

Optiva Platform - Removing the Growing Pain



Fiber vs. Traditional Coax Cable The Benefits Are Well Known

- Simplified installation of the cable run as fiber is 1/10th the weight and size of coaxial cable
- Long distances are possible (from 10 m to 100 km)
- Ability to keep the signal in the native satellite frequency reduces signal errors caused by up and down conversion
- Customers can run multiple signals over a single fiber with CWDM and DWDM technology
- Cleaner path with much simplified architecture and redundancy switching
- Fiber has great EMI immunity to avoid hum and distortion of the signal
- Fiber is much cheaper than coaxial cable over any reasonable distance
- Fiber optics provide a higher level of protection and security; lighting protection and virtually impossible to "tap"

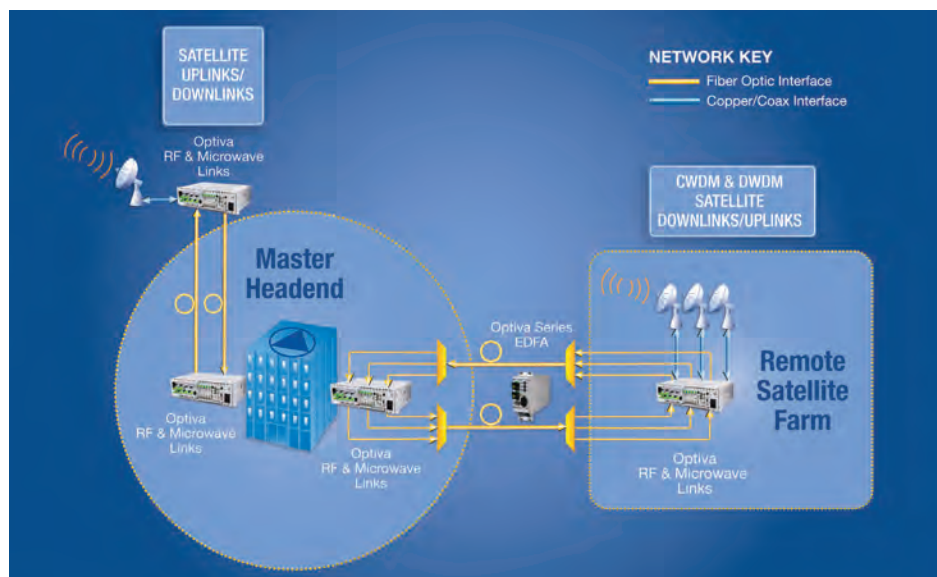
Satellite Antenna Remoting on the Optiva Platform

As the requirement for more centralization within teleports continues to grow and the pressure to reduce operational cost increases, more and more companies are looking at fiber optics as an alternate solution to RF over coax/copper to connect their Remote Antenna Farm to their Central Operations Room.

Although the benefits are very tangible, justification of this capital investment must be made and as such, making a system that is completely scalable over time is a critical consideration.

At EMCORE, we have developed the Optiva Platform to address these concerns and allow your fiber network architecture to grow seamlessly as your requirements grow.

Optiva Platform Teleport Architecture



Being in business for over 30 years with a commitment to providing the highest-quality products in the market, EMCORE is your ideal partner for Satellite RF over fiber solutions.

EMCORE is the only fiber optic link manufacturer in the world that has its own in-house laser fabrication facility to build the fiber optic transmitters and receivers from scratch. We have the advantage of providing a massive range of frequency options for your network. Our family of Optiva SNMP managed products provides high-performance fiber optic transmission from 1 MHz to 60 GHz.

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Frequency Band Options

L-BAND: The most cost-effective entry point in the industry with our new budget L-Band cards operating from 5 MHz to 3 GHz.

DUAL L-BAND: Where chassis space is limited, we can double the number of links with our two-channel card. This can provide up to 30 L-Band links in one 3RU rack.

6.5 GHz & 8.5 GHz: A new budget 6.5 GHz card allowing us to carry 5G signals and C-Band traffic at a similar cost of traditional L-Band links. We are also looking to extend the capabilities of this card to 8.5 GHz to serve the military X-Band market.

DEDICATED SATELLITE BANDS: Dedicated satellite cards for up and down links in native S, C, X, Ku, DBS and Ka bands.

HIGH FREQUENCY WIDEBAND: Transmitters and receivers that cover frequencies from 1 GHz to 18 GHz, 22 GHz and 40 GHz.

Q & V BAND: A new Q/V-Band transmitter and receiver card allowing signal transmission up to 60 GHz for the new series of satellite transponders.

Live Operational Requirements

Along with the widest range of frequency options in the industry, we also have a strong focus on true live operational requirements that include:

CHASSIS OPTIONS: A range of different chassis options from a simple desktop unit, through to a 1RU and 3RU rack-mount unit to a fully temperature controlled outdoor unit.

REDUNDANT POWER SUPPLIES: Our rackmount unit includes dual power supplies that mirror each other allowing a hot-swap facility if one fails meaning no down-time.

NMS CONTROL: Full SNMP control allowing remote interrogation of the whole system along with APIs to integrate to most of the main high-level teleport management systems.

RF AMPLIFIERS: The ability to have RF pre- and post-amplifiers up to 35 dB on the optical transmit and receive cards allowing a completely flat RF response across the link.

FULL REDUNDANCY: We have a variety of inter-chassis RF splitters and RF switches to allow seamless redundancy in either auto-switch mode or under SNMP control.

MULTI-WAVELENGTH: Where connectivity between sites is limited, we have optical multiplexers and demultiplexers to allow multiple signals (wavelengths) to be carried over a single fiber.

ETHERNET CONNECTIVITY: If a separate IP connection is not available between sites, we have an "in-band" Gb Ethernet card that allows you to control your remote site from your main station.

OPTICAL AMPLIFIERS: High power lasers (typically 11dBm) allow us to achieve very long distances without the need for a mid-point cabinet. We also have chassis-based pre & post EDFA (up to 23 dBm amplifiers) that we can put either end of the link to enhance the link performance.

DISPERSION COMPENSATION: We can provide dispersion compensation spools to stop the back reflection of light within the fiber due to the required high launch power of the transmitter when going long distances.

Custom Design Services

Our Engineering Team offers a Link Budget Analysis Service free of charge so that you can be confident that your design will be able to comfortably close the link once deployed. This service also extends to dispersion and optical delay calculations when necessary. Your requirement today maybe well understood, but in the ever-changing teleport market it is very difficult to know what will be required in the future. As the market leader in mixed signal analog fiber optics, EMCORE is here to support you through this journey and help remove all the growing pains!