Cerebrum
Broadcast control & orchestration system

→ evs.com/cerebrum

Product overview

As a complete Broadcast Control System (BCS), Cerebrum gives you control over your most critical broadcast operations. The system's powerful and highly customizable interfaces allow you to control, configure, orchestrate and monitor any broadcast environment the way you want, all accessible via one umbrella system. Cerebrum is designed to be robust in both small and large infrastructures and adapted for IP and SDI workflows. It offers a scalable solution that is ready for today's and tomorrow's operations.
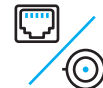
Core benefits

ADAPTABLE TO ANY SCENARIO

From small and simple setups to complex multi-site workflows, any broadcast environment can be managed by Cerebrum. An extensive list of APIs and protocols ensures compatibility, interoperability and orchestration of almost any broadcast device.
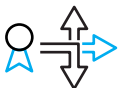
ADVANCED ROUTING MADE EASY

The trusted Routemaster lies at the heart of Cerebrum and allows any workflow, SDI, IP or hybrid, to be configured as a central multilevel Router, controllable and compatible with almost any native or generic protocol, like Ember+, RDS and NMOS.

FOR TODAY AND TOMORROW

Cerebrum is fully capable of managing SDI and IP infrastructures. With the SDN licenses, it can even manage your main IP fabric and edge switches. With the integration of various cloud-services it can even manage cloud-based workflows.

AGNOSTIC LICENSING MODEL

You don't buy device specific drivers or licenses. Instead you buy a number of device points which you can use for any device, using any of the 250 included protocols.

LOWER COST OF OWNERSHIP

Competitively priced options, comprehensive functionality and user-friendliness combine to reduce the need for manual intervention. Cerebrum offers you potentially dramatic savings.
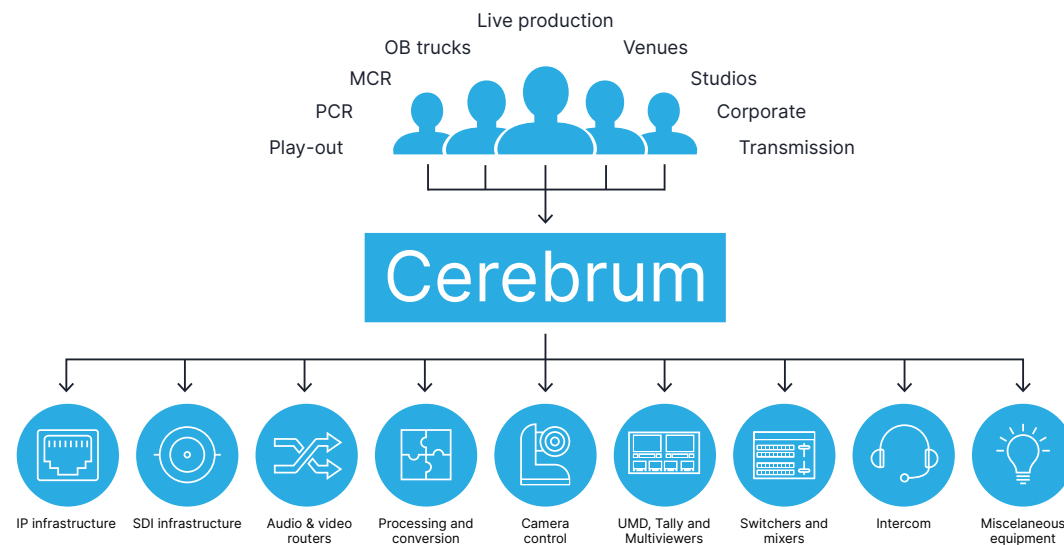
EVERYTHING IS CUSTOMIZABLE

Users are free to modify the interfaces' default templates or design their own for a highly customizable experience, both on a live system as well as offline at home using snapshots of the system. The (router) control panels can be fully customized as well.

Cerebrum: The Smarter Way to Control Your Broadcast Operations

Managing a modern broadcast environment is complex, with multiple devices, protocols, and workflows needing seamless integration. **Cerebrum** simplifies operations by **centralizing control**, configuration, and monitoring in one **intuitive interface**, eliminating the need for multiple applications and reducing errors.

Scalable for any setup, from small studios to multi-site workflows, Cerebrum's trusted **Routemaster** enables centralized **SDI, IP, or hybrid routing** together with **Tally and UMD** configuration and control. With support for protocols like NMOS, SDP, and Ember+, it ensures **seamless device interoperability** across your infrastructure.

Live production
OB trucks   Venues
MCR   Studios
PCR   Corporate
Play-out   Transmission

Cerebrum

IP infrastructure | SDI infrastructure | Audio & video routers | Processing and conversion | Camera control | UMD, Tally and Multiviewers | Switchers and mixers | Intercom | Miscelaneous equipment

Cerebrum's intelligent automation **enhances efficiency** by detecting issues and instantly triggering alerts or switching to a valid backup source, **ensuring uninterrupted broadcasts**.

Beyond SDI and IP, Cerebrum also manages **cloud-based workflows**. It controls **IP fabrics and edge switches** while its flexible device-point system grants access to **250+ supported protocols** without extra costs, making it a cost-effective, future-proof solution.

With **customizable control panels**, **offline template editing**, and deep third-party integrations, **Cerebrum streamlines workflows**, enhances reliability, and maximizes cost efficiency, making it the ultimate broadcast control solution.

Combining SDN With BCS to Support Complex Hybrid Workflows

Cerebrum offers the flexibility to deploy Software Defined Networking **(SDN) only when necessary**. In **smaller setups**, such as OB trucks or small PCRs with **only a core switch** and no leaf switches, or in systems using **non-blocking switches**, an **SDN isn't necessarily required**. Unlike other vendors that push SDN solutions regardless of the situation, Cerebrum controls endpoints via NMOS, ensuring seamless operation in simple networks **without the need for SDN**. This prevents unnecessary expenses and installation complexity, allowing customers to choose the best solution for their specific needs.

When an SDN is required, Cerebrum offers integration with **Arista MCS**, **Cisco NDFC** or deploying **Cerebrum's own SDN solution**. Cerebrum SDN revolutionizes broadcast network management with a deterministic, intelligent approach—without relying on IGMP or PIM. By **directly controlling the network**, it optimizes bandwidth, ensures real-time resource awareness, and enables **dynamic network topology discovery**. Traffic is routed efficiently through deterministic network paths for **maximum stability and performance**.

Unlike traditional SDN, **Cerebrum** seamlessly integrates network control with advanced broadcast management, making it ideal for **hybrid IP and SDI workflows**. With real-time bandwidth awareness, admission control, and self-healing resilience, it ensures smooth operation. Its flow-agnostic, switch-agnostic design supports **mixed hardware environments** like Arista and Cisco while providing superior automation, redundancy, and **third-party integration**.

SDN features supported in Cerebrum
Multicast routing
Bandwidth management
Link load balancing
Red and blue spine/leaf topology
Any network topology
Flow policing (automatic policies on ingress)
Hybrid IP and SDI support (also supports fan in/out of essences between SDI or ST2022 and ST2110)
Multicast NAT support
Alarm management (with logging to an SQL database)
Support for unmanaged traffic (could be PIM/IGMP or control)
Scheduling and future reservations
Device and link maintenance
Automatic multicast assignment
Data service tunneling
Media-aware re-routing

Key Features

- Control and orchestrate multiple workflows with a single system
- Compatible with almost any broadcast device
- IP end-point discovery and routing using NMOS, RDS, and various native protocols.
- SDN licenses to manage your Arista or Cisco IP fabric
- Easy Router, Tally, UMD, Mnemonics, Categories and Tie-line configuration
- Federation of multiple routemasters (sync shared virtual routing / locks)
- Create, edit and recall salvos (snapshots) of routing configurations and device settings
- Fully customizable user interfaces and control panels
- User and group management compatible with active directory
- Parallel multi-user configuration, online and offline
- Standalone, client/server or distributed topologies
- Resource Management to plan and prepare your productions
- Wide range of customizable hardware LCD-button panels and web-based control interfaces
- Low system requirements, allowing small computers and tablets to run the web clients or rich clients

Cerebrum control panels

Cerebrum control panels are configured using the same **Cerebrum Designer application** you use to create your own graphical user interfaces, which comes **for free** with every Cerebrum installation.

All devices connected to the Cerebrum server can be controlled by the buttons of the panel. Due to the flexibility of the LCD button displays, the panel can be configured to work with a limitless number of 'pages' which can be linked together to form an **intuitive, quick and user-friendly interface**.

The **CTP-2003 touch panel** also provides a hardware panel control surface for a Cerebrum control system. The panel acts as a **Cerebrum web-client** which can show any **custom designed** or **pre-made** Cerebrum control interface.

CCP-1601

CCP-1800

CCP-3201

CCP-4801

CCP-4200

CCP-6002

CCP-8002

CTP-2003-WEB

CCP-4800

CGP-4848

Cerebrum licenses

- **CRBM-SR** Cerebrum Server software
- **CRBM-RD** Cerebrum Redundant Server software
- **CRBM-CL** Cerebrum Client software
- **CRBM-Service-Man** Cerebrum Service Manager software
- **CRBM-WEB-CL-5** Cerebrum web clients (5 concurrent)
- **CRBM-Router-250/1K/4K** # of logical router destinations
- **CRBM-TL** Router Tie-line management
- **CRBM-IPRout-250/1K/4K/16K** Routing up to # of IP streams
- **CRBM-NDFC-1K/4K/16K** Cisco SDN for # of IP destinations
- **CRBM-MCS-1K/4K/16K** Arista SDN for # of IP destinations
- **CRBM-SDN-250/1K/4K/16K** CRBM SDN for # of IP destinations
- **CRBM-FEDERATION** Federated Routemaster SRC/DEST
- **CRBM-IP-Mon** Network Monitoring of IP switches
- **CRBM-IPAud-128/512/2048** # of auto audio shuffle streams
- **CRBM-SNMP-Supp** Monitor and control SNMP devices
- **CRBM-SNMP-5-Dev** Add 5 SNMP device
- **CRBM-GD-5** Add 5 Generic device protocol point
- **CRBM-RESMGMT-1K/2K/5K** Plan and manage # of resources
- **CRBM-Tally** Configure and control Tallies and UMDs
- **CRBM-Salvos** Adds salvos functionality
- **CRBM-Schedule-1/5/20** # of timelines for scheduled events
- **CRBM-EXLOG** External logging through Syslog
- **CRBM-XML-CI** Native XML web socket interface

Cerebrum hardware

- **CCP-1601D** 1RU Control panel with 16 LCD-buttons
- **CCP-1800C** 1RU Control panel with 18 LCD-buttons
- **CCP-3201D** 2RU Control panel with 32 LCD-buttons
- **CCP-4801D** 2RU Control panel with 48 LCD-buttons
- **CCP-4200C** 1RU Control panel with 42 LCD-buttons
- **CCP-6002C** 2RU Control panel with 60 LCD-buttons
- **CCP-8002C** 2RU Control panel with 80 LCD-buttons
- **CCP-4800B** 1RU Control panel with 42 LED-buttons
- **CTP-2003-WEB** 2RU Control panel with touchscreen*
- **CGP-4848** 1RU GPI/O unit with 48 GPI inputs and outputs
- **CRBM-Single-server** Preinstalled 19" 1RU Cerebrum server
- **CRBM-Red-server** 3x preinstalled 19" Cerebrum servers (primary, secondary and witness server)
- **CCS-2650-8-2AC** 8-port RS232/422/485 terminal server

Cerebrum protocols lists V2.8

The following tables describe which third party protocols are supported within Cerebrum for the Router Control and Generic Device options. The compatible devices are also listed per device type.

LEGACY ROUTER CONTROL PROTOCOLS

Manufacturer	Protocol	Products	Mnemonic upload	Ethernet	Serial
EVS	Snell SW-P-08	SynCross/Neuron Shuffle	No	Yes	No
Blackmagic	Videohub Ethernet Protocol v2.3	Videohub	Yes	Yes	No
Calrec	Snell SW-P-08	Hydra2	Yes	Yes	No
ETL	ETL Remote Comms Protocol	NiGMa, Vulcan L Band Routers	Yes	Yes	No
Evertz	Quartz RCP-01	SC-1000, Topaz, Q16-256, Xenon, EQX, Magnum	Yes	Yes	Yes
Grass Valley	ES Switch	Jupiter controller	Yes	Yes	Yes
Grass Valley	Jupiter ASCII	Jupiter controller	No	No	Yes
Grass Valley	Native	SMS7000, Encore, Prelude, Concerto	Yes	Yes	Yes
Grass Valley	GV Triton	Grass Valley Triton	No	No	Yes
Grass Valley	NVision NV9000	NVision NV9000 Controllers	Yes	Yes	No
Grass Valley	NVision Router Control Protocol	NVision 5128, 7512, 8144, 8256, 8500 Routers	No	Yes	No
Grass Valley	NVision Router Control Protocol-C	NVision Compact Router	No	Yes	No
Grass Valley	Pro-Bel SW-P-02	Pyxis, Cygnus	No	Yes	Yes
Grass Valley	Pro-Bel SW-P-08	Aurora, Sirius, Vega, Orbit	Yes	Yes	Yes
Imagine	Leitch pass-through	Panacea, Integrator, Platinum	No	No	Yes
Imagine	Harris LRC	Platinum, IP3 Router, Magellan Controller	Yes	Yes	No
Kramer	Kramer 2K		No	No	Yes
Nevion	V128	VikinX	No	Yes	Yes
Novotronik	Novotronik MAS	Novotronik MAS	No	Yes	No
NTP	Dot	NTP Routers	No	Yes	Yes
Pesa	P1	PERC2000, 3500PRO	No	No	Yes
Pesa	P1N	PERC2000, 3500PRO	No	Yes	No
Ross	NK ASCII	NK	No	No	Yes
Ross	SW-P-08, GV Native	Ultrix	Yes	Yes	No
Sony	Cart/+/++	IXS-6700	No	No	Yes
Sony	NS-Bus	LSM	Yes	Yes	No
Stagetec	Nexus UDP	Nexus	No	Yes	No
Stagetec	Nexus V5	Nexus	No	No	Yes
Studer	Snell SW-P-02	Studer OnAir, Vista	No	No	Yes
Studer	Snell SW-P-08	Studer OnAir, Vista	No	Yes	No
Utah Scientific	RCP-1	SC-4 System Controller	No	Yes	Yes
Utah Scientific	RCP-3	SC-4, 40, 400 system Controllers, UDS routers	Yes	Yes	Yes

DEVICE PROTOCOLS

Manufacturer	Protocol	Points	Products	Description	Ethernet	Serial
-	BACNet	5	BACNet compatible devices	Building control and monitoring	Yes	No
-	DMX / Art-Net	2	DMX compatible devices via Art-Net convertor (LSC NXS1)	Lighting control	Yes	No
-	Ember/Ember+	1,2 or 5	Ember/Ember+ compatible devices	Device control and routing	Yes	No
-	ICMP	0	Any network device	Network presence	Yes	No
-	MIDI (requires IP to MIDI server)	5	MIDI compatble devices	Control of MIDI devices	No	No
-	ModBus TCP/IP	5	Modbus compatible GPIO devices	GPIO control	Yes	No
-	Open Sound Control (OSC)	3	Any Device	Parameter control for OSC compatible devices	Yes	No
-	NMOS IS-04/05	IP rout. license	NMOS compatible IP senders and receivers	IP end-point discovery and control	Yes	No
-	Pyhton API	2	Any device	3rd party driver using Python script	Yes	Yes
-	Raw UDP/TCP/Serial comms	1	Any device	Low level comms	Yes	Yes
-	Raw HTTP comms	1	Any device	Low level comms	Yes	No
-	Raw HTTP client proxy	5	Target any device	Low level comms	Yes	No
-	RestFul API	5	Generic RestFul API support	Generic control API	Yes	No
-	RTP-MIDI	5	RTP-MIDI compatible device	Control/Status of RTP-MIDI devices	Yes	No
-	SNMP wrapped as a Generic Device	2	Any Device	Generic control API	Yes	No
-	SNMP	SNMP licence	SNMP compatible devices	Device monitoring and control	Yes	No
-	Wake on LAN (WOL)	2	Any Device	Power on	Yes	No
Adder	DDX API	5	AdderView DDX10, DDX30 KVM	KVM routing	Yes	No
Adder	AIM	5	AdderLink Inifinity Manager	KVM routing	Yes	No
AETA	Scoop 5	5	Scoop 5 Codec	Audio Codec	Yes	No
AJA	VTECS Remote Control Protocol	5	FS1	Device control	Yes	No
AJA	AJA FS RestAPI	5	FS2,3,4	Device control and routing	Yes	No
AJA	AJA KiPro*	5	KiPro 12G, KiPro Go*	Device control	Yes	No
Allen and Heath	AHM	5	AHM Audio Processor	Level and Mute contol of Inputs, Zones, Control Groups, Rooms	Yes	No
Allen and Heath	iLive TCP/IP	5	iLive, dLive Audio Mixer	Device control and routing	Yes	No
Allen and Heath	Qu	5	Qu Audio Mixer	Device control and routing	Yes	No
Andrew	APC100	5	APC 100 Antenna Controller	Device Control	No	Yes
ApexSat	ModBus over IP	5	APS500 Dish positioner	Satellite Dish Positioner	Yes	No
Arkona/Lawo	vMatrix JSON API	5	vMatrix media network proc	Device control and routing	Yes	No
AppearTV	AppearTV X RestAPI	5	X Platform modular system	Limited device control and routing	Yes	No
AppearTV	AppearTV SOAP XML API	5	XC5000 modular system	Limited device control and routing	Yes	No
Ateme	Titan LiveAPI*	3	Titan Pilot*	Status and Routing (TS)	Yes	No
Ateme	Titan Pilot Manager API*	3	Titan Pilot*	Redundancy Control	Yes	No
Axia	Livewire Routing (LWRP)	5	Axia Livewire compatible devices	Audio Routing	Yes	No
Axia	Livewire Control (LWCP)	5	Axia Livewire compatible devices	Audio device control	Yes	No
Audinate	Dante	10	Audinate Dante compatible devices, incl. support for DDM	Audio routing	Yes	No
Aver	Aver	5	PTC310/330 Camera	Control	Yes	No
AVIWEST	Streamhub Rest API	5	Streamhub	Device Control	Yes	No
Avid	Capture Webservices	5	Avid Interplay Capture	Driving ingest channel recording	Yes	No
AWS	Elemental Server API	5	Elemental encoder	Device Control	Yes	No
Barco	FSN-150 Controller Protocol	5	FSN-1400 Presentation processor	Preset recall	Yes	No
BBright	BBright Open API	3	Decoder	Routing (TS)	Yes	No
BBright	Playout API*	5	UHD Playout*	Logo insertion control	Yes	No
Blackbox	ACX API	5	Blackbox ACXxxx KVM	KVM routing	Yes	No
Blackbox	Boxilla RestAPI	5	Blackbox Boxilla KVM Manager	KVM routing	Yes	No
Blackmagic	ATEM	5	ATEM Production and Constellation switchers	Routing, tally, device control	Yes	No
Blackmagic	HyperDeck	5	HyperDeck server	Transport control, status	Yes	No

Manufacturer	Protocol	Points	Products	Description	Ethernet	Serial
Blackmagic	Multiview	1	Multiview	Routing and labels	Yes	No
Blackmagic	Teranex	5	Teranex video processor	Device control	Yes	No
Calrec	Ember+	5	Apollo, Artemis, Hydra2	vGPIO control	Yes	No
Calrec	Serial Control Protocol	5	Apollo, Artemis, Hydra2	Device, Fader control	Yes	No
Canon	RC-IP Protocol*	5	CRC-IP 1000 controller*	Camera selection	Yes	No
Casper CG	Casper CG	2	GFX	Control	Yes	No
Cisco	vDCM API	10	vDCM	Stream switching, monitoring	Yes	No
ClearCom	HCI protocol	10	Eclipse	Full Intercom integration	Yes	No
Colorlight	Colorlight	5	LES Wall Processor	Device Control	Yes	No
DAD	DAD AX32	5	AX32 Audio Router	Routing and device control	Yes	No
Dataprobe	iPIO GPIO	2	GPIO unit	Control and status of GPIOs	Yes	No
DHD	DHD external control protocol	5	XR/XS/XC/XD Audio Router	Routing and snapshots	Yes	No
DHD	Ember+	5	DHD 52CX Audio Router	Routing and device control	Yes	No
DirectOut	Montone .42	5	Audio routing	Audio stream subscription and routing	Yes	No
ETC	EOS	5	EOS Lighting desk	Lighting control	Yes	No
ETC	Unison	5	Unison Paradigm lighting controller	Lighting control	Yes	No
Evertz	Symphony	5	VIP, MVP	Layout changes	Yes	No
Evertz	M-2100 protocol	5	Axon MCS, Quartz QMC	MC control	Yes	Yes
Evertz	Magnum multiviewer contr	5	Magnum	Control of multiviewer	Yes	No
Evertz	RCP-S7 protocol	5	Quartz / Evertz limited hardware panels (CP-1000/2048/3201E)	Hardware Panel control	Yes	Yes
EVS	ACP/ACP2	Free	Synapse/Neuron	Device control and monitoring	Yes	No
EVS	EVS DYVI PixTally	5	EVS DYVI Switcher	Switcher Tally	Yes	No
EVS	Ember+	5	EVS DYVI Swticher	Routing, IP Routing, mnemonics and general control	Yes	No
EVS	Ember+	5	EVS XT VIA	IP Routing	Yes	No
EVS	Hammer / PAS API	Free	EVS XT-VIA	Transport control, clips and timelines	Yes	No
EVS	LinX API	Free	EVS XT / XT-Via	Configuration, Transport control, clips and timelines	Yes	No
EVS	Neuron View Rest API	Free	EVS Neuron View	Multiview Configuration	Yes	No
EVS	BFE Tally Link	2	EVS X ONE Server	Tally and Source names	Yes	No
EVS	VDCP	5	EVS XS-Neo	Server Control	Yes	Yes
EVS	Native Control API*	Free	XT-VIA*	Production server config	Yes	No
EVS	Native Control Protocol	Free	XHub-VIA	Xnet-VIA Configuration	Yes	No
For-A	HVS Tally	2	HVS / Hanabi switcher	Switcher tally	Yes	No
For-A	Editor protocol	5	HVS / Hanabi switcher	Editor protocol	No	Yes
For-A	FA-1010 Contol	5	FA1010 Video Processor	Device control	Yes	No
Gefen	ExtCuLan	2	EXT-CU-LAN Matrix Controller	KVM routing	Yes	No
Gefen	GTB-HD	2	GTB-HD Series HDMI Matrix	HDMI routing	Yes	No
Gefen	Gefen EXT-CU-LAN	5	EXT-DVIKVM-LANRX	KVM routing	Yes	No
Gigawave	Gigawave DCP	2	Bosch Metal Mickey Camera	Camera control / no tally	No	Yes
GlobalCache	Itach IP2IR	2	Infrared Emitter	Control of IR devices	Yes	No
Grass Valley	ACOS	5	Kayak	Tally	Yes	Yes
Grass Valley	Adv. Media Protocol (AMP)	5	K2 Servers	Server Control protocol	Yes	No
Grass Valley	AMPP protocol	10	AMPP	Workflow control and monitoring	Yes	No
Grass Valley	DD35-Net	5	Kayak	Control and Tally	Yes	No
Grass Valley	Densite	10	Densite	Device Control	Yes	No
Grass Valley	GVG-100	5	Grass Valley Switchers	Editor protocol	No	Yes
Grass Valley	GV Serial Tally	5	Kalypso, Zodiac	Serial Tally	No	Yes
Grass Valley	GV Editor	5	Kalypso, Zodiac	Control	No	Yes
Grass Valley	MV-821 web socket	5	GV MV-821 multiviewer	Screen geometry only	Yes	No
Grass Valley	iControl Gateway Services	10	Densite modular	Device control and ltd. monitoring	Yes	No
Grass Valley	Kaleido	2	Kaleido M/V's	UMD, Tally and Layout	Yes	No
Grass Valley	Kayenne Contribution Tally	5	Kayenne	Serial Tally	No	Yes
Grass Valley	K-Frame CPL	5	K-Frame	IP IO Control, EMEM, MACRO, Keyers	Yes	No
Grass Valley	K-Frame Ethernet Tally	5	K Frame	Tally only	Yes	No

Manufacturer	Protocol	Points	Products	Description	Ethernet	Serial
Grass Valley	LDK Gateway	5	LDK Gateway camera network	Camera cont. RCP routing and Tally	Yes	No
Grass Valley	M-2100 Automation	5	M-2100	Control	No	Yes
Grass Valley	M-2100 Tally	5	M-2100	Tally	No	Yes
Grass Valley	MPK	5	GV UMDs (RP1/2/3) - not panels!	UMD and Tally	No	Yes
Grass Valley	NVision panel protocol	5	NV9640, 9640A, 9641A, 9642 9654	Hardware Panel control	Yes	No
Grass Valley	Oxtel Automation Protocol	5	Imagestore i7500, LDK-3901, DSK-3901	Device control	Yes	No
Guntermann & Drunk	CatCenter NEO	5	CatCenter NEO	KVM routing	Yes	No
Haivision	MAkito X4 API*	5	X4 Encoder/Decoder*	Create IP senders/receivers, routing	Yes	No
Haivision	SRT Gateway	5	SRT Gateway	Limited SRT routing	Yes	No
Harmonic	Oxtel Automation	5	ChannelPort	Device control	Yes	No
Harmonic	SpectrumXe SOAP API	5	SpectrumXE	Start/Stop playlist primary overlay	Yes	No
Harmonic	Fuze 1 SOAP API	2	Fuze	Input switch tally	Yes	No
Harmonic	Spectrum Player	5	Harmonic Spectrum Player	Transport control	Yes	No
Harmonic	NMX*	5	Hamonix NMX*	Status and parameters control	Yes	No
Harris	Zandar Z Protocol	5	Harris Predator	MV Preset change, UMD, Tally	Yes	No
Hitomi	Matchbox	3	Hitomi Matchbox Analyser	Audio offset/delay stats	Yes	No
IHSE	Blackbox ACX API	5	Draco Tera KVM	KVM routing	Yes	No
Image Video	Image Video UMD client	2	Image Video TallyLink UMD's	UMD/Tally	No	Yes
Image Video	UMD server/sink	2	Evertz Magnum	UMD/Tally	No	Yes
Imagine Comm.	Epic Multiviewer	5	Epic	Control of multiviewer	Yes	No
Imagine Comm.	VDCP	5	Servers	Server transport control	Yes	Yes
Imagine Comm.	CCS Protocol	1 ~ 10	X50, X75, X100, Selenio, 6800+, IP3	Device control and monitoring. Points dependant on #objects	Yes	No
Imagine Comm.	SNP Rest API	5	SNP models: processor, MV, etc.	Control/monitoring	Yes	No
JLCooper	eBox	2	eBox	GPIO in/out	Yes	No
JLCooper	FaderMaster	2	FaderMaster 4/100, 8/100 and Eclipse MX Midnight	Control Surface	Yes	Yes
JVC	PS-4XX monitor	1	JVC ProVerite PS-420W, 470W monitor	Power/Input Selection	No	Yes
JVC	GM-5XX monitor	1	JVC GM-552, DTVxxG monitors	Power/Input Selection	No	Yes
KVM tec	KVM tec RestAPI	5	KVM tec Switching Manager	KVM Routing, mnemonics	Yes	No
Lawo	Remote MNOPL	5	MC²	Audio Console Routing, control and meters	Yes	No
Lawo	Ember+	5	V Pro 8, v_Matrix, A_line/A_mic 8, Power Core, A_UHD Core	Routing and parameter control, status	Yes	No
Lawo	NATs API	10	Lawo Home	Redundant UHD core status and failover	Yes	No
Lightware	Lightware API	5	Lightware MX-FR HDMI Router	Routing and some setting control	Yes	No
MA Lighting	GrandMA protocol	5	MA Lighting GrandMA	Preset control of lighting console	Yes	No
MA Lighting	OSC	5	MA Lighting GrandMA3	Control / Status of executor faders	Yes	No
Masterplay	Remote Text prot.	5	OnAir server	Server transport control	Yes	No
Mediakind	RX1 API*	5	RX1*	Status & control	Yes	No
Media Excel	HMS SOAP API	5	Hero Management System	Device control	Yes	No
Merging Tech	Merging RestAPI	5	Horus/Anubis	Device control	Yes	No
NDI	NDI V6.2+	25+	V6.2+ Endpoint devices	Virtual NDI Router + direct routing of endpoints (GD based on #dests)	Yes	No
NEC	External Control P Series	1	P series Monitors	Power/Input Selection	No	Yes
Netvia	Netvia Audio Media Playout Server API	5	Netvia Audio Media Playout Server	Playlist and transport control	Yes	No
Nevion	VideoIPath RestAPI	40	VideoIPath	IP orchestration/routing based on profiles/tags	Yes	No
Nevion	Virtuoso RestAPI v1	5	Virtuoso	IP Routing, control, status	Yes	No
NewTek	NDI Routing	5	n/a	Virtual NDI Router	Yes	No
NMOS	IS-07	5	Pebble Marina Automation	Automation control/status (now/next/tc)	Yes	No
OES	Scoring Protocol	5	OES Protocol	Scoreboard Status	Yes	No
OnHertz	Artisto	5	Artisto	Audio mixer control	Yes	No
Panasonic	AV-HS450 Interface	5	AV-HS450 Switcher	Switcher routing and tally	Yes	No

Manufacturer	Protocol	Points	Products	Description	Ethernet	Serial
Panasonic	AV-HS7300 Interface	5	AV-HS7300 Switcher	Switcher routing and tally	Yes	No
Panasonic	HD Integrated Camera interface	5	AW-HE40,HE42,HE50,HE60,HE70,UE70,HE120,HE130,UE150 cams	PTZ control	Yes	No
Panasonic	Remote Camera Control Interface	2	AW-RP50, AW-RP120, AW-RP150	Camera, Group, Port Selection	Yes	No
Panasonic	HD intergr. camera server interface	5	AW-RP50, AW-RP120, AW-RP150	Camera control re-direction/routing	Yes	No
Panasonic	Kairos Automation API	5	Kairos	Routing, Tally, Config, Control	Yes	No
Panasonic	PJLink	5	Panasonic compatible projectors	Basic device control, power, input, vol, etc	Yes	No
Panasonic	TH-98/86/75/65/55/49SQ1	1	Monitor*	Power on/off	Yes	No
Penta	RCP-1806	1	HD2LinePro	Tally/UMD	Yes	No
Plura	Timer Request Prot.	5	Plura SPT	Studio Timer control/status	Yes	No
Pro-Bel	SW-P-06	5	Pro-bel BPS hardware panels	Hardware panel control	No	Yes
Pro-Bel	SW-P15	2	Serial Cues	Bi-directional Tally	Yes	Yes
Pro-Bel	SW-P-100	5	Automation	Scheduled event notification	Yes	No
Q-SYS	Q-SYS RCP	10	Q-SYS Core	Control of exposed devices / objects to the RCP	Yes	No
Quintech	QEC	5	Quintech QRM	Routing	Yes	No
RCT	Remote Camera Tech API*	5	FR-1 Remote Control*	Cam selection, status and GPO	Yes	No
Research Concepts	RC-2000A	5	RC2000A Dual Axis Antenna controller	Device control	No	Yes
RGB Spectrum	Mediawall 1900	1	Mediawall 1900	Control	Yes	No
Riedel	RRCS	10	Artist	Control	Yes	No
Riedel	Ember+	5	MediorNet	Control and routing	Yes	No
Riedel	Muon Rest API (Embrionix emSFP Rest)	2	MuON (Encap/Decap)	Control and routing	Yes	No
Riedel	Connect Trio Command	5	Connect Trio	ISDN Control	Yes	No
Riedel	NMOS IS-07	5	Smartpanels RSP-1216/1232	Cerebrum control surface on intercom panel	Yes	No
Rohde and Schwarz	SCPI	2	FSL3 Spectum analyser	Device control	Yes	No
Rohde and Schwarz	Prismon Multiviewer API	5	Prismon Multiviewer	Preset layout selection	Yes	No
Rohde and Schwarz	Gallium Rest Web Services	5	Gallium Server	Transport control/main/backup switching	Yes	No
Ross	Combined RossTalk and TSLv5	5	Acuity	Switcher Routing / Tally / UMD / Key Control etc.	Yes	No
Ross	Combined RossTalk and TSLv3.1	5	Carbonite, Carbonite Black, Ultra, Ultrix, HyperMax	Switcher Routing / Tally / UMD / Key Control etc.	Yes	No
Ross	GPI/O interface	2	GPI-8941	Generic GPI/O control	Yes	No
Ross	GVG-100	5	Acuity, Carbonite	Editor protocol	No	Yes
Ross	Xpression RossTalk	2	Xpression	Command Protocl - no status	Yes	No
Ross	openGear	1 to 10	openGear compatible products	Device control	Yes	No
Rotronics	Rotronics CF2000	5	CF2000	GPIO control, status	Yes	No
RTS/Telex	AZEdit	10	RTS Cronus, Zeus, Adam	Intercom control	Yes	No
Samsung	Samsung MDC	1	Multidisplay	Switching screens on/off	No	No
SDNsquare	GRID RestAPI	150	SDNsquare GRID	Control/status of SDN layer	Yes	No
Shotoku	T Computer Auto Remote	5	TR-XT	Remote Camera control	Yes	No
Shotoku	STAR API*	5	Automated Robotics*	Cam pos, status and show select	Yes	No
Skaarhoj	Skaarhoj RAW	5	Skaarhoj hardware panels (Control Duo, Fly Uno/Duo, Quick Pad/Bar, RCPV2, Micro audio)	Hardware panel control	Yes	No
Sky	Remote control	2	Sky Q Box	Remote control, channel selection	Yes	No
Skyline	Dataminer SOAP API	5	Dataminer	Device list read/limited object control	Yes	No
Snell	Kahuna K360 Tally Protocol / TSL V3.1	5	Snell Kahuna switcher	Combined Tally, UMD	Yes	No
Snell	Kahuna K360 Macro	1	Snell Kahuna switcher	Macro recall	Yes	No
Snell	RollCall	2 or 10	IQ, Siruis Hybrid routers, Kudos	Generic Snell protocol	Yes	No
Sonifex	DHY04	5	DHY04 TBU	Device control	Yes	No
Sony	9-pin	5	Blackmagic Hyperdeck, Sony BVS3000, etc	VTR transport control	No	Yes
Sony	CNA-1	5	Sony CNA-1 (MSCN option required)	Audio mic gain, format changes	Yes	No

blue = new in V2.8

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Manufacturer	Protocol	Points	Products	Description	Ethernet	Serial
Sony	CNA-2	10	Sony CNA-2	Interface to Sony camera network	Yes	No
Sony	MVS X Serial Tally	5	MVS-7000X/8000X	Serial Tally	No	Yes
Sony	MVS Serial Tally	5	MVS-8000,DVS-9000 (DCU)	Serial Tally	No	Yes
Sony	MVS RS-422A	5	MVS-8000,DVS-9000 (Gen.)	Serial Tally	No	Yes
Sony	PVM-2541 Interface E	1	BVM/PVM Monitors	Monitor Power	Yes	No
Sony	Simple Display Control API*	1	PVM Monitors (X2400/X1800)*	On/Off	Yes	No
Sony	VISCA	5	BRC H700, Z700	PTZ Cmaera control	Yes	Yes (m-drop)
Sony	XVS Serial Tally	5	XVS-6000/7000	Switcher Tally, Bus control, panel mnmnics	Yes	Yes
Stagetec	Nexus UDP	5	Audio processor	Routing and DSP control	Yes	No
Studer	Ember	5	Studer Vista Audio Mixer	In/Out faders, delays, mutes, snapshot rcl	Yes	No
Swiss	Tissot Timer Protocol	5	Tissot Protocol	Scoreboard status	Yes	No
TAG	MCM9000 soap api v2, v4	5	MCM9000 Multiviewer	Mon.Statistics, IP routing, control	Yes	No
TAG	MCS	10	TAG MCS	Routing, Channel alarms	Yes	No
Tascam	CD-400U	3	Tascam CD-400U Media player	Player control	Yes	No
TC Electronic	D22 Remote Control	1	D22 Broadcast Delay	Preset, delay, bypass control	No	Yes
Technolution	SigmaXG API	40	SigmaXG	KVM routing	Yes	No
Tektronix	Prism API	5	Prism	Device Control	Yes	No
Telemetrics	RCCP API	5	Robotic camera control panel	Camera show recall / status	Yes	No
Telos	LWCP - extensions	5	Vx Enterprise VoIP	SIP device control	Yes	No
Trilogy	Ember+	5	Gemini Intercom	Intercom control	Yes	No
TSL/EVS	TallyLink-V3 (Tx/Rx) TSL UMD V3.1	2	Cerebrum, 3rd party control systems	Bi directional exchange of UMD/Tally	Yes	Yes
TSL/EVS	TallyLink-V5 (Tx/Rx) TSL UMD V5	2	Cerebrum, third party control systems	Bi directional exchange of UMD/Tally	Yes	No
TSL/EVS	GPIOLink (Tx/Rx) TSL UMD V5	1	Cerebrum, third party control systems	Bi-directional exchange of Tally only	Yes	No
TSL	TSL UMD V3.1/V4.0	1 or 2	TSL UMDs	UMD and tally	Yes	Yes
TSL	TSL UMD V5	2	EVS GQW/MGG/MGU, TSL, GV KX/MX, Evertz VIP/MVP	UMD and tally	Yes	No
VisLink	Diversity Remote Protocol	5	Diversity	Device control	Yes	No
VisLink	MVL-HD2 Receiver	5	MVL-HD2 Receiver	Device control	Yes	No
VisLink	MVL-HD2 Tx Protocol	5	MVL-HD2 Transmitter	Device control	Yes	No
VizRT	Pb Listener	2	Media Sequencer	Simple macro (load/start/stop) control	Yes	No
VizRT	MSE RestAPI	5	Media Sequencer	Graphics playlists, selection ctrl/status	Yes	No
vMix	vMix TCP API	5	vMix switcher device	Control / Status / Tally of outputs including Layers. text field control	Yes	No
Vutrix	Vutrix Network	1	Vutrix monitors/Quad splits	UMD/Tally input source	Yes	No
Wohler	iAM API	3	iAM monitor	Preset recall	Yes	No
Xytech	Interop Scheduler*	40	ScheduALL interop*	Schedule Management	Yes	No
Yamaha	MIDI (requires IP to MIDI device server)	5	DM-1000	Device control	No	No

DEVICE PROTOCOLS BY DEVICE TYPE

Antenne Controllers
- Andrew APC100
- ApexSat APS500
- Research Concepts RC8000A

Audio mixers
- Allen and Heath DLive audio console
- Allen and Heath iLive audio console
- Allen and Heath Qu audio console
- Calrec Apollo, Artemix, Hydra2
- DHD 52XC/XR/XS/XD
- Lawo Nova, MC²
- OnHertz Artisto
- Stagetec Nexus Routing/DSP control
- Studer OnAir 1500/3000 (Ember)
- Studer Vista (Ember)
- Yamaha DM1000 (over MIDI)

Audio Monitoring
- Wohler iAM

Audio processing
- Axia Livewire
- Allen and Heath AHD audio processor
- Audinate Dante
- DAD AX32
- Lawo A_Line, A_mic8, Power core, A_UHD Core
- Merging Horus/Anubis
- TC Electronics D22 Delay unit
- Telos VX VoIP talkshow system

Automation
- Snell PBAK
- Rohde & Schwarz Gallium
- Xytech ScheduALL

Asset Management
- EVS IPDirector
- EVS VIA MAP
- Avid Interplay Capture

Building management
- BACnet

Camera control
- Aver PTC310/330 camera control
- Canon RC-IP Controller*
- Gigawave camera control protocol
- Grass Valley LDK Gateway
- Panasonic AW-RP450, RP120 Controller
- Panasonic AW-HE Cameras

- RCT FR-1 Remote Control*
- Shotoku Remote Camera Control
- Shotoku STAR*
- Sony CNA-1 gateway
- Sony CNA-2 gateway
- Sony VISCA Cameras
- Telemetrics RCCP

Control Systems
- Q-SYS Core

CiaB
- Harmonic Fuze-1

Encoders
- AWS Elemental

GPIO
- EVS CGP-4848
- Dataprobe iPIO
- JLCooper eBox
- Ross GPI-8941
- Rotronics CF2000

Graphics Engines
- Casper CG
- Ross Xpression
- VizRT MSE

Hardware Panels
- Evertz Panels (using -S7) CP1000E, 2048E, 3201E
- NVision Panels
- Pro-Bel Panel protocol SW-P-05/6 for BPS panels
- JLCooper Fadermaster 4, 8/100, Eclipse MX
- Riedel SmartPanels RSP-1216/1232
- Skaarhoj Control Duo, Fly Uno / Duo, RCPV2, Micro audio, QuickBar, Quick Pad

IRD
- MediaKind RX1*

ISDN/Codec
- AETA Scoop5
- Riedel Connect Trio protocol

Interface control
- Grass Valley iControl Gateway/Densité
- Lawo HOME
- Riedel Mediornet
- Ross OpenGear
- Snell Roll Call

Intercom
- Clearcom Eclipse
- Riedel Artist RRCS protocol
- RTS Cronus, Zeus, Adam
- Trilogy Gemini (Ember protocol)

KVM switches
- Adder Infinity KVM Switch AIM
- Adderview DDX10,30
- Blackbox ACX, Boxilla
- Gefen EXT-CU-LAN
- Guntermann & Drunck KVM Switch
- IHSE Draco Tera
- KVM tec
- Technolution SigmaXP

Lighting
- Art-Net (DMX512) lighting
- ETC EOS Lighting console
- MA Lighting GrandMA/GrandMA3

Management Systems
- Skyline Dataminer
- Ateme Titan Live/Pilot Manager*
- Harmonix NMX*

Master Control
- Axon MCS
- Evertz EMC, Quartz QMC
- Grass Valley Imagestore IS750
- Grass Valley M-2100 control and tally

Microwave Transmission
- VisLink Diversity
- VisLink MVL-HD2 TX/Rx

Modular Products
- AppearTV NX5000, X Platform
- Axon/EVS Synapse
- GV Densite
- GV/Snell IQ (via RollCall)
- Imagine 6800+, Selenio, SNP
- Ross OpenGear

Monitors
- JVC
- NEC
- Panasonic TH-98/86/75/65/55/49SQ1
- Penta
- Sony BVM/PVM
- Samsung MDC
- Vutrix, Vutrix Quad

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DEVICE PROTOCOLS BY DEVICE TYPE (CONTINUED)

Multiviewers
Blackmagic Multiview
Evertz VIP, MVP, Magnum
EVS Neuron View Config
GV/Miranda Kaleido (presets/UMD) MV-821
Harris Predator
Imagine Epic Multiviewer
RGB Spectrum Mediawall (Input)
R&S Prismon
TAG MCM9000 Control/Monitoring
TAG MCS routing/channel alarms

Protocols
Ember/Ember+
ICMP for simple ping devices
MIDI
ModBus TCP/IP
Open Sound Control (OSC)
Python (scripted) protocol
'Raw' UDP/TCP/Serial for 'simple' devices
RestFul API
RTP-MIDI
Wake on LAN (WoL)

Projectors
Panasonic PJLink

Routers
DirectOut Montone .42
Gefen GTB-HD HDMI Matrix
Lightware MX-FR HDMI Router
NDI Routing
Newtek NDI Routing
Riedel MediorNet
Quintech QRM

SaaS Platforms
GV AMPP

Scoreboards
Swiss Tissot Timer Protocol
OES Scoring Protocol

SDN/IP orchestrators
Nevion VIdeoIPath
SDNsquare GRID

Servers/VTRs/Media players
AJA KiPro*
Atomos Shogun Studio
BBright Playout*
Blackmagic Hyperdeck
EVS XT-VIA, XS-VIA, XS-NEO
Grass Valley AMP
Harmonic Spectrum X
Imagine VDCP protocol
Masterplay OnAir
Media Excel Hero
Netia Audio Playout Server
Sony 9 pin protocol
Tascam CS-400U

Set Top Box
Sky Q Receiver

Studio Timers
Plura SPT

Switchers
Blackmagic ATEM (Studio/Constellation)
EVS DYVI
For-A Hanabi tally and editor protocol
Grass Valley Kaleido remote control protocol
Grass Valley K Frame Tally and control protocols
Grass Valley Kayak DD35-Net
Grass Valley Karrera, Kayenne, Zodiak Tally
Grass Valley (Snell) Kahuna, Kula
Panasonic AV-HS450
Panasonic Kairos
Ross Acuity, Carbonite (Normal, Black, Ultra, Ultrix, Hypermax)
Ross Vision Switchers (GV Serial contribution Tally)
Sony MVS/DVS/XVS switcher Tally/editor protocol
vMix

TBU
Sonifex DHY-04

Test Instruments
Hitomi Matchbox Analyser
Tektronix Prism
Rohde Schwarz FSL3 Spectrum Analyser

UMD/Tally
Pro-Bel SW-P-15 Serial cue protocol
Grass Valley RP 1/2/3 - MPK
Image Video UMD
Image Video TallyLink (server/sink)
Tally link protocol (based on TSL V3.1)
TSL UMD protocol V3.1, V4 and V5

Video Encoder/Decoder
BBright Encoder
Haivision SRT Gateway

Video Processors
AJA FS1,2,3,4
Arkona / Lawo vMatrix
Barco FSN-1400
Blackmagic Teranex
Cisco vDCM
EVS Neuron
For-A FA1010
Imagine SNP
Lawo vPro8
Nevion Virtuoso

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