

**Features**

- DVD-quality MPEG-4 video codec
- Environmentally hardened
- Low-bandwidth and low-latency
- Multi-stream support
- 2-way audio, serial data and contact closures
- Password protected Web-interface
- Unicast and multicast support
- Ruggedized and compact
- SNMPv2 network management
- Five year warranty

**Description**

Optelecom-NKF's versatile C-40 encoder and decoder are designed for low-bandwidth, DVD-quality video surveillance over IP networks. The encoder can simultaneously use 5 streams for live monitoring, background recording, video content analysis, etc. By supporting IGMPv2 multicast, the C-40 effectively limits the necessary network capacity. To migrate analogue CCTV services to IP, the versatile C-40 combines DVD-quality video with two-way stereo audio, serial data (PTZ-control), and two-way contacts (e.g. for alarm contacts). Both encoder and decoder are designed and tested to operate under industrial conditions, characterized by a wide operating temperature range (-40 to +74°C) and mechanical stress (vibration and shock).



C-series

MPEG-4

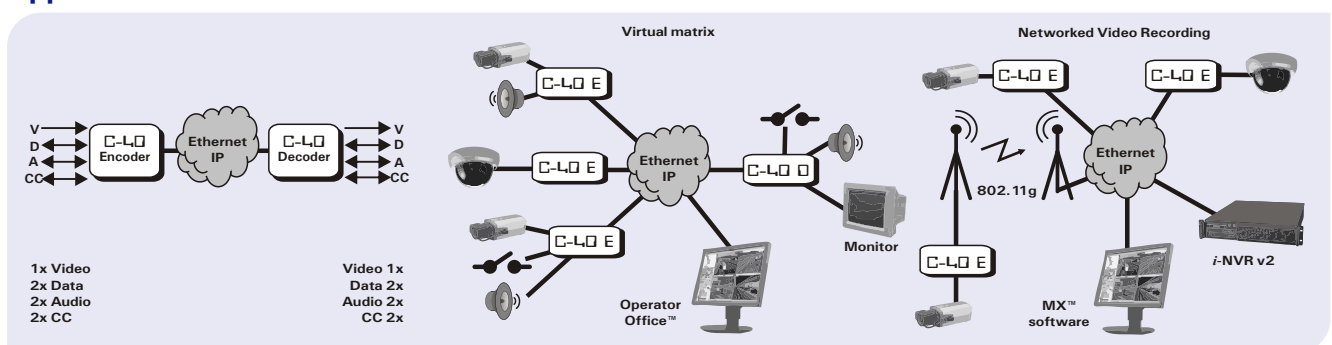
The C-40 encoders and decoders are key elements of Optelecom-NKF's Advanced IP-Video Network solutions offering seamless integration of video management, network recording, control and operating software, and video content analysis software. All systems within Optelecom-NKF's Advanced IP-Video Network 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 MPEG-4 codec comes as a Eurocard module to be slotted into an Optelecom-NKF MC 11 power supply cabinet or as a stand-alone (/SA) version. The C-40 is field upgradeable.

**Ordering information**

Model	Description	Interface	Housing	Managed
C-40 E /IP	Ethernet MPEG-4 video encoder, with audio, data and CCs	10/100Base-TX	rack-mount	SNMP/MX
C-40 D /IP	Ethernet MPEG-4 video decoder, with audio, data and CCs	10/100Base-TX	rack-mount	SNMP/MX
C-40 x /IP /SA	Stand-alone version of rack-mount model		stand-alone	SNMP/MX

**Applications**



## Technical Specifications

### Video

Video channels	1x PAL/NTSC	
In-/output level	1 Vpp (±3 dB)	
Number of encoders	2 ('Dual Stream')**	
Number of output streams	5 (multi- and/or unicast)	
Input impedance	75 Ω / Hi-Z selectable	
Compression algorithm	MPEG-4 ASP	
Encoding-decoding latency	< 200 ms	
Resolution (HxV)	<b>PAL</b>	<b>NTSC</b>
D1	720x576	720x480
HD1	352x576	352x480
2CIF	720x288	720x240
CIF	352x288	352x240
QCIF	176x144	176x120
Frame rate	1 to 30 fps	
Data rate	9.6 kb/s to 4 Mb/s (CBR or VBR selectable)	
Connector type	BNC 75 Ω (goldplated center pin)	

### 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

### Contact Closure

Number of channels	2 (full-duplex)
Number of streams	2x 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

### 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

### Transmission interface

Number of interfaces	1
Interface	10/100Base-TX Fast Ethernet
selectable	auto-negotiation, half-duplex/full-duplex, 10/100 Mb
Protocols	MPEG-4 ES, RTP, UDP, IP, DHCP, IGMPv2, NTP, MX/IP, HTTP, SNMP v2
Connector	RJ45

### Powering

Power consumption	< 7 W
Rack-mount units	MC 10 and MC 11 power-supply cabinets
Stand-alone units (/SA)	11 to 16 Vdc (PSA 12 DC/25 or PSR 12 DC)

### 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)
Ethernet port	Green LED: on = 100 Mb, off = 10 Mb; Amber LED: on = link okay, flashes with activity.
Network Management & Control	SNMP v2, SNMP™, MX™, HTTP (password protected)

### Environmental

Operating temperature	-40 to +74°C
Relative humidity	< 95% (no condensation)
MTBF	> 200,000 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 (hxwxwd)	128 x 34 x 190 mm
Weight (approx.)	450 g
Housing	Rack-mount or stand-alone

\*\* Not available in firmware versions 1.1.0 or lower.

