Optelecom-nkf

FE↔ 4+2x | V→ 1x | A↔ stereo | D↔ 2x | CE↔ 2x

6-port managed FE switch/MPEG-2 video encoder

CS-20

Features

- Managed Fast Ethernet switch with IP-video encoder
- Environmentally hardened
- DVD-quality MPEG-2 video codec
- 4x 10/100Base-TX and 2 pluggable optical ports
- Bandwidth-efficient multi-stream
- 2-way CD-quality audio, (PTZ) data and contact closures
- Password protected Web-interface
- IGMPv2 multicast and Rapid Spanning Tree
- Advanced IGMP for rapid switch-over
- SNMPv2 network management
- Five year warranty

Description

Optelecom-NKF's CS-20 drop & insert encoder/switch combines Fast Ethernet switch functions with video, audio, data and contact closures. The MPEG-2 encoder can simultaneously stream different picture rates to limit bandwidth during live monitoring, background recording, video content analysis, etc. By supporting IGMPv2 multicast, the CS-20 efficiently uses available network capacity.

To migrate analogue CCTV services to IP, the cost-effective CS-20 combines Fast Ethernet switching with video encoding (indistinguishable from analogue quality), audio (low latency CD-quality or lip-sync), serial data (for PTZ- control or any other type of data), and dry contacts (for alarm, emergency stops, etc.). The compact encoder/switch offers Rapid Spanning Tree and Optelecom-NKF's advanced IGMP to ensure rapid switch-over times and to secure reliable transport of the video, audio and data streams. It features 4 independent 10/100Base-TX ports and two pluggable 100Base-FX ports, based on XSNet™ SFP optical modules.

The CS-20 encoder/switch is designed and tested to operate under industrial conditions, characterized by a wide operating temperature range and mechanical stress (vibration and shock).
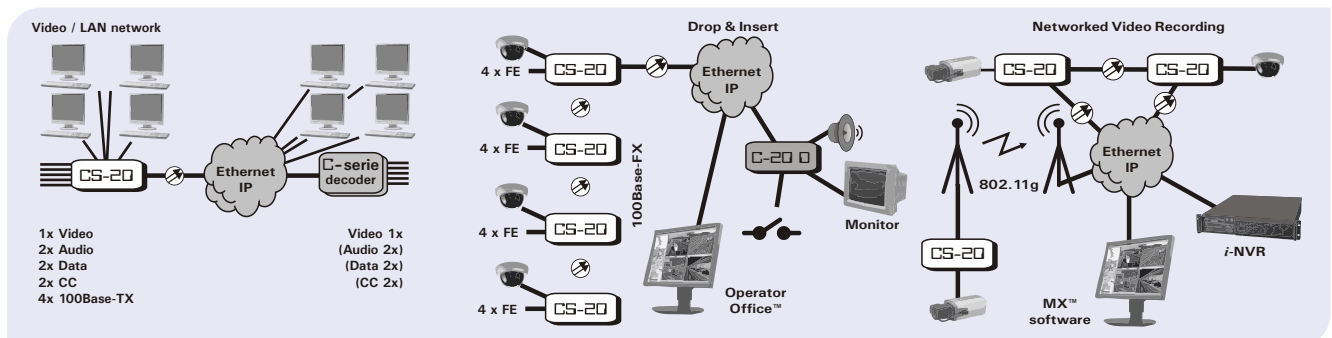The CS-20 encoder/switch is an element of Optelecom-NKF's Advanced IP-Video Network solutions offering seamless integration of video management, network recording, control and operating software, and video content analysis software. All systems within Optelecom-NKF's Advanced IP-Video Network solutions interoperate.

Configuration and management are simplified by the built-in web-interface and SNMPv2 agent. Full in-band control is available through Optelecom-NKF's software suites (MX™ and Operator Office™). The encoder/switch comes as a Eurocard module to be slotted into an Optelecom-NKF MC 11 power-supply cabinet or as a stand-alone (/SA) version and is firmware upgradeable.

Ordering information

Model	Description	Housing	Managed
CS-20	4 + 2-port managed FE switch with MPEG-2 video encoder, audio, data and CCs	rack-mount	SNMP/MX
CS-20 /SA	Stand-alone version of rack-mount model	stand-alone	SNMP/MX
XSNet SFP	See SFP data sheet		

Applications

Technical Specifications

Video

Video format	PAL/NTSC
In-/output level	1 Vpp (± 3 dB)
Number of inputs	1
Number of output streams	3 (multi- and/or unicast)
Video connector	BNC 75 Ω (goldplated center pin)
Compression algorithm	MPEG-2
Encoding-decoding latency	120 ms (no B-frames)

Resolution (HxV)	PAL	NTSC
D1	720x576	720x480
2/3D1	480x576	480x480
HD1	352x576	352x480
CIF	352x288	352x240

Frame rate	1 to 30 fps, configurable per stream
Data rate	up to 15 Mbps, configurable per stream

Audio

Number of channels	2 (full-duplex)
Number of streams	3 (multi- and/or unicast)
Maximum bandwidth	20 Hz to 20 kHz
Sampling resolution	16-bits (linear PCM or G.711)
Sampling rate	44, 16 or 8 kHz (selectable)
In-/output level	0 dBV (+6 dBV max)
Total harmonic distortion	< 0.25% at nom. level
SNR	> 75 dBA
Input impedance	> 50 kΩ or 600 Ω bal.
Output impedance	< 50 Ω bal.
Connector type	RJ45

Transmission interface

Number of interfaces	6
Electrical Interface	4 x 10/100Base-TX Fast Ethernet
selectable	auto-negotiation, half-duplex/full-duplex, 10/100 Mb
Connector	4x RJ45
Optical interface	2x Empty 100 Mb optical interface
Type	XSNet SFP
Specifications	See XSNet SFP data sheet
Protocols	MPEG-ES or TS, RTP, UDP, IP, DHCP, IGMPv2, MX/IP, STP, RSTP, IGMPv2, HTTP, SNMPv2
Connector	RJ45

Management

LED status indicators	
DC	Power-on indicator (green)
NV	No video on in- or output (red)
SYNC	All links are operational (green), failure in RX stream(s) (yellow), failure in TX stream(s) (red)
Port 5 and 6	Fibre Link status (Green, blinks with activity)
Port 1 to 4	Green: 100 Mb, blinks with activity
	Amber: 10 Mb, blinks with activity
Network Management & Control	SNMPv2, SNM™, MX™, HTTP (password protected)
MIB variables	Network settings and port statistics, MPEG-2 settings (GOP), video settings, audio and data settings, stream control, PS voltages, module temperature, module status, configuration, etc.

Environmental

Operating temperature	-40 to +74°C
Relative humidity	<95% (no condensation)
MTBF	>150,000 h
Safety & EMC	IEC/EN 60950-1, IEC/EN 60825, IEC/EN 61000
	EN 50130-4, EN 50081-1, EN 55022, FCC part 15

Mechanical

Dimensions (hxwxd)	128 x 71 x 190 mm
Weight (approx.)	900 g
Housing	Rack-mount or stand-alone

Contact Closure

Number of channels	2 (full-duplex)
Number of streams	3 (multi- and/or unicast)
Input	+3 V pull-up, 2 kΩ
Threshold	1.5 V
Output	Fail-safe, potential-free
Switch rating	2 A at 30 Vdc
Latency	<5 ms
Connector type	RJ45

Powering

Power consumption	< 12 W
Rack-mount units	MC 10 and MC 11 cabinets
Stand-alone units (/SA)	11 to 16 Vdc
	(PSA 12 DC/25 or PSR 12 DC)

Data

Number of channels	2 (full-duplex)
Number of streams	2x 3 (multi- and/or unicast)
Interfaces	1x RS-232
	1x RS-422/485 (2- or 4-wire)
Format	Asynchronous, serial
Data rate sampling mode	DC to 19.2 kb/s
Sampling rate	153 ksamples/sec
Latency	10 ms
Data rate UART mode	300 b/s to 230.4 kb/s
Latency	<5 ms
Connector type	RJ45