

Roland

*Introducing the next step in audio transport flexibility  
— the 24x16 Digital Snake*

STAGE UNIT

# S-2416



*Digital Snake*  
Multi Channel Digital Audio Transfer System

**REAC**

# A new standard in digital stage units

- 24 input x 16 output analog and 8 input x 8 output digital, for a total of 32 input and 24 output channels
- Two REAC ports to cascade to additional snake for expanded inputs and outputs or for a fully redundant, zero-loss audio backup
- Newly developed high-grade discrete mic preamps on all analog inputs

## STAGE UNIT S-2416



### 24 inputs and 16 outputs in a 4U rack size

The chassis houses 24 analog inputs and 16 analog outputs in an EIA rack-mount size of 4U. All input sections are equipped with discrete mic preamps that have been freshly designed to be transparent with uncolored sound. What's more, each XLR jack features three-colored lights that clearly communicate the status of phantom power, clipping, and signal presence. The use of Neutrik connectors assures ruggedness for demanding environments.



### AES/EBU ports provide a digital input/output environment

The rear panel provides AES/EBU connectivity (25-pin D-sub type) for 8 channels of input and output, enabling connection to speaker processors, amps, and other devices capable of AES/EBU input and/or output. Input via AES is assigned to channels 25 through 32 and output is selectable by a mode switch. When combined with analog input and output, the S-2416 can achieve up to 32 inputs and 24 outputs.

\*When using AES/EBU input/output, external syncing to a master clock is required. Use third-party AES/EBU breakout cables to make connections.



#### Pin layout of AES/EBU connector

Signal	Data In Ch. 1-2 3-4 5-6 7-8	Data Out Ch. 1-2 3-4 5-6 7-8	Open	GND
Hot	1 2 3 4	5 6 7 8		10,12,13,22
Cold	14 15 16 17	18 19 20 21	9,11	23,24,25

Digital Snake

### Two REAC connectors, enabling support for redundant transmission

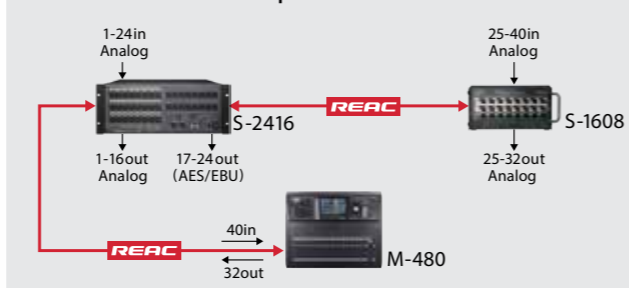
With two REAC connectors – a main and a backup – a redundant REAC network is possible. If a problem occurs with the main line, operation instantly switches to the backup with no break up or click/pop in sound. What's more, use of Neutrik Ethercon connectors assures both a reliability and ruggedness for any type of environment.



### Easily expand I/O with a cascade connection

The S-2416 is the first Digital Snake capable of a cascade connection. Switching the device to Cascade mode and connecting another Digital Snake makes it possible to expand inputs and outputs up to 40x40 channels. Any of four patterns can be selected for the number of channels output to the additional Digital Snake with a cascade connection: 40 (1-40 ch), 32 (9-40 ch), 24 (17-40 ch), and 16 (25-40 ch).

#### Cascade connection example



### High sampling rate of 96 kHz and word-clock input/output

The S-2416 supports a high bit rate of 24 bits and a high sampling rate of 96kHz. A mode switch enables selection of 96 kHz, 48 kHz, or 44.1 kHz, when the S-2416 is switched to Clock master mode. The unit is also equipped with word-clock input and output connectors (BNC) for supplying a master clock signal when using the AES/EBU connection.



### DIP switches for easily adjusting the configuration

DIP switches set the REAC mode, AES/EBU in/out, cascade settings, and sampling rate.

#### MODE SWITCH

1	REAC SLAVE MODE	2	REAC BACKUP MODE	3	4	CASCADE OUTPUT
OFF	CLOCK SLAVE	OFF	BACKUP	OFF	OFF	1-40
O N	CLOCK MASTER	O N	CASCADE	OFF	O N	9-40
				O N	OFF	17-40
				O N	O N	25-40
5	AES/EBU INPUT	6	AES/EBU OUTPUT	7	8	SAMPLE RATE
OFF	ENABLE	OFF	1-8	OFF	OFF	96 KHz
O N	DISABLE	O N	17-24	OFF	O N	48 KHz
				O N	OFF	44.1 KHz
				O N	O N	WORD CLOCK

### MUTE ALL OUTPUTS button for silencing all output



The S-2416 is equipped with a MUTE ALL OUTPUTS button to temporarily silence all outputs - a handy feature when changing cable connections.

### Mode control via REAC, USB, or RS-232C

Mic preamps can be controlled using any V-Mixer, R-1000, an S-4000R unit connected by RS-232C, or by using the S-4000 RCS remote-control software on a computer (Mac or Windows) connected via USB.

\*S-4000RCS can be downloaded from [www.rolandsystemsgroup.net](http://www.rolandsystemsgroup.net).



### Front/back adjustable rack mounting for greater freedom in installation

Rack-mount angle brackets can be attached not only at the front panel, but also at the rear. This makes it possible to mount the S-2416 with either front or rear orientation as needed.



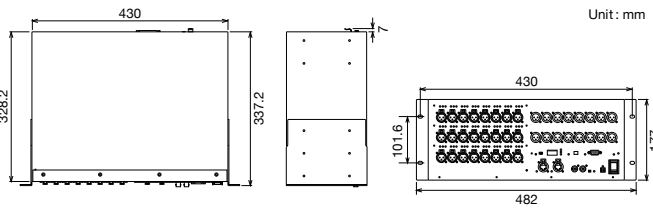
**Roland S-2416: STAGE UNIT**

<b>Number of Channels</b>	32 in 24 out
<b>AD Conversion</b>	Sample Rate: 96.0 kHz, 48 kHz, 44.1kHz Signal Processing: 24 bits
<b>DA Conversion</b>	Sample Rate: 96.0 kHz, 48 kHz, 44.1kHz Signal Processing: 24 bits
<b>Frequency Response</b>	-2 dB / +0 dB (@ +4 dBu, 10 Hz to 40 kHz, Sample Rate: 96 kHz, typ.)
<b>Total Harmonic Distortion + Noise</b>	0.007 % (Pad: Off, Input Gain: -10 dBu, 20 Hz to 20 kHz, typ.)
<b>Dynamic Range</b>	INPUT jacks (1 to 24): 110 dB (typ.)
<b>Channel Separation @ 1kHz</b>	INPUT jacks (1 to 24): 103 dB (Input Gain: +4 dBu, IHF-A, typ.) OUTPUT jacks (1 to 16): 110dB (typ.)
<b>Nominal Input Level (Variable)</b>	-65 to -10 dBu (PAD: Off) -45 to +10 dBu (PAD: On)
<b>Non Clip Maximum Input level</b>	INPUT jacks (1 to 24): +28dBu (1 kHz, 10 k ohms load, typ.)
<b>Input Impedance</b>	INPUT jacks (1 to 24): 7 k ohms
<b>Nominal Output Level</b>	OUTPUT jacks (1 to 16): +4 dBu (Load impedance: 10 k ohms, typ.)
<b>Maximam Output Level</b>	OUTPUT jacks (1 to 16): +22 dBu (Load impedance: 10 k ohms, typ.)
<b>Output Impedance</b>	OUTPUT jacks (1 to 16): 600 ohms (typ.)
<b>Recommended Load Impedance</b>	OUTPUT jacks (1 to 16): 10 k ohms or greater
<b>Residual Noise Level (IHF-A, typ.)</b>	OUTPUT jacks (1 to 16): -84 dBu
<b>Equivalent Input Noise Level (E.I.N.)</b>	INPUT jacks (1 to 24): -128 dB (Input Gain: -65 dBu, IHF-A, typ.)
<b>Network Latency</b>	375 microseconds when using REAC cable only (AD to REAC to DA Latency: about 1.2 ms) *1
<b>Connectors</b>	INPUT jacks (1 to 24): XLR type, balanced, phantom power OUTPUT jacks (1 to 16): XLR type, balanced AES/EBU connector: DB-25 type REAC port: RJ-45 EtherCon type WORD CLOCK connector: BNC type REMOTE connector: DB-9 type COMPUTER port: USB type B * XLR type: 1 GND, 2 HOT, 3: COLD * phantom power: DC+48V (unloaded maximum), 14mA (maximum load) (All XLR type inputs)

<b>Power Consumption</b>	62 W
<b>Dimensions</b>	482 (W) x 348 (D) x 177 (H) mm 19 (W) x 13-3/4 (D) x 7 (H) inches (EIA-1U rack mountable)
<b>Weight</b>	9.7 kg 21 lbs 7 oz
<b>Operation Temperature</b>	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit
<b>Accessories</b>	Power cord Owner's manual Rubber foot x 4

\* 0 dBu = 0.775 Vrms  
 \* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.  
 \* When a REAC Splitter S-4000D or a switching hub is used in-line with REAC cables, the network latency will increase by the amount of processing delay introduced by the splitting device itself. The actual delay is dependant upon the specifications of the splitting device, though the maximum delay amount for a single splitting device should be about 200 microseconds.

**DIMENSIONS**



**LINEUP**

<p><b>V-Mixer M-480</b> LIVE MIXING CONSOLE</p> <ul style="list-style-type: none"> <li>•48 mixing channels plus 6 stereo returns</li> <li>•Main LCR outputs, 16 AUX buses, 8 matrices</li> </ul> 	<p><b>V-Mixer M-300</b> LIVE MIXING CONSOLE</p> <ul style="list-style-type: none"> <li>•32 mixing channels</li> <li>•Main LCR outputs, 8 AUX buses, 4 matrices</li> </ul> 	<p><b>V-Mixer M-200i</b> LIVE MIXING CONSOLE</p> <ul style="list-style-type: none"> <li>•32 mixing channels</li> <li>•Main LR outputs, 8 AUX buses, 4 matrices - iPad not included.</li> </ul> 	<p><b>S-4000S 3208</b> 32x8 Modular Stage Unit</p> <ul style="list-style-type: none"> <li>•32 inputs and 8 outputs configuration</li> <li>•High Quality Pre-amps on each input channel configurable with analog or digital I/O cards</li> </ul> 
<p><b>S-1608</b> 16 x 8 Stage Unit</p> <ul style="list-style-type: none"> <li>•16 inputs and 8 outputs configuration</li> <li>•Compact, floor-based or rack-mountable design</li> </ul> 	<p><b>S-4000R</b> REMOTE CONTROLLER</p> <ul style="list-style-type: none"> <li>•Remote control of all input gain adjustments, phantom power and PAD settings</li> </ul> 	<p><b>W100S-R</b> REAC CABLE (100m)</p> 	<p><b>SC-W100S</b> REAC CABLE (100m)</p> <p><b>SC-W20F</b> REAC CABLE (20m)</p> 

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www.rolandsystemsgroup.com/s2416

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