BOSCH
Invented for life

VIP X1600 Modular High-Performance Video Encoder

▶ **Up to 16 video inputs**

▶ **Modular and expandable with hot-swappable video modules**

▶ **Direct- or network-attached RAID5 storage via iSCSI**

▶ **Up to 30 ips at 4CIF/D1**

▶ **Storage-efficient Dual Streaming**

▶ **Intelligent Video Motion Detection and camera tampering detection**

▶ **Redundant power supply inputs**

▶ **Redundant Gigabit Ethernet ports**

The Bosch VIP X1600 is a high-performance modular multi-channel CCTV video encoder. The VIP X1600 is accommodating up to four hot-swappable video modules, each with four analog video inputs.
Video-audio modules are also available.
Having a modular construction, expanding a system is simple and low cost. Simply plug in additional video or video-audio modules at any time, without interrupting the operation of existing channels.
The VIP X1600 delivers MPEG-4 video over IP at a rate of 25 images (PAL) or 30 images (NTSC) per second at 2CIF or 2/3 D1 resolution, but is also capable of providing 4CIF/Full D1 resolution at 12.5/15 images per second for every video channel. For those inputs, where ultimate performance is required, full 4CIF 25/30 images per second video is available when alternate channels on an input module are used.

Functions

Viewing

The video can be viewed on a PC using VIDOS, the Bosch comprehensive video management system, or in a simple Web browser such as Internet Explorer. It can also be integrated into other video management systems using the Bosch Video SDK.
By routing the IP video to a high performance VIP XD video decoder or a VIDOS Monitor Wall you can

present the video with ultimate clarity on an analog CCTV or large, flat-screen VGA monitor or TV.

Recording

The VIP X1600 offers unparalleled recording options – locally, short-term RAM-based, network-attached utilizing iSCSI devices, and of course centrally using Network Video Recorders. The iSCSI RAID5 storage enables the VIP X1600 to act as a conventional DVR as well as to stream high performance live video across the network.

Reliability

Designed for reliability, the VIP X1600 features hot-swappable video modules, dual redundant power supply inputs, dual redundant network ports and fault-tolerant mass storage via iSCSI RAID5.

Dual Streaming

The VIP X1600 uses Dual Streaming to generate two independent IP video streams per channel. This allows viewing and recording at two different quality levels to save disk space and bandwidth. On alarm, it may send out email with JPEG images attached.

Increased intelligence

The VIP X1600 supports increased intelligence at the edge that includes detection of:
• video loss

- masking
- hooding
- defocusing
- diverted camera

These detection features provide tamper detection for various unified picture causes. More advanced video content analysis (VCA) applications are offered with Bosch's Intelligent Video Motion Detection (IVMD) as additional licensable option, giving VCA directly at the video input.

These powerful and flexible multi-channel devices with iSCSI recording represent the cutting edge of high performance Video over IP for CCTV today.

Certifications and Approvals

Complies with	CE: IEC 60950
	UL 1950
	AS/NZS 3548
	EN 55103-1, -2
	EN 50130-4
	EN 55022
	EN 55024
	EN 61000-3-2; EN 61000-3-3
	FCC 47 CFR Ch.1 Part 15

Installation/Configuration Notes

Frame Rate Combinations

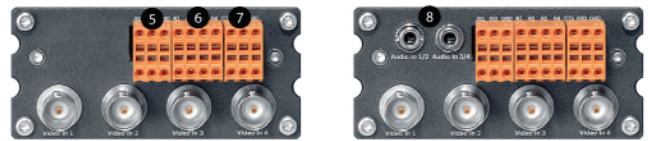|	4 CH per Module	2 CH per Module
Camera inputs	4	2
4CIF/D1 frame rate	15 ips *	30 ips *
2/3 D1 frame rate	30 ips *	30 ips *
2CIF frame rate	30 ips *	30 ips *
Dual Streaming	Yes	Yes

depending on picture content and movement
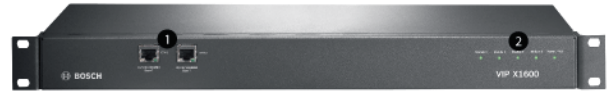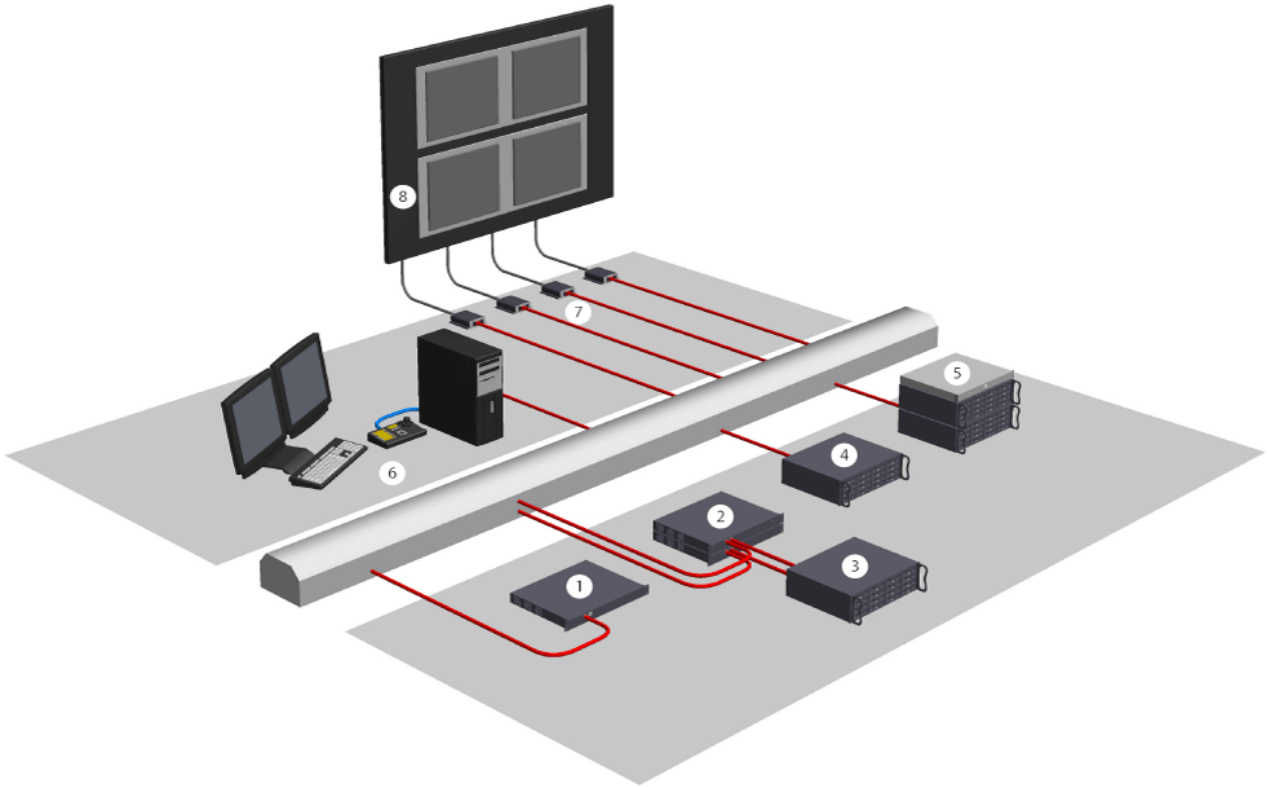

Front view


Rear view with 4x video-audio modules

Modules

1. 2x redundant 10/100/1000 Base-T Gigabit Ethernet
2. 5 status LEDs
3. 4 modules, each with 4x video-audio in
4. Redundant power supply inputs
5. 4x alarm in per module
6. 4x relay out per module
7. COM port (RS232/485) per module
8. Line-level stereo audio jack per 2 channels (video-audio module only)

1 - 16 analog Cameras. Network-attached iSCSI storage or Local RAM Recording or Streaming only
2 - 2x 16 analog Cameras
3 - Direct-attached iSCSI RAID5
4 - Network-attached iSCSI RAID5
5 - NVR Server with SCSI connection to very large RAID5 Disk Arrays > 12 TByte
6 - Management Station with IntuiKey
7 - Decoders
8 - Monitors
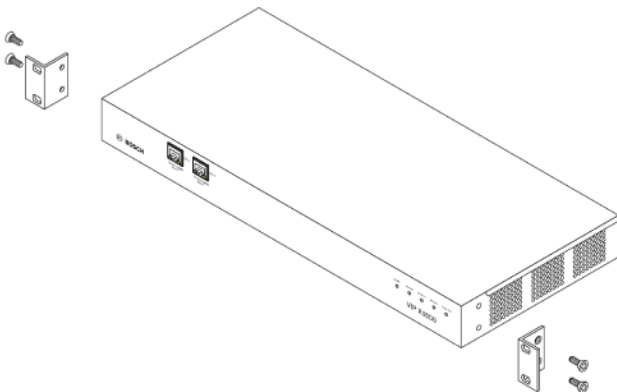
VIP X1600 rack mounting accessories
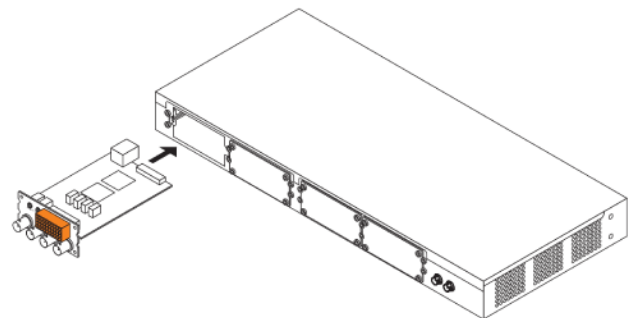
VIP X1600 module assembly

Parts Included

VIP X1600 Base

Quantity	Component
1	VIP X1600 Base System
1	Quick Installation Guide
1	CD ROM with software and documentation
	Mounting material
	Modules and power supply not included, must be ordered separately

VIP X1600 Module

Quantity	Component
1	VIP X1600 Module
1	Quick Installation Guide
	Mounting material

VIP X1600 stand-alone Power Supply

Quantity	Component
1	Power supply for VIP X1600, includes cables, country versions EU/US, UK and AUS available

Technical Specifications

Electrical

Video Compression Standards	MPEG-4; JPEG
Video Data Rate	9.6 kbps - 6 Mbps per channel
Video Resolution	704 x 576/480 (4CIF/D1: 12,5/15 ips) 704 x 288/240 (2CIF: 25/30 ips) 464 x 576/480 (2/3 D1: 25/30 ips) 352 x 576/480 (1/2 D1: 25/30 ips) 352 x 288/240 (CIF: 25/30 ips) 176 x 144/120 (QCIF: 25/30 ips)
GOP Structure	I, IP
Overall Delay	120 ms
Network Protocols	RTP, Telnet, UDP, TCP, IP, HTTP, IGMP V2, IGMP V3, ICMP, ARP, SNMP (V1/V2c/V3 MIB-II)
RAM Recording	32MB total, 8MB per channel
Software Update	Flash ROM, remote programmable
Configuration	Configuration Manager or web browser
Ethernet	Dual port 10/100/1000 Base-T, auto-sensing, half/full duplex, RJ45
Module Interfaces	
Video In	4x analog composite: NTSC/PAL; BNC connector 75 Ohm switchable, 0.7 - 1.2 Vp-p
Alarm In	4x (non-isolated closure contact type), max. activation resistance 10 Ohm, 6 position spring clamp contacts
Relay Out	4x, 30 Vp-p, 2 A, 8 position spring clamp contacts
COM Port	1x RS232/422/485, 6 position spring clamp contacts
Audio Modules	
Audio Standard	G.711; 300 Hz - 3.4 kHz
Audio Data Rate	80 kbps
Audio Sampling Rate	8 kHz
Line In	Stereo jack 3.5 mm, 9 kOhm typ., 5.5 Vp-p max.

Mechanical

Dimensions (H*L*W)	44*210*440 mm (17.32*1.73*8,27 in)
Weight	Approx. 4.0 kg (8.4 lb) with 4 modules

Environmental

Input Voltage	12 VDC, redundant (dual inputs)
Power Consumption	Approx. 60 VA, fully equipped
Heat output	205 BTU/h
Operating Temperature	0 °C - +50 °C (+32 °F - +122 °F) ambient temperature
Humidity	20 - 80%, atmospheric humidity (not cond.)

Ordering Information

Model | Description

VIP X1600 Base
VIP X1600 Base System with 4 module slots
FastEthernet backplane, dual power inputs

VIPX1600M4S
VIP X1600 4-channel video module, serial I/O,
4 alarm in, 4 relays

VIPX1600M4SA
VIP X1600 4-channel video-audio module, serial I/O,
4 alarm in, 4 relays, 4 audio in

Accessories

VIPX1600PS
VIP X1600 stand-alone power supply for EU and USA

VIPX1600PS-UK
VIP X1600 stand-alone power supply for UK

VIPX1600PS-AUS
VIP X1600 stand-alone power supply for Australia

DVA-12T-04050RA
iSCSI RAID5, 12 bay 1.5 TByte net capacity (4 hard drives installed)

DVA-12T-12050RA
iSCSI RAID5, 12 bay, 5.5 TByte net capacity (12 hard drives installed)

Software Options

VIP-X1600-FS1
VIP X1600 IVMD 1.0 VCA License per module, valid for all 4 channels