## High-Performance Satellite Communications Infrastructure Solutions





# Market-Leading Bandwidth Efficiency & Link Optimization

Comtech EF Data Corp., a subsidiary of Comtech Telecommunications Corp. (NASDAQ: CMTL), is a leading supplier of satellite bandwidth efficiency and link optimization. Our integrated satellite communications infrastructure solutions encompass Heights Networking Platform, Advanced VSAT Solutions, Satellite Modems, RAN & WAN Optimization, Network & Bandwidth Management and RF Products. The offerings feature groundbreaking efficiency, robust intelligence and unparalleled horsepower. Commercial and government users around the world utilize our solution suite to reduce OPEX/CAPEX and to increase throughout for the most demanding fixed and mobile networks. With the addition of our premium service, ESS Prime, we also provide 24x7 engineering support and other technical services to support your integrated network infrastructure. We work closely with our customers to assess requirements, to identify optimum solutions and to carve out service differentiation based on the right mix of platform and support...before, during and after the network implementation.

Carry.

## Patented & Industry-Leading Technologies

We focus significant R&D efforts on creating patented and industry-leading technologies that provide maximum bandwidth efficiency and link optimization so you can best utilize your satellite capacity. Examples of our ground equipment technologies are:

- DoubleTalk® Carrier-in-Carrier® Bandwidth Compression
- Automatic Carrier-in-Carrier Power Control
- VersaFEC®-2, VersaFEC®, LDPC, DVB-S2X, DVB-S2, DVB-S2-EB
- Adaptive Coding & Modulation (ACM)
- Integrated Packet Processing
- Dynamic Predistortion
- AutoEQ<sup>™</sup> Automatic Uplink Equalization System
- Radio Access Network (RAN) Optimization
- Wide Area Network (WAN) Optimization
- Dynamic Single Channel per Carrier
- DVB-Carrier ID Using MetaCarrier®
- · Daisy Chain Redundancy Switching

## Installed in 160+ Countries

#### Our solutions are:

- Facilitating sustainable and profitable service expansion for MNOs & ISPs
- Powering mission-critical communication for governments & militaries
- Providing on-demand and always-on connectivity for energy, mining & maritime
- Enabling premium enterprise services
- Supporting broadcast transmissions on every continent

## Made in the USA

Products are designed and manufactured at our Tempe, Arizona USA plant. Our well-maintained facilities are configured to support current and planned production requirements. We employ formal quality management programs and training, including the international Standard Organization's ("ISO-9000") and Aerospace Standard ("AS9100") quality procedure registration programs.

## **Our Core Markets**

## Mobile & Backhaul

Our satellite mobile backhaul solutions are facilitating sustainable and profitable connectivity for mobile network operators and Internet service providers globally. Our installed equipment is supporting a range of applications, including 2G, 2.5G, 3G & 4G/LTE backhaul, IP & G.703 trunking, highspeed content delivery and network infrastructure restoral.

As the undisputed market leader, you can rely on our solutions to significantly improve backhaul and trunking capacity, quality and service reliability. Whether you are building out new networks in rural or remote areas with low density populations, expanding existing networks to support subscriber and traffic growth, or upgrading networks to add new services, the combination of our technologies and premium services can help you reduce OPEX & CAPEX, and maximize your customers' Quality of Experience (QoE).

## Government

By utilizing our line-up of patented and industry-leading technologies, government users are able to increase throughput and reduce OPEX. Given our proven performance and market-leading bandwidth efficiencies, our satellite modems are utilized in the majority of the U.S. Department of Defense's tactical terminal programs for operation on military and commercial satellites.

Our extensive RF product line of frequency conversion and amplifier solutions are deployed worldwide by governments and militaries to support fixed and mobile / transportable applications. There are cost-effective indoor and outdoor models that provide the field-proven performance and reliability required for mission-critical communications.











Whether you are a service provider or end user, you need solutions that facilitate the delivery of premium grade services. With the right technology mix, you can meet your customers' service level expectations. You need an infrastructure solution that provides the highest performance possible and enables timely packet delivery and service differentiation. As transmission costs can represent a significant portion of your OPEX, you need a solution that leverages the latest bandwidth-saving technologies.

Our solutions are facilitating significant throughput increases while reducing expenses for energy, mining, corporate networks, broadcasters and service providers. Our customers are achieving the highest Mbps/MHz ratios and using our equipment with a variety of satellite capacity types and services.

## Mobility

At Comtech EF Data, we understand that the quality of our customers' mobility systems is critical to their success whether in the maritime, aeronautical or other mobile environment. Our connectivity solutions pioneered high performance in the mobility markets – providing superior performance and reliability in the most challenging environments. Organizations across the globe are currently leveraging Comtech EF Data Onboard to build a digital infrastructure second to none, achieving unmatched efficiency to directly improve the bottom line.

## **More Information**

We work closely with our customers to assess requirements and to identify the optimum infrastructure solutions for specific networks and applications. We welcome the opportunity to work with you. Contact us today to learn how our integrated SatCom infrastructure solutions can optimize your satellite links.







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