KUMO
Compact SDI routers.

Because it matters.
Compact SDI routers.

Cost-effective, robust and built for critical production environments, KUMO compact routers offer flexibility and signal quality at an unprecedented price.

KUMO compact SDI routers provide powerful signal control in a compact 1RU frame that is ideal for small facilities or space-sensitive locations. Cost-effective, without compromising power or flexibility, KUMO supports full broadcast specifications over SDI, HD-SDI, and 3G-SDI, making them a perfect fit for any broadcast, production, or post production environment, from mobile sports trucks and edit suites, through to corporate video installations or live theatrical A/V rigs.

Running Embedded Linux, KUMO routers are network-ready and support full HTTP control and monitoring. KUMO’s internal webservice allows immediate installation, configuration, and operation with standard web browsers - so there’s no need to purchase or install any additional software. The optional 1RU networkable control panel (KUMO CP) can be used in standalone or networked configurations to enable comprehensive control without the need of a computer.

KUMO SDI routers are available in two configurations: the KUMO 1616 supporting sixteen channels in and out, and the KUMO 1604 supporting sixteen SDI inputs and four outputs.

KUMO compact SDI routers offer AJA reliability, flexibility and true state-of-the-art signal quality, all at an unprecedented price. Built to the exacting standards of all AJA hardware, KUMO products are backed by our world-class support network, 5-year international warranty and advanced exchange service.
## Compact, powerful, reliable

Just 1RU high and less than 2” deep, KUMO fits in the most space-constrained locations, offering flexible routing with support for SD, HD and 3G SDI I/O via BNC and SMPTE.

The powerful cross-point routing matrix allows the mapping of any input to any output. Signals can also be sent to multiple outputs without the need for additional patch panels or distribution amplifiers.

Designed for critical broadcast, production and post environments, KUMO hardware uses premium components coupled with dual redundant power supplies to ensure uptime in the unlikely event of a power supply failure.

## Simple installation and configuration

Running Embedded Linux, KUMO routers are network-ready and support powerful HTTP control and monitoring via a web browser - without the need for any additional software.

KUMO's auto-detect Bonjour™/Zeroconf protocols mean that network configuration is automatic, just connect KUMO to your network or a computer and the system will self-configure, ready for use. Alternatively, standard network configuration allows access to each KUMO via its default IP address. Once connected to KUMO using a web browser, you can configure the full TCP/IP settings, select and name KUMO routers, name sources and destinations, and perform all operational functions.

## KUMO Control Panel

KUMO CP is an optional 1RU control panel that can be used in standalone or networked configurations.

Connecting via Ethernet to the same network as the KUMO routers, KUMO CP enables full control from any location without the need for a computer. Up to four KUMO routers can be controlled from a single control panel.

For standalone configurations with KUMO CP, all KUMO hardware units can be connected together directly using standard RJ45 cables or a switch, if required. KUMO software automatically assigns routers to control panel delegations so you’re ready to use the system immediately.
Connections

KUMO 1616 rear panel

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

**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.

**RS-422**
RS-422 remote control via 9-pin DB9 connector (future enhancement)

**LAN Connection**
RJ45 10/100/1000 LAN Connector - internal webserver, Bonjour support

**RS-422**
RS-422 remote control via 9-pin DB9 connector (future enhancement)

**Full Redundant LAN**
RJ45 10/100/1000 LAN Connector - internal webserver, Bonjour support

**RS-422**
RS-422 remote control via 9-pin DB9 connector (future enhancement)

**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 259M/292M/424M)

**Fully Redundant LAN**
RJ45 10/100/1000 LAN Connector - internal webserver, Bonjour support

**Full Redundant LAN**
RJ45 10/100/1000 LAN Connector - internal webserver, Bonjour support

**RS-422**
RS-422 remote control via 9-pin DB9 connector (future enhancement)

**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 259M/292M/424M)
Connections

KUMO 1604 rear panel

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

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

RS-422 remote control via 9-pin DB9 connector (future enhancement)

LAN Connection
RJ45 10/100/1000 LAN Connector - internal webserver, Bonjour support

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

www.aja.com
Configurations

Standalone routing system - zero configuration, just plug, power, and play

1. Plug In
2. Power Up
3. KUMO Software assigns control to CPs based on KUMO router serial number order
Configurations

LAN-only system - use TCP/IP to configure routers and devices

1. Use Bonjour or configure KUMO's TCP/IP settings
2. Control KUMO's from a web browser

Control Unlimited KUMO Routers via TCP/IP

Web Browser
User Interface
Configurations

Hybrid system - KUMO’s controlled by KUMO CPs and web browsers

Each KUMO CP can control up to 4 KUMO routers at a time.
Features and tech specs

Features at a glance

- SD, HD, 3G SDI inputs and outputs via BNC, SMPTE 259M/292M/424M
- Automatic EQ and re-clocking
- Supports all ancillary data, including embedded audio
- Reference via BNC, passive loop, PAL/NTSC color black or HD tri-sync
- 10/100/1000 Ethernet LAN
- Auto-detect Bonjour™/Zeroconf protocol provides ease of installation
- Embedded Linux OS with internal webserver for web browser control
- Control from HTTP or Remote Control Panel (KUMO CP is optional)
- 1RU form factor
- Redundant power inputs (isolated)
- 1 power supply and line cord supplied
- Optional second power supply available
- AJA 5-year international warranty

Tech specs

Formats:
- 3Gb, 1.5Gb, 270Mb, ASI, Auto Select

Video Inputs and Outputs:
- SDI (SMPTE 259/292/296/424), BNC

Cable Equalization (BNC inputs, 694 coax):  
- 270Mb: 400m
- 1.5Gb: 200m
- 3Gb: 140m

Input/Output Return Loss (BNC):  
- >15db, 270Mb – 1.5Gb
- >10db, 1.5Gb – 3Gb

Reference Input:  
- Analog input, passive looping BNCs
- Format: NTSC, PAL, Tri-level sync

Control:  
- 10/100/1000 Ethernet, RJ-45, internal Linux OS/web server
- RS-422 (future enhancement)

Environment:  
- Operating Temperature: 0 to 40 Degrees C
- Relative Humidity: 0 to 90%, non-condensing

Power:  
- +12 VDC nominal, 9-18VDC range, optional redundant power
- KUMO 1604: 9 watts
- KUMO 1616: 20 watts
- KUMO CP: 5 watts

Physical:  
- KUMO 1604, 1616: 19” width x 1.75” height, x 1.5” depth (483 x 44.5 x 38.1 mm)
- KUMO CP: 19” width x 1.75” height, x 1.3” depth (483 x 44.5 x 33 mm)

Weight:  
- KUMO 1616: 1.4 lb (.64 kg)
- KUMO 1604: 1.2 lb (.55 kg)
- KUMO CP: 1.2 lb (.55 kg)
Incredible 5-year warranty
AJA Video warrants that Converter products will be free from defects in materials and workmanship for a period of five years from the date of purchase.

About AJA Video Systems, Inc.
Since 1993, AJA Video has been a leading manufacturer of video interface and conversion solutions, bringing high-quality, cost-effective digital video products to the professional broadcast and post-production markets. AJA offers the Io and KONA desktop video products, Ki Pro family of recorders, miniature standalone converters, and a complete line of rack mount interface and conversion cards and frames. With a headquarters and design center located in Grass Valley, California, AJA Video offers its products through an extensive sales channel of dealers and systems integrators around the world. For further information, please see our website at www.aja.com