MODEL

OPTIVA™ SERIES

CONFIGURABLE COMMUNICATION PLATFORM

A System Designed By You - For You.

The new Optiva™ Series of digital fiber optic transmission systems are designed entirely by you. They are built to accommodate your precise video, audio and data transport needs. Almost any configuration is available, all over one fiber.

With a short visit to the "Product Configurator" at www.opticomm.com, you can select the exact video, audio and data signals you wish to transport, the optics and connectors you need and the most suitable housing unit. Simply sit back and watch your system materialize right before your eyes!

Sample Products*

	V	A	D
OTP-4VT	4→		
OTP-8VT	8→		
OTP-4VT2AT2DTR	4→	2→	←2→
OTP-4VT8ATR	4→	←8→	
OTP-4VT4DTR	4→		←4→

*numerous configurations available, see www.opticomm.com

System Design

Optiva™ systems utilize Daisy-Chained Time Division Multiplexing (TDM) to optimize bandwidth allocation. Optical multiplexing can be integrated to enable increased channel requirements. All cards are hot-swappable and can be housed in a 19" rack solution (3RU or 1RU) or as stand alone units using a number of different ruggedized Desktop Card Racks (DTCRs). The Platform enables future add-ons and upgradeability (See Section 4 below).

Features

- Selectable Video/Audio/Data configuration
- Multimode or singlemode operation over one fiber
- Daisy-chain capability
- Digital transmission
- Uncompromised transmission quality
- SNMP network management
- No EMI or RFI and no ground loops
- Stand alone or rack-mount, hot-swappable
- Up to 2.5 Gbps per wavelength
- Upgrade Path (See Section 4 below)

1310	1310 (D)	1550	1550 (D)	1270-1610 (CWDM)	Mode	Wavelength Suffix	Fiber Type	Optical Loss Budget	Range*	Connection Types Available
•					MM	A/B 1	50/125µ 62.5/125µ	10 dB	1-3 km	ST, FC, SC or LC
•					SM	A/B 2	09/125µ	7 dB	10 km	ST, FC, SC or LC
	•				SM	A/B 2D	09/125µ	12 dB	20 km	ST, FC, SC or LC
		•			SM	A/B 3	09/125µ	17 dB	40 km	ST, FC, SC or LC
			•		SM	A/B 3D	09/125µ	25 dB	60 km	ST, FC, SC or LC
				•	SM	L4	09/125µ	Varies	20-70 km	ST, FC, SC or LC

* Chromatic dispersion and additional losses should be taken into account; link budget and range may be affected by bandwidth required.

Opticomm reserves the right to change specifications without notice

The Benefits of the Opticomm Optiva™ Configurable Communication Platform for Video, Audio and Data Optical Networking

The Optiva™ digital daisy-chained fiber optic transmission platform significantly improves upon existing solutions for video, audio, and data fiber optic networking. The following outlines the unique primary benefits of the Optiva™ Platform.

1. Customizable Multi-Oriented Video, Audio and Data Input Configuration

Table A below lists the types of Video, Audio, and Data signals that are supported with Optiva™.

VIDEO	AUDIO	DATA
Composite Video (NTSC and PAL)	Analog Audio, Balanced 600 Ohm Input Impedance	RS-232
Studio Composite Video (NTSC, PAL and SECAM)	Analog Audio, Balanced Hi-Z Input Impedance	RS-422
SDI (per SMPTE 259)	Analog Audio, Unbalanced Hi-Z Input Impedance	RS-485 (2-Wire)
HD-SDI (per SMPTE 292)	Studio Quality Analog Audio, Balanced Hi-Z Input Impedance	RS-485 (4-Wire)
DVB-ASI	Digital AES/EBU (per SMPTE 276M)	Contact Closure
S-Video		10/100 Ethernet
Component (Preliminary)		1 Gbps Ethernet (Preliminary)
VGA (Preliminary)		
DVI (Preliminary)		
HDMI (Preliminary)		

The signals listed above are supported, in virtually any configuration, addressing almost all signals deriving from commercially available video, audio and/or data equipment, across all professional industries.

Using advanced firmware embedded within each card, the specific card configuration and other vital information are transmitted over the backplane to other cards via a Time Division Multiplexing (TDM) based Daisy-Chain path (defined below). The optics card accepts and optically transports the relevant signals. No compression is used.

2. Daisy-Chained Time Division Multiplexing

Optiva™ utilizes proprietary and unique methods of (TDM) to electronically combine and multiplex the various video, audio and data signals.This is made possible through the advanced firmware embedded in each Optiva™ card ensuring smooth and continuous communication between all cards situated on the same backplane. This chain of communication is referred to as a "daisy-chain". Each Optiva™ enclosure contains one dedicated backplane thereby offering a single "platform" upon which all cards convert to a powerful and tightly managed optical transmission system.

3. Intelligent Bandwidth Allocation

One of the primary concerns of any communication-based application is bandwidth. Fiber strands are very expensive to lease where they are not proprietary and additional fiber is typically very complex and expensive to install, even when the cable is proprietary.

Optiva™ sets industry precedents in the number of Video, Audio and Data signals that can be transported over one fiber, both for single and multiple wavelength transmission.

With Optiva™, the only limitation to the number of channels that can be transported over each wavelength would be the bandwidth that the laser and backplane can support. At present, this limitation is 2.5 Gigabits Per Second (Gbps). For sake of comparison, most other products are limited to 1.25 Gbps, not to the mention they would transport a pre-determined set of video, audio and data signals in a specific configuration, not necessarily your configuration.

For example, if you have 4 Composite Video signals, 24 RS-232 Data signals, and 2 Audio signals, you would easily design an Optiva™ product solution for this specific configuration. Without Optiva™, you would likely NOT find a solution to transport all of these signals in one product over one wavelength, even after an exhaustive search and complex offerings of many different pre-configured systems.

As each card is electronically multiplexed with one or more additional cards via the TDM daisy-chain communication path, all signals utilize the same optical wavelength via one fiber connected to an optical card (situated to the left of all other cards). By allocating up to 2.5 GB of bandwidth for each wavelength, Optiva™ truly maximizes wavelength bandwidth allocation. Each "maximized" wavelength can then be optically multiplexed with additional wavelengths by simply integrating Coarse Wave Division Multiplexing (CWDM) onto the platform, if necessary or desired.

4. Upgrade Path and Modularity

With other optical transmission products offering only a set configuration of video, audio or data channels, your upgrade path is non-existent. This means that you are forced to purchase additional systems (typically requiring additional fiber strands) for future expansion, even if only one extra video, audio or data input is required. Optiva™ is inherently modular and upgrading is easy, without the need for additional fiber allocation.

You will always maintain the option of adding additional signals onto the same optical path within the bandwidth allowance. Transporting more video, audio or data signals onto the same wavelength is accomplished by simply adding more cards to an existing daisy-chain (ie. in the same enclosure). Any "Optiva™ Standard" product can be ordered without optics to serve as an upgrade to an existing Optiva™ daisy-chain (see the Optiva™ Standard product series). The newly added signals are automatically communicated to the existing optics card(s) and transported over the existing wavelength. The Optiva 19" Sub-Rack can accommodate up to 16 different Optiva™ insert cards. For exceptionally high bandwidth application, up to 16 optical outputs (deriving from any number of sub-racks) would be optically multiplexed onto one fiber using a passive CWDM Mux/Demux (such as Opticomm's MDM-7000 Series).

All Optiva™ units come as insert cards that can be inserted into one of four different enclosures, rack mount or stand-alone. Whether the application demands a distribution frame or stand-alone solution, Optiva™ will adapt. All insert cards are hot swappable and can be transferred from one enclosure to another (stand-alone or rack-mount) at any time, providing the flexibility required for evolving environments and applications.

Optiva™ was designed with the needs of multiple markets in mind. The platform will support any video, audio and/or data application, from composite video to uncompressed HD-SDI and from analog audio to digital AES/EBU, etc.. This eliminates the need for the costly upgrade of existing video, audio or data equipment simply to support transmission efforts.

5. Quality Transmission

Optiva™ offers the highest quality transmission across all professional industries. Where applicable, Studio Broadcast industry standards are strictly applied to all communications. As a result, not only are the platform's transmission standards sufficient for all industries, they in fact exceed the expectations of non-broadcast industries providing exceedingly higher quality video and audio transmission. For example, in surveillance applications, Optiva™ would enable studio quality video outputs ensuring absolute attention to detail in video resolution and audio precision.

All Optiva™ systems utilize digital transmission for optimum quality. 10-Bit digitally encoded broadcast quality transmission is standard for all Optiva™ analog-based video systems. 12-Bits are applied for studio quality video processing. All analog audio systems utilize 24-Bit digitally encoded transmission. With digital source signals such as digital video, digital audio or virtually any data protocol, Optiva™ maintains the digital source applying transmission techniques to the source directly, without conversion.

6. Network Management

All Optiva™ systems can be managed remotely with the OptivaView™ SNMP Management Suite. The management system enables the remote display of vital operational data as well as control functionality.

In modern networks, various types of equipment are installed. OptivaView™ makes remote management simple in its utilization of SNMP (Simple Network Management Protocol) offering a uniform software platform for efficient integration with other devices operating alongside the Optiva™ Platform. The OptivaView™ NMS Controller Card (Opticomm Model OPV-CTLR-IC) serves as an agent that fits within any Optiva™ enclosure requiring only one slot. This agent collects the data coming from the personally designed Optiva™ systems and the OptivaView™ Graphical User Interface Management Software Module analyzes and displays the data to the user.

The OptivaView™ NMS Controller Card can also communicate with any SNMP based Management Software. An example of such software is the HP Openview Source. The client retains the ultimate discretion of whether to use the OptivaView™ software or an alternative, ensuring both independence and flexibility in system management.

A Management Information Base (MIB) is integrated within the OptivaView™ NMS Controller Card. The MIB stores and provides all information required by the Network Management Software to understand the data presented by the OptivaView™ NMS Controller Card. This means that regardless of which viewing medium you select, the designated software will receive all collected data.

OptivaView™ provides fiber optic link status, link budget and bandwidth management, operations and fault detection, and logging. These features ensure that your are constantly provided with important data for essential optical system management and that you remain aware of critical concerns to ensure maintenance of a safe and healthy network at all times.

The OptivaView™ Graphical User Interface Management Software offers a professionally designed and user-friendly interface maintaining a simple yet comprehensive tunnel view to your optical network.

The Controller Card will transmit and collect data to and from the other cards situated within the Optiva™ Chassis via the daisy-chain. Local control room monitoring is provided by LED "status" and "alert" indication on the Optiva sub-rack. Moreover, every sub-rack will detect the presence of a Controller Card and notify the local control room operator that remote monitoring is operational via an "NMS" LED located on the front of each rack.

7. Redundancy and Reliability

Optical redundancy is easily implemented using a single additional optics card, (see the Opticomm model ORC-400) thereby duplicating the transport of all signals over a separate optical path without the need to provide additional electrical sources. Power redundancy is available with all rack solutions.

8. On-line Configuration and System Design

Opticomm has developed an advanced web-based system that allows any user to configure an Optiva™ system on-line. A user is able to select his or her precise signals to be transported, rack or stand-alone preference, optical budget and cable requirements, and even the desired optical connector type.

The use of this tool offers the potential customer with instant gratification by receiving an immediate system overview, Build of Materials (BOM), and system diagram. Moreover, all Optiva™ systems designed are maintained in a personal folder that the user can securely access each time he or she is signed in, serving as an exceptional project management tool.

You are encouraged to register for the "Product Configurator" at www.opticomm.com and design an Optiva system.

9. Product Regulatory Compliance, Quality Assurance and Warranty

All Optiva™ systems conform to applicable Conformite' Europe (CE) regulations, CSA safety standards, and the Federal Communications Commission Part 15 (FCC Part 15) regulations for emissions control. All Opticomm systems are subject to stringent quality control processes implemented as part of Opticomm's ISO-9001:2000 certified Quality Management System. All Optiva systems are backed by an industry-leading 10-Year Warranty.

Optiva™ Multi-Signal Transmission Platform Specifications

Video

Composite

Standard	SMPTE 170M; RS-250C
Bit Resolution	12-Bit Processing; 10-Bit Transmission
Level	1.0 Volt p-p
Bandwidth	5.5 MHz
Differential Gain	< 1%
Differential Phase	< 0.7°
Compatibility	NTSC, PAL
Signal to Noise Ratio	> 67 dB
Connector	BNC (IEC 60169-8)

Studio Composite

Standard	SMPTE 170M; RS-250C
Bit Resolution	12-Bit Processing; 10-Bit Transmission
Level	1.0 Volt p-p
Bandwidth	5.5 MHz
Differential Gain	< 2%
Differential Phase	< 0.7°
Passband Ripple	< ±0.2 dB to 5.5 MHz
Chroma/Luma Delay	<12ns
Compatibility	NTSC, PAL, SECAM
Signal to Noise Ratio	> 67 dB
Connector	BNC (IEC 60169-8)

SDI

Standard	SMPTE 259
Pathological Test Code	RP-178
Bit Rate	270 Mbps
Bit error rate	10^{-14}
Connector	BNC (IEC 60169-8)

HD-SDI

Standard	SMPTE 292 and 259
Pathological Test Code	RP-178
Nominal Bit Rate	1.485 Gbps; 270 Mbps
Bit error rate	10^{-14}
Connector	BNC (IEC 60169-8; Gold Plated)

S-Video

Standard	SMPTE 170M; RS-250C
Bit Resolution	10-Bit Processing; 10-Bit Transmission
Level	1.0 Volt p-p
Bandwidth	7 MHz
Differential Gain	< 1%
Differential Phase	< 0.7°
Compatibility	NTSC, PAL
Signal to Noise Ratio	> 67 dB
Connector	S-Video

DVB-ASI

Standard	SMPTE
Pathological Test Code	RP-178
Bit Rate	270 Mbps
Bit error rate	10^{-14}
Connector	BNC (IEC 60169-8)

Audio

Analog Audio

Level	6 dBm In/Out
Bandwidth	20 Hz to 20 KHz
Signal to Noise Ratio	> 80 dB
Total Harmonic Distortion	< 0.1%
Signal Coding	24-bit
Connector	Micro DB25

Impedance Options:

Input	Output
Balanced 600 Ohm	Balanced 600 Ohm
Balanced Hi-Z	Balanced Low-Z
Unbalanced Hi-Z	Unbalanced Low-Z

Digital AES/EBU

Digital Format	AES/EBU AES3-1992 (ANSI S4,40) SMPTE 276M
Connector	Micro DB25

Data

Connector	Micro DB25

RS-232, RS-422

Data Rate	DC to 1 Mbps

RS-485 (2 Wire)

Data Rate	DC to 1 Mbps

RS-485 (4 Wire)

Data Rate	DC to 1 Mbps

Contact Closure

Ethernet

Standard	Ethernet IEEE 802.3
Data Rate	10/100 Mbps
Connector	RJ-45 UTP

General

Dimensions & Weight	Insert Card (IC): 6.3" L x 0.8" W x 4.0" H 11 oz
Operating temperature	-20° C to +55° C
Storage temperature	-40° C to +85° C
Humidity	0 to 95% non-condensing
Operating voltage	9-12 V_{DC}
Consumption	1A Max per Insert Card
System Latency	< 1ms (Audio <10ms)

Local Monitoring

LED Indication

Remote Monitoring

Compatible with OptivaView™ SNMP Management Suite

Optiva™ Configurable Communication Platform
Network Management
SDI & HD-SDI
Composite Video, Audio & Data
RGB/VGA/DVI
Audio/FSK/Intercom
Data (Ethernet/Serial/USB)
CATV/RF & L-Band
Optical Switching, Routing & Redundancy
Passive Multiplexing Solutions
Enclosures, Racks & Frames
Power Supplies & Accessories

10 YEAR WARRANTY

ISO 9001:2000 CERTIFIED

FCC PART 15 COMPLIANT

MADE IN THE USA

www.amt.com

advanced media technologies

Advanced Media Technologies® Inc. · 3150 SW 15th Street Deerfield Beach, FL 33442
(888) 293-5856 · (954) 427-5711 · Fax (954) 427-9688