Optelecom-nkf

4-channel digital video, audio, data, CC and Fast Ethernet

Preliminary product data   **TETRA 4300**

9-bit

Features

- 4-channel digital video multiplexer with 2-way audio, data, contacts and Fast Ethernet
- Uncompressed digital video (SNR >63 dBw)
- 1x 10/100Base-TX Fast Ethernet (IEEE 802.3)
- 4x High-speed full-duplex data channels
- 2x CD-quality full-duplex audio channels
- 2x full-duplex contact closures
- No signal degradation over long distances
- Adjustment-free operation
- Compact rack-mount or stand-alone
- SNM™ compatible

Description

The TETRA 4300 provides a compact and versatile combination of video, audio, data, contacts, and Ethernet can be deployed effectively in almost any CCTV application.

The multiplexer simultaneously transmits four camera signals with two audio, four data, two telemetry signals and one 10/100Base-TX Fast Ethernet interface over one single-mode or multimode optical fiber. Uncompressed
9-bit digitizing, over-sampling and digital filtering ensure a very high transmission performance of the video channels, exceeding the requirements of the EIA RS-250-C short-haul specifications.

The highly configurable data interfaces are suitable for RS-232/422/485, TTY, Manchester and biphase, they also provide compatibility with any CCTV equipment.
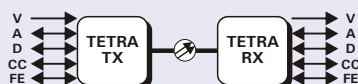
In addition to data and audio, the TETRA offers a 10/100 Mbps Fast Ethernet interface with Auto Negotiation, Auto Sensing and Auto MDI/MDI-X for a fast, easy and reliable connection.

The wide operating temperature range of these units make the TETRA 4300 system extremely well suited for environmentally harsh applications such as traffic monitoring, incident management, video surveillance in city centers, airport security etc.

The TETRA 4300 comes as a twin Eurocard cassette, suita-ble for an MC 10 or MC 11 power-supply cabinet, or as a stand-alone unit (/SA version). LED indicators give an instant overview of the system's status.

Smart Network Management (SNM™) provides status information of all transmission parameters.

Ordering information

Model	Description	Fiber	Wavelengths	Budget	Housing	Managed
TETRA 4310 TX	4-ch digital video mux, 2-way audio, data, CC and FE	MM	850/1300 nm	16 dB[1]	rack-mount	SNM
TETRA 4310 RX	4-ch digtal video demux, 2-way audio, data, CC and FE					
TETRA 4350 TX	4-ch digital video mux, 2-way audio, data, CC and FE	SM	1310/1550 nm	20 dB[2]	rack-mount	SNM
TETRA 4350 RX	4-ch digital video demux, 2-way audio, data, CC and FE					
TETRA 4350 RX/ED	4-ch digital video demux, 2-way audio, data, CC and FE, extended distance					
TETRA xxxx /SA	Stand-alone version of the TETRA models					

[1]: Due to fiber bandwidth the maximum transmission distance may be limited to 2 km. For 50/125 μ fiber subtract 4 dB.
[2]: Due to dispersion at 1550 nm distance may be limited to 20 km.

Applications

4x Video	Video 4x
2x Audio	Audio 2x
2x RS-422/485	RS-422/485 2x
2x RS-232	RS-232 2x
2x CC	CC 2x
1x Fast Ethernet	Fast Ethernet 1x

TETRA 4300

Technical Specifications

Video

Number of channels	4
Video format	PAL/NTSC
In-/output level	1 Vpp (±3 dB)
DC restore (clamping)	On or off (selectable)
Bandwidth (-3 dB)	6 MHz
Sampling resolution	9-bit
Sampling rate	27 Msamples/s, 2x over-sampled
Differential gain	< 2%
Differential phase	< 1°
Group delay	< 33 ns
SNR	> 63 dB (weighted)
Connector type	BNC 75 Ω (gold-plated centerpin)

Data

Number of channels	4 (full-duplex)
Data interface	2x RS-232
	2x RS-422/485 (2- or 4-wire)
Interface support	Current loop / TTY / TTL/ Manchester/Bi-phase
Data format	Asynchronous, serial
Data rate	DC to 1,5 Mb/s
Sampling rate	15 M samples/s
Connector type	RJ45

Audio

Number of channels	2 (full-duplex)
Bandwidth	20 Hz to 20 kHz
Sampling resolution	16-bit
In-/output level	0 dBV (+6 dBV max)
Total harmonic distortion	< 0.25% at nominal level
SNR	> 75 dBA
Input impedance	47 kΩ or 600 Ω bal.
Output impedance	47 Ω bal.
Connector type	RJ45

Contact Closure

Number of channels	2 (full-duplex)
Input activation	0,5 mA
Output	Fail-safe, potential-free
Switch rating	2 A at 30 Vdc
Connector type	RJ45

Powering

Power consumption	< 12 W (2 A inrush)
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)

Fast Ethernet

Switching method	Store and Forward
Interfaces	1x 10/100Base-TX (IEEE 802.3u) Auto MDI/MDI-X, Auto Polarity Auto Negotiation
Max distance	100 m
Connector	RJ45

Management

LED status indicators	
DC	Power-on indicator (green)
NV	No video on in- or output (red)
SYNC	Full duplex link (green), local (red) or remote synchronization error (yellow)
D1, D3	RS-4xx data activity on input (red/green = 1/0)
D2, D4	RS-232 data activity on input (green/off = 1/0)
Network Management	SNM™ compatible
SNM™ variables	PS Voltages, module temperature, module status, optical levels, configuration, etc

Environmental

Operating temperature	-40 to +74°C
Relative humidity	<95% (no condensation)
MTBF	>250,000 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 (approximately)	900 g
Housing	Rack-mount or stand-alone

Optical	TETRA 4310 TX	TETRA 4310 RX	TETRA 4350 TX	TETRA 4350 RX	TETRA 4350	
Fiber type	1x MM		1x SM		1 x SM	
System budget	> 21 dB @ 850 nm		23 dB @ 1310 nm		20 dB @ 1310	
Min. link loss	0 dB		0 dB		0 dB	
Output wavelength	1300 nm	850 nm	1310 nm	1550 nm	1310 nm	1550 nm
Output power	-4 dBm	-7 dBm	-4 dBm	-7 dBm	-4 dBm	-7 dBm
Input sensitivity	-30 dBm	-20 dBm	-30 dBm	-24 dBm	-30 dBm	-24 dBm
Connector type	SC		SC		SC	