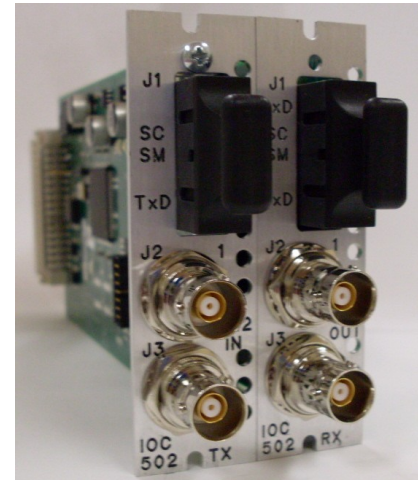




## IOC502TX / IOC502RX Pulse/PCM Data over Fiber-optics

### FEATURES

- Pulse mode
  - ◊ 20 nano-second minimum pulse width
  - ◊ 5Mhz Repetition Rate
  - ◊ 265nano-second Throughput Delay  $\pm 15\text{ns}$
  - ◊ Selectable Input/Output Data Polarity
- PCM Mode (Low rate PCM)
  - ◊ DC to 5Mbps Data Rate
  - ◊ Selectable Input/Output Data Polarity
- PCM Mode (High rate PCM)
  - ◊ 1Mbps to 80Mbps Data Rate



### OVERVIEW

The Model IOC502TX/RX fiber-optic module is designed to move RS-422 level Pulses or RS-422 level PCM data signal across fiber-optic cables (TTL I/O model available IOC504TX/RX) with minimum delay and minimum induced jitter. With 3 unique modes of operation the module covers a wide variety of data types and rates. The module is designed to fit into the AL2873 chassis which provides direct access to control of the module via the LCD display and multifunction keypad in addition to Ethernet remote control. The module may also be housed in the popular AL2073 chassis and the new AL2073-S single-wide chassis both providing rotary switch control of the modules 3 modes of operation.

The transmitter accepts a RS-422 level Pulse or RS-422 level PCM data signal and converts it to an optical signal for transmission over single mode fiber optic cable . The packetized data is received by the receiver module, which converts the optical signal back to its original RS-422 level Pulse or RS-422 level PCM data signal .

A bright, high contrast LCD display and 20 position keypad are used for local control of the unit. Remote control is by means of an optional Ethernet link which uses simple ASCII commands.

## AL2873 Front Panel STATUS

### [IOC502TX Interface](#)

- Mode
  - Pulse—TTL Pulse Mode
  - Lo Rate PCM —TTL Low PCM Mode
  - Hi Rate PCM —TTL Hi PCM Mode
- Source
  - Ext\_J2—J2 Input Source
  - Ext\_J3 —J3 Input Source
  - Int\_DC —Internal Daisy Chain Input Source
- Input Polarity
  - Normal—Input Polarity is Normal
  - Invert—Input Polarity is Inverted
- Input Data
  - Inactive—No Data to Input Source
  - Active—Data Active to Input Source

### [IOC502RX Interface](#)

- Output Polarity
  - Normal—Output Polarity is Normal
  - Invert—Output Polarity is Inverted
- Output Data
  - Inactive—No Data to Output
  - Active—Data Active to Output
- Fiber Link
  - No Input—No Optical Input Signal
  - Active—Optical Input Signal Present

## Remote Control Commands

Commands via the RS-232 port provide the modules status and can report the units firmware and revision codes. See AL2873 Manual for Command structure.

### [IOC502TX](#)

- Commands
  - FIRMWARE U3 — “DATE CODE”
  - ASSEMBLY— “Alpha/Numeric”
  - MODE—PULSE,LO Rate PCM, HI Rate PCM
  - SOURCE—EXT\_J2,EXT\_J3,INT\_DC
  - IN POL—Normal, Invert
  - INPUT—Inactive, Active

### [IOC502RX](#)

- Commands
  - FIRMWARE U3 — “DATE CODE”
  - ASSEMBLY— “Alpha/Numeric”
  - OUT POL—Normal, Invert
  - FIBER LINK—No Input, Active
  - OUTPUT—Inactive, Active

## SPECIFICATIONS

### PULSE MODE

- Pulse Width: 20 nano-second minimum
- Pulse Repetition Rate: 5MHz maximum
- Input to Output Delay: 265ns +/- 15ns accuracy
- Output: 1300 nm Wavelength

### LOW RATE PCM MODE

- Rate: DC to 5MHz NRZ codes(2.5MHz max for Bi-Phase codes)
- Code Independent
- Input to Output Delay: 265ns +/- 15 ns accuracy
- Max Data Output Jitter: <25ns for all rates
- Transition Density: no restrictions

### HIGH RATE PCM MODE

- Rate: 1MHz to 80MHz NRZ codes(40MHz max for Bi-Phase codes)
- Code Independent
- Input to Output Delay: 35ns +/- 3 ns accuracy
- Typical Data Output Jitter: <1.5ns for all rates
- Transition Density: Requires an average of 50% transition density

### IOC504TX Specifications

- SC— Single mode fiber optics output interface 1310nm
- BNC type connector input
- Input termination Fixed
  - J2 Input—120 Ohm
  - J3 Input—120 Ohm

### IOC504RX Specifications

- SC— Single mode fiber optics output interface 1310nm
- BNC type connector outputs
  - J2 and J3 are redundant
  - High current capable of driving Coaxial Cables

### FRONT PANEL DISPLAY FORMAT

- Bit Oriented test results are displayed as 1.2345e+12
- Slips, Error Seconds and Rx Frequency are displayed as 123456789
- Bit error rate is displayed as 1.23e-08
- Control: reset to zero control is provided to restart tests
- Status: Synchronization (Search/Lock) Data, Clock (Present/LOS)

### REMOTE CONTROL

- RS-232 or Optional Ethernet

### ENVIRONMENTAL

- Operating temperature: 0° to 60° C
- Relative humidity: 15% to 95%; non-condensing
- Altitude: Sea level to 10,000 feet

### POWER

- +5V input / 5.5 watts

### MEAN TIME BETWEEN FAILURES

- ~ 100,000 hours