

# Open Transport Network (OTN) H.264/AVC 16(4) Port Video Interface Card

Nokia Siemens  
Networks



## FEATURES

16 or 4 PAL/NTSC  
video input/  
output ports

H.264 Advanced  
Video Codec

Integrated IP  
streaming

RS422/232/485  
port for PTZ

For OTN-X3M

## Introduction

The OTN concept allows handling nearly all existing communication standards for voice, data, LAN and video. The H.264/AVC video interface card is only one of the many interfaces presently available for OTN-X3M. For more information and other data sheets, contact the address overleaf.

## Description

The H.264/AVC cards are used to transmit up to 16 PAL or NTSC video signals via OTN-X3M.

*Note: A 4-port version is also available for installations with a limited number of cameras per site.*

Analog CVBS video signals are digitized and compressed by the video input circuit, and transmitted over the OTN-X3M network to one or more analog or IP video outputs. For IP outputs, the compressed digital video data is mapped into IP packets, while for analog outputs, the compressed digital video data is decompressed and converted to an analog PAL or NTSC signal. A single H.264/AVC card can be used both as input and output (analog & IP).

All OTN video cards provide high-quality video using the bandwidth offered by OTN-X3M.

The H.264/AVC card offers a higher compression ratio than the MPEG card (which uses MPEG2/4 compression) and the VID4E card (which uses M-JPEG compression). This allows an even higher number of video connections to be transmitted simultaneously through OTN-X3M.

## Operation

The H.264/AVC video interface cards provide fixed or switched connections between video inputs and outputs, both in point-to-point and multidrop configurations.

Bandwidth for fixed or switched video applications is allocated by the



OVS (OTN Management System). The bandwidth used by the H.264/AVC codecs can be configured from 56 kbps to 10 Mbps per video connection, depending on the resolution and field rate required; 2 Mbps is adequate for most applications.

In switched video applications, the video management system, which can either be a Network Video Recorder (NVR), such as Omnicast, the OTN VENUS software or an existing Video or traffic Management System (VMS), controls the actual switching of the video channels. The OVS (OTN Video Solution software) translates commands from the VMS or NVR into OTN-X3M switching commands.

The H.264/AVC cards have 16 (4) video inputs, each with their own codecs, offering independent and simultaneous transmission. As such, all 16 (4) video inputs are available simultaneously.

The H.264/AVC card can also be used as an analog video output card with 16 (4) independent output circuits. On top of the analog output capabilities, the card can send out the analog camera images as Video-over-IP streams via its Gigabit Ethernet port.

Two RS422/232/485 control ports are provided on board for camera PTZ control or external equipment control. The compression algorithm used is the H.264 Advanced Video Codec (also known as MPEG4-part10).

## Applications

The H.264/AVC card is very suitable for large CCTV (Closed Circuit Television) video installations, where a high number of video camera inputs have to be collected in each node and where many video channels need to be transported through the OTN-X3M network simultaneously.

Transparent point-to-point or multipoint connections can be established for PAL or NTSC signals. This allows analog cameras (fixed, PTZ or dome) to be connected to analog video equipment such as analog monitors or video walls over very long distances.

## Specifications

### CE marking

EMC directive 89/336/EEC  
LVD directive 73/23/EEC

Bandwidth used on OTN-X3M: between 56 kbps and 10 Mbps (2Mbps typical)

Latency: Typical: 150ms

### Compression algorithm

H.264 Base Line Profile Level 3 (with Main Profile extensions)

### Supported resolutions:

Resolution	PAL (NTSC) H x V
D1	720x576(480)
3/4D1	528x576(480)
2/3D1	480x576(480)
1/2D1	720x288(240)
SIF	352x288(240)

### Frame rate

1..25(30) fps PAL (NTSC)

### Video connections:

Composite video (16 (4) inputs or outputs), CVBS, DB50F (DB50M to 16 BNC cable)

### Video standard:

PAL-B/G, NTSC-M

### Output signal level:

1Vpp at 75 Ohm

### Signal to noise ratio

> 60dB (weighted)

### Differential gain

< 5%

Differential phase  
< 2.5°

Insertion gain variation  
+/- 0.2dB

Amplitude vs. frequency characteristics  
Bandwidth 5.5MHz (typical)

Chrominance to luminance gain inequality < 7%

Chrominance to luminance delay inequality < +/-70ns

### IP Streaming port

RJ45 port with 10/100/1000BASE-T Gigabit Ethernet transceiver

- Up to 55 video over IP streams from ring + 4 local video over IP streams S30824-Q131-X101 (4-port).
- Up to 43 video over IP streams from ring + 16 local video over IP streams S30824-Q131-X401 (16-port).

### Control data port

2 RJ45 ports (RS232/RS422/RS485) for camera PTZ Control or external equipment control

### Card size

Double Eurocard 200 x 233.4 mm

Weight: Approx. 500 g

Reliability (MTBF) at 25°C (77°F)  
> 20 Years

### Power consumption:

Approx. 25W (16-port)

When the Video-over-IP output feature is used, the video data is encapsulated into IP packets that can be sent to digital video display walls for monitoring purposes, Network Video Recorders (NVR) e.g. Omnicast for storage and analysis or to other PC based applications.

Video connections over the OTN-X3M network can either be fixed, or dynamically switched by a video management application or NVR. In this way, the H.264/AVC card helps to build high-quality, real-time and reliable integrated video applications.

Note: Omnicast is a registered trade mark of Genetec Inc.

## Ordering information

H.264/AVC Card (16-port)  
S30824-Q131-X401  
H.264/AVC Card (4-port)  
S30824-Q131-X101  
Cable DB 50 M to 16 x BNC  
S30827-C132-Axx-1

### Compatibility

The H.264/AVC Card can be installed in the N42 and N415 nodes for OTN-X3M.

### OVS software

OVS v5.3 and up

### OVS software

OVS v5.0 and up