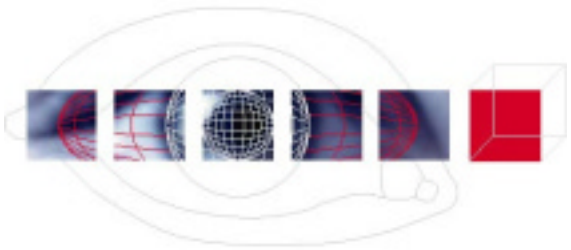
COE X-class video codec - MPEG4 and M-JPEG



Video encoder/decoder with audio/data/ contact closure interfaces

The X-class MPEG4/M-JPEG variable bit rate video codec is the latest in the line of video interfaces offered within the X-class IP video network package. It incorporates the latest compression techniques to ensure analogue equivalent video quality for all video applications where real-time low latency video transmission within an IP network is required. In addition to the powerful video transmission engine, the codec provides two auxiliary data transmission channels; one audio channel and three contact inputs/outputs. These additional service channels make the X-class MPEG4 codec a versatile and flexible option for all typical CCTV applications.

System Features and Benefits

- MPEG4 or M-JPEG compression provides best-of-breed video performance - Highest quality video at low latency for CCTV applications
- Compression type is set by the User - Choice of algorithm, set by the User, ensures best performance for your application
- Performance enhancements via new software upgrades on site - Future proofs your investment through a simple upgrade process throughout the life of the system
- User set bit rates from 64Kb/s to 6Mb/s+ suiting many applications and network constraints - Usable video transmission over the most restricted networks makes the X-class codec suitable for ADSL, ISDN and LAN/WAN applications
- The codec supports up to four video inputs via an extender panel enabling selection of any one source for transmission - Allows you to keep codec count to a minimum in applications where cameras are only selected for viewing when required
- Two data channels provide duplex high speed comms to peripheral devices with one incorporating flexible protocol translation for peripheral device control - Simple industry standard method of upgrade (flash upload) allows new/ different protocols to be loaded as required thus minimising inventory and spares holding
- All codec settings are managed through a standard web browser interface - Simplifies the installation and maintenance of the codec with fast access to all operating parameters
- The audio and contact I/O channels broaden the scope of application into Help Points, public access systems and P.A. use - The comprehensive interface set allows you to manage several different system needs with one product within the IP domain thus ensuring commonality and reduced maintenance costs
- The card is available as a boxed unit for field applications or where space is at a minimum - Flexible option for the hardware allows you to make best use of the space available on site

The codec utilises the latest DSP and processor technology to provide the User with a flexible, upgradeable product. The addition of data/audio/binary I/O allows you to integrate many applications into the IP network as your ideas and system grow. Offered as a Eurocard with chassis or as a stand-alone boxed unit all manner of mounting arrangements can be satisfied. Comprehensive environmental and EMC testing ensures compliance with the most rigorous Transport and CCTV environment system specifications.

Building your network and application solution

In order for you to implement a robust and efficient video network system we have designed COE X-class and codecs to be flexible enough to either stand as a complete solution or be integrated into existing IP or even analogue CCTV surveillance networks. The diagram below serves to illustrate a typical design, consisting of a ring architecture with full dual redundant transmission path, the various peripheral devices and applications are shown as examples of what can be integrated into the system. These include:

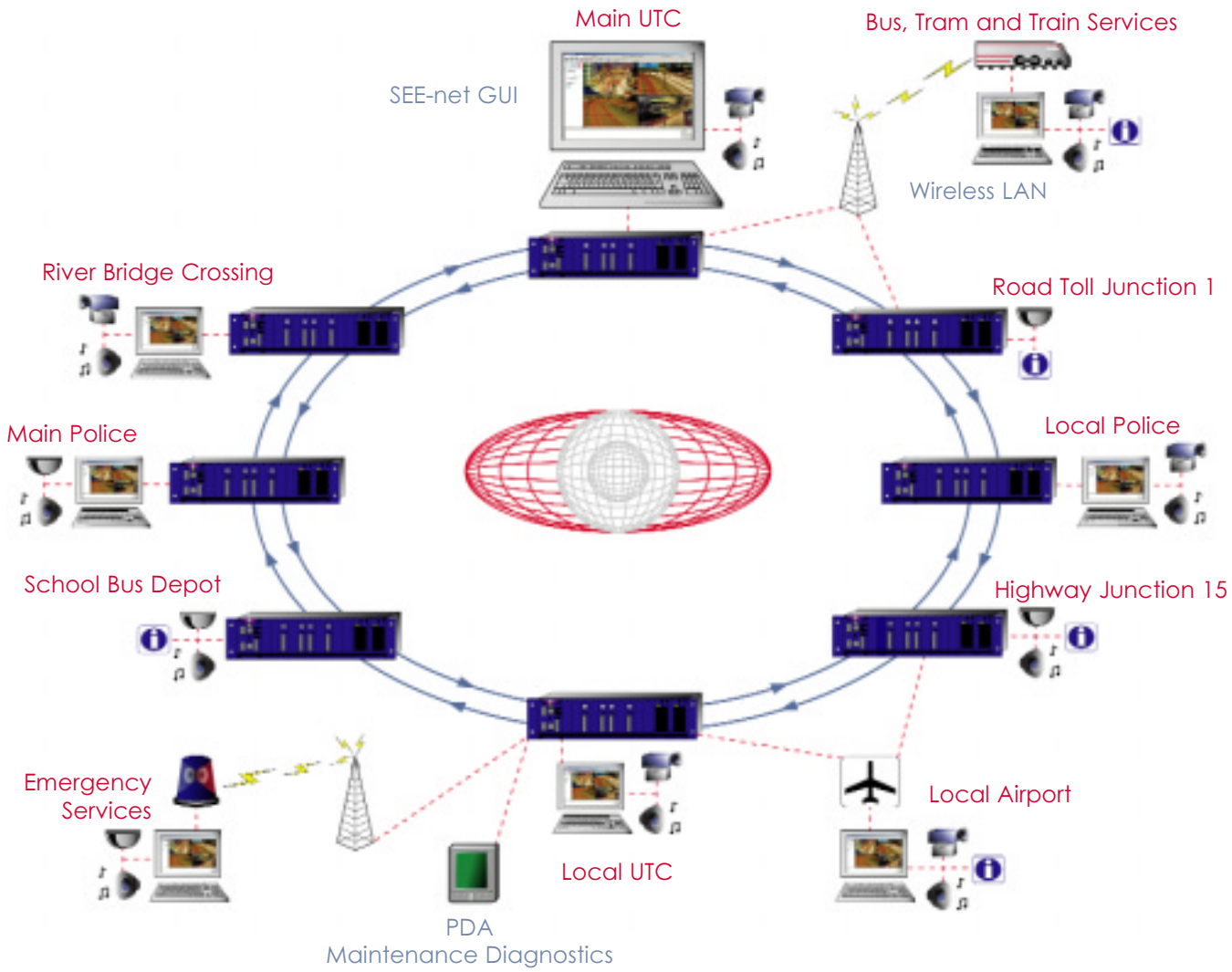
P.A. - audio transmission coupled with a data channel provides support for most modern P.A. systems.

CCTV - video and telemetry data transmission: Fixed, PTZ and Dome cameras with support for Privacy Zoning, Map driven GUI (SEE-net or third party) and recording devices (VCR or DVR)

Alarm/Intruder detection - data and contact closure transmission enables gathering and control of many data points across the network

Network Management - X-class includes web page based management as well as SNMP support for small, medium and large scale NMS systems.

COE-net Suite Wide Area Network



A typical system consists of a core IP network, either as a closed ring (as shown) or as an open solution utilising your existing LAN/WAN. All peripheral devices can be linked across the network via the Codecs as simple point-to-point/multi-point links or managed centrally via COE SEE-net or master third-party GUI.

Specifications

Video

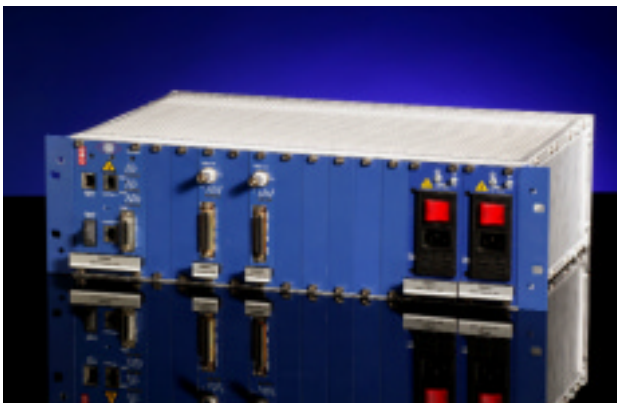
Compression algorithm	MPEG4 or M-JPEG - Software configured to be either Encoder or Decoder
Frame Rate	From 1fps up to 25/30 fps (PAL/NTSC)
Bit Rate	From 64kb/s up to 6Mb/s - Variable bit rate option with constant quality settings
Resolution	4CIF (704 x 576), 2CIF (704 x 288) CIF (352 x 288), QCIF (176 x 144)
Quality	Selectable quality options dependant on application
Video Input /output	PAL/NTSC, analogue composite, 75 Ohm, 1V p-p
On-screen display (decoder)	OSD for time, date, camera titles & alarms

*Data

2 independent channels	Transparent or User defined Protocol
Data formats	RS232, RS422, RS485 (2 & 4 wire)
Baud rate	Up to 115.2kbaud
Link type	Asynchronous

*Binary I/O

Inputs	3 x Opto-coupled Contacts or TTL inputs - Max Isolation 48VRMS , - Max Forward Current, IF (max) 50mA
Outputs	3 x Opto-relay O/Ps - Max Load 0.1A, 48V. Max RON 16 Ohm



*Audio

Compression	TBD 16-bit sample resolution
Sample Rate	Up to 18.6ksps
Input Impedance	600 Ohms or High-Z Balanced
Input Level	Line - 2V p-p typ. User selectable input gain
Output Level	2V p-p typ. (into 600 Ohm) - Balanced. User selectable output gain
Bandwidth	300Hz to 7kHz
Signal to noise ratio	>60dB

Physical Interfaces

Video Input/Output	1x BNC. User selectable Input or Output
Optional Video Expansion Board - Additional 4x BNC. This provides:	4 x selectable analogue i/ps, 1 analogue o/p - OR - 3 x selectable analogue i/ps, 1 analogue o/p + 1 extra o/p for additional VCR/Monitor
Data, Audio, Binary I/O Connector	- 25 way D-type
Network Connector (box)	IEEE 802.3aa 10/100BaseT, auto-sensing, full/half duplex, RJ-45
Network Connector (rack)	IEEE 802.3aa 10BaseT, half duplex

Network

Protocols	DHCP, ARP, HTTP, RTP, NTP, UDP, TCP/IP, ICMP, IGMP
Configuration	Internet Explorer to built-in web server
Software Upgrade	Remote Flash Programmable

LED indicators

Alive (Codec Health)	Green LED (Flashing = OK; ON/OFF = Fault)
Video detect (Input only)	Green LED (ON = Video present; OFF= No Video Input)
10/100 (Link speed)	Orange LED (ON = 10Mbit; OFF = 100Mbit)
Network activity	Orange LED (Flashing = Rx data; OFF = No data)

* Some features will only be available at release two of the product. For further information please contact COE.

Specifications continued overleaf

Product Coding

XNG2VAD1C

MPEG-4 and M-JPEG video compression codec, 1 x video channel, 2 x data I/O supporting protocol translators*, 1 x audio I/O**, 3 contact I/O, 3U extended Eurocard for X-class chassis mounting

XNG2VAD1B

MPEG-4 and M-JPEG video compression codec, 1 x video channel, 2 x data I/O supporting protocol translators*, 1 x audio I/O**, 3 contact I/O, boxed with ac mains power supply and 100BT network port

XNG2VAD5C

MPEG-4 and M-JPEG video compression codec, 1 x video channel with video expansion card, 2 x data I/O supporting protocol translators*, 1 x audio I/O**, 3 contact I/O, 3U extended Eurocard for X-class chassis mounting

XNG2VAD5B

MPEG-4 and M-JPEG video compression codec, 1 x video channel with video expansion card, 2 x data I/O supporting protocol translators*, 1 x audio I/O**, 3 contact I/O, boxed with ac mains power supply and 100BT network port

* Consult COE for peripheral devices supported. Configured at point of order

** Consult COE for audio codec options and availability

Specifications continued:

Power Supply

X-class chassis	Power from Backplane, 5V DC, 1.8A max
Stand alone	5V DC, 1.8A max
Protection	Poly fuse, 2.5A (re-settable)

Mechanical

Card	5HP, extended Eurocard
Box (max)	225mm x 140 x 50mm

Environmental

Operating Temperature	0 to 60^{0}C
Storage Temperature	-30 to 70^{0}C
Humidity	20% to 95% (non condensing @ 40^{0}C)

Regulatory

Standard (Alarms/CCTV Equipment) -

- EN 55130 -4 - Immunity
- EN 61000 -6-3 - Emissions Light Ind
- ENV50204 - Radiated (mobile phone frequencies)
- EN60950 -1: 2002 + A1: 2003
- Electrical Safety

Additional (Railways, Transport) -

- EN 55011: 1998 (inc. low freq. magnetic emissions)
- EN 50121-4 - Traction Frequency voltages
  GS/ES1914, GM/RC1500 - Radiated Emissions
- EN61000-4-16 - Signal lines con ducted RF immunity

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In line with the company policy of continuous improvement, COE reserves the right to vary descriptions and specifications without notice.

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