



Evolution Product Line

iDirect's Evolution® product line is built on the DVB-S2 standard with Adaptive Coding and Modulation (ACM). The product line comprises of iDirect's Evolution routers, line cards and software. Service providers can build high-performing satellite networks that improve bandwidth efficiency and lower operating costs.

Applications

Few organizations in the world can survive without constant connectivity. People demand IP voice, video and data applications wherever they are. Global enterprises in the heart of major cities need to connect to local offices all over the world. Governments need secure, high-speed networks able to be instantly deployed and deliver immediate access to mission-critical applications. Maritime vessels scattered across the seas need reliable ship-to-shore communications. Utility companies are modernizing the power grid and need to expand their networks while overcoming challenges of distance, weather and terrain. Widely dispersed populations currently living beyond the reach of cellular service in remote, rural areas need voice and data services.

Key Features

- ◆ DVB-S2/ACM for bandwidth efficiency
- ◆ Group QoS and QoS enhancements create flexible traffic configuration and prioritization
- ◆ Adaptive TDMA allows higher network availability
- ◆ SCPC Return provides dedicated bandwidth
- ◆ Enhanced waveforms and Superburst acquisition improve inbound performance
- ◆ Reduced roll-off factors increase spectral efficiency
- ◆ IP multicasting throughput improvements with Multicast Fastpath
- ◆ High-speed COTM features
- ◆ Wide range of remotes, including X1 and X7, meets any market application
- ◆ TRANSEC, FIPS 140-2 Level 2 compliance for defence
- ◆ Multichannel demod line cards save infrastructure costs

iDX Software

iDX software is the platform operating software, fully integrated across iDirect's Evolution remotes, hubs and line cards, and network management. iDX incorporates iDirect's most advanced communication technologies, fueling the performance gains and innovative features that customers depend upon for reliable and effective service.

It dynamically supports star and SCPC Return topologies through Adaptive TDMA and DVB-S2 data transmission, enables Group QoS bandwidth allocation, and offers secure AES encryption with military-grade TRANSEC and FIPS¹ standards compliance. Ready-to-access mobility and portability functionality provide high-quality, reliable user experience for communications on the move or on the pause.

By bringing the very latest technology features to the network core while maintaining backwards compatibility through software upgrades, iDX software enables network operators to take advantage of new innovations while preserving their initial hardware investment.

Adaptive TDMA

iDirect's operating system, iDX 3.2, expands on the Evolution platform's performance with several major efficiency enhancements. The most significant of these is Adaptive TDMA, which

improves return channel performance and increases network availability under rain fade and satellite link degradation. Adaptive TDMA enables an inroute group to support carriers with different symbol rates and MODCODs.

The network dynamically adjusts to changing uplink conditions based on each remote's demand and the system's Quality of Service configuration. With Adaptive TDMA, service providers are able to boost their network throughput, increase network availability and reduce bandwidth and terminal costs or combine these benefits to fit their business needs.

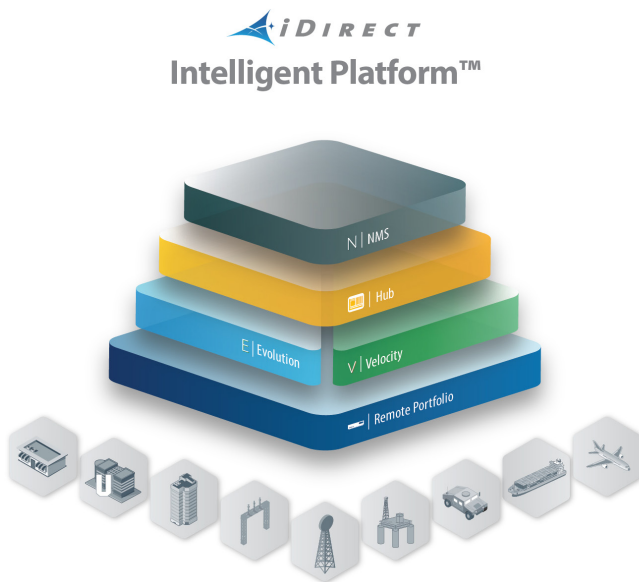
Advanced Remote Performance

As one of the newest remote available for the Evolution platform, the X7 is built on an entirely new multi-core hardware system and optimized to deliver best-in-class DVB-S2/ACM and Adaptive TDMA performance to support bandwidth heavy applications and emerging high throughput satellite (HTS) services. The X7 features an embedded second demodulator² with a fully independent RF chain, enabling even higher performance rates with future operating software releases and line card technology. The X7 also features licensable SCPC Return² and an 8-port embedded switch for managing multiple user groups.

1 - Certification pending 2 - Future release



Intelligent Platform Overview



Evolution, built on the iDirect Intelligent Platform™, is an IP-based satellite communications system engineered to deliver the highest quality broadband connectivity wherever and whenever it's needed. The Platform positions operators and service providers for long-term growth and success with the ability to access a wide range of markets, manage operational and capital costs effectively and create unique value for customers.

The Platform consists of a universal hub and network management system that supports iDirect's Evolution® and Velocity™ product lines. Each product line comprises a series of line cards, operating software and a portfolio of both dedicated and dual-mode remotes to provide investment protection with the flexibility to upgrade to higher capabilities in the future. Every element — from hardware components to software features embedded in the Platform — shares a common development approach based on performance, efficiency, flexibility and functionality.

The fundamental value of the Platform lies in the extremely tight integration of the hardware and software architecture with a dynamic feature set that makes it highly flexible in its ability to handle diverse market needs — enabling everything from basic Internet and VoIP, to highly sophisticated application suites such as video conferencing and digital signage in fixed and mobile environments alike.

Product Portfolio

Network Management System

Manage complex, large-scale networks; run an efficient, reliable and high-quality operation; and continually improve customer satisfaction

Hub and Line Card System

Universal capabilities and cost-effective modular design to establish and scale satellite networks

Evolution

Award-winning product line designed to meet a broad range of customer requirements from narrowband to demanding high-bandwidth applications

Velocity

Builds on the capabilities of Evolution for greatly expanded scale. Designed for satellite operators deploying HTS architectures

Remote Portfolio

Designed to meet distinct end user requirements and support a wide range of data speeds – from narrowband to extreme bit rates. Multiple form factors, including desktops, rack-mounts, outdoor units and router boards

The iDirect Advantage

The Evolution® product line fully integrates with the advanced features of the iDirect Intelligent Platform™ to help operators amplify the benefits of DVB-S2:

- **Flexible, Efficient Core Architecture:** iDirect hub can connect to any frequency band on all satellite architectures. The Platform is built on DVB-S2/ACM with Adaptive TDMA and multiple efficiency technologies such as 2D 16-State FEC coding to allocate bandwidth efficiently over distributed networks, while automatically adjusting to dynamic traffic demands and changing network conditions.
- **Modular Design for Scalability:** The modular hub and line card system enables operators and service providers to minimize initial capital costs, offer multiple service types from a central hub, and scale business one network at a time in a “pay as you grow” manner. It also allows them to operate across all business models, including VNO, HNO and managed service models and easily add new capabilities with over-the-air software upgrades.
- **Integration with Telecom Core Networks:** The Platform mirrors the quality and reliability of terrestrial services, ensuring an enterprise-class user experience, and can operate seamlessly as part of an integrated global IP network.
- **Advanced Quality of Service and Reliability:** iDirect’s QoS technologies allow operators and service providers to create application-level Service Level Agreements within a customer’s network and offer multi-tiered services. The Platform’s hub diversity and redundancy and seamless network failover protects overall network integrity and delivers carrier class reliability.
- **Data Security:** The Platform supports Advanced Encryption Standard (AES) for commercial applications, as well as advanced military security standards, such as TRANSEC, FIPS and STANAG.
- **Mobility Capabilities:** Industry-leading mobility functionality lets operators and service providers capitalize on emerging maritime, government and defense, and aviation markets.
- **Operational Efficiency:** The Intelligent Platform’s NMS enables operators and service providers to run their entire business operations more efficiently and profitably.

Service providers can translate these gains into broad business advantages. They can lower operating costs, access new markets and forge competitive advantages to win new customers. They can improve SLAs through better bandwidth availability, throughput rates and reliability. And with iDirect, they can accomplish all this while protecting their current investment in an iDirect hub.



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