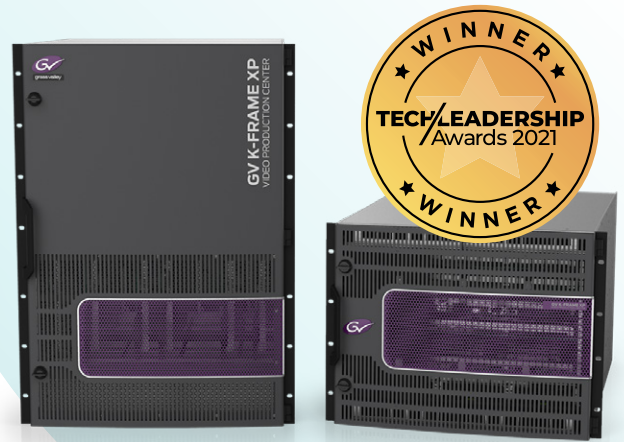


DATASHEET

GV K-FRAME XP

Video Production Center



All new, no-compromise 4K UHD/HD IP and SDI video processing frame.

Introduction

In the past, producing premium 4K content frequently required bandwidth and processing capacity that could only be achieved by combining multiple video sources and processors. This complexity made production difficult and at times limited the creative effects available to productions in UHD. The new GV K-Frame XP from Grass Valley is a no-compromise 4K UHD/HD, IP and SDI video processing frame that alleviates these limitations.

The GV K-Frame XP video production center introduces a new generation of full raster 4K UHD products for live production. Available in two different sizes – compact or standard – GV K-Frame XP may be paired with any of Grass Valley's Kayenne, Karrera, Korona or KSP control surfaces. GV K-Frame XP provides unsurpassed 4K UHD connectivity with every input and output supporting 4K UHD 2160p signals.

Switching in 4K Feels the Same as Switching in HD

Unlike competitive switchers claiming to support 4K UHD, Grass Valley's new GV K-Frame XP production switcher does not internally break down a 12G input into smaller streams or only allow connection to a subset of available I/O connectors. Whether you are producing content in HD, 3G or 4K UHD, there is no reduction in physical I/O count or processing capability resulting in maximum signal density and complete utilization of all available resources.

When you walk into a control room on a mobile truck or studio outfitted with GV K-Frame XP, switching a show in 4K UHD feels the same as switching in HD. It's the same workflow for the operator. Creative limitations vanish with smooth "full-raster" effects available on every keyer and DPM.

Multiformat production in a hybrid environment has never been easier. No re-cabling or external equipment is required to alternate between HD and 4K UHD or work in a mixed format mode of 1080p and 2160p. Internal conversion provides simple utilization of existing HD, SDQS or 2SI resources, while new single-stream 4K UHD 12G sources can be used directly in either IP on 25 GbE SFPs or SDI.

Expanded Production Capability

This next-generation production switcher is built on an all-new hardware platform that is not only ready for future production requests, it provides expanded capability for today's productions as well. Every full raster processing M/E has six keyers with all keyers supported by a full raster 2D DPM with perspective and optional chromakey capability. If you're counting, that's a maximum of 6 M/Es in the compact and 9 M/Es for the standard XP frames.

An additional option is Grass Valley's unique floating pool of up to 16 iDPMs usable in either HD or 4K UHD without losing resources by coupling or pairing. With an eight-channel built-in ImageStore for stills and movies with key and audio – including HDR support – the replay storage capacity of 128 GB (over 1 minute of 4K UHD) assures your confidence that you are prepared for any event with zero compromise.

Undiminished I/O Count in Any Format

The GV K-Frame XP provides more 4K UHD processing per RU than any other competitor, while providing all the features and functions you've come to expect in a Grass Valley switcher such as: DoubleTake, FlexiKey, Source Rules, as well as true Suites mode, multiple Macro triggering, timing manipulation/monitoring, and "UltraMatch." An I/O footprint of 80x40 connections

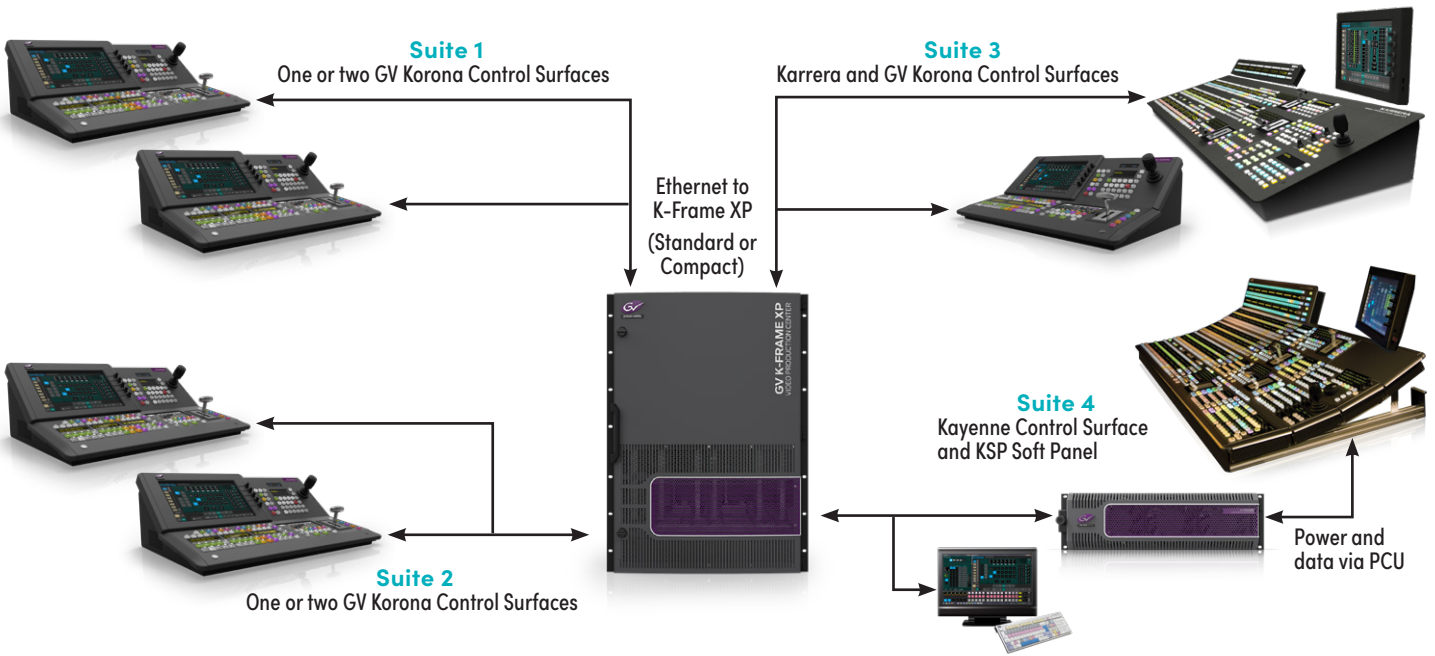
on the compact and an industry-leading 192x96 maximum I/O count on the standard model remains the same in HD and 4K UHD 2160p. The undiminished I/O count is the same regardless of whether you are producing in all IP, all SDI, or any combination of I/O boards. And to keep it simple, the I/O boards for the GV K-Frame XP are the same as the current GV K-Frame X.

Key features

- I/O footprint supports both IP and SDI offerings
- IP I/O boards come in 16x8 or 8x4 bi-directional configurations that support:
 - Standard SMPTE ST 2110-20/30/40, SMPTE ST 2022-7 for redundancy and NMOS IS-04 and IS-05 for configuration
 - 10 GbE or 25 GbE SFPs: (25 GbE SFP are required for Single-stream 2160p) (SFPs are sold separately)
 - IP GearBox inputs of 2160p and 4K 2SI and outputs of 2160p, 4K 2SI or 1080p in a 2160p Frame Operating Mode
 - "UltraMatch" automatic conversion of 1080p or 2160p sources into the Frame Operating Mode format of 2160p or 1080p
- SDI I/O boards come in two configurations:
 - 16x8 GearBox I/O board:
 - SDI GearBox supports inputs of HD, 1080p 3G, 2160p, 4K 2SI, and 4K SDQS and outputs of HD, 1080p 3G, 2160p, 4K 2SI in a 2160p frame operating mode
 - "UltraMatch" automatically converts 1080p or 2160p sources into the frame operating mode format of 2160p or 1080p on the SDI GearBox board and the two IP I/O boards
 - MatchSync aligns out-of-time incoming SDI signals up to a frame. One use is to align SDI signals with IP inputs in a mixed format environment
 - 8x4 format conversion board includes GearBox functionality and MatchSync:
 - Supports up/down/crossconverts with direct connection of (HD to 4K (2160p, 2SI and SQDS) and 4K (2160p, 2SI and SQDS) to HD)
 - Supports SD to HD and HD to SD conversion
 - MatchSync aligns out-of-time incoming SDI signals up to a frame
- 4K UHD 2160p sources can be handled as two single streams on a 25 GbE SFP or one on a 12G-SDI link
- Maintain the same functionality and feature DNA as the current K-Frame X
- Up to 3 M/Es on each of two new VPE (Video Processing Engine) boards
- Six full function keyers per M/E with 2D DPMs with perspective per keyer
- Up to 16 optional 3D iDPMs, spread over two new DPM (Digital Picture Manipulation) boards
- Supports HD, 1080p 3G, 12G, 2160p 4K UHD and HDR (HLG and PQ) with ability to set HDR (HLG and PQ) separately for each suite
- Internal 8-channel ImageStore for stills and movies with video, key and audio (up to 128 GB of storage)
- E-MEMs, Macros and show files are fully compatible with K-Frame and K-Frame X
- Multiviewers (licensable)
- Compatible with all Kayenne, Karrera, Korona and KSP control surfaces
- Rugged modular design on both control surface and chassis for field reconfiguration and serviceability
- Four independent suites capability in both HD or 4K UHD
- Automation application control under GV Ignite and GV Pace, or other third-party applications
- On-panel triggered integration with graphics devices: ChyronHego LyricX or PRIME, Ross Video XPression, and Daktronics (via RossTalk)



Four Suites with K-Frame XP



Feature/Function	GV K-Frame XP – Compact	GV K-Frame XP – Standard
Frame processing	4K UHD 2160p (full-raster), 1080p, 1080i, 720p	4K UHD 2160p (full-raster), 1080p, 1080i, 720p
Video frame	8 RU frame (with internal power supplies)	15 RU frame (plus 1 RU external power supply)
1080p 3G I/O (IP, SDI)	HD and 4K-2SI or SDQS are supported	HD and 4K-2SI or SDQS are supported
12G SDI I/O (4K 2160p)	4K UHD 2160p – SMPTE ST 2082-10	4K UHD 2160p – SMPTE ST 2082-10
4K UHD 2160p IP I/O	4K UHD 2160p single-stream IP	4K UHD 2160p single-stream IP
HDR capability	10-bit, HLG or PQ	10-bit, HLG or PQ
I/O type	SDI, IP or mixed	SDI, IP or mixed
I/O footprint	Up to 80x40 I/O in either full SDI, full IP or mixed	Up to 192x96 I/O in either full SDI, full IP or mixed
IP connector type	SFPs: 10-25 GbE	SFPs: 10-25 GbE
Other connectors	2 MediaPort Inputs	4 MediaPort Inputs
Mix/effects	Up to 6 M/Es each with 6 full keyers with 2D DPMs with perspective	Up to 9 M/Es each with 6 full keyers with 2D DPMs with perspective
Multiviewer	Licensed VPE hardware can be optionally configured as an M/E or a multiviewer	With an optional license, there is a dedicated multiviewer on the controller board in addition to being able to optionally use a VPE as an M/E or a multiviewer
Internal ImageStore	8-channel (video+key) – stills or movies with audio, maximum storage up to 128 GB (Licensable as 32 GB, 64 GB or 128 GB)	8-channel (video+key) – stills or movies with audio, maximum storage up to 128 GB (Licensable as 32 GB, 64 GB or 128 GB)
Conversion	Optional inputs: up to 16 SDI with frame syncs and format converters Outputs: up to 8 SDI format converters Additional functionality: SDI Gearbox I/O board provides 2SI and SQDS translation MatchSync for all inputs. The IP I/O boards include “UltraMatch” and the ability to take in and output 4K 2SI and 1080p when in a 2160p frame operating mode	Optional inputs: up to 32 SDI with frame syncs and format converters Outputs: up to 16 SDI format converters Additional functionality: SDI Gearbox I/O board provides 2SI and SQDS translation MatchSync for all inputs. The IP I/O boards include “UltraMatch” and the ability to take in and output 4K 2SI and 1080p when in a 2160p frame operating mode
2D DPMs	Licensable, 2D DPM with perspective associated with every keyer	Licensable, 2D DPM with perspective associated with every keyer
3D DPMs	Licensable, up to 16 floating 3D iDPMs with effects	Licensable, up to 16 floating 3D iDPMs with effects
Control surface	Any Kayenne, Karrera, KSP and Korona control surface runs on any K-Frame video processing engine. (Available in multiple configurations)	Any Kayenne, Karrera, KSP and Korona control surface runs on any K-Frame video processing engine. (Available in multiple configurations)
Software panel option	KSP touchscreen GUI software available with optional tactile custom keyboard	KSP touchscreen GUI software available with optional tactile custom keyboard

Specifications

The initial release will support 12 Frame Operating Modes (FOMs):

- 2160p 59.94 Hz
- 2160p 50 Hz
- 2160p 29.97 Hz
- 2160p 23.98 Hz
- 1080p 59.94 Hz – Level A
- 1080p 50 Hz – Level A
- 1080p 29.97 Hz
- 1080p 23.98 Hz
- 1080i 29.97 Hz
- 1080i 25 Hz
- 720p 59.94 Hz
- 720p 50 Hz

Mechanical Specification

Compact Frame:

Depth: 63.2 cm (24.90 in.)
Width: 48.3 cm (19.00 in.)
Height: 34.5 cm (13.97 in.)
RU: 8 RU
Weight: 59.7 kg (125 lbs.)*

Standard Frame:

Depth: 60.4 cm (23.76 in.)
Width: 48.3 cm (19.00 in.)
Height: 66.2 cm (26.22 in.)
RU: 15 RU
Weight:

- K-FRM-100SXP: 58.3 kg (128.6 lbs.)
- K-FRM-100SXP-I: 57.7 kg (127.3 lbs.)

Power Supply for Standard Frame:

Depth: 58.4 cm (23.0 in.)
Width: 48.3 cm (19.0 in.)
Height: 4.4 cm (1.75 in.)
Weight:

- Single power supply: 2.2 kg (4.85 lbs.)
- Empty power supply frame: 7.3 kg (16.0 lbs.)
- Power supply frame w/4 power supplies: 16.0 kg (35.4 lbs.)

Inputs

Compact frame: Base frame 32 inputs with max. 80 inputs; choice of SDI and/or IP

Standard frame: Base frame 32 inputs with max. 192 inputs; choice of SDI and/or IP

Outputs

Compact frame: Base frame 16 outputs with max. 40 outputs; choice of SDI and/or IP

Standard frame: Base frame 16 outputs with max. 96 outputs; choice of SDI and/or IP

GPI+Tally I/O

Compact frame: 16x GPI + 16x GPO + 64x Tally

Standard frame: 40x GPI, 40x GPO, 160x Tally

*Compact frame has internal power supplies. Frame weight is with three power supplies. A single supply weighs 2.5 kg (5.4 lbs.).

Audio Standards

Audio will be passed as:

- SDI: Embedded
- SMPTE ST 2022-6
- Embedded (Transport SMPTE ST 2110-30 AES67 at 48 kHz, Level A and B)

Video Standards

IP Video Standards:

- SMPTE ST 2110-20/30/40
- SMPTE ST 2022-6 with TICO

4K UHD Mode:

- SMPTE ST 2082-10 (12G SDI)
- SMPTE ST 425-5:2014 Quad Link 2-Sample-Interleave (2SI)
- SMPTE ST 425-5:2014 Quad Link Square Division Quad Split (SDQS)
- SMPTE ST 2110-20/30/40
- SMPTE ST 2022-6 with TICO

3G Mode:

- SMPTE ST 424 section 4 – Level A – 1080p 50/59.94/60 Hz

HD Mode:

- SMPTE ST 292-1 1080i25/29.97/30 Hz $\pm 5\%$
- SMPTE ST 292-1 720p50/59.94/60

Serial Digital Video Inputs

Interface:

- 4K 12G video format SMPTE ST 2082
- 3G video formats SMPTE ST 424-2006
- HD video formats SMPTE ST 292-1998
- SD video formats SMPTE ST 259-1997 ITU-R BT.656 (requires K-FRM-IO-CONV-X module)

Return loss:

- ≥ 4 dB, 6.0 GHz to 12 GHz
- ≥ 15 dB, 5 MHz to 1.5 GHz
- ≥ 10 dB, 1.5 GHz to 3.0 GHz

Type of connector: 75 Ω BNC (SMPTE ST 259)

Nominal amplitude: 800 mVp-p terminated

Input impedance: 75 Ω

Max. cable length: using Belden 1694A type cable

- 4K 12G video 60m (197 ft.) typical
- 3G video 140m (459 ft.) typical
- HD video 200m (656 ft.) typical
- SD video 350m (1,148 ft.) typical

Serial Digital Video Outputs

Interface:

- 4K 12G video format SMPTE ST 2082
- 3G video formats SMPTE ST 424-2006
- HD video formats SMPTE ST 292-1998
- SD video formats SMPTE ST 259-1997 ITU-R BT.6560 (requires K-FRM-IO-CONV-X module)

Return loss:

- ≥ 4 dB, 6.0 GHz to 12 GHz
- ≥ 15 dB, 5 MHz to 1.5 GHz
- ≥ 10 dB, 1.5 GHz to 3.0 GHz

Type of connector: 75 Ω BNC (SMPTE ST 259)

Nominal amplitude: 800 mVp-p across 75 Ω

Rise and fall times:

- 4K 12G: ≤ 45 ps between 20% and 80% amplitude
- 3G & HD video formats ≤ 135 ps between 20% and 80% amplitude
- SD video formats, 400 to 1400 ps between 20% and 80% amplitude

Timing jitter:

- 4K 12G video format ≤ 2.0 UI
- 3G video formats ≤ 2.0 UI
- HD video formats ≤ 1.0 UI
- SD video formats ≤ 0.2 UI

Alignment jitter:

- 4K 12G video format ≤ 0.3 UI
- 3G video formats ≤ 0.3 UI
- HD video formats ≤ 0.2 UI
- SD video formats ≤ 0.2 UI

Output impedance: 75 Ω

DC offset: <500 mV with 75 Ω termination

Ancillary and embedded data: Blanked or passed (user selectable)

EDH: Blanked

Specifications (cont.)

Reference Input

Analog: Black or Tri-level sync

Digital: SDI – SMPTE ST 425-1

PTP: IEEE 1588-2008 Precision Time Protocol with SMPTE ST 2059-2 PTP Profile, out of band

Analog Reference Input

Video standard: Analog black or Tri-level sync

Return loss: >40 dB, up to 5 MHz

Connectors: 2 BNC loop-through

Impedance: 75Ω external termination

Communications

Connections:

- PCU to video frame: LAN cable 100m (328 ft.) max. length
- Control panel to PCU: dedicated cables, choice of 7.5m or 15m
- Menu panel to PCU: dedicated cables, choice of 7.5m or 15m
- Audio AES67: 2x SFP for AES67 (SFP may be Fiber or RJ-45)
- Machine control: 8x RS-422
- PTP: 2x SFP

Interoperability:

The Video Production Centers are interoperable with the GV Orbit, GV Convergent, Sirius, IQ Edge, Encore, Jupiter, SMS-7000 and NV9000 routing control systems; LDK Series and LDX Series cameras using Connect Gateway, VISCA controlled PTZ systems; and with the K2 Summit, sQ servers, legacy Profile servers, and T2 iDDR's

Supported Control Protocols

The Video Production Centers support Ethernet and serial AMP protocol (standard in all systems), serial BVW and Odetics protocols, as well as controlling devices using PBus II and GPIs

- Serial BVW-75 for VTR control
- AMP (advanced media protocol) for Profile PVS, Profile XP Media Platform, K2, M-Series, Turbo iDDR and T2 iDDR systems over Ethernet and serial
- Grass Valley native protocol for routers/routing control systems (Trinix/Trinix NXT, Venus, Triton, NVISION and third-party routers; Jupiter, Encore and NV9000 router control systems)
- Grass Valley Sirius
- NVISION Native Router Control Protocol NP0017
- Ethernet tally
- Grass Valley remote Aux Panels via Ethernet
- Grass Valley editor protocol for edit controllers and external control
- VDCP Serial and Ethernet
- RossTalk protocol support for direct control of XPression graphics engine
- Single-point-of-control integration for graphics with ChyronHego Click Effects PRIME
- iControl
- NMOS IS-04 and IS-05

Power

Video Processing Frame 8 RU:

- Line voltage: 100V-240 VAC ±10% power factor corrected
- Automatic line-voltage sensing for 120V and 240V sources
- Line frequency: 50/60 Hz ±5%
- Power consumption: max. 1800W

Video Processing Frame 13 RU:

- Line voltage: 100V-240 VAC ±10% power factor corrected
- Automatic line-voltage sensing for 120V and 240V sources
- Line frequency: 50/60 Hz ±5%
- Power consumption: max. 2500W

Kayenne Control Panel:

- Line voltage: 100V-240 VAC ±10% power factor corrected
- Automatic line-voltage sensing for 120V and 240V sources
- Line frequency: 50/60 Hz ±5%
- Power consumption: max. panel configuration 600W
- Leakage current: <2.5 mA

Karrera Control Panel:

- Line voltage: 100V-240 VAC ±10% power factor corrected
- Automatic line-voltage sensing for 120V and 240V sources
- Line frequency: 50/60 Hz ±5%
- Power consumption: max. 200W
- Leakage current: <2.5 mA

GV Korona Control Panel:

- Line voltage: 100-240 VAC ±10% power factor corrected with automatic line-voltage sensing for 120V and 240V sources
- Line frequency: 50/60 Hz ±5%
- Power consumption: max. 60W
- Leakage current: <2.5 mA

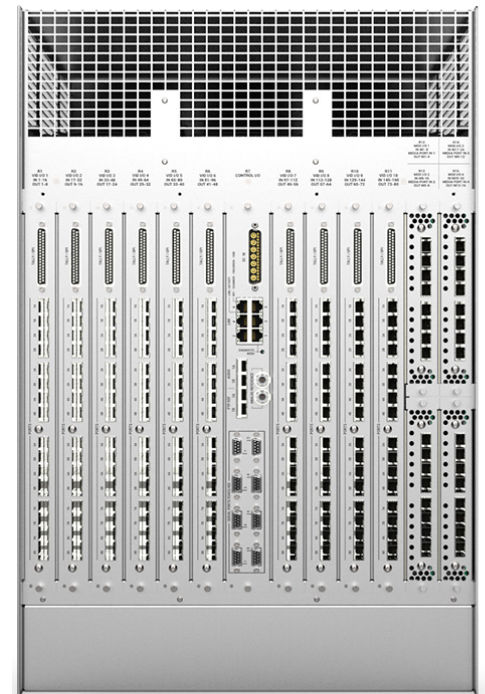
Environmental Conditions

Storage temperature: -20 to 70°C (-4 to 158°F)

Operating temperature: 0 to 40°C (32 to 104°F)

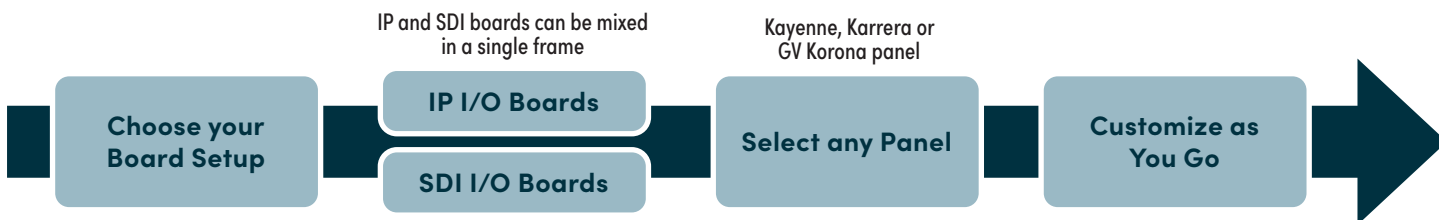
Relative humidity: 0-95% (non-condensing)

Electromagnetic environment: E2 (according to EN55103-1, -2)



Ordering

Look for the system nomenclature that includes panel type/size and video processing frame size, then add your options; or build your system à la carte.



- SDI I/O boards come in two types: 16x8 with “gearbox” functionality, and 8x4 conversion for frame sync and format conversion, up/down/cross converts with direct connection
- IP I/O boards come in two configurations: 16x8 and 8x4

Kayenne Panel Systems – XP Compact

KAYN-3-35-3M-CXP

Kayenne K-Frame CXP SDI 3 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license.

3-stripe (3 M/E) Kayenne modular panel (KAYN-PNL-300-35), Panel Control Unit with redundant power, supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter).

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KAYN-3-35-3M-CXP-I

Kayenne K-Frame CXP IP 3 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) Kayenne modular panel (KAYN-PNL-300-35), Panel Control Unit with redundant power supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter).

GV Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I module
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KAYN-3-35-4M-CXP

Kayenne K-Frame CXP SDI 4 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license.

3-stripe (3 M/E) Kayenne modular panel (KAYN-PNL-300-35), Panel Control Unit with redundant power supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter).

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) Video Processing Engine module (K-FRM-VPE-XP)

PLUS, three (3) M/E licenses (K-FRM-LIC-ME)

PLUS, 24 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KAYN-3-35-4M-CXP-I

Kayenne K-Frame CXP IP 4 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) Kayenne modular panel (KAYN-PNL-300-35), Panel Control Unit with redundant power supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter).

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-I modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) Video Processing Engine module (K-FRM-VPE-XP)

PLUS, three (3) M/E licenses (K-FRM-LIC-ME)

PLUS, 24 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

Ordering (cont.)

KAYN-4-35-4M-CXP

Kayenne K-Frame CXP SDI 4 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license.

4-stripe (4 M/E) Kayenne modular panel (KAYN-PNL-400-35), Panel Control Unit with redundant power supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter).

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) Video Processing Engine module (K-FRM-VPE-XP)

PLUS, three (3) M/E licenses (K-FRM-LIC-ME)

PLUS, 24 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KAYN-4-35-4M-CXP-I

Kayenne K-Frame CXP IP 4 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

4-stripe (4 M/E) Kayenne modular panel (KAYN-PNL-400-35), Panel Control Unit with redundant power supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter).

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-I modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) Video Processing Engine module (K-FRM-VPE-XP)

PLUS, three (3) M/E licenses (K-FRM-LIC-ME)

PLUS, 24 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

Kayenne Panel Systems – XP Standard

KAY-3-35-3M-SXP

Kayenne K-Frame SXP SDI 3 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license.

3-stripe (3 M/E) Kayenne modular panel (KAY-PNL-300-35), Panel Control Unit(s) with redundant power, supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter)

GV K-Frame XP – Standard 15 RU (K-FRM-100SXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-SXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Three (3) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KAY-3-35-3M-SXP-I

Kayenne K-Frame SXP IP 3 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) Kayenne modular panel (KAY-PNL-300-35), Panel Control Unit(s) with redundant power supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter)

GV Frame XP – Standard 15 RU (K-FRM-100SXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-SXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Three (3) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KAY-4-35-3M-SXP

Kayenne K-Frame SXP SDI 3 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G, and full-raster 4K UHD 2160p with the appropriate license.

4-stripe (4 M/E) Kayenne modular panel (KAY-PNL-400-35), Panel Control Unit(s) with redundant power supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter)

GV K-Frame XP – Standard 15 RU (K-FRM-100SXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-SXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Three (3) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KAY-4-35-3M-SXP-I

Kayenne K-Frame SXP IP 3 M/E system

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license.

4-stripe (4 M/E) Kayenne modular panel (KAY-PNL-400-35), Panel Control Unit(s) with redundant power supply, touchscreen menu panel, manual and set of cables (choose 7.5 or 15 meter)

GV K-Frame XP – Standard 15 RU (K-FRM-100SXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-SXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-I modules
- Three (3) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

Karrera Panel Systems – XP Compact

KRR-2-25-2M-CXP

Karrera K-Frame CXP SDI 2 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

2-stripe (2 M/E) Karrera panel (KRR-PNL-200-25) with touchscreen menu panel set (KRR-PNL-MENU-SET).

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) M/E license (K-FRM-LIC-ME)

PLUS, 12 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KRR-2-25-2M-CXP-I

Karrera K-Frame CXP IP 2 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

2-stripe (2 M/E) Karrera panel (KRR-PNL-200-25) with touchscreen menu panel set (KRR-PNL-MENU-SET).

GV Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) M/E license (K-FRM-LIC-ME)

PLUS, 12 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KRR-2-25-C-2M-CXP

Karrera K-Frame CXP SDI 2 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

2-stripe (2 M/E) Karrera compact panel (KRR-PNL-200-25-C) with touchscreen menu panel set (KRR-PNL-MENU-SET)

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) M/E license (K-FRM-LIC-ME)

PLUS, 12 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KRR-2-25-C-2M-CXP-I

Karrera K-Frame CXP IP 2 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

2-stripe (2 M/E) Karrera compact panel (KRR-PNL-200-25-C) with touchscreen menu panel set (KRR-PNL-MENU-SET).

GV Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) M/E license (K-FRM-LIC-ME)

PLUS, 12 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KRR-3-35-3M-CXP

Karrera K-Frame CXP SDI 3 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) Karrera panel (KRR-PNL-300-35) with touchscreen menu panel set (KRR-PNL-MENU-SET).

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KRR-3-35-3M-CXP-I

Karrera K-Frame CXP IP 3 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) Karrera panel (KRR-PNL-300-35) with touchscreen menu panel set (KRR-PNL-MENU-SET).

GV Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

Ordering (cont.)

KRR-3-35-4M-CXP

GV Karrera K-Frame CXP SDI 4 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license.

3-stripe (3 M/E) Karrera panel (KRR-PNL-300-35) with touchscreen menu panel set (KRR-PNL-MENU-SET).

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) Video Processing Engine module (K-FRM-VPE-XP)

PLUS, three (3) M/E licenses (K-FRM-LIC-ME)

PLUS, 24 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KRR-3-35-4M-CXP-I

Karrera K-Frame CXP IP 4 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) Karrera panel (KRR-PNL-300-35) with touchscreen menu panel set (KRR-PNL-MENU-SET).

GV Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Two (2) power supplies (K-FRM-PSU-XP)

PLUS, one (1) Video Processing Engine module (K-FRM-VPE-XP)

PLUS, three (3) M/E licenses (K-FRM-LIC-ME)

PLUS, 24 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

Karrera Panel Systems – XP Standard

KRR-3-35-3M-SXP

Karrera K-Frame SXP SDI 3 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license.

3-stripe (3 M/E) Karrera panel (KRR-PNL-300-35) with touchscreen menu panel set (KRR-PNL-MENU-SET)

GV K-Frame XP – Standard 15 RU (K-FRM-100SXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-SXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 2x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Three (3) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KRR-3-35-3M-SXP-I

Karrera K-Frame SXP IP 3 M/E System

Includes control panel, video frame, and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) Karrera panel (KRR-PNL-300-35) with touchscreen menu panel set (KRR-PNL-MENU-SET)

GV Frame XP – Standard 15 RU (K-FRM-100SXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-SXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Three (3) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

GV Korona Panel Systems – XP Compact

KOR-2-20-2M-CXP

GV Korona K-Frame CXP SDI 2 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G, and full-raster 4K UHD 2160p with the appropriate license.

2-stripe (2 M/E) GV Korona panel (KOR-PNL-200-20) with built-in multitouch touchscreen menu

GV K-Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two power supplies (K-FRM-PSU-XP)

PLUS, one M/E license (K-FRM-LIC-ME)

PLUS, 12 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KOR-2-20-2M-CXP-I

GV Korona K-Frame CXP IP 2 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G, and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

2-stripe (2 M/E) GV Korona panel (KOR-PNL-200-20) with built-in multitouch touchscreen menu.

GV Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Two power supplies (K-FRM-PSU-XP)

PLUS, two M/E licenses (K-FRM-LIC-ME)

PLUS, 12 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KOR-3-25-3M-CXP

GV Korona K-Frame CXP SDI 3 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) GV Korona panel (KOR-PNL-300-25) with built-in multitouch touchscreen menu.

GV Frame XP – Compact 8 RU (K-FRM-100CXP) which includes:

- One XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Two power supplies (K-FRM-PSU-XP)

PLUS, two M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KOR-3-25-3M-CXP-I

GV Korona K-Frame CXP IP 3 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) GV Korona panel (KOR-PNL-300-25) with built-in multitouch touchscreen menu.

GV Frame XP – Compact 8 RU (K-FRM-100CXP-I) which includes:

- One XP Controller module (K-FRM-CTRL-CXP) with onboard ImageStore, requires license
- One Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Two power supplies (K-FRM-PSU-XP)

PLUS, two M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

GV Korona Panel Systems – XP Standard

KOR-3-25-3M-SXP

GV Korona K-Frame SXP SDI 3 M/E System

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) GV Korona panel (KOR-PNL-300-25) with built-in multitouch touchscreen menu.

GV Frame XP – Standard 15 RU (K-FRM-100SXP) which includes:

- One (1) XP Controller module (K-FRM-CTRL-SXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O SDI footprint comprised of two K-FRM-IO-FULL-X-GB modules
- Three (3) power supplies (K-FRM-PSU-XP)

PLUS, Two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

KOR-3-25-3M-SXP-I

GV Korona K-Frame SXP IP 3 M/E system

Includes control panel, video frame and licenses. XP systems are capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license. Fiber SFPs are purchased separately.

3-stripe (3 M/E) GV Korona panel (KOR-PNL-300-25) with built-in multitouch touchscreen menu.

GV Frame XP – Standard 15 RU (K-FRM-100SXP-I) which includes:

- One (1) XP Controller module (K-FRM-CTRL-SXP) with onboard ImageStore, requires license
- One (1) Video Processing Engine module (K-FRM-VPE-XP) with one M/E license (K-FRM-LIC-ME)
- 32x16 I/O IP footprint comprised of two K-FRM-IO-FULL-X-I modules
- Three (3) power supplies (K-FRM-PSU-XP)

PLUS, two (2) M/E licenses (K-FRM-LIC-ME)

PLUS, 18 2D DPMs with perspective (K-FRM-LIC-2DDPM-XP)

GV K-Frame Video Production Centers – XP Compact**K-FRM-100CXP****GV K-Frame XP Compact (8 RU) SDI-based Video Production Center**

With internal power supplies, capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license; it includes:

- Two power supplies (K-FRM-PSU-XP)
- One XP Compact Controller Processor module (K-FRM-CTRL-CXP) with on-board ImageStore, requires a license
- 32 SDI inputs/16 SDI dual outputs spanning two K-FRM-IO-FULL-X-GB. I/O capable of 4K UHD 2160p, 3G and/or 12 GB w/ "gearbox" functionality
- One Video Processing Engine module (K-FRM-VPE-XP) capable of licensing three on-board processors as either M/E, eDPM or multiviewer. M/E includes:
 - 18 inputs – A/B/C/D backgrounds, 1/2 utility, six video/key pairs
 - Seven outputs – Program A, B, C, D (Programmable Clean Feed); Preview A, C; optional M/E view
 - Six full-function keyers with two pages of V/K store
 - Licensable 2D DPMs with perspective on each keyer (K-FRM-LIC-2DDPM-XP)
 - Cut, mix and wipe transitions
- One Mix/Effect license (K-FRM-LIC-ME) enables one M/E on the VPE module
- Eight GPI inputs and eight GPI outputs (max. 16 GPI inputs and eight GPI outputs), 32 tally outputs (max. 64 tally outputs)

999 macros, 1,000 E-MEMs, machine control (serial and Ethernet).

The frame has a maximum of six M/Es with maximum 36 full-function keyers.

Maximum I/O footprint 80x40 in HD or 4K UHD 2160p.

K-FRM-100CXP-I**GV K-Frame XP – Compact (8 RU) IP-based Video Production Center**

With internal power supplies, capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license; it includes:

- Two power supplies (K-FRM-PSU-XP)
- One XP Compact Controller Processor module (K-FRM-CTRL-CXP) with on-board ImageStore, requires a license
- 32 IP inputs/16 IP outputs spanning two bidirectional K-FRM-IO-FULL-X-I boards. SFP connector cages can be stuffed for either 10 GbE or 25 GbE, SFPs must be ordered separately (K-FRM-IO-SFP10-25G). Board may also be licensed for SMPTE ST 2022-7 redundancy (K-FRM-LIC-IO-RDN-X)
- One Video Processing Engine module (K-FRM-VPE-XP) capable of licensing three on-board processors as either M/E, eDPM or multiviewer. M/E includes:
 - 18 inputs – A/B/C/D backgrounds, 1/2 utility, six video/key pairs
 - Seven outputs – Program A, B, C, D; Preview A, C; optional M/E view
 - Six full-function keyers with two pages of V/K store
 - Licensable 2D DPMs with perspective on each keyer (K-FRM-LIC-2DDPM-XP)
 - Cut, mix and wipe transitions
- One Mix/Effect license (K-FRM-LIC-ME) enables one M/E on the VPE module
- Eight GPI inputs and eight GPI outputs (max. 16 GPI inputs and eight GPI outputs), 32 tally (max. 64 tally outputs)

999 macros, 1,000 E-MEMs, machine control (serial and Ethernet).

The frame has a maximum of 6 M/Es with maximum 36 full-function keyers.

Maximum I/O footprint 80x40 in HD or 4K UHD 2160p.

GV K-Frame Video Production Centers – XP Standard**K-FRM-100SXP****GV K-Frame XP – Standard (15 RU) SDI-based Video Production Center**

With (1 RU) external power supply frame is capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license; it includes:

- Three (3) power supplies (K-FRM-PSU-XP)
- One (1) XP Standard Controller Processor module (K-FRM-CTRL-SXP) with on-board ImageStore, requires a license
- 32 SDI inputs/16 SDI dual outputs spanning two K-FRM-IO-FULL-X-GB. I/O capable of 4K UHD 2160p, 3G and/or 12 GB w/ "gearbox" functionality
- One (1) Video Processing Engine module (K-FRM-VPE-XP) capable of licensing three on-board processors as either M/E, eDPM or Multiviewer. M/E includes:
 - 18 inputs – A/B/C/D backgrounds, 1/2 utility, Six (6) video/key pairs
 - Seven (7) outputs – Program A, B, C, D; Preview A, C; optional M/E view
 - Six (6) full-function keyers with two pages of V/K store
 - Licensable 2D DPMs with perspective on each keyer (K-FRM-LIC-2DDPM-XP)
 - Cut, Mix and Wipe transitions
- One (1) Mix/Effect license (K-FRM-LIC-ME) enables one M/E on the VPE module
- Eight (8) GPI inputs and eight (8) GPI outputs (max. 16 GPI inputs and 8 GPI outputs), 32 tally outputs (max. 64 tally outputs)

999 macros, 1000 E-MEMs, machine control (Serial and Ethernet)

The frame has a maximum of nine (9) M/Es with maximum 54 full-function keyers

Maximum I/O footprint 192x96 in HD or 4K UHD 2160p

K-FRM-100SXP-I**GV K-Frame XP – Standard (15 RU) IP-based Video Production Center**

With (1 RU) external power supply frame is capable of processing in HD, 1080p 3G and full-raster 4K UHD 2160p with the appropriate license; it includes:

- Three (3) Power supplies (K-FRM-PSU-XP)
- One (1) XP Standard Controller Processor module (K-FRM-CTRL-SXP) with on-board ImageStore, requires a license
- 32 IP inputs/16 IP outputs spanning two bidirectional K-FRM-IO-FULL-X-I boards. SFP connector cages can be stuffed for either 10 GbE or 25 GbE, SFPs must be ordered separately (K-FRM-IO-SFP10-25G). Board may also be licensed for 2022-7 redundancy (K-FRM-LIC-IO-RDN-X)
- One (1) Video Processing Engine module (K-FRM-VPE-XP) capable of licensing three on-board processors as either M/E, eDPM or multiviewer. M/E includes: A/B, Utility 1 & 2 backgrounds; six (6) full-function keyers with two pages of video/key store, cut, mix, and wipe transitions; six (6) program, preview and clean feed outputs
- One (1) Mix/Effect license (K-FRM-LIC-ME) enables one M/E on the VPE module
- Eight (8) GPI inputs and eight (8) GPI outputs (max. 16 GPI inputs and 8 GPI outputs), 32 tally (max. 64 tally outputs)

999 Macros, 1000 E-MEMs, machine control (Serial and Ethernet)

The frame has a maximum of nine (9) M/Es with maximum 54 full-function keyers

Maximum I/O footprint 192x96 in HD or 4K UHD 2160p

Options

K-FRM-VPE-XP

GV K-Frame XP Video Processing Engine Module

With three processors that can be licensed as either M/E (K-FRM-LIC-ME), multiviewer (K-FRM-LIC-MLT-VWR) or an eDPM (K-FRM-LIC-EDPM). M/E includes:

- 18 inputs – A/B/C/D backgrounds, 1/2 utility, six video/key pairs
- Seven outputs – Program A, B, C, D; Preview A, C; optional M/E view
- Six full-function keyers with two pages of V/K store
- Licensable 2D DPMs with perspective on each keyer (K-FRM-LIC-2DDPM-XP)
- Cut, mix and wipe transitions

K-FRM-PSU-XP

GV K-Frame XP power supply for redundancy, replacement or spares on K-FRM-100CXP.

K-FRM-PSU-FRAME-SXP

GV K-Frame XP – Standard power supply frame, includes 3 K-FRM-PSU-XP power supply modules with open slot for 1 additional supply for redundancy.

K-FRM-CXP-KIT

GV K-Frame XP – Compact (8 RU) Video Production Center Spares Kit includes: Control Processor module (K-FRM-CTRL-CXP) and fan module.

K-FRM-SXP-KIT

GV K-Frame XP – Standard (15 RU) Video Production Center Spares Kit includes: Control Processor module (K-FRM-CTRL-SXP) and fan module.

K-FRM-CTRL-CXP

GV K-Frame XP – Compact Controller Processor module for K-FRM-100CXP enabling processing in full-raster 4K UHD 2160p, 1080p 3G and HD. The internal ImageStore functionality resides on-board with eight channel pairs of V&K for stills and movies with audio. ImageStore storage capacity up to 128 GB and movies requires licenses.

K-FRM-CTRL-SXP

GV K-Frame XP – Standard Controller Processor module for K-FRM-100SXP enabling processing in full-raster 4K UHD 2160p, 1080p 3G and HD. The internal ImageStore functionality resides on-board with eight channel pairs of V&K for stills and movies with audio. ImageStore storage capacity up to 128 GB and movies requires licenses.

K-FRM-LIC-IDPM-8

K-Frame Software License enabling eight of the available floating iDPM (Internal Digital Manipulator) video and key channels. Includes: Kurl with nonlinear transforms including page-turn, page-roll, spheres, ripple, slits, mirrors, splits, size modulation and position modulation; plus Spektra with Lighting, Wide-range defocus, Glow and Output Recursives. When utilized on GV K-Frame XP, a hardware module option is required (K-FRM-DPM-XP). Order under switcher configuration or under K-FRM-SW-OPT, include frame serial number.

K-FRM-LIC-12G-CXP

K-Frame Software License enabling 12G (full-raster 4K UHD 2160p) and 3G 1080p formats in the GV K-Frame XP – Compact (K-FRM-100CXP or K-FRM-100CXP-I). Order under switcher configuration or under K-FRM-SW-OPT, include frame serial number.

K-FRM-LIC-12G-SXP

K-Frame Software License enabling 12G (Full-raster 4K UHD 2160p) and 3G 1080p formats in the GV K-Frame XP – Standard (K-FRM-100SXP or K-FRM-100SXP-I). Order under switcher configuration or under K-FRM-SW-OPT, include frame serial number.

K-FRM-LIC-2DDPM-XP

K-Frame Software License enabling ALL 2D DPMs with perspective available on licensed M/Es. Can only be licensed on GV K-Frame XP systems. Order under switcher configuration or under K-FRM-SW-OPT.

K-FRM-LIC-IMG128GB

K-Frame Software License enabling 128 GB of storage capacity in the internal ImageStore. Can only be licensed on GV K-Frame XP systems. Order under switcher configuration or under K-FRM-SW-OPT.

K-FRM-PRO-XP-PS

GV K-Frame XP PRO Performance Suite software includes:

- One K-FRM-LIC-IMG-32GB
- One K-FRM-LIC-IDPM-2, requires purchase of K-FRM-DPM-XP module
- One K-FRM-LIC-CHRO-2
- One K-FRM-LIC-FLEX

Only available for GV K-Frame XP systems. Order under switcher configuration or under K-FRM-SW-OPT.

K-FRM-ELITE-XP-PS

GV K-Frame XP ELITE Performance Suite software includes:

- One K-FRM-LIC-IMG-64GB
- One K-FRM-LIC-IDPM-8, requires purchase of K-FRM-DPM-XP module
- One K-FRM-LIC-CHRO-ALL
- One K-FRM-LIC-FLEX
- One K-FRM-LIC-DBL

Only available for GV K-Frame XP systems. Order under switcher configuration or under K-FRM-SW-OPT.

K-FRM-XTREME-XP-PS

GV K-Frame XP XTREME Performance Suite software includes:

- One K-FRM-LIC-IMG-128GB
- One K-FRM-LIC-IDPM-ALL, requires purchase of K-FRM-DPM-XP module (Scheduled availability Nov. 2020)
- One K-FRM-LIC-CHRO-ALL
- One K-FRM-LIC-FLEX
- One K-FRM-LIC-DBL

Only available for GV K-Frame XP systems. Order under switcher configuration or under K-FRM-SW-OPT.

K-FRM100C-UPG-CXPI

K-Frame Compact chassis hardware (K-FRM-100C) upgrade to GV K-Frame XP – Compact chassis hardware (K-FRM-100CXP-I). This upgrade provides the following:

- One K-FRM-100CXP-I
- Matched IP I/O footprint up to 48x24
- Up to two K-FRM-LIC-ME licenses provided

Any additional hardware modules or software licenses shall be purchased options.

K-FRM100C-UPG-CXP

K-Frame Compact chassis hardware (K-FRM-100C) upgrade to GV K-Frame XP – Compact chassis hardware (K-FRM-100CXP). This upgrade provides the following:

- One K-FRM-100CXP
- Matched SDI I/O footprint up to 48x24
- Up to two K-FRM-LIC-ME licenses provided

Any additional hardware modules or software licenses shall be purchased options.

K-FRM-UPG-SXP

K-Frame Standard chassis hardware (K-FRM-100X or K-FRM-100S) upgrade to GV K-Frame XP – Standard SDI chassis hardware (K-FRM-100SXP). This upgrade provides the following:

- One K-FRM-100SXP
- Two K-FRM-LIC-ME licenses provided

Any additional hardware modules or software licenses shall be purchased options.

Select software licenses may be transferable by ordering option items: KAYN-SW-UPGRADE or KRR-SW-UPGRADE.

K-FRM-UPG-SXP-I

K-Frame Standard chassis hardware (K-FRM-100X-I or K-FRM-100S) upgrade to GV K-Frame XP – Standard IP chassis hardware (K-FRM-100SXP-I). This upgrade provides the following:

- One K-FRM-100SXP-I
- Two K-FRM-LIC-ME licenses provided

Any additional hardware modules or software licenses shall be purchased options.

Select software licenses may be transferable by ordering option item KAYN-SW-UPGRADE or KRR-SW-UPGRADE.

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