



Product
Portfolio

Evolution Series IP Long Haul

Easy migration from TDM to all-IP

Evolution Series IP Long Haul is a versatile and cost-effective microwave radio solution for long distance, high capacity telecommunication networks. It allows carriers to smoothly migrate from legacy TDM to all-IP, satisfying the ever-increasing demand for bandwidth - while keeping revenue generating 2G/3G services intact. Evolution Series IP Long Haul is available in all frequency bands from 4 to 13 GHz and provides 4 Gbps aggregated Ethernet traffic.



High Power, High Performance Radio

- **Best-in-Class Reliability**
Unmatched quality, field-proven long haul radio
- **Meeting Bandwidth Demand**
Pluggable modules, upgradable capacity, "pay-as-you-grow"
- **Simplified Logistics**
Full-band transceivers - fewer spare parts
- **Smooth Migration to All-IP**
Modular architecture, easy and cost-effective upgrade
- **Significant OPEX Reduction**
Lowest power consumption in the Industry

CERAGON



IP Transport for Your Business - with Evolution Series IP Long Haul

Mobile and telecom infrastructure operators, government authorities and broadcast carriers require the right technology to transport large amounts of data. Smart IP-enabled solutions allow them to balance between investment costs and the need to evolve.



Mobile Communication



Rural Communication



Digital Broadcast



Secure Networks

Migrating Mobile Operators

In yesterday's world, mobile networks were mostly built to provide voice and text communication. Operators were concerned with initial network deployment, coverage and subscriber base growth.

Today, subscribers demand more. They want to connect and share, going far beyond email communication and simple voice calls. The revenue per bit continually drops, operators need to switch to IP to efficiently monetise the multimedia traffic.

Ceragon's microwave enables easy upgrade from legacy TDM to all-IP, offering cost-cutting technology and long term expertise in long distance communication links.



Broadband to Remote Locations

To bridge the digital divide and connect rural areas to the world of communication, carriers opt for microwave, the only economical way to bring high-speed Internet to remote locations.

Ceragon's advanced long haul solution provides unmatched performance while simplifying deployments to allow operators to make broadband accessible. Enabling smooth migration to all-IP networks, it helps bridge the digital divide quickly and cost effectively.

Digital Broadcast

The broadcast networks are rapidly migrating to digital broadcast technology. The distribution and contribution network require upgrades to cater for the new services.

Whether expanding the network or migrating to all-IP, Evolution Series IP Long Haul is the right choice. Evolution Series IP Long Haul and its predecessors have for many years been the reliable backbone of a wide range of national broadcast networks worldwide.

Secure Networks for Government and Defense

Government networks, border control, military and police require high speed communication networks to efficiently access and exchange information.

Secure networks for IP connectivity, TDM, video conferencing, client/server communication can effectively be provided by Evolution Series IP Long Haul.



Your Choice for Migration from TDM to All-IP

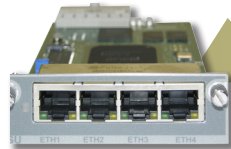
Competition has never been fiercer, margins remain under constant pressure. Challenged by the pressing demand for more bandwidth, operators turn to technology to minimise OPEX and satisfy the market. Evolution Series IP Long Haul is the technology and the solution.

The Evolution Series hardware is designed to work in TDM, hybrid and all-IP/Ethernet modes, where a simple change of interfaces is required to achieve the desired configuration.

Migration with Evolution Series IP Long Haul solution means:

- Same radio, same indoor units
- Same network topology
- Minimal downtime
- Minimum effort
- Plug and play

SDH/Sonet Controller Unit



Native Ethernet Switch & Controller Unit

System Design and Technology

Combining innovation and long-term expertise, Ceragon delivers field-proven long distance radio with the right features to build reliable networks.

Multichannel ABC

Evolution Series IP Long Haul features Multichannel Adaptive Bandwidth Control, the unique technology for dynamic traffic distribution over several RF carriers. The packet distribution is based on physical layer, and is independent of packet flows and sizes.

The system automatically scales with available channels and capacities. Adaptive modulation is used to dynamically adjust link capacity. Compared with systems designed for TDM, Ceragon's IP Long Haul solution provides substantially higher service availability. In addition, advanced QoS mechanisms ensure that most important traffic is always prioritised.

Radio Protection

In addition to the traditional N+1 protection, where one standby channel protects all other channels, Evolution Series IP Long Haul is able to dynamically adjust overall capacity depending on the number of available channels and capacities. If a channel has degraded due to fading or failure, this channel is excluded from the distribution and the bandwidth will remain available for high priority traffic.

All-indoor and Split-mount

Evolution Series IP Long Haul is a flexible solution, allowing for both all-indoor and split mount configurations. Evolution Series is the only in its class to provide full transmit power in split-mount architecture, exhibiting the highest system gain on the market to deliver robust and resilient links.



Space Diversity

Space Diversity with IF combiner is available for all configurations, including indoor and split-mount. The use of Combiner Space Diversity is essential to improve system performance on difficult paths.

Spectrum Efficiency

The system allows for flexible channel arrangements, adjacent and co-channel operation with XPIC can be used in any combination. Different frequency bands can be combined in one multichannel system. This ensures very efficient spectrum utilisation.

Key Features

Highest possible capacity and efficiency at any channel bandwidth

- Up to 10 carriers per rack indoor configuration
- 8 carriers in split mount configuration
- From 10 to 450 Mbps Ethernet traffic per carrier
- Up to 4 Gbps aggregated Ethernet traffic
- Frequency bands 4, 5, L6, U6, 7, 8, 10, 11, 13 GHz
- Channel bandwidth 10, 28, 29.65, 30, 40, 56 MHz
- Standards: FCC & ETSI compliant
- Network interfaces: 6 Gigabit ports (SFP or electrical), nxSTM-1/OC-3, nxSTM-4/OC-12, 75xE1s/80xDS1s

Network features

- Embedded Carrier Ethernet switch
- Embedded TDM cross-connect
- Optional SDH/SONET ADM
- Full support for Synchronous Ethernet, including 2 MHz and TDM in/out

Traffic redundancy

- Multiple levels of protection: radio carrier, network port, service awareness (QoS) and integral support for rings
- Increased availability with dynamic capacity (Multichannel Adaptive Bandwidth Control)

High power, high capacities

- High transmit power up to 31dbm in all-indoor and split-mount
- Space Diversity with 3dB system gain increase
- Adjacent and co-channel operation with XPIC
- Hitless Adaptive Coding & Modulation (ACM) QPSK - 256 QAM
- Multi-band branching capabilities

Smart Network Management

- Comprehensive Network Management System (NMS)
- Integrated Web based Element Management System (EMS)
- Embedded IP router for management traffic
- Enhanced user access control for increased security
- Comprehensive Service OA&M tools
- Fast root cause identification

OPEX reduction

- Transceivers tunable across the full band - fewer spare parts, simplified logistics
- Best-in-class reliability, less site visits, minimal maintenance
- Simple system expansion and upgrade with modular design
- Lowest power consumption in the industry

Ceragon Comprehensive Network Offering:



Product
Portfolio



Network
Management



Professional
Services



Strategic
Partnerships

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