DATASHEET

GV FABRIC
Compact, High–speed Ethernet Switches for Broadcast IP Routing Systems

Meeting the exacting requirements of modern IP media facilities.

GV Fabric® from Grass Valley® is a COTS (commercial–off–the–shelf) IP switch enabling format–agnostic signal routing for small to enterprise–wide installations. Operation has been rigorously tested with Grass Valley IP edge devices and in typical workflow scenarios, thus ensuring all the main equipment for an "end–to–end" IP solution can now be sourced from a single leading supplier. Its seamless integration with proven and established GV Orbit® router control, configuration and monitoring systems dramatically reduces deployment timelines, system upgrading, fault finding and customizing workflows.

GV Fabric's scalable technology means it's equally at home in spine–and–leaf or monolithic type structures both for single or redundant network schemes. Its non–blocking architecture exhibits zero packet loss at very low latency and is fully compliant with PTPv2 timing protocol for device and network timing offering alternative

clock distribution schemes, including transparent and boundary clock mechanisms. The delivered units come with all the necessary software pre–installed, while including a "docker container" allowing deployment of future applications that can run independently on top of the operating system. All switches exhibit the best power budget compared with other vendor types at less than 5W per 100 GbE port.

Furthermore, Grass Valley's adoption of open architecture methods and standards means inclusion of third–party equipment around a GV Fabric framework provides unparalleled choice and flexibility. GV Fabric opens the door to a one–stop–shop approach, eliminating time and costs associated with third–party switch vendor consultation, ensuring equipment interoperability has been fully verified and that your investment is protected well into the future.

Applications

IP Core Routing for All Facility Types
Whether you're migrating from SDI to IP or building a completely new facility based around an IP infrastructure, GV Fabric is the perfect solution for implementing the core signal routing function.

As your solution partner, Grass Valley offers an extensive range of high–density modular IP/SDI interface devices — working at all standard network speeds — for seamless integration of GV Fabric to existing SDI networks. For "all IP" facilities, Grass Valley direct–IP enabled devices including cameras, switchers, conversion, processing devices, multiviewers and more combine with GV Fabric in offering the most complete product portfolio for open architecture IP systems.

Studios, Master Control Rooms, OBs, Venues and More

GV Fabric is ideally suited to all broadcast applications, including studios, MCRs, OBs, venues and other media installations. It provides all the established benefits that IP brings, including greatly extended bandwidth, independence from signal format, and size, weight and power savings compared with traditional SDI structures. Resource sharing between OB vehicles, for example, or other LAN sites is far simpler with IP. GV Fabric's 100–400 GbE ports maximize signal density while minimizing cabling between the networks. The half–rack version of GV Fabric (GVF–516A–100G) is a perfect fit for fly packs with the ability to create redundant SMPTE ST 2022–7 based networks in a single rack unit.

Key Features

IP switches specifically created for broadcast and media applications

- Grass Valley supplied COTS-based hardware
- Software pre-installed with "docker container" for future applications
- Verified operation with Grass Valley edge devices and typical workflow scenarios
- Seamless integration with GV Orbit router control and configuration and monitoring systems

- Eliminates all potential consultation with third-party switch vendors
- Fully compliant with IGMP internet protocol and PTPv2 for device and network timing
- Optics and cables are available with short- and long-range options
- Provides users with a "one stop shop" with Grass Valley for IP-based broadcast solutions

State-of-the-art performance

- Autosensing port speeds
- Non-blocking, zero packet loss architecture at full data capacity
- Very low through-port latency
- Low power consumption compared with industry-leading vendors

Specifications

Technical

Layer 2 Features: IGMPv3, VLAN 802.1Q (4K), 1/10/25/40/50/100 GbE
Layer 3 Features: PIM-SSM, PIM-SM, IGMPv3
Management: SNMP v1,2,3,10/100/1000 Mb/s Ethernet RJ45 management ports, USB, Console port
Synchronization: IEEE-1588-2008 (PTPv2, SMPTE ST 2059 profile)
Docker Container: Persistent container & shared storage

Standard Compliance

Safety/EMC: CB, cTUVus, CE, CU, S_Mark, CE, FCC, VCCI, ICES, RCM, BSMI, KCC, CCC
Hazardous Substances: RoHS

General Specifications

Temperature:
- Operating 0°C to 40°C (32°F to 104°F)
- Non-operating -40°C to 70°C (-40°F to 158°F)

Relative Humidity:
- Operational: 10% to 85% non-condensing
- Non-operational: 10% to 90% non-condensing

Operating Altitude: 0 to 3,050m (10,006 ft.)

Port Configurations	GVF-1032A-100G	GVF-1032-200G	GVF-1048-25G	GVF-1032-400G	GVF-2064-100G	GVF-518-25G	GVF-516A-100G
Max. 400 GbE ports	–	–	–	32	–	–	–
Max. 200 GbE ports	–	32	–	64	–	–	–
Max. 100 GbE ports	32	64	12	128	64	4	16
Max. 50 GbE ports	64	128	24	128	128	8	–
Max. 40 GbE ports	32	32	12	64	64	4	16
Max. 25 GbE ports	128	128	48+48	128	128	18+16 (100G / 25G)	64
Max. 10 GbE ports	128	128	48+48	128	128	18+16	64
Max. 1 GbE ports	128	128	48+48	128	128	18+16	–

Specifications (cont.)

Switch Model	GVF-1032A-100G	GVF-1032-200G	GVF-1048-25G	GVF-1032-400G	GVF-2064-100G	GVF-518-25G	GVF-516A-100G
Throughput	6.4 Tb/s	12.8 Tb/s	4.8 Tb/s	25.6 Tb/s	12.8 Tb/s	1.7 Tb/s	3.2 Tb/s
Packet per Second	4.76 Bp/s	8.33 Bp/s	3.58 Bp/s	8.4 Bp/s	8.4 Bp/s	1.26 Bp/s	2.38 Bp/s
Latency	425 ns	425 ns	425 ns	545 ns	735 ns	<300 ns	<300 ns
CPU	Intel x86 2.20 GHz Dual Core				Intel x86 2.40 GHz Quad Core		ATOM x86
System Memory	8 GB DDR4 RAM		8 GB RAM	16 GB RAM	8 GB RAM	8 GB DDR3L 1600 MT/s SO-DIMM	8 GB
SSD Memory	32 GB SSD			64 GB SSD	32 GB SSD	16 GB Dual Channel MLC M.2-SATA SSD	16 GB
Packet Buffer	42 MB	42 MB	42 MB	64 MB	64 MB	16 MB	16 MB
100/100 Management Ports	1	1	1	1	1	1	1
Serial Ports	1 RJ45	1 RJ45	1 RJ45	1 RJ45	1 RJ45	1 RJ45	1 RJ45
USB Ports	1	1	1	1	1	1	1
Power Supplies	2	2	2	2	2	2	2
Fans	4	6	5	6	3	4	4
Power Supply Range	Frequency: 50-60 Hz Input range: 100-264 AC Input current: 2.9-4.5A, DC			Frequency: 50-60 Hz Input range: 100-264 AC		Frequency: 50-60 Hz Input range: 100-264 AC Input current: 4.5-2.9A	
Typical Power (ATIS)	242W	250W	204W	700W	482W	57W	94W
Size (H x W x D)	44 x 428 x 559 mm (1.72 x 16.84 x 22 in.)		44 x 428 x 432 mm (1.72 x 16.84 x 17 in.)	44 x 428 x 568.5 mm (1.72 x 16.85 x 22.3 in.)	88 x 428 x 568.5 mm (3.46 x 16.85 x 22.3 in.)	43.8 x 200 x 508 mm (1.72 x 7.87 x 20 in.)	
Weight	11.1 kg (24.5 lbs.)		8.5 kg (18.7 lbs.)	11.6 kg (25.6 lbs.)	14.64 kg (32.3 lbs.)	4.5 kg (10 lbs.)	

Ordering

GVF-1032A-100G

GV Fabric Spectrum-2 based 100 GbE 1 RU Open Ethernet Switch with Onyx, 32 QSFP28 ports, two power supplies (AC), x86 CPU, standard depth, C2P airflow, rack installation kit.

GVF-1032-200G

GV Fabric Spectrum-2 based 200 GbE 1 RU Open Ethernet Switch with Onyx, 32 QSFP56 ports, two power supplies (AC), x86 CPU, standard depth, C2P airflow, rack installation kit.

GVF-1048-25G

GV Fabric Spectrum-2 based 25 GbE/100 GbE 1 RU Open Ethernet switch with Onyx, 48 SFP28 ports and 12 QSFP28 ports, two power supplies (AC), x86 CPU, short depth, P2C airflow, rack installation kit.

GVF-1032-400G

GV Fabric Spectrum-3 based 400 GbE 1 RU Open Ethernet Switch with Onyx, 32 QSFPDD ports, two power supplies (AC), x86 CPU, standard depth, P2C airflow, rack installation kit.

GVF-2064-100G

GV Fabric Spectrum-3 based 100 GbE 2 RU Open Ethernet Switch with Onyx, 64 QSFP28 ports, two power supplies (AC), x86 CPU, standard depth, P2C airflow, rack installation kit.

GVF-518-25G

GV Fabric Spectrum based 25 GbE/100 GbE 1 RU Open Ethernet switch with Onyx, 18 SFP28 ports and 4 QSFP28 ports, two power supplies (AC), x86 CPU, short depth, P2C airflow. Rack installation kit must be purchased separately.

GVF-516A-100G

GV Fabric Spectrum based 100 GbE 1 RU Open Ethernet Switch with Onyx, 16 QSFP28 ports, two power supplies (AC), x86 CPU, short depth, P2C airflow. Rack installation kit must be purchased separately.

Mounting Option

GVF-5XX-RK2

Rack installation kit for GV-518-25G and GV-516A-100G. Allows installation of one or two switches side-by-side in standard depth rack.

Support Contracts

GVF-1032A-100G-SUP

Nvidia technical support and warranty — Silver 2 years, for SN3700 series switch

GVF-1032-200G-SUP

Nvidia technical support and warranty — Silver 2 years, for SN3700 series switch

GVF-1048-25G-SUP

Nvidia technical support and warranty — Silver 2 years, for SN3420 series switch

GVF-1032-400G-SUP

Nvidia technical support and warranty — Silver 2 years, for SN4700 series switch

GVF-2064-100G-SUP

Nvidia technical support and warranty — Silver 2 years, for SN4600 series switch

GVF-518-25G-SUP

Nvidia technical support and warranty — Silver 2 years, for SN2010 series switch

GVF-516A-100G-SUP

Nvidia technical support and warranty — Silver 2 years, for SN2100 series switch

GVF-1048-25G

GVF-1032-200G

GVF-518-25G

www.grassvalley.com Join the Conversation at GrassValleyLive on Facebook, Twitter, YouTube and Grass Valley on LinkedIn