OPTICAL SYSTEMS DESIGN

FM SINGLE CHANNEL VIDEO/AUDIO/DATA LINKS

OSD420T/OSD420R VIDEO/AUDIO/DATA PAIR

V 1 ⟶

A 1 ⟷

D 1 ⟷

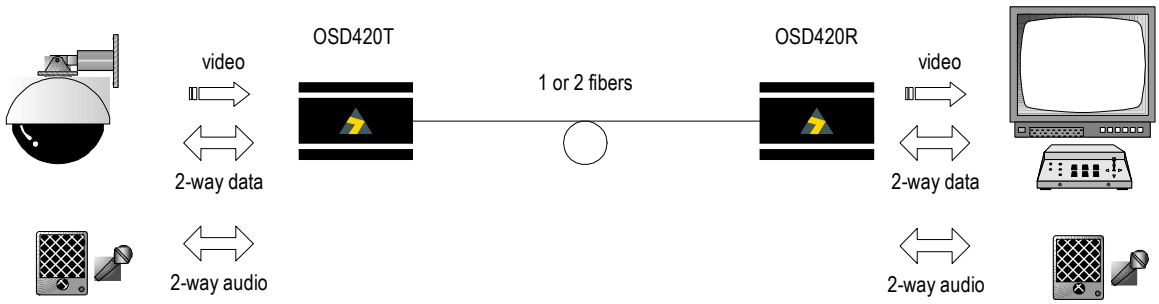
APPLICATIONS

- CCTV networks requiring half or full duplex data and/or audio transmission between cameras and control centre

FEATURES AND BENEFITS

- Fiber optic transmission of video plus audio and data signals from a CCTV camera and of audio and data signals to the camera
- Remote control of Pan, Tilt and Zoom for video surveillance
- Transmission of alarm and control signals from the camera site
- Full duplex 4-wire audio intercom
- Video bandwidth in excess of 6MHz
- Operating range of over 5km
- Immunity to electrical interference, low radiation with complete end-to-end isolation
- Safe transmission in hazardous environments
- Optional contact closure termination in lieu of data signalling

TYPICAL APPLICATION DESIGN



ORDERING INFORMATION

OSD420AT	Video transmitter with full duplex audio and data	Option L	1310nm operation singlemode or multimode
OSD420AR	Video receiver with full duplex audio and data	Option W	Single fiber operation
OSD420BT	Video transmitter with audio and data to camera	Option 13-10	10dBm 1310nm laser
OSD420BR	Video receiver with audio and data to camera	Option 13-5	5dBm 1310nm laser
Option C	Module version	Option R	Relay output

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SPECIFICATIONS

ELECTRICAL

Video Input/Output Impedance	75Ω
Video Input/Output Level	1Vpp nominal
Video Connector	BNC
Video Bandwidth	5Hz to 6.5MHz (+1, -3dB)
Weighted Signal to Noise Ratio	>60dB at -25dBm received optical power >50dB at -30dBm received optical power
Audio Input/Output Impedance	>5KΩ/100Ω
Audio Bandwidth	20Hz - 20kHz ±3dB
Audio Input & Output Level	200mV nominal, balanced or unbalanced
Audio Signal to Noise Ratio	>50dB
Data Interface	TTL, RS232, RS422 and RS485 (Relay contact optional) 31kHz Manchester or Biphase possible from OSD420R to OSD420T
Data Rate	DC to >64kbps OSD420R to OSD420T DC to >20kbps OSD420T to OSD420R
Audio and data Connector	15 pin female subminiature D connector

OPTICAL

Transmitter Wavelength	850 ± 30nm (1310nm for OSD420TL and OSD420RL)
Receiver Operating Wavelength	800 to 900nm (1270 to 1580nm for OSD420TL and OSD420RL)
OSD420T Transmitter Coupled Power	-15 to -9dBm into multimode fiber (OSD420T) -20 to -13dBm into singlemode fiber (OSD420TL only)
OSD420T Sensitivity	<-37dBm for >50dB Audio SNR and 1 x 10^{-9} BER
OSD420R Transmitter Coupled Power	-20 to -10dBm into multimode fiber (OSD420R) -20 to -12dBm into singlemode fiber (OSD420RL only)
OSD420R Receiver Sensitivity	<-30dBm for >50dB video SNR
OSD420R Receiver Saturation	>-12dBm
Transmission Distance	>5km for multimode, >50km for singlemode
Optical Connectors	ST standard, others optional

PHYSICAL

	OSD420T	**OSD420R**
Dimensions of Module (mm)	104W x 144D x 25H	
Weight of Module	400g	
Dimensions of Card (mm)	25W x 208D x 100H	
Weight of Card	200g	
Operating Temperature	-20 to +75℃	
Relative Humidity	0 to 95% non-condensing	
Power Requirements	+10V to 24VDC @ 2.4VA	
Indicators	Laser OK Tx Video Present Tx/Rx Data Present Rx Optical Signal OK	Laser OK Rx Video Present Tx/Rx Data Present Rx Optical Signal OK
Chassis Current Consumption (CCC)	0.20 Amp	0.20 Amp

PIN CONFIGURATION

Pin No	**Function**	**Pin No**	**Function**
1,4,10,12,15	Ground	5	Data input + or contact input
9	Audio input +	13	Data input -
2	Audio input -	14	Data output + or relay n.o. contact
3	Audio output +	7	Data output - or relay n.c. contact
11	Audio output -	8	RS232 data output
6	Relay common		

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