

## Multichannel Fiber Optic HDTV/SDTV System



*Squeezes the cost out of digital transmission.  
8 channels, all formats, SDTV/HDTV*

Telecast's Python is your answer to keeping down the costs of serial digital video interface (SDI) distribution, while eliminating all the problems of ordinary coaxial cables.

The Python combines eight channels of fiber optic converters in a compact 1RU frame. Select a transmitter and a receiver frame for eight channels in one direction. Select two transceiver frames for four channels in both directions. Or use miniature single channel transmitter or receiver units in conjunction with the Python frame to distribute signals to and from several locations simultaneously.

The Python offers the industry's broadest range of digital transmission rates while maintaining the quality of transmission that broadcasters demand. It supports numerous interface standards, including applicable SMPTE, ATSC, Bellcore, and DVB recommendations. No matter what your format, the Python allows you to implement:

- 19.4 Mbps ATSC
- 143 Mbps NTSC composite
- 177 Mbps PAL composite
- 270 Mbps Serial component
- 360 Mbps Serial component video and compressed HDTV
- 540 Mbps Proprietary, and
- 1.5 Gbps Uncompressed HDTV

### DA, EQ and Signal Monitoring

Each channel's receiver provides you with two outputs to lower your distribution costs. Each transmitter channel has two inputs, as well. One input equalizes your incoming coaxial signal, up to 540 Mbps. The other is a direct input for rates up to 1.5 Gbps. Our unique front panel BNC monitor output let you monitor any transmit or receive channel.

### Future proof, eliminates coax

This is your opportunity to cable once. Coaxial cable is severely limited in distance, and coax is prone to problems of noise, crosstalk and ground faults. Coax equalizing distribution amplifiers are very expensive. The Python eliminates all these problems, and goes hundreds of times farther with a cable that is only one tenth the size of equivalent coax. Fiber now, or fiber later. It's your choice.

### From Telecast, the one you trust

The Python contains the same high reliability as our other broadcast production systems. You count on Telecast, and you can count on the Python for your digital and HDTV future.

### Features

- Economical, low profile packaging
- 8 Channels per 1 RU chassis
- Wide range of digital formats
- 19.4 Mbps to 1.5 Gbps transport
- Compatible with digital TV standards SMPTE 292M & 259M
- Immune to pathological data errors
- Handles ASI signals
- Equalizes coax up to 540 Mbps
- Dual BNC outputs
- Front panel monitor output
- Powerful optical link budget
- Low system jitter
- AC or DC operation
- UPS Battery back-up inside
- Extended temperature range, no fans
- Low power consumption
- High reliability, durable design
- WDM multiplexing optional

### Applications

- Studio Infrastructure
- Sports & Field Production
- Campus/Metro HDTV distribution
- ATSC or HDTV STL
- Telco last mile and local loop
- CLEC access to IXC POP

### Optical Link Loss Budget

*How far can you go?*

**TX Power Out**                    -2 dBm

**RX Sensitivity**                    -22 dBm

**Link Loss Budget**                **20 dB**

Range, at .6 dB/km average single mode fiber cable loss, = 33 km (for SH Level)

# Specifications

## Video

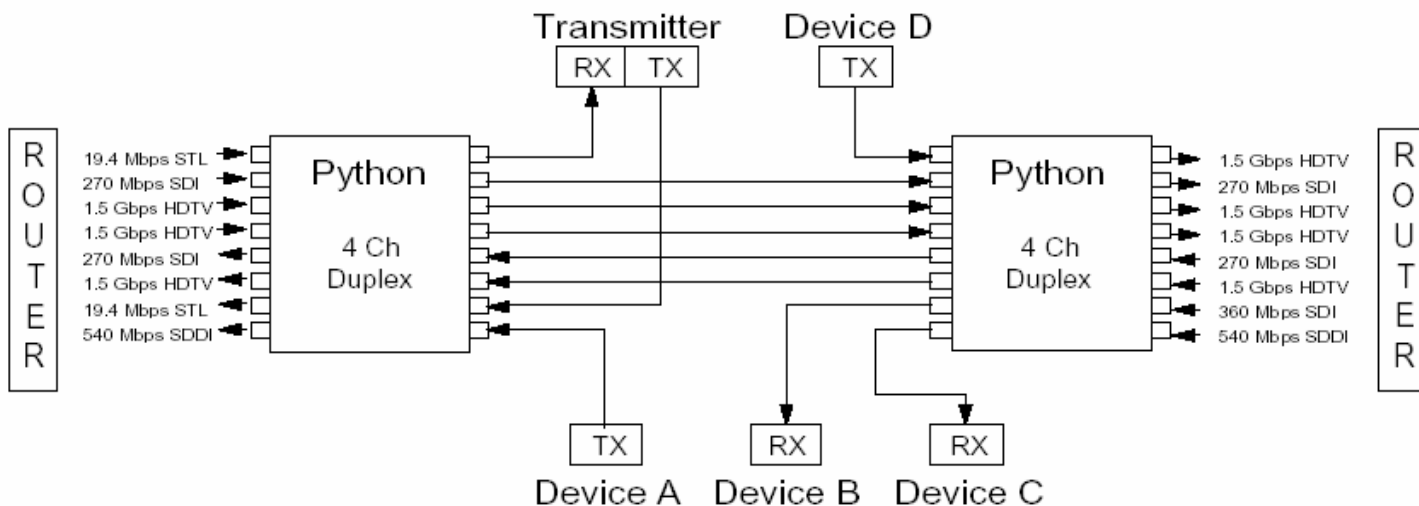
Transmission Method	Digital
Input Level	800 mV (peak to peak)
Input Impedance	75 Ohms
Output Impedance	75 Ohms
Coaxial Input Equalization	
Maximum Rate	540 Mbps
Equalization at 270 Mbps	300 meters of Belden 8281
Bit-Error Rate (@ -22 dBm received optical power level)	10 <sup>-12</sup>
Jitter (using pathological data pattern)	less than 0.2 UI

## Electro-Optical

Operating wavelength	1310 nm
Link margin	up to 22 dB
Transmitter output power options	-7 dBm (S level), & -2 dBm (SH level)
Receiver sensitivity	-22 dBm
Recommended Transmission Distance Limit	20 km (12.4 miles) (S level) & 26 km (16 miles) (SH level)
Optical source	Laser diode
Optical detector	PIN
Fiber type	single mode

## Mechanical/Environmental

Dimensions (LxWxH)	16.7" x 10.5" x 1.75"
Weight, each end	5 lbs
Connectors	
Electrical	BNC
Optical	SC or ST (specify)
Input Voltage	12-24 VDC
Power Consumption	< 15 Watts
Indicators	Power On, Activity
Temperature Range	-20° C to +55° C
Humidity Range	0 to 95% non-condensing



## Example of Multipoint Distribution

The Python can transmit 8 channels to another Python, or 4 channels in each direction. Using single channel TX and RX modules, as seen above, it can also transmit to or receive from another router location and to multiple isolated locations, such as a broadcast transmitter. All ports have full range from 19.4 Mbps up to 1.5 Gbps uncompressed HDTV.