

Solution Brief:

Reducing Bandwidth Requirements for Digital Satellite News Gathering (DSNG) Applications

Overview

As a DSNG operator, you are faced with the challenge of your satellite expenses. You want more bandwidth at a lower cost than what you spend now, and you would like some of that new extra bandwidth to be on the return link to your trucks. We have the answers for you, and they are called VersaFEC[®], DoubleTalk[®] Carrier-in-Carrier[®], Dynamic SCPC (dSCPC), optimized rolloffs and a High-Performance Packet Processor. Comtech EF Data's CDM-570A series modems have all of these features that will help you reduce bandwidth requirements, minimize BUC size requirements and provide additional throughput for VoIP and Internet / email along with your video link.

Comtech EF Data Solution

The CDM-570A series are our next generation modems providing industry-leading performance and network flexibility in a competitively priced 1 RU package. With support for advanced technologies including those specified below, the modems provide unparalleled bandwidth efficiency. The result for DSNG users is multi-layer optimization and OPEX savings. Also, the CDM-570A series of satellite modems support DVB-CID, the Carrier ID standard.

The dSCPC Bandwidth Management can now support the Carrier-in-Carrier features, for unprecedented bandwidth savings and management in one package, while enjoying all other capabilities of this powerful technology, including automatic adjustment of your satellite link's parameters.

Feature	Benefits for DSNG Users
VersaFEC Low Latency LDPC FEC	<ul style="list-style-type: none">• Provides maximum coding gain while minimizing latency
DoubleTalk Carrier-in-Carrier Bandwidth Compression	<ul style="list-style-type: none">• Provides the option for two way communication without having to use two channels• Both carriers operate seamlessly in the same bandwidth
Optimized Transmit Filter Rolloff (ROF): 5%, 10%, 15%, 20%, 25% & 35%	<ul style="list-style-type: none">• Allows users to further optimize the link; Carrier-in-Carrier combined with VersaFEC and optimized transmit filter rolloffs can provide 50% or more bandwidth savings
High-Performance Packet Processor	<ul style="list-style-type: none">• Enables efficient IP networking and transport over satellite with header and payload compression and advanced Quality of Service (QoS)• The advanced QoS combined with hardware-based header and payload compression ensures the highest quality of service with minimal jitter and latency for real-time traffic, priority treatment of mission-critical applications and maximum bandwidth efficiency
dSCPC Bandwidth Management	<ul style="list-style-type: none">• Lets users set up bandwidth pools on different transponders or satellites to enable use of spot capacity or the best occasional use rates• Provides SCPC bandwidth based on demand for dynamic utilization of bandwidth with the benefits of SCPC (stability, low latency and jitter)• Provides SCPC quality while dynamically responding to data, voice and video traffic demands on a per site basis• Each dSCPC enabled modem can transmit a carrier of any bandwidth, within the constraints of the modem's performance and satellite link budget limits• The dSCPC carrier center frequency is changed based on the dynamic bandwidth demand for the carrier and placed in pre-determined bandwidth segments, singularly or aggregated with other carriers, in either polarization on the satellite, automating the process• Provides maximum flexibility in bandwidth optimization to meet immediate demand

Savings Examples

Below are two examples of the types of savings possible. The first shows the savings from a reduction in bandwidth required for the same throughput. The second shows the increase in throughput using the same bandwidth. For both scenarios, these parameters are applicable:

- Truck with 1.8 m antenna, 4.5 m antenna at the studio.
- Intelsat G-16 (North American coverage)
- Links with older Turbo Product Code (TPC) compared with new links using VersaFEC, Carrier-in-Carrier, and 5% rolloff

Scenario: Truck to studio link 10 Mbps, Studio to truck link 2.5 Mbps, CDM-570A

	CDM-570 with TPC	CDM-570A with CnC, VersaFEC & Optimized ROF (5%)	Savings / Improvement
Leased Bandwidth	8.8 MHz	5.9 MHz	32.9% reduction in leased BW

These comparisons show the big advantages of using the newer Carrier-in-Carrier (CnC), VersaFEC and optimized roll off factor technology. The scenario shows a side-by-side comparison of the old versus the new technology for a forward link from the truck to the studio of 10 Mbps, and a return link from the studio to the truck of 2.5 Mbps. For the same throughput (10 / 2.5 Mbps), the leased bandwidth required is reduced by almost one-third, a 32.9% reduction. It is the same bandwidth required for the truck to studio forward link of 10 Mbps only, using the older TPC technology. By changing over to the newer technology you gain a return carrier from the studio to the truck, in the same satellite bandwidth, a substantial amount of savings.

With the new technology, there is also a savings to be realized on the BUC power required. Taking into consideration that most DSNG trucks already have a BUC installed for all services off of the truck, it may not be relevant to your situation. If you are building new, and the primary service will be the modem, you can see a reduction of required BUC power by a third or more.

Comtech EF Data – Your Transmission Equipment Partner

You will have confidence in your choice of Comtech EF Data based on a long and consistent track record of reliability in our satellite communications equipment. Our bandwidth efficiency and link optimization solutions are supporting fixed, mobile and transportable satcom for commercial and government users in 160+ countries. Our solutions can help you reduce bandwidth and minimize BUC sizes for your DSNG applications. Contact us to learn more about how our infrastructure products can be integrated into your network.



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