# OPTICAL SYSTEMS DESIGN

## OSD830T/OSD830R DIGITAL VIDEO, AUDIO AND DATA TRANSCEIVER PAIR



## APPLICATIONS

▲ High quality CCTV networks requiring full duplex data and/or audio transmission between cameras and their control centre

▲ Transportation communications systems

▲ Broadcast television systems

▲ Extremely high quality video conferencing

## FEATURES AND BENEFITS

▲ One way optic transmission of PAL, NTSC or SECAM video plus full duplex transmission of
  ▪ two audio channels
  ▪ three data channels
▲ one relay contact channel

▲ Studio quality 10 bit video and 24 bit audio

▲ Remote control of Pan, Tilt and Zoom for video surveillance.

▲ Transmission of alarm and control signals from the camera site.

▲ Video bandwidth of 10MHz

▲ Full duplex 2-wire audio intercom with 100Hz to 5kHz bandwidth and associated on hook/off hook signalling with industry standard RJ11 connector

▲ Operating range of at least 3km on multimode and 100km on singlemode fiber, depending on optical devices.

▲ Video inputs have 3dB overload capability and can be equalised for up to 300m of coaxial cable.

## TYPICAL APPLICATION DESIGN
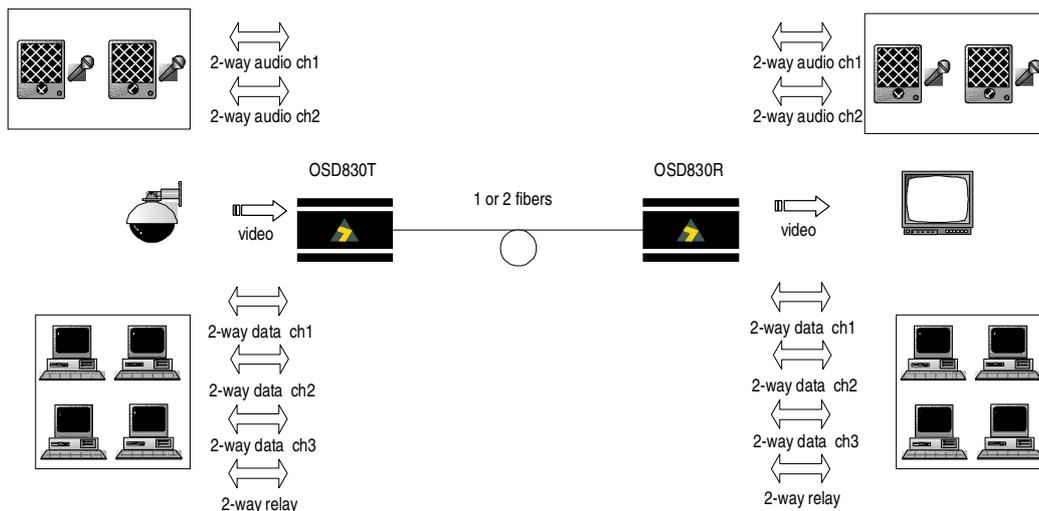


## ORDERING INFORMATION

| | | | |
|---|---|---|---|
| OSD830AT | Video transmitter with 2 duplex audio and 4 duplex data channels | OSD830BR | Video receiver with audio and data to camera |
| | | Option C | Module version |
| OSD830AR | Video receiver with 2 duplex audio and 4 duplex data channels | Option L | 1310nm operation singlemode or multimode |
| | | Option LDN | 300nm and 1550nm lasers: Contact factory |
| OSD830BT | Video transmitter with audio and data to camera | Option W | Single fiber operation |

# SPECIFICATIONS

## ELECTRICAL

| | |
|---|---|
| Video Input/Output Impedance | 75Ω |
| Video Input/Output Level | 1Vpp nominal |
| Video Connector | BNC |
| Video Bandwidth | 5Hz to 10MHz ±1dB |
| Video Distortion | <0.5% DG, <0.5° DP |
| Weighted Video Signal to Noise Ratio | >67dB at all receive levels over the unit's full dynamic range |
| Audio Input/Output Impedance | >10KΩ/<200Ω |
| Audio Bandwidth | 10Hz - 22kHz ±1dB |
| Audio Input & Output Level | 0dBu (0.775Vrms) nominal, balanced or unbalanced |
| Audio Headroom | 20dB balanced, 15dB unbalanced |
| Audio Signal to Noise Ratio | >100dB at maximum level |
| Audio Distortion | <0.02% |
| Data Interface | TTL, RS232, RS422 and RS485 |
| | 31kHz Manchester or Biphase possible in either direction |
| Data Rate | DC to >400kbps on 3 data channels |
| | DC to >100bps on relay channel |
| Audio and Data Connectors | 26 pin female subminiature high density D connector |
| | RJ11 for 2-wire intercom |

## OPTICAL

| | |
|---|---|
| Transmitter Wavelength | 850nm (1310nm for OSD830TL or OSD830RL options) |
| OSD830T Transmitter Coupled Power | -15 to -5dBm into multimode fiber |
| | -15 to -3dBm into singlemode fiber (OSD830TL version only) |
| OSD830R Transmitter Coupled Power | -20 to -14dBm into multimode fiber |
| | -20 to -10dBm into singlemode fiber (OSD830RL version only) |
| OSD830R Receiver Sensitivity | <-29dBm |
| OSD830R Receiver Saturation | >-3dBm |
| OSD830T Sensitivity | <-37dBm |
| OSD830T Receiver Saturation | >-10dBm |
| Link Distances | >2km multimode for standard 850nm OSD830 link |
| | (fiber bandwidth limited) |
| | >3km multimode for optional 1310nm OSD830L link |
| | (fiber bandwidth limited) |
| | >30km singlemode for optional 1310nm OSD830L link |
| | (fiber loss limited) |
| Optical Connectors | ST standard, others optional |

## PHYSICAL

| | OSD830T | OSD830R |
|---|---|---|
| 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 | |
| Power Requirement | +10V to 24VDC @ 5VA | |
| Operating Temperature | -20 to +75℃ | |
| Relative Humidity | 0 to 95% non-condensing | |
| Indicators | Laser OK | Laser OK |
| | Tx Video Present | Rx Video Present |
| | Rx Data Present | Rx Data Present |
| | Optical Signal OK | Optical Signal OK |
| Chassis Current Consumption (CCC) | 0.40 Amp | 0.40 Amp |

## DB26 PIN CONFIGURATION

| FUNCTION | PIN | FUNCTION | PIN | FUNCTION | PIN | FUNCTION | PIN |
|---|---|---|---|---|---|---|---|
| Data ground | 1,6 | Data2 input+ | 20 | Relay input | 22 | Audio1 output+ | 16 |
| Audio ground | 15,18 | Data2 input- | 3 | Relay output n.o | 5 | Audio1 output- | 25 |
| Data1 input+ | 10 | Data2 output+ | 12 | Relay output n.c | 14 | Audio2 input+ | 8 |
| Data1 input- | 19 | Data2 output- | 21 | Relay output common | 23 | Audio2 input- | 17 |
| Data1 output+ | 2 | RS232 input | 4 | Audio1 input+ | 24 | Audio2 output+ | 26 |
| Data1 output- | 11 | RS232 output | 13 | Audio1 input- | 7 | Audio2 output- | 9 |

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