

# OPTIMIZING COMMUNICATIONS FOR IPTV DELIVERY



Comtech EF Data understands your need for an economical means of reaching across service regions when you rollout IPTV to urban and suburban areas. And, to pursue other areas of interest – cable systems, business TV, Direct-to-Home (DTH), mobile and wireless – you would like to have a common distribution platform to serve you at every stage. Time-to-market is critical. You need a baseline system architecture that is scalable and ready for use by all your points of ingest to the edge. You don't want to limit your product/service offerings, whether it's a turn-around service, video-on-demand feed or streamed and video-on-demand for mobile. But, the CAPEX and OPEX of transport will be key to your success.

With very little national or regional upstream traffic, satellite is your most cost-effective distribution method. While satellite distribution serves you best, you provide your customers with different service classes from a basic IP "pipe" for your large content owners that handle their own distribution and self-provision everything but the pipe, to IPTV content distribution or content owners that expect you to handle their network infrastructure.

Even though you need a uniform transport platform, you want to easily control content – adding local content, blocking national content, contending with sports blackouts and local advertising insertions. You may be delivering content that is encoded in multiple forms; MPEG-2 or MPEG-4, HD and SD, and even DVB-H. You need solutions that optimize your IPTV delivery.



Comtech EF Data offers broadcast solutions that make it possible to optimize your IPTV delivery. We have the building blocks for the transport of your organization's content. As a long-time supplier of modulator, demodulator and frequency conversion equipment to broadcasters, our products are installed in more than 160 countries. And, the addition of the Digicast Products to our mix has enhanced our IP-based broadcast solutions. Our DVB-S2 Satellite Modems, IP Encapsulators and Receivers combine the bandwidth efficiencies of DVB-S2 and advanced technologies to enable the cost-effective and reliable delivery of IPTV in most of its forms. Key benefits of the Comtech solutions are:

- Leverages DVB-S2 plus spectral roll-off functionality to deliver bandwidth savings up to 30%
- Reduces capital expenditures and rack space with four systems (Receiver, Combiner, Filter & Video to IP Router) in one platform
- Enables 1:1 redundancy for high availability of service
- Allows centralized and proactive management via SNMP

## MODULATION & DEMODULATION TAILORED TO BROADCAST

The CDM-710 Broadcast Satellite Modem is based on the transmission standard, DVB-S2, and is ideally suited for High Definition Television (HDTV). DVB-S2 extends the scope of possible applications by combining functionality of previous standards developed for Direct-to-Home and professional environments. The broad range of modulation and coding formats of DVB-S2 enable link performance optimization – delivering on average 30% greater throughput when compared to DVB-S services. Users can tailor a link for the available bandwidth and power. The Asynchronous Serial Interface (ASI) or optional Gigabit Ethernet interface for the CDM-710 support both legacy and green field video production builds. And, beyond the DVB-S2 support, the CDM-710 offers spectral roll-off functionality that delivers additional satellite transponder cost savings.



CDM-710 Broadcast Satellite Modem

## DIGICAST PRODUCTS – IP ENCAPSULATORS & RECEIVERS

The Digicast Products are IP-based and support the range of DVB standards for satellite, cable and terrestrial, including DVB-S, DVB-S2, DVB-C and DVB-T. The products optimize end-to-end solutions for stand-alone and overlay broadband IP networks. A range of interfaces, redundancy options and IP-based management are provided to accommodate diverse network configurations. Spanning satellite, cable, wireless and cellular networks, the Digicast Products support video and IP-based content contribution and distribution.

The IP Encapsulators and Receivers for IPTV are highly reliable. The products are built on embedded operating systems, like cell phones or set-top boxes, not servers or PC operating systems. They also draw less power than a server or PC. There are no hard drives in the products that can fail. Our reliability will not keep you up at night.



## DIGICAST PRODUCTS – IP ENCAPSULATORS & RECEIVERS

### Receivers & Filtering

Our Receivers are media routing devices that enable the reception of DVB-S and DVB-S2 transport stream and IP-based multimedia content (video, audio and data) to be delivered over satellite or high-speed ASI links and distributed to remote devices. The filtering functionality is offered by the Media Router 6000, a versatile, combination platform.

The receivers are ideally suited for IPTV applications. They provide ease of use, flexibility and reliable operation, featuring an embedded central processing unit, an eCOS operating system and support for 1:1 redundancy.

Each receiver can be managed at the program identifier (PID) level to provide operators with the maximum flexibility in selecting national content to pass through, as well as content that needs to be filtered to comply with local blackouts.



**CMR-6000 Media Router**  
Satellite Receiver, Combiner, Filter & Video  
to IP Router in One Platform

**Media Router 6000** – In a single platform, the Media Router 6000 functions as a satellite receiver, combiner, filter and video to IP router. Supporting multi-protocol encapsulation and MPEG-2 TS, the Media Router 6000 facilitates standard data broadcasts, as well as the transport of MPEG-2 video service over IP.

As a combiner/multiplexer, it allows content received from satellite and local ASI to be multiplexed in to a single MPEG-2 transport stream and output over the ASI or Ethernet interface. In addition, the Media Router can filter content by static PIDs from one or both streams before multiplexing.

The Media Router 6000 can also route video to IP received on the satellite and/or ASI input and output an IP stream capable of being decoded by a standard IP set top box or IP decoder. With the optional ASI input, content that is originated locally may be sent through the receiver to be combined with satellite content.

**Media Router S2 Receiver** – Enables the reception of DVB-S and DVB-S2 IP-based multimedia content to be delivered over satellite and distributed to remote devices connected to the MR-S2 via an Ethernet LAN. It is unique, since it provides a DVB-S or S2 input with an Ethernet output.



**CMR-5975 Media Router S2 Receiver**

**Media Router ASI Receiver** – Enables IP-based multimedia content to be delivered over a high-speed ASI link and distributed to remote devices connected to the Media Router ASI via an Ethernet LAN. It provides a cost-effective upgrade path for deployment of an overlay distribution network across widely dispersed remote locations.



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## DIGICAST PRODUCTS – IP ENCAPSULATORS & RECEIVERS

### IP Encapsulators

Our line of IP Encapsulators are Multi-Protocol Encapsulator (MPE) devices that encapsulate IP data into MPE format for distribution over DVB-S, DVB-S2, DVB-C, DVB-T and ATSC networks.

The products provide unmatched value for broadcast applications.

Our IP Encapsulators are:

- Based on an embedded platform
- Available in a 1RU rack mountable or desktop form factors; 1RU form factor for redundant units
- Configurable in real-time
- Software upgradeable
- Managed via Web, console, Telnet & SNMP



CMR-8500 IP Encapsulator



MENCAP 50-10K Encapsulator



MENCAP Redundancy Bundle

### MORE INFORMATION

The delivery of IPTV can be challenging. To be competitive, you need to add more channels and expand your reach. Yet, cost-effective and reliable transport is necessary to justify your return on investment. Our proven solutions provide high availability of service and unmatched link efficiency, enable more channels to be delivered per transponder, and support proactive management. Contact us to learn more about how our infrastructure products can be integrated into your network to optimize your IPTV delivery.



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