VIP X1 XF Single-channel Video Encoder

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BOSCH
Invented for life

- ▶ Single-channel H.264 encoder with Dual Streaming
- ▶ Built-in analytics VCA
- ▶ SD card and iSCSI recording
- ▶ Multicast and Internet streaming
- ▶ ONVIF conformant

The VIP X1 XF encoders feature DVD-like quality H.264 video, at up to 25/30 images per second, over IP networks. The devices support PAL and NTSC sources and are available in a standard version that supports Bosch VCA (video content analysis) algorithms. The encoders provide bidirectional audio communication in parallel to video.
They also provide Dual Streaming and therefore are able to generate two independently configurable video streams. The devices are ultra-compact, so they are perfect for any application that depends on space-saving solutions.

Functions

Flexibility
The encoders offer unparalleled recording flexibility. Record on network-attached RAID iSCSI storage devices or locally on SD cards. The built-in iSCSI support enables the devices to act as conventional DVRs while streaming high-performance live video across the network.

Triple streaming
The encoders use Dual Streaming to generate two independent H.264 video streams per channel. This allows viewing and recording at two different quality levels to save disk space and bandwidth. As a third stream for easier third-party integration they provide an independently configured M-JPEG stream. On alarm, they can send an e-mail with JPEG images attached.

Dual H.264 recording
You can record the streams independently on different media. Thus video can be recorded centrally on iSCSI drives managed by VRM Video Recording Manager and redundantly on the local media.

Recording profiles
The encoders feature a highly flexible recording scheduler, providing up to ten programmable recording profiles and allowing individually assigned camera profiles. With these profiles, you can accelerate the frame rate as well as increase the resolution on alarm, saving recording space during non-alarm periods.

Access security
The devices offer various security levels for accessing the network, the unit, and the data channels. As well as password protection with three levels, they support 802.1x authentication using a RADIUS server for identification. You can secure Web browser access by HTTPS using a SSL certificate that is stored in the unit.
Also the communication channels—video, audio, or serial I/O—are then AES encrypted.

Intelligence
With built-in VCA, the VIP X1 XF encoders reinforce the Intelligence-at-the-Edge concept where edge devices become increasingly intelligent. The encoders come with built-in MOTION+ video motion detection. This motion detection algorithm is based on pixel change and includes object size filtering capabilities and sophisticated tamper detection capabilities.
Bosch offers more advanced VCA applications with its IVA (Intelligent Video Analysis). A licensable option, it bases the IVA algorithm on digital imaging technology that uses multi-level image analysis of pixel, texture, and motion (trajectory) changes.

Viewing
View the encoder video on a PC using a Web browser, in the Bosch Video Management System, or integrate it into another video management system. By routing the IP video to a high-performance VIDEOJET decoder device you can present the video with ultimate clarity.

Camera control
Configure and control your camera or dome using one of the various pre-defined control protocols. VIP X1 XF encoders provide a serial interface and alternatively support Bilinx communication over coax cable.

Easy upgrade
Remotely upgrade the encoders whenever new firmware becomes available. This ensures up-to-date products, thus protecting investment with little effort.

ONVIF conformance
Conformance to ONVIF 1.02 and ONVIF Profile S provides interoperability between network video products regardless of manufacturer. In addition, the firmware of the device supports all applicable features of the ONVIF 2.2 specification.
ONVIF conformant devices are able to exchange live video, audio, metadata, and control information and ensure that they are automatically discovered and connected to network applications such as video management systems.

Certifications and approvals

Safety

Region	Number
	IEC 60950-1

System

Region	Number
	IEC 62676-2
	EN50132-5-2

Electromagnetic compatibility

Region	Number
EU	EN 55022
	EN 55024
	EN 50130-4 Alarm systems
	EN 50121-4 Railway
USA	FCC 47 CFR Part15 SubpartB ClassB
Australia/New Zealand	AS/NZS 3548 ClassB

Approvals

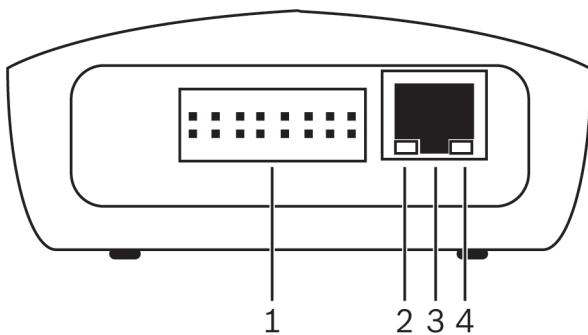| Region	Certification	
Korea	KCC	VIP X1 XF
Europe	CE	VIP X1 XF
	CE	VIP X1 XF PSU
USA	UL	Bosch UL online certifications directory (link)

Installation/configuration notes

Dimensions
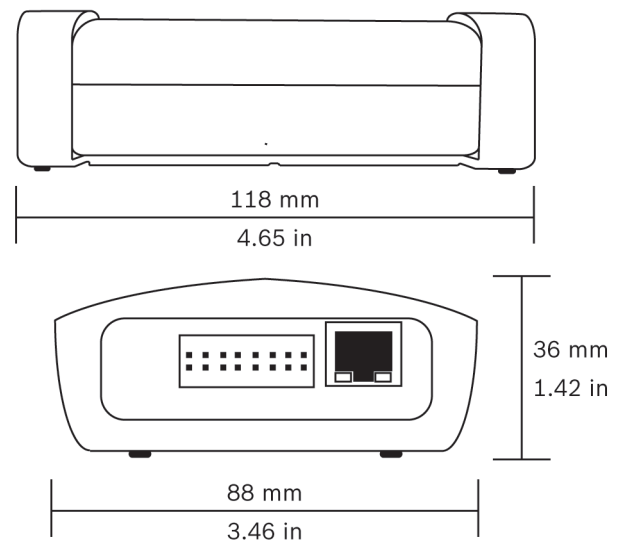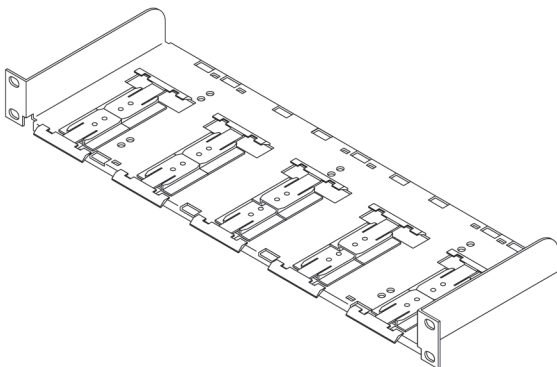

Dimensions in mm (inches)

Front connectors and indicators
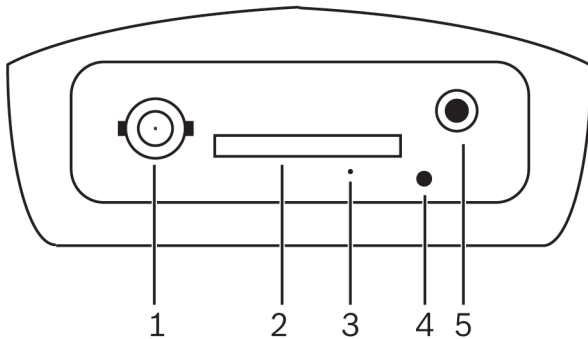
1	**VIDEO IN**	4	**POWER** LED
2	**SD CARD** slot	5	**LINE IN/OUT** audio
3	Factory reset button		

Rear connectors and indicators

1	Alarm in, relay out, power, COM (RS-232/422/485)	3	10/100 Base-T Fast Ethernet
2	LED Link	4	LED Traffic

Rack Mount Kit XF (optional)

Quantity	Component
1	VIP X1 XF single-channel video/audio encoder
1	Quick Installation Guide
1	Wall-mounting panel

Technical specifications

Electrical	
Power supply	Via external unit
Input voltage	9 to 30 VDC
Current consumption	0.65 A max
Power consumption	Approx. 6 W

Input/output	
Video	1 x input
• connector	BNC
• impedance	75 ohm, switchable
• signal	Analog composite, 0.7 to 1.2 Vpp, NTSC or PAL
Audio	1 x mono line in, 1 x mono line out
• connector	3.5 mm stereo jack
• signal line in	9 kohm typical, 5.5 Vpp max
• signal line out	3.0 Vpp at 10 kohm typical, 2.3 Vpp at 32 ohm typical, 1.7 Vpp at 16 ohm typical
Alarm	2 x input
• connector	Clamp (non-isolated closing contact)
• activation resistance	10 ohm max
Relay	2 x output
• connector	Clamp
• signal	30 Vpp (SELV), 0.2 A
COM port	Clamp, RS-232/422/485

Video	
Standards	H.264 (ISO/IEC 14496-10), M-JPEG, JPEG
Data rates	9.6 kbps to 6 Mbps
Resolution	Horizontal x vertical PAL/NTSC
• 4CIF/D1	704 x 576/480 (25/30 ips)
• CIF	352 x 288/240 (25/30 ips)

Video	
GOP structure	I, IP, IPBB, IBBRBP
Overall IP delay	240 ms max
Frame rate	1 to 50/60 (PAL/NTSC)

Audio	
AAC	
• Profile	AAC-LC
• Frequency rate	300 Hz to 6.4 kHz
• Data rate	48/80 kbps at 16 kHz sampling rate
G.711	
• Frequency rate	300 Hz to 3.4 kHz
• Data rate	80 kbps at 8 kHz sampling rate
L16	
• Frequency rate	300 Hz to 6.4 kHz
• Data rate	640 kbps at 16 kHz sampling rate
Signal-to-noise ratio	> 50 dB

Network	
Ethernet	10/100 Base-T, auto-sensing, half/full duplex, RJ45
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, NTP (SNTP), SNMP (V1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication
Encryption	TLS 1.0, SSL, DES, 3DES, AES

Control	
Software update	Flash ROM, remote programmable
Configuration	Configuration Manager or web browser
Camera control	Via serial interface; supported* protocols and devices:
• Bosch	AUTODOME, HSPT, MIC1-300 IP, TC8x00
• Canon	VCC1, VC-C4R
• CBC	SMD 12P/12PII/20P
• JVC	TK-C676
• Panasonic	WV-CS850

Control	
• Pelco	Spectra D/P
• Sensomatic	SpeedDome Ultra
• Sony	EVI D30/31/D100
• Ultrak	KD6
• VT	VPT4x
	* Basic functions only, no claim for full functionality valid. Bosch may not be made responsible if functions are not implemented or not working under all circumstances.

Connections	
SD card interface	1 x SD card

Mechanical	
Dimensions (H x W x D)	36 x 88 x 118 mm (1.42 x 3.46 x 4.65 in)
Weight	Approx. 0.25 kg (0.55 lb)

Environmental	
Operating temperature	0 ℃ to +50 ℃ (+32 ℉ to +122 ℉) ambient temperature
Relative humidity	0 to 95% atmospheric humidity, non-condensing
Thermal value	17 BTU/h max

Ordering information

VIP X1 XF
High-performance video encoder. H.264 triple-streaming; IVA-ready; iSCSI recording; SD card slot; audio; Motion+; ROI; BILINX; 1 video input
Order number **VIP-X1XF**

Accessories
VIP X1 XF PSU
Power supply for encoder. 9 to 30 VDC
Order number **VIP-X1XF-PSU**

Rack Mount Kit XF
Rack mount kit for stand-alone encoders and decoders
Order number **VIP-VJTXF-RMK**

Software Options
IVA license single channel encoder
IVA 4.xx/5.xx VCA software license (e-license) for single channel encoder
Order number **MVC-FIVA4-ENC1**