IPITEK
INTEGRATED PHOTONICS TECHNOLOGY
ISO 9001 Registered

IPIstream

OPTICAL DTV TRANSPORT SYSTEM

Features & Benefits:

- **High capacity solution - up to 40 channels per fiber**
- **Extended reach - up to 300km without regeneration**
- **DVB-ASI, 270Mb/s, 601 component video, 1.485Gb/s HDTV uncompressed**
- **Eliminates the need for costly compression before transport**

IPITEK's new IPIstream optical DTV solution provides a more cost effective and higher performance method for transporting one to many mixed rate DTV signals over a single fiber at ranges beyond the competition. Fiber protection is also offered via the IPIswitch optical link protection unit, while IPITEK's line of CWDM and DWDM passive filters and EDFAs extend the distance and capacity to over 300 km spans. Want to go farther? A regenerator model is also available to run a regional distance system.

The IPIstream system begins with a high-performance 75 ohm coax to optical transmitter available on both CWDM and DWDM colors. What is unique is that this transmitter uses premium discrete components and not SFPs, thus it can go much farther than typical solutions before it needs regeneration. Its dispersion limit exceeds 300 km over SMF-28 fiber and is available in up to 40 100 GHz-spaced DWDM colors. For shorter ranges the CWDM version, when coupled with the IPIstream highest sensitivity receiver can exceed 31 dB of link budget with margin to spare. A high-quality PIN-based receiver module is also available for ultra-low jitter performance on 23 dB or less link budgets with margin to spare.

The modules fit into either the 2 slot, 1 RU high enclosure or the 10 user slot 4 RU high enclosure. Thus, either two one-way channels or one duplex channel can fit into only 1 RU of rack space.

Leveraging IPITEK's optical product-line of 1RU IPIswitch optical protection switches and RMC series EDFAs provides a very compact yet modular system solution which can co-locate with the video source and receiving equipment to yield the best quality possible today.

Pathological signals are also no problem as these units bypass the traditional troublesome equalizers and phase-lock loop circuits, which are prone to false operation under long strings of zeros, achieving true transparency to any video data patterns without the addition of timing-distortions. Standard-based SC/PC optical connectors are also used to ease installation and ownership.

LEDs show module health status, yet there is nothing to configure to turn up links, as this system is "plug and play" and data transparent to all these DTV signals.

Contact an IPITEK Optical Video System Specialist to learn more about how IPITEK can provide you an engineered solution for your upcoming video transport applications.

IPITEK FIBER OPTIC DIGITAL TRANSPORT

IPIstream DTV Formats

DVB-ASI 270 Mb/s Line Rate
Payload to 214 Mb/s
SMPTE 259M (SDI) - 270 Mb/s

SMPTE 292M (HDTV) - 1.485 Gb/s
SMPTE 305M (SDTI) - 270 Mb/s

Specifications:

DTV Transmitter Electrical

Data Input Signal:	270 Mb/s - 1.485 Gb/s
Data Input Level:	800 mV (peak-to-peak)
Input Impedance:	75 ohms
Input Return Loss:	>16 dB nominal

Optical:	**DWDM 100 GHz Spacing**	**CWDM**
Input Wavelength:	1530.33-1561.42 nm ITU ch 20 -59	1470 - 1610 nm 20nm ITU ch
Peak Wavelength/ EOL stability:	±0.15 nm	±4 nm
Output Power:	mW (3 dBm)	2mW (3 dBm)
Max link length (dispersion-limited)	300 km on SMF-28	80 km on SMF-28
Max dispersion penalty:	1dB @ 300 km	2 dB @ 80 km
Connector Type:	SC/PC	SC/PC

Receiver

Optical:	**PIN Rx**	**APD Rx**
Input Wavelength:	1.25-1.6µm	1.25-1.6µm
Input Power Range @ BER-10^{-11}:	-20 to 0 dBm	-28 to -8 dBm
Max Return Loss:	-27 dB	-27 dB
Max Rating Input Pwr:	8 dBm	0 dBm
Max Return Loss:	-27 dB	-27 dB
Input Fiber Type:	SMF	SMF
Connector Type:	SC/PC	SC/PC

Electrical:

Output Level:	800 mV p-p
Output Impedance:	75 ohms
Output Return Loss:	>16 dB nominal

Chassis and Powering:
1 RU Chassis
Electrical:

Input Voltage:	95-260 VAC, 50/60 Hz
Output Voltage:	±5 V DC
Power Consumption:	< 20 Watts
Operating Temperature:	0° to +50° C
Humidity:	0 – 95%, non-condensing

Mechanical

Dimensions:	19" W x 13.5" D x 1.75" H 483mm x343mm x44.5mm
Weight:	10 lbs (4.5 kg))without modules 15 lbs (6.8 kg) fully loaded

3 RU Chassis

Electrical:	**AC Supply**	**DC Supply**
Input Voltage:	95-260 VAC, 50/60 Hz	-40 to –60 VDC
Output Voltage:	+/- 10 VDC 300 Watts Max	+/- 10 VDC
Operating Temp.:	-20° to +65° C	-20° to +65° C
Humidity :	0 – 95% non-condensing	0-95% non-condensing

Mechanical

Dimensions:	19" W x 15.9" D x 7.0" H 483 mm x 404 mm x 178 mm
Weight :	12 lbs (5.4 kg) without modules; 30 lbs (13.6 kg) fully loaded

ORDERING INFORMATION

2 SlotChassis:		**12 Slot Chassis**	
2 slot Chassis with AC Powering, 19" rack:	LSL12-RMC-02-1-19	12 Slot Chassis, 4 RU, 10 modules + 2 PS	LSL12-CHS-19
2 slot Chassis with DC Powering, 19" rack:	LSL12-RMC-02-2-19	110/220 VAC 200W max Power Supply	LSL12-PWS-1

Digital Repeater Module:
DWDM Repeater, 2 mW output, 300 km dispersion distance, APD receiver. **xx** = ITU channel. Ch 21 - 59 are standard,even channels special order only. **LSL-12-RT-AP-XX-2-E02SCSCP**

CWDM Repeater Module:
CWDM repeater, 2 mW output, 80 km dispersion distance, APD receiver. **xx** = ITU channel Ch 41-61 odd are standard, even channels special order only **LSL-12-RT-AP-XX-2-C02SCSCP**

Digital DWDM Transmitter Module:
Dual rate DWDM SDI & HD-SD transmitter. 2 mW output, 300 km dispersion distance, **xx** = ITU channel.Ch 21 - 59 are standard,even channels special order only. 270 Mb/s to 1.5 Gb/s. SCPC connector **LSL-12-TX-XX-2E02-BN-SCP**

Digital CWDM Transmitter Module:
Dual rate CWDM SDI & HD-SD transmitter. 2 mW output, 80 km ispersion distance, **xx** = ITU channel.Ch 41-61 odd are standard,even channels special order only. 270 Mb/s to 1.5 Gb/s. SCPC connector **LSL-12-TX-XX-2C02-BN-SCP**

Digital Receiver Module:
This receiver supports both DWDM and CWDM. 270 Mb/s to 1.5 Gb/s.PIN Receiver (0 to -20dBm) or APD Receiver (-8 to -28 dBm).

PIN Rx **LSL-12-RX-PI-2-BN-SC-P**

APD Rx **LSL-12-RX-AP-2-BN-SC-P**

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