

## IPITEK's Advanced MSP Digital Transport Family Solutions for Any Network Requirement



Broadband operators are expanding services in response to the growth of the Internet, Video-on-Demand and iP telephony over broadband cable. At the same time, the industry is working to maintain the highest levels of system performance to assure operation with maximum flexibility and reliability.

IPITEK's advanced digital video transport solutions are driven by the broadband industry's vision for the high performance networks of today and tomorrow. Meeting the demands for the quality and dependability required by service providers in broadband, broadcast and telecommunications is IPITEK's primary challenge. Our highly focused teams of advanced research and development engineers have pushed the design envelope to higher

levels, resulting in products with the highest performance levels and providing cost effective systems and architectures that enable broadband systems to deploy Analog, HDTV, VoD, telephony and advanced ip services of the future today. IPITEK's dedicated attention to equipment and system design also assures flawless integration of newly developed products into existing networks, providing customers with greater flexibility and higher performance through efficient, adaptable network solutions. Building on its 25 years of experience in optical transport systems, IPITEK's MSP family offers full integration into existing operations, with the capability to expand from a single wavelength to full performance CWDM/DWDM networks over a dedicated single optical fiber.

The MSP family flexibility allows system operators to increase bandwidth and provide full bidirectional transportation in the distribution system to enhance revenue generating services. For optimum operation, the MSP family provides a number of client side interfaces. The interface to the fiber trunk is provided by industry standard SFP (Small Form Pluggable) optical plug-in modules. The units are common to all of the MSP family, reducing stocking requirements and enabling rapid reconfiguration to allow the unit to be used with a wide range of optical link budgets. The SFP family also includes a full range of CWDM lasers, allowing the MSP family to be used in CWDM networks.

## **MSP-110 Flexible Transmission System**



To meet the transition to digital TV, Cable operators need a solution to transport both Baseband analog and HDTV digital signals from broadcasters studios or other video origination points to the cable headend. The New MSP-110 Transmission System is a cost effective problem solver. Multiplexing baseband video and HDTV signals over a single fiber saves valuable fiber assets. In addition, multiple options for unidirectional or bi-directional transport provide more ways to optimize system solutions.

The new MSP-110 is a cost effective solution which allows broadcasters, MSOs and other video transport organizations to deliver their new high performance HDTV programming and their traditional analog programming over a common fiber facility.

The system offers a very wide range of transmission options from short transport distances operating at 1310nm to long haul operations utilizing standard 1550nm transmission or CWDM transmission with link budgets up to 30 dB. There are no compromises in system performance throughout the entire range of link budgets.

MSP-110 provides even more advantages, including options for one way or two way transmission within a single MSP-110 Unit. This allows the same set of equipment to both transmit and receive at the same time, providing return services where required. This versatile arrangement makes it easy to meet almost any network topology.

The MSP-110 can provide a vary large variety of transmission functions with a minimum of equipment. At the same time, the system is very totally flexible for transmission options, allowing the signal to be carried over a single fiber or being grouped with other signals via one of the many transmission options. Also unique in the MSP-110 system is the option to use compatible coding for OC-3 operation over a SONET ring. Many operators have operating SONET rings and can take advantage of the unique features in the MSP-110 to operate over their existing SONET ring.

## **MSP-220 -T Media Services Optical Transport Platform**



The new, high performance MSP-220-T provides an efficient method for transport of the highest quality contribution video. MSP-220-T not only exceeds current transport requirements for services such as broadcast video and TV-1 but also provides a clear path to migrate to digital TV, either with SDI or Ethernet circuits in the same unit. With the many options designed into the MSP-220-T, the system provides the user with a product which will not be obsolete as transmission requirements evolve. SNMP based network management and direct software download assure full, long life service capability.

MSP-220-T provides time division multiplex of multiple services, including analog TV-1 with 4 audio channels, digital SDI and 100 Mbps Ethernet, all within the same unit. The MSP-220-T agile serial data interface supports 270 Mbps SDI (SMPTE 259M), SDTI (SMPTE 305M) or DVB-ASI. The system is quickly and easily configured to provide any type of high performance

video transport service. Setup and provisioning is simplified with adjustable audio with internal monitoring, adjustable cable equalizers and front panel in/out monitoring.

The MSP-220-T utilizes SFP lasers, allowing field link configuration with virtually no down time. It also minimizes requirements for backup units by allowing the user to make a field replacement of the SFP assembly in the event of a failure. The system offers a choice of transport links, including point-to-point over dark fiber at 1310 or 1550 nm or CWDM integration over existing networks. The MSP-220-T is also standards based SONET OC-12, allowing immediate aggregation to a local SONET access point without requiring intermediate equipment.

MSP-220-T includes an internal IP web based user interface for full featured local and remote provisioning and monitoring. In bi-directional systems, both ends of the system can be managed and monitored either from end of the system.

## **MSP-220-D Dual SDI Transporter**



As the broadband industry moves to an all HDTV system, the need to transport the full range of HDTV services is rapidly increasing. IPITEK's new MSP-220-D provides full bi-directional transport of 270 Mbs/s DVB-ASI/sDI/SDTI video. The same unit also transports a 10 Mb/s Ethernet circuit using dependable TDM techniques. To assure accurate transmission, the unit also includes automatic video cable equalization up to 300 meters of coaxial cable. The MSP-220-D is also standards based SONET OC-12,

allowing immediate aggregation to a local SONET access point without requiring intermediate equipment. The native SONET link interface assures maximum performance over a dark fiber and guarantees full compatibility with any public SONET transport, allowing the user to extend the transmission distance literally world wide.

The MSP-220-T also utilizes SFP lasers, allowing field link configuration with virtually no down time. It also minimizes requirements for backup units by allowing the user to make a field replacement of the SFP assembly in the event of a failure. SFP units are available in 1310nm, 1550nm and CWDM wavelengths. Link interfaces may be for a short range transport up to 30 dB loss budget on a link utilizing an 8 wavelength CWDM transport system.

MSP-220-T includes an internal IP web based user interface for full featured local and remote provisioning and monitoring. In bi-directional systems, both ends of the system can be managed and monitored either from end of the system. The system is designed to assure that only in-service circuits are alarmed, eliminating false alarms for unused circuits.

### **MSP-220-R Optical Link Regenerator**



The MSP-220-R provides a state-of-the-art solution for regeneration of optical signals where long distances

require extended reach transmission. An ideal companion to the MSP-220T, the MSP-220-R provides a cost effective and efficient solution for operations where the transmission distance of the MSP-220T requires additional reach. It allows the signals to be extended without having to decode and re-encode.

MSP-220-R carries all of the signals generated by the MSP-220-T and provides the highest level of accuracy and performance, assuring optimum quality over extended distances. To assure maximum transparency, MSP-220-R provides full 3R (regenerate, reshape, reclock) capability. The MSP-220R can be utilized as a simple line extender or may be used in more complex optical networks. It provides the highest level of redundancy in standard fiber or SONET networks.

The unit is designed with common, field replaceable SFP optics that are common with the MSP-220-R. This simplifies operations and eliminates having to stock multiple types of SFP modules. The unit is also future proof. If, as a result of network changes, the MSP-220-R is no longer required and a full service unit is desired, the unit is designed to allow a factory upgrade to a full service MSP-220-T.

MSP-220-R includes the same internal IP web based user interface, used in the MSP-220-T to provide full featured local and remote provisioning and monitoring.

### **MSP-220-C Pro Video Converter**



The MSP-220-C provides a state-of-the-art solution for video switching centers. It is used in operations that require conversion of analog video with diplexed audio signals to video with separate audio channels. Full bi-directional operation is supported through the use of one modulator and one demodulator circuit in the same 1 RU unit.

Signal quality is equal in performance to the MSP-220-T Pro Video Link. Both units utilize the same 12 bit PCM video encoder and decoder design, discrete audio encode and decoder circuitry and audio FM digital encoder and decoder circuitry and audio measurement and adjustment. The MSP-220-C also provides independent video equalization to both video outputs.



IPITEK's innovative IPstream optical DTV transport provides a cost effective high performance transport system for all types of HDTV signals over single mode optical fiber.



Format and protocol independent, the new IPstream system offers a choice of DWDM and CWDM optics, with transmission distances to more than 125 Km

For additional product or ordering information related to the featured products or any of IPITEK's family of transmission products, visit our web site [www.ipitek.com](http://www.ipitek.com) or send a message to [sales@ipitek.com](mailto:sales@ipitek.com).



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