

MXDMA[®]

SEAMLESS DYNAMIC BANDWIDTH ALLOCATION AT SCPC EFFICIENCY

ST Engineering iDirect's MxDMA[®] is the return satellite technology that incorporates the best features of MF-TDMA and SCPC technologies, solving the difficult choice of having to select one or the other.

ST Engineering iDirect's MxDMA[®] is a patented, efficient and dynamic multiple-access waveform which enables service providers to share satellite capacity more efficiently over a group of satellite terminals.

The MxDMA return technology adjusts the frequency plan, the symbol rate, the modulation, coding and power in real-time for every terminal in the satellite network. These adjustments are based on the return traffic demand, the network Quality of Service (QoS) management and channel conditions for the terminal population in the network.

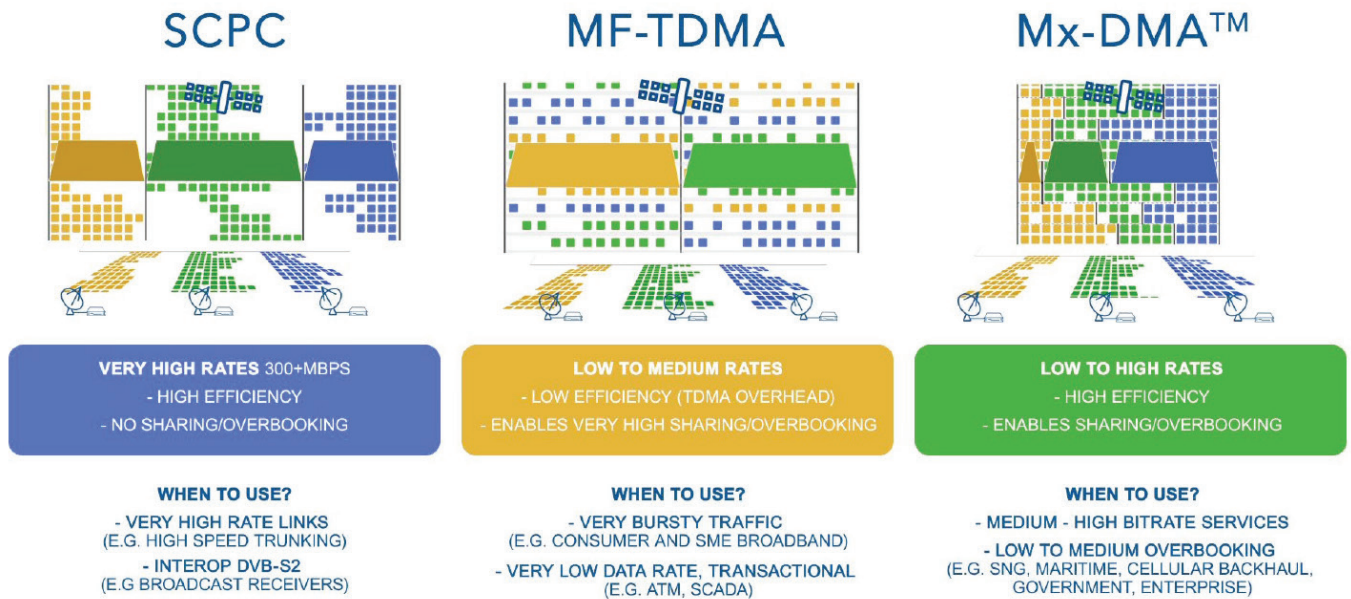
Within the MxDMA return link, each carrier is assigned to only one terminal, achieving SCPC-like maximum return efficiencies. At the same time, the flexibility of MF-TDMA can be maintained as MxDMA allocates bandwidth based on real-time demand from each terminal and QoS profiles. In other words, as the traffic demand for a remote terminal changes, bandwidth will be allocated on the fly. If the traffic within the terminal becomes more important, extra bandwidth will be assigned to the carrier assigned to the terminal based on QoS and priority rules. The entire allocation operation is performed seamlessly without any data packets being lost.

MxDMA leverages the highly efficient coding technique called HRC (High Resolution Coding) making it particularly well suited for low-to-medium rate applications between 32 kbps and 70 Mbps (20Mps). HRC provides a level of efficiency comparable to DVB-S2 with a 5% roll-off factor in order to get as many bits through the available bandwidth as possible. In contrast to DVB-S2, the HRC coding also handles low throughput speeds in SCPC mode without the harmful latency effects that could hamper voice traffic or video streaming services. HRC optimizes low-to-medium rate traffic and avoids latency over satellite by using short block codes. With the new release Dialog Release 2.3 HRC will extend the maximum carrier size of MxDMA from currently 20Mps to 68Mps allowing up to 200 Mbps on the return for a terminal.

DIALOG

powered by

Newtec  **iDIRECT**



Benefits

- Satellite service providers can select the best transmission technology for their particular application, service or traffic type.
- MxDMA combines the best qualities of SCPC and MF-TDMA and solves the difficult choice of selecting one or the other.
- The implementation typically doubles the transponder throughput using the same bandwidth or alternatively reduces the required space segment capacity by 50%. Specifically this means when compared to SCPC DVB-S2 with 20% roll-off, it provides 50% bandwidth savings or doubles the number of customers per MHz.
- For shared and overbooked services the bandwidth savings for MxDMA are more than 50%, equivalent to serving more than twice as many customers in the same bandwidth.
- For fixed bit rate services, MxDMA can guarantee high service availability with hardly any rain fade margin.

Introducing MxDMA MRC

Building on the well-established, award winning MxDMA technology that utilizes HRC, MxDMA MRC (Multi-Resolution Coding) will offer unprecedented service agility, extending the availability of MxDMA to very large networks and expanding the applicability and use of the technology to include a full spectrum of use cases.

The introduction of MxDMA MRC brings forth the full scalability of TDMA return link technologies to the original MxDMA HRC return at the same efficiency levels. Service providers can cover a myriad of use cases in a single return link, from cruise ships and large enterprise customers to SCADA and broadband access, sharing satellite capacity more efficiently over a group of satellite terminals and applications achieving the lowest Total Cost of Ownership (TCO).

MxDMA MRC is a return link technology that combines the benefits of MF-TDMA (ideal for bursty traffic and higher contention services) and the spectrum efficiency of SCPC (more applicable to dedicated higher data and video rate return links) into a single return technology suited to a greatly expanded set of applications. MxDMA scales in MHz independent of the number of terminals so customers may be served with a single return link for the majority of their use cases, minimizing operational complexity and maximizing statistic multiplexing. MxDMA MRC delivers these benefits by maintaining the industry-leading spectral efficiency of MxDMA HRC while drastically improving the agility, scalability and fill efficiency. Designing an MxDMA MRC link does not require precise knowledge of the traffic and terminal mix as the link self-optimizes in real time. Moreover, the high efficiency enables bandwidth savings, higher throughput, better network availability and substantial terminal cost savings.

The first release of MxDMA MRC will be available soon to early adopters on the Dialog platform.