Emcore Optiva Platform

The Emcore Optiva platform is a universal fiberoptic signal transport system capable of accommodating a vast array of RF/microwave (up to 40 GHz) and baseband digital video/audio/data signal formats. The system is modular and the various signal formats are realized with hot-swappable plug-in cards.

The following signal formats are supported within the Optiva platform.

Analog

Wideband L-Band (50 – 3000 MHz)
C-Band (3.4 – 6.8 GHz)
X-Band (7 – 10 GHz)
1 MHZ Reference Oscillator
10 MHz Reference Oscillator
IRIG-B, 1PPS

Wideband Ku-Band (0.1 – 18 GHz)
Wideband K-Band (0.1 – 22 GHz)
Wideband Ka-Band (0.1 – 40 GHz)
5 MHz Reference Oscillator
100 MHz Reference Oscillator

Digital

3G HD-SDI, SMPTE 424M
DVB-ASI Video
Dual Link DVI
12-Bit Composite Video
Gigabit Ethernet
USB 1.1/2.0
Balanced Analog Audio
RS-422 Serial Data
Contact Closure

HD-SDI, SMPTE 292M
SD-SDI, SMPTE 259M
VGA & Component Video
8-Bit Composite Video
10/100 Ethernet
AES/EBU Digital Audio
RS-232 Serial Data
RS-484 (2- and 4-wire) Serial Data

Chassis options include the following.

19” 3RU

- 16 cards slots
- Redundant hot-swappable power supplies
- SNMP M&C interface

19” 1RU

- 6 cards slots
- Redundant hot-swappable power supplies
- SNMP M&C interface

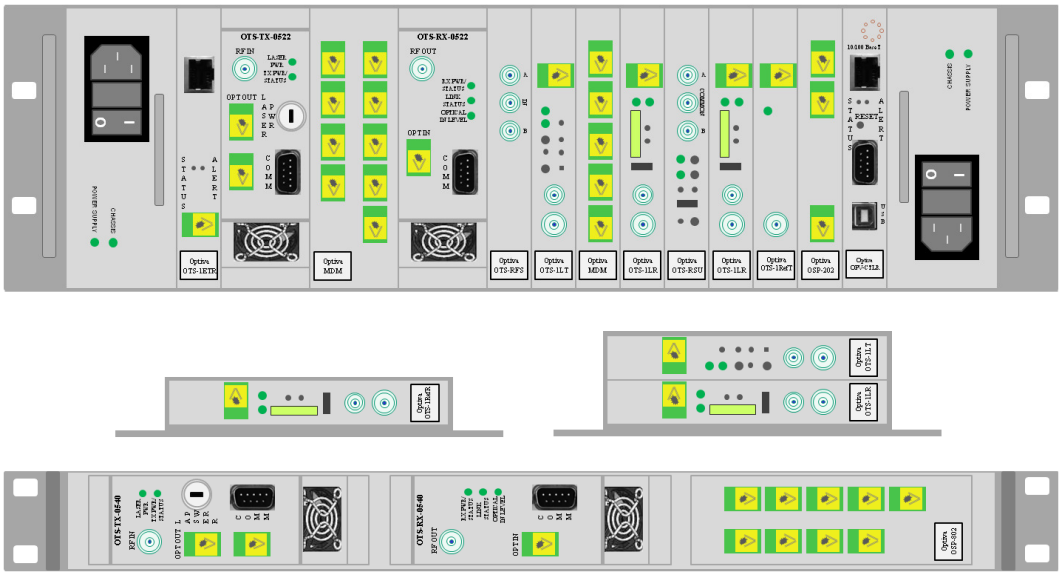
Flange mount enclosures

- Support 1 or 2 card slots
- External 9V power supply
- SNMP M&C interface (for 2-slot version)

The Optiva system supports CWDM and DWDM optics, add/drop wavelength multiplexing, RF 1+1 redundancy, and RF/optical signal splitting.

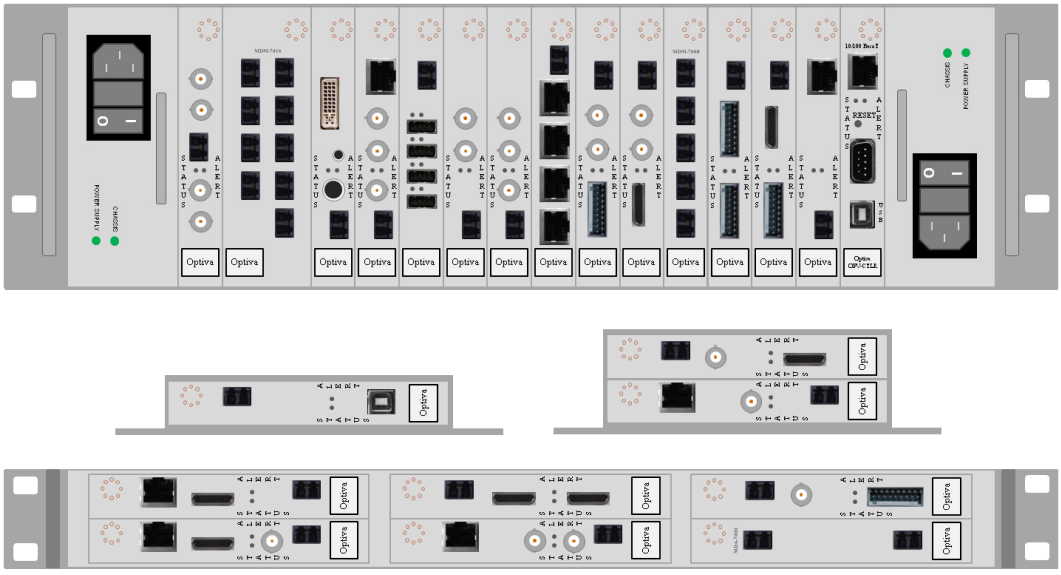
Analog Links

All links support either variable or fixed RF gain options to satisfy a variety of RF input level and RF link gain requirements. Wideband L-Band links support automatic gain control and LNB powering. All cards are hot-swappable. 1RU and 3RU chassis options support hot-swappable redundant power supplies. Local monitoring as well as an SNMP interface are provided for integration into existing management and control architectures.



Digital Links

Optiva digital video/audio/data cards are built up from multiple signal format specific modules, of which 3 or 4 may reside in a single plug-in card. In this way, Optiva does not require selecting from a small set of statically defined card signal formats. Instead, signal combinations may be dynamically configured to optimize rack space and fiber usage. In many cases, an arbitrary set of different signal formats may be time division multiplexed (TDM) onto a single fiber for transport. Also, in many cases, systems may be upgraded in the future without the need to dedicate additional fiber. Added signals may be time division multiplexed onto existing fiber. Singlemode and multimode fiber are supported.



An example of Optiva's TDM capabilities are shown below. In this particular example, 12 SD-SDI video, 24 AES/EBU digital audio, 28 analog (mono) audio, 8 RS-232 serial data channels, and a 10/100 Ethernet channel are transported on just 2 fibers. CWDM could be used to combine these onto a single fiber.