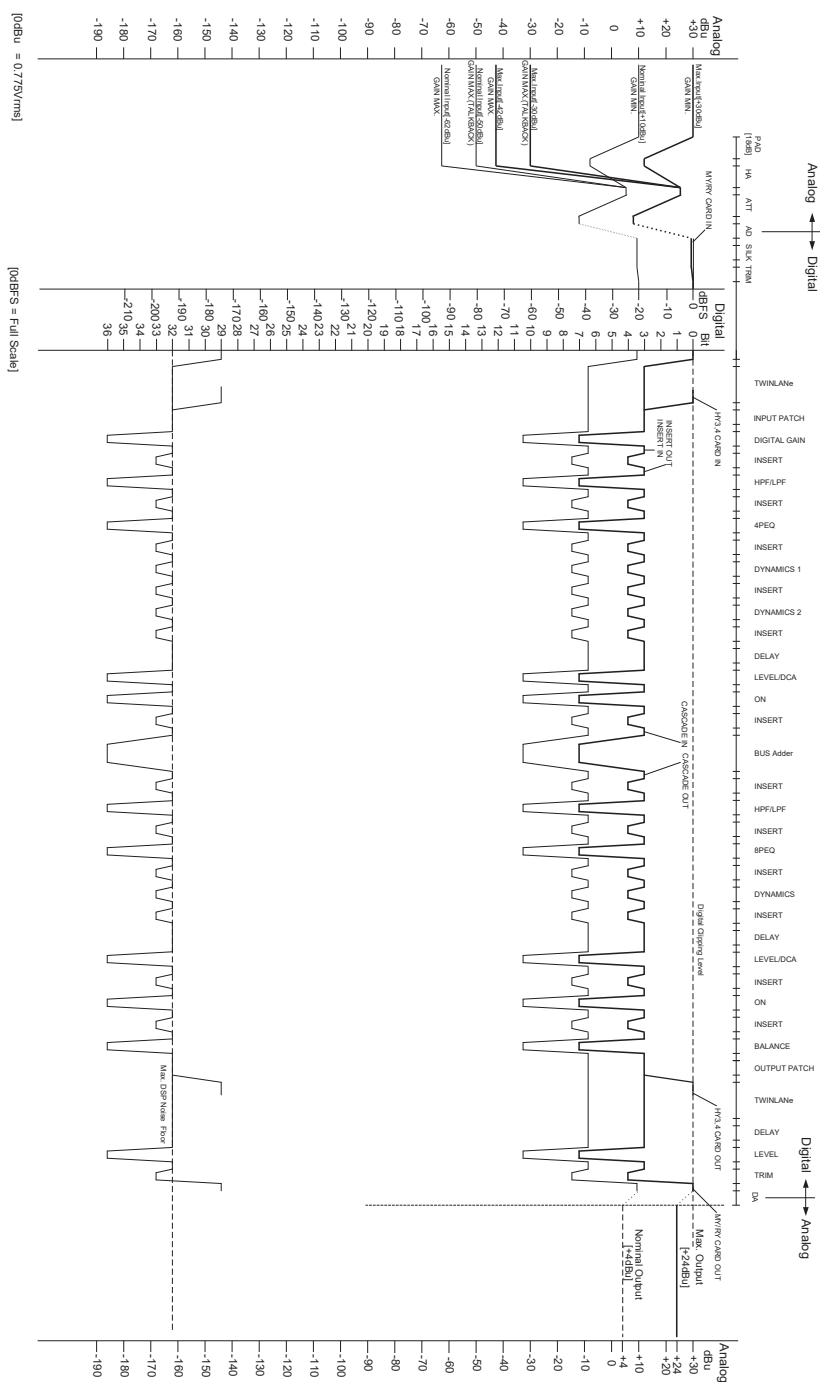


Block Diagrams

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(*) The number of channels varies depending on the model.
Refer to the following information.
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DSP-R10: INPUT 1-144, MIX 1-72, MATRIX 1-36
DSP-RX-EX: INPUT 1-288, MIX 1-72, MATRIX 1-36
DSP-RX: INPUT 1-120, MIX 1-48, MATRIX 1-24





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