AutoDome TCP/IP Communications Module

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BOSCH
Invented for life

- Adds TCP/IP connectivity to any AutoDome 100, 200, 300 or 500i Series camera
- Choice of standard, including high-performance H.264 and JPEG
- High-quality H.264 compression at 4CIF/D1 and CIF resolutions
- Tri-streaming generates three independent IP video streams (simultaneous H.264 dual streams and JPEG streaming)
- Supports hybrid analog/IP operation

The TCP/IP Communications Module is an integral part of Bosch's AutoDome Modular Camera System, adding network connectivity to any AutoDome 100, 200, 300 or 500i Series camera. The TCP/IP module provides complete network-based control of all dome functionality including pan/tilt/zoom operation, presets, tours and alarming as well as web-based configuration of all dome settings.

AutoDome cameras equipped with the TCP/IP Communications Module deliver true hybrid operation. With both Ethernet and analog BNC connections, network-enabled AutoDome cameras provide direct network connection while simultaneously supporting existing analog equipment. The TCP/IP Communications Module uses H.264 compression and bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.

Built-in iSCSI support allows network-enabled AutoDomes to stream video directly to an iSCSI RAID array. This eliminates the need to stream all the video data over the network to a conventional network video recorder (NVR). The TCP/IP Communications Module can be configured to send alarm notifications with associated snapshot images via e-mail. SNMP support is included for remote device monitoring and management.

Functions

Ultra-efficient H.264 encoding
The AutoDome TCP/IP Communications Module uses an advanced H.264 encoder to create DVD-quality streaming video at ultra-low bit rates. Use of H.264 encoding, bandwidth throttling and multicasting capabilities, minimizes bandwidth and storage usage to significantly reduce costs. The AutoDome TCP/IP Communications Module supports 4CIF, and CIF resolutions at frame rates up to 25 and 30 images per second (for PAL and NTSC respectively).
The use of H.264 reduces bit rates and storage requirements by as much as 30% compared to standard MPEG-4 without sacrificing image quality.

Tri-streaming video
The AutoDome TCP/IP Communications Module is capable of generating Two independent H.264 streams with up to 4CIF resolution plus one JPEG stream simultaneously. This profile allows you to stream high-quality H.264 images for live viewing and recording, and at the same time, stream JPEG images to a remote FTP server or PDA device.

ONVIF conformance
The TCP/IP Communications Module conforms to the ONVIF (Open Network Video Interface Forum) specification guaranteeing interoperability between network video products regardless of manufacturer. 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.

Hybrid flexibility
The TCP/IP Communications Module enables true hybrid camera operation. With both Ethernet and BNC connections, AutoDomes equipped with a TCP/IP Communications Module can simultaneously stream IP video across a local or wide area network, and CVBS video via coaxial cabling to support existing analog equipment. Network video streams are sent over IP networks and can be viewed with the Bosch Divar XF Digital Video Recorder, or on a PC running VIDOS video management software. Alternatively, a Bosch IP video decoder can be used to display the video on an analog CVBS or VGA monitor. For maximum accessibility, the video can be viewed using a web browser.

The built in web server allows authorized access using a standard web browser, such as internet Explorer, eliminating the need to install special viewing software.

Audio
The AutoDome TCP/IP Communications Module provides integrated one-way audio support. This support allows the user to remotely monitor audio from the camera site directly over the network. Bosch enables video and audio to be relayed as a single media stream so the two are synchronized.

iSCSI device support
Built-in iSCSI support allows a network-enabled AutoDome to stream video directly to an iSCSI RAID array. This enables local video storage just like a conventional DVR without streaming high bandwidth video across the network. Local recording, or Recording at the Edge, minimizes bandwidth usage and makes system recording performance totally independent from network performance.

Alarm management
The TCP/IP Communications Module extends AutoDome's powerful, flexible alarm management system even further. An AutoDome equipped with the optional network module can be configured to send alarm notifications via e-mail. Each e-mail notification contains a text description of the alarm as well as a digital image of the event.

Network-based control and configuration
The AutoDome TCP/IP Communications Module enables full camera control and configuration capabilities over the network. Operators or technicians can control camera pan/tilt/zoom operation, presets, tours, and alarm management functions virtually anywhere without need for additional wiring.

The embedded web server on the Communications Module lets the installer access all the user settings, make camera adjustments, and update firmware via a standard web browser.

The AutoDome TCP/IP Communications Module supports the Bosch Divar XF, Video Recording Manager VRM, Vidos, and the Bosch Video Management System.

Viewing
View the AutoDome IP video on a PC using a Web browser, in the Bosch Video Management System, or integrate it into another video management system. The AutoDome TCP/IP Communications Module is also used with VASA—Bosch's hybrid IP integration software—offering Allegiant IntuiKey users the ability to view an Allegiant camera or one from an IP-based system.

Device management
Simple Network Management Protocol (SNMP) support facilitates the remote monitoring and management. The TCP/IP Communications Module provides full support for SNMP v3.

Certifications and approvals

Electromagnetic Compatibility (EMC)	Complies with FCC Part 15, ICES-003, and CE regulations
Product Safety	Complies with CE regulations, UL, CSA, EN, and IEC Standards

Technical specifications

Parts Included

Quantity	Component
1	TCP/IP Communications Module

Electrical

Compression Standards	H.264 (ISO/IEC 14496-10), M-JPEG, JPEG
Video Data Rate	9.6 Kbps–6 Mbps constant and variable
Video Resolution	704x576/480 (4CIF; 25/30IPS) 352x288/240 (CIF; 25/30IPS)
GOP Structure	I, IP, IPBB
Overall Delay (IP)	240 ms
Frame Rate	1-25/30 IPS (PAL/NTSC) Field/frame based coding
Network Protocols	RTP, Telnet, UDP, TCP, IP, HTTP, HTTPS, FTP, DHCP, IGMP V2/V3, ICMP, ARP, SMTP, SNTP, SNMP, RTSP, 802.1x, iSCSI, DynDNS, UPnP
NTCIP Protocols	
• CCTV Camera Control	NTCIP 1205
• Application Layer	SNMP per NTCIP 1101:1996 & NTCIP 2301
• Transport/Network Layers	TCP/IP per NTCIP 2202:2001
• Sub-network Layer	PMPP (Point to Multi-Point Protocol) per NTCIP 2101:2001 & NTCIP 2102:2003
Ethernet	10/100 Base-T, auto sensing, half/full duplex, RJ45
Audio Line In*	9 K Ohm typ, 5.5 Vp-p max

* With Ethernet models, the bi-phase ± can optionally be used as the audio line in connector.

Software Control

Unit Configuration	Via Microsoft Internet Explorer 7.0 Web browser or higher, Divar XF, Vidos, or Configuration Manager
Software Update	Flash ROM, remote update

Environmental

Input Voltage	Supplied by AutoDome
Power Consumption	4 W in addition to AutoDome
Weight	Approx. 0.17 kg (0.37 lb)
Operating Temp.	Depends on specific AutoDome model configuration

Ordering information

VG4-MTRN-E1 AutoDome TCP/IP Communications Module
H.264 TCP/IP (Ethernet) communications module for AutoDome 100 Series products
Order number **VG4-MTRN-E1**

Accessories

VG4-MTRN-E
TCP/IP Communications Module (add-on upgrade)
Order number **VG4-MTRN-E**

VIP-XD
H.264/MPEG-4/MPEG-2 single/quad-stream decoder, serial I/O, alarm in, relay
Order number **VIP-XD**

Software Options

SFT-VASA Hybrid IP - Analog/Matrix Video over IP Integration Software
Order number **SFT-VASA**

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