

Solution Brief:

Unleash the Power of Your CDM-625: Data Optimization for 2.5G/3G – 2G/3G Transition

Your CDM-625 Advanced Satellite Modem is packed with innovative and leading-edge features that facilitate exceptional satellite mobile backhaul service. It is the market-leading satellite modem in current 2G/2.5G satellite mobile backhaul networks. Its advanced features also provide top performance in 3G/4G deployments.



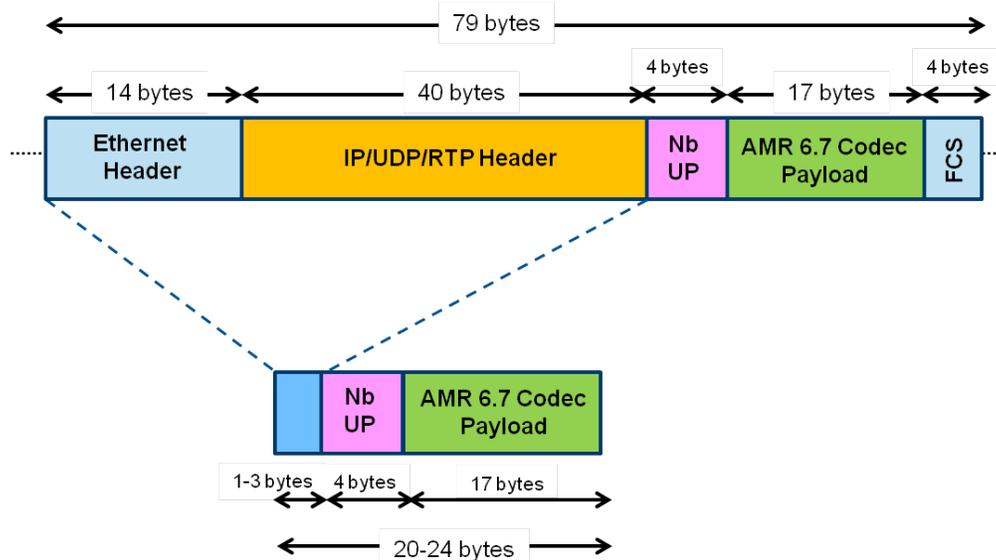
The embedded high-performance Packet Processor adds specific bandwidth optimization capabilities, which can help you manage the audio, video, and Internet traffic growth in your 2.5G/3G/4G networks. Bandwidth optimization helps transitioning from 2G to 3G, makes room for new services and provides instant OPEX and CAPEX improvements. These key benefits are described below.

Save OPEX on Voice & Data Traffic

Nb Interface

Media gateways are increasingly used in conjunction with remote BSCs and RNCs to enable local switching at regional levels for 2G/3G interworking, and to reduce the need for backhaul bandwidth. Unfortunately, the data overhead on the Nb interface is significant, which makes it extremely inefficient for deployment over satellite without an IP header and payload compression solution.

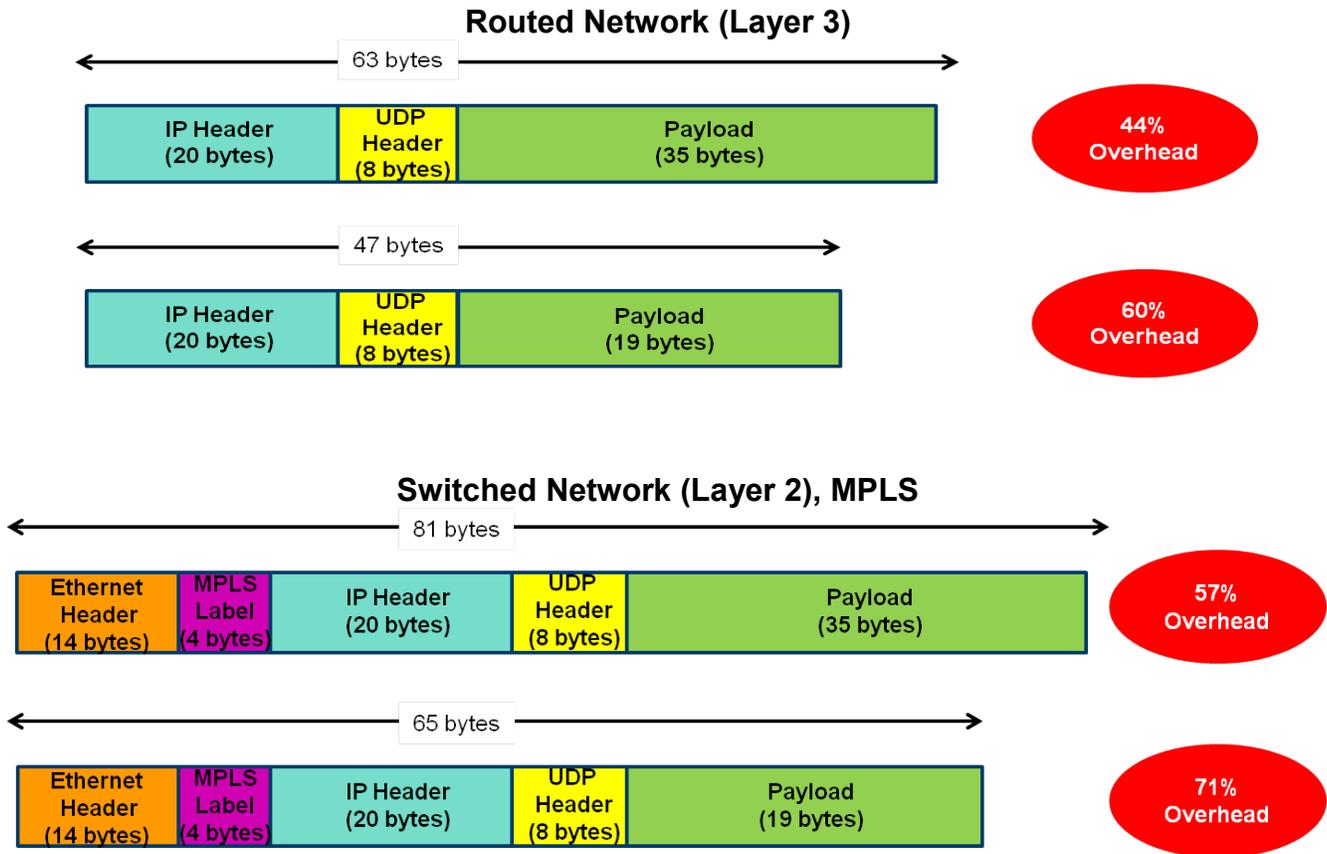
Our **Layer 2/3/4 Header Compression** feature addresses Ethernet, IP, UDP and RTP (codec independent) formats. The advanced processing capability removes the static fields in the packet header and provides more than 60% bandwidth savings, which directly improves the OPEX.



Our second generation **Payload Compression** processor is implemented directly in the hardware for increased performance and efficiency. This allows any payload compression with very low jitter and delay, which is particularly critical for 2G/3G traffic to maintain good KPI for voice and data services performance.

Application: 2G and 3G IP Base Station Backhaul Traffic Optimization/Reduction

2G GSM Abis over IP (AbisIP) BTS may generate substantial protocol overhead and inefficiency with regards to traditional legacy Abis TDM BTS, as UDP/IP headers (28 bytes) get added to every chunk of user data (voice or data) information, which are relatively small (40 bytes or less in average). In addition, synchronization, OAM and signaling data shall be added, which all bear very small packet sizes, as well. While AbisIP implementation may vary from vendor to vendor, our high-performance Header Compression provides significant bandwidth savings on all IP BTS connections, with bandwidth savings in the range of 30 to 60% depending on vendor's implementation.



The same considerations apply to 3G IP BTS for voice traffic (at the lub interface) and parts of the data traffic, e.g. TCP ACK packets when the user browses the web or downloads files, which represents most of the mobile data traffic.

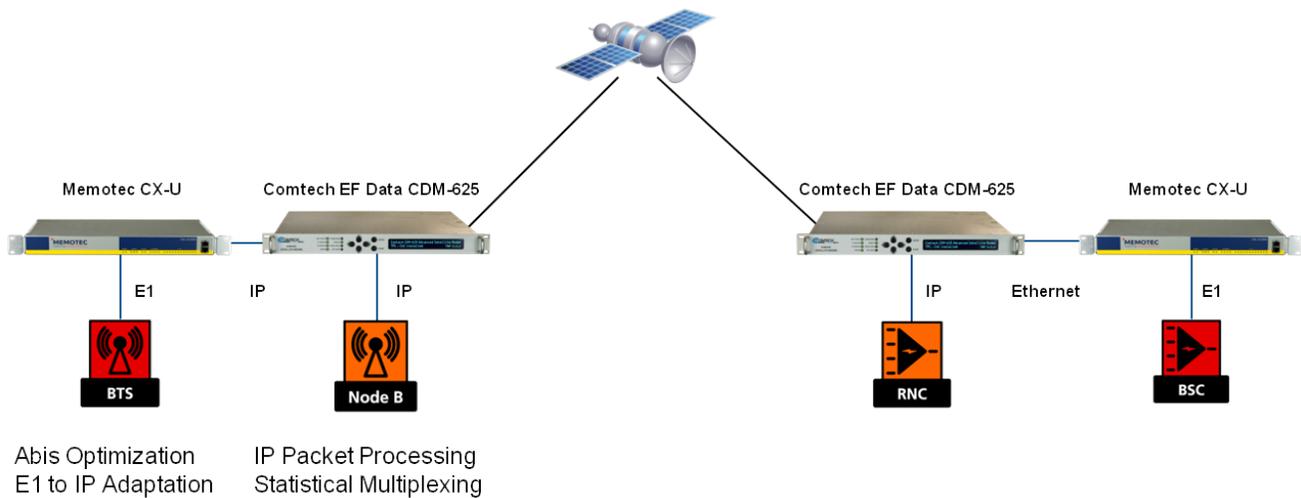
Further bandwidth gains may also be achieved when using our high-performance Payload Compression if the user data traffic is not encrypted (encryption parameter set to NULL at the RNC, or else when deploying small cells, eHSPA or LTE services).

Transition Efficiently from 2G to 3G

Many mobile networks have a combination of 2G (E1) and newer 3G (IP) Base Stations deployments. When the corresponding traffic is backhauled over satellite, additional transponder resources need to be provisioned to accommodate the separate types of traffic. The consequences on OPEX can be catastrophic.

Our high-performance Packet Processor can be utilized in combination with the CX-U Series Abis optimizer by our subsidiary, Memotec, to eliminate the need to provision extra satellite capacity. The CX-U Series adapts and compresses the E1 traffic from the 2G BTS into IP. The CDM-625 Advanced Satellite Modem will then statistically multiplex the 2G

traffic (now in IP format) with the 3G traffic, applying IP/UDP Header Compression and, if applicable, Payload Compression. Only one type of resource needs to be provisioned at the satellite transponder now, which will be shared on-demand between 2G, 3G voice and data traffic.



The benefits provided are multiple:

- Limited satellite bandwidth to be provisioned, saving on OPEX and CAPEX (smaller antenna and BUC)
- The CX-U Series further reduces bandwidth requirements for 2G voice service by removing the unnecessary information conveyed over the Abis interface. Typically, 50% OPEX savings can be achieved on 2G GSM backhaul costs via the CX-U.
- Statistical multiplexing further optimizes the bandwidth requirements over satellite and reduces the OPEX even more.

About the CDM-625

The CDM-625 Advanced Satellite Modem is the most efficient satellite modem in the industry. It is the first modem to combine advanced Forward Error Correction (FEC), such as VersaFEC® and Low Density Parity Check (LDPC) codes with the revolutionary DoubleTalk® Carrier-in-Carrier® bandwidth compression allowing for maximum savings under all conditions. It is also the first satellite modem to provide native support for PTP, providing unprecedented synchronization accuracy for satellite-based 2G and 3G mobile backhaul over IP

Combined with the high-performance Packet Processor, the CDM-625 can help you manage the increasing data and video and transition from 2G to 3G networks. The CDM-625's Packet Processor instantly increases the user experience, drives customer satisfaction and lowers CAPEX & OPEX. Contact us to learn more about how you can get the most out of your satellite backhaul network.

