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

<table>
<thead>
<tr>
<th>Safety</th>
<th>Region</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IEC 60950</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System</th>
<th>Region</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IEC 62676-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN 50132-5-2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electromagnetic Compatibility</th>
<th>Region</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>EN55022 ITE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN55024 ITE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN50130-4 Alarm systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN50121-4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN61000-3-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN61000-3-3</td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>FCC 47 CFR, Part 15 Subpart B Class B</td>
<td></td>
</tr>
<tr>
<td>AU</td>
<td>AS/NZS 3548 Class B</td>
<td></td>
</tr>
</tbody>
</table>
Approvals

<table>
<thead>
<tr>
<th>Region</th>
<th>Regulatory compliance/quality marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>CE VIDEOJET multi 4000</td>
</tr>
</tbody>
</table>

Installation/configuration notes

<table>
<thead>
<tr>
<th>Stream 1</th>
<th>Stream 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>4CIF/D1</td>
<td>25/30 fps</td>
</tr>
<tr>
<td>2CIF</td>
<td>25/30 fps</td>
</tr>
<tr>
<td>CIF</td>
<td>25/30 fps</td>
</tr>
</tbody>
</table>

Dimensions

Fig. 1: Dimensions in mm (in)

Front view

Fig. 2: VIDEOJET multi 4000 front

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

Rear view

Fig. 3: VIDEOJET multi 4000 rear

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

Technical specifications

Input/output

<table>
<thead>
<tr>
<th>Video</th>
<th>16 x input</th>
</tr>
</thead>
<tbody>
<tr>
<td>connector</td>
<td>BNC</td>
</tr>
<tr>
<td>impedance</td>
<td>75 ohm, terminated</td>
</tr>
<tr>
<td>signal</td>
<td>Analog composite, 0.7 to 1.2 Vpp, NTSC or PAL</td>
</tr>
</tbody>
</table>

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

criminator | Clamp (non-isolated closing contact) |
activation resistance | 10 ohm max |

Relay

1 x output

criminator | 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 fps) |
| 2CIF | 704 x 288/240 (25/30 fps) |
| CIF | 352 x 288/240 (25/30 fps) |
| GOP structure | I, IP |
| Total delay | 260 ms typical |
### Video

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual Streaming</td>
<td>Full performance and full frame rate on both streams for every video input channel</td>
</tr>
<tr>
<td>Frame rate</td>
<td>1 to 25/30 fps</td>
</tr>
</tbody>
</table>

### 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<br> > 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;

- **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 D/P
  - **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