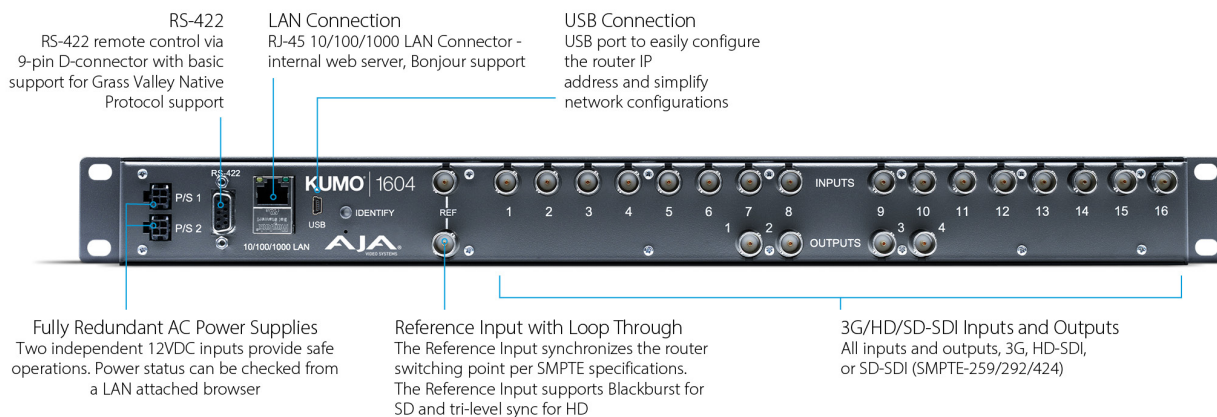# KUMO 1604

KUMO 1604 is the right size for typical AV setups or corporate meetings with 16x 3G-SDI inputs and four 3G-SDI outputs when several different cameras, computers or other video devices need to be routed to a few monitors or projectors.

$1,395 US MSRP

https://www.aja.com/products/kumo-1604

RS-422
RS-422 remote control via 9-pin D-connector with basic support for Grass Valley Native Protocol support

LAN Connection
RJ-45 10/100/1000 LAN Connector - internal web server, Bonjour support

USB Connection
USB port to easily configure the router IP address and simplify network configurations

Fully Redundant AC Power Supplies
Two independent 12VDC inputs provide safe operations. Power status can be checked from a LAN attached browser

Reference Input with Loop Through
The Reference Input synchronizes the router switching point per SMPTE specifications. The Reference Input supports Blackburst for SD and tri-level sync for HD

3G/HD/SD-SDI Inputs and Outputs
All inputs and outputs, 3G, HD-SDI, or SD-SDI (SMPTE-259/292/424)

Video Formats

- 270 Mbps, 1.5 Gbps, 3 Gbps SDI
- 270 Mbps DVB-ASI
- Format agnostic, 150 Mbps - 3 Gbps

Video Input Digital

- 3G-SDI Inputs
- 16x BNC, SMPTE-259/292/424

Video Output Digital

- 3G-SDI Outputs
- 4x BNC, SMPTE-259/292/424
- Noninverting

Ancillary Data

- Passes all SDI embedded ancillary data including audio

Salvo

- Up to 8 Salvos can be configured and saved in each KUMO router

Cable Equalization

(Belden 1694A)
- 3 Gbps, up to 140m
- 1.5 Gbps, up to 200m
- 270 Mbps, up to 400m
- Automatic operation

Reclocking

- 270 Mbps, 1.483 Gbps, 1.485 Gbps, 2.966 Gbps, 2.970 Gbps - Auto Select
- All other rates are passed through and not reclocked

Switching Modes

- Single, Dual, and Quad link modes
- Switches in vertical blanking per SMPTE RP-168

Control Panel Compatibility

- AJA KUMO CP – 1RU X-Y Ethernet control panel
- AJA KUMO CP2 – 2RU X-Y Ethernet control panel

Reference Input

- External, 2x BNC
- Looping, nonterminating
- Blackburst or tri-level sync

Network Interface

- 1x RJ-45, 10/100/1000 Ethernet
- Supports AJA KUMO Ethernet control panels, direct connect or networked
- Grass Valley Native Protocol
- Embedded web server for remote control

USB Interface

- 1x Mini-USB for IP configuration using AJA eMini-Setup

Serial Interface

- 1x DB-9 Female, RS-422
- Basic support for Grass Valley Native Protocol
- 9-pin D-connector pinout is as follows:

1	GND
2	TX-
3	RX+
4	GND
5	No Connection
6	GND
7	TX+
8	RX-
9	GND
Shell	GND

Size (w x d x h)

- 1RU - 17.4" x 1.54" x 1.75" (441.96 x 39.12 x 44.45 mm)

Weight

- 1.2 lb (0.6 kg)

Power

- 10-14VDC regulated, 7W typ, 9.6W max, power supply required, included with purchase
- AC Adapter: 100-240VAC, 50/60 Hz, universal input

Environment

- Safe Operating Temperature: 0 to 40 C (32 to 104 F)
- Safe Storage Temperature (Power OFF): -40 to 60 C (-40 to 140 F)
- Operating Relative Humidity: 10-90% noncondensing
- Operating Altitude: <3,000 meters (<10,000 feet)