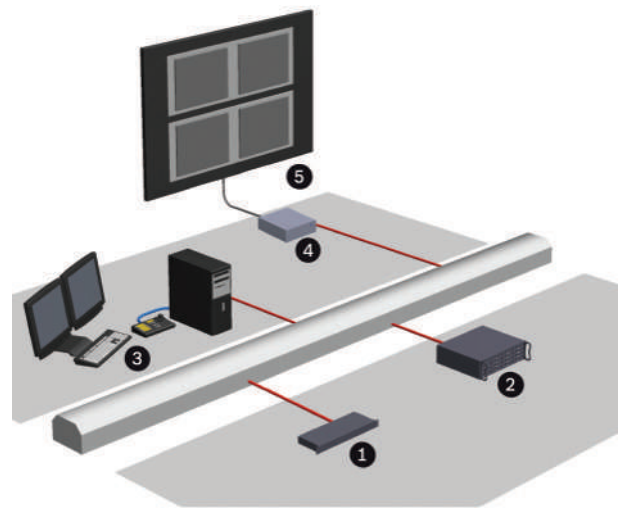# VIDEOJET multi 4000

- ▶ 16 video input channels with Dual Streaming
- ▶ Deinterlacing at video input and progressive encoding with H.264 High Profile
- ▶ Network-attached iSCSI recording
- ▶ Motion detection and privacy masking
- ▶ ONVIF conformant

VIDEOJET multi 4000 from Bosch is a 16-channel CCTV video encoder that offers top-of-the-line Video-over-IP performance for CCTV today.

The VIDEOJET multi 4000 H.264 High Profile encoder delivers real-time H.264 compressed video over IPv4 and IPv6 networks. It provides Dual Streaming per camera with full frame rate at best quality.

The unit supports PAL and NTSC sources and offers bidirectional audio communication in parallel to video. View the video on a PC using Bosch's comprehensive video management system, with or without Bosch's IntuiKey keyboard. Alternatively, use a Web browser. Bosch VideoSDK provides the means to integrate the encoder with other video management systems.

With 16 channels in a rack-mountable 1HU form factor VIDEOJET multi 4000 offers the highest port density at this quality of video. Its 1 Gbps Ethernet interface allows to deliver IP video fast and with low delay.

System overview

1	VIDEOJET multi 4000 with 16 analog cameras, network-attached iSCSI storage, or streaming only
2	Network-attached iSCSI RAID unit
3	Management station with CCTV keyboard
4	Decoder
5	Monitors

Functions

Flexibility
The encoder supports external iSCSI storage across an IP network.
It also supports VRM (Video Recording Manager), Bosch's flexible and scalable recording management software. This allows a flexible assignment of recording space on camera level including load balancing and decent redundancy features. VRM is available as stand-alone system or embedded into Bosch Video Management System.

Dual Streaming
The encoder uses the feature Dual Streaming to generate two independent IP video streams per channel at variable resolutions.

Recording
You can record each video input independently on different media. Thus video can be recorded centrally on iSCSI drives managed by VRM.
The encoder features 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 quality on alarm, saving recording space during non-alarm periods.

Access security
The encoder offers various security levels for accessing the network, the unit, and the data channels. As well as password protection with up to three levels, they support 802.1x authentication using a RADIUS server for identification. You can secure Web browser access by HTTPS using an SSL certificate that is stored in the unit.

Also the communication channels - video, audio, or serial I/O - are then AES encrypted.

Intelligence
The encoder comes with built-in MOTION+ video motion detection. This motion detection algorithm is based on pixel change and includes object size filtering capabilities.
On alarm, the device can send an e-mail with JPEG images attached.

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

Easy upgrade
Remotely upgrade the device 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.

Regulatory information

Safety

Region	Number
	IEC 60950

System

Region	Number
	IEC 62676-2
	EN 50132-5-2

Electromagnetic Compatibility

Region	Number
EU	EN55022 ITE
	EN55024 ITE
	EN50130-4 Alarm systems
	EN50121-4
	EN61000-3-2
	EN61000-3-3
US	FCC 47 CFR, Part 15 Subpart B Class B
AU	AS/NZS 3548 Class B

Approvals

Region	Regulatory compliance/quality marks	
Europe	CE	VIDEOJET multi 4000

Installation/configuration notes

	Stream 1	Stream 2
4CIF/D1	25/30 fps	25/30 fps
2CIF	25/30 fps	25/30 fps
CIF	25/30 fps	25/30 fps

Dimensions
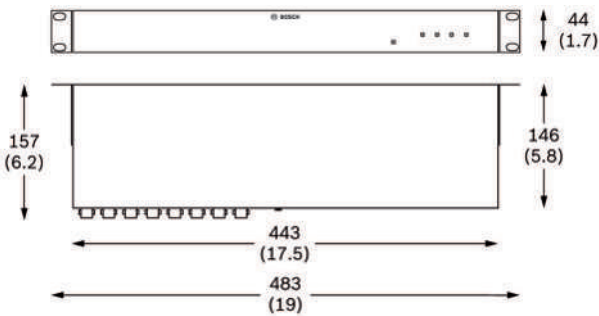
Fig. 1: Dimensions in mm (in)

Front view

Fig. 2: VIDEOJET multi 4000 front

1	Factory reset button	4	LED **STATUS**
2	LED **ACTIVITY**	5	LED **CONNECT**
3	LED **LINK**		

Rear view
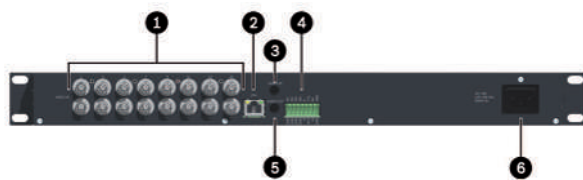
Fig. 3: VIDEOJET multi 4000 rear

1	**VIDEO IN 1** to **16**	4	Alarm in, relay out, COM (RS-232/422/485)
2	1 x 10/100/1000 Base-T Gigabit Ethernet	5	**AUDIO OUT**
3	**AUDIO IN**	6	Power supply input

Technical specifications

Input/output	
Video	16 x input
• connector	BNC
• impedance	75 ohm, terminated
• signal	Analog composite, 0.7 to 1.2 Vpp , NTSC or PAL
Audio	2 x mono in, microphone/line 1 x mono line out
• connector	2 x 3.5 mm (1/8 in) stereo jack
• signal line in	9 kohm typical, 5.5 Vpp max, microphone amplifier 60 dB max
• signal line out	3.0 Vpp at 10 kohm
Alarm	4 x input
• connector	Clamp (non-isolated closing contact)
• activation resistance	10 ohm max
Relay	1 x output
• connector	Clamp
• signal	30 Vpp (SELV), 0.2 A
COM port	Clamp, RS-232/422/485

Video	
Standards	H.264 High Profile (ISO/IEC 14496-10) M-JPEG
Data rates	9.6 kbps to 2 Mbps per channel
Resolution	Horizontal x vertical PAL/NTSC
• 4CIF/D1	704 x 576/480 (25/30 ips)
• 2CIF	704 x 288/240 (25/30 ips)
• CIF	352 x 288/240 (25/30 ips)
GOP structure	I, IP
Total delay	260 ms typical

Video

Dual Streaming	Full performance and full frame rate on both streams for every video input channel
Frame rate	1 to 25/30 fps

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	10/100/1000 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, APIPA (Auto-IP, link local address), 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
Connections	32 simultaneous unicast/multicast min
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;

Control

		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
•	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.

Mechanical

Dimensions (H x W x D)	44 x 483 x 157 mm (1.7 x 19 x 6.2 in)
Color	RAL 9017 (Traffic Black)
Weight	Approx. 1.7 kg (3.7 lb)

Electrical

Input voltage	100 to 240 VAC, 47 to 63 Hz
Input current	0.32 to 0.15 A
Power consumption	23 W
Connectors	IEC 320 C14

Environmental

Operating temperature	0 °C to +50 °C (+32 °F to +122 °F)
Storage temperature	0 °C to +50 °C (+32 °F to +122 °F)
Relative humidity	0 to 95%, non-condensing
Thermal value	79 BTU/h max

Ordering information

VJM-4016 Encoder, 16ch, H.264, dual streaming
High-performance multi-channel encoder. H.264 High
Profile; Dual Streaming; audio; MOTION+; iSCSI
recording; 16 channels; power cord added for specific
countries only
Order number **VJM-4016 | F.01U.298.670**

VJM-4016-EU Encoder, 16ch, H.264, dual streaming
High-performance multi-channel encoder with H.264
Dual Streaming, EU power cord with IEC lock.
Order number **VJM-4016-EU | F.01U.296.122**

VJM-4016-US Encoder, 16ch, H.264, US power cord
High-performance multi-channel encoder. H.264 High
Profile; Dual Streaming; audio; MOTION+; iSCSI
recording; 16 channels; US power cord with IEC lock
NDAA compliant
Order number **VJM-4016-US | F.01U.298.556**

Accessories

DIP-3042-2HD Storage 2x2TB, embedded VMS
All-in-one recording, viewing and management solution
for network surveillance systems.
For up to 32 channels and with 2 x 2 TB storage
capacity.
Order number **DIP-3042-2HD | F.01U.270.194**

DIP-3042-4HD Storage 4x2TB, embedded VMS
All-in-one recording, viewing and management solution
for network surveillance systems.
For up to 32 channels and with 4 x 2 TB storage
capacity.
Order number **DIP-3042-4HD | F.01U.270.195**