iDirect Hub Infrastructure

The iDirect Hub Infrastructure solution provides the high performance needed for today's IP broadband networks in a high-density package that provides market-leading throughput and reduces the total cost of ownership. Our flexible state-of-the-art hub infrastructure is equipped with the latest virtualization and cloud technologies for strengthened security, streamlined operations, and scalable deployment options. With the iDirect Hub Infrastructure solution, operators can meet the need for high-quality connectivity today and be assured of capacity and scale as bandwidth demand increases. Our architecture is engineered to grow with your demands, ensuring seamless expansion without compromising efficiency.

Highly Flexible and Scalable

The iDirect Hub Infrastructure is a solution for Dialog gateway deployments, serving a multitude of beams, transponders, or satellites. The use of a baseband matrix brings N:M redundancy for up to 32 multicarrier modulators and/or demodulators in one rack. In addition, the matrix fan in/out capability allows for simple interfacing with the gateway RF infrastructure. Capacity can be extended easily and rapidly by adding additional multicarrier modulators, demodulators, servers, and activation in the Dialog NMS. High-capacity multicarrier modulator units support DVB-S2X carriers, whereas the high-capacity multicarrier demodulator units can support our patented Mx-DMA return link technology. The use of Private Cloud technology enables flexible VNF deployment based on scalable compute and storage resources.

Best-in-Class Performance

The iDirect Hub Infrastructure is designed for operators seeking high throughput through its 10 Gbps Ethernet switching infrastructure. With support for Forward DVB-S2X carriers up to 500 Msps, they can leverage the high bandwidth transponders provided by High Throughput Satellites (HTS).

Markets

Enterprise
SME
Cellular Backhaul
Government / Defense
Offshore and Maritime
Aero
Land Mobility

Main Advantages:

- Highly flexible and scalable architecture
- Optimized baseband density & flexibility with baseband matrix
- Advanced security with integrated cloud native virtualization layer based on OpenShift
- Up to 500 Msps forward carriers
- Carrier grade reliability with built-in redundancy
- Support for Mx-DMA HRC and MRC return links
- Pay-as-you-grow

Forward Channel

Standard	DVB-S2/DVB-S2X ACM
Modulation	QPSK to 256APSK
Encapsulation	GSE, MPE
Carrier bandwidth	Max. 500 Msps, 525 MHz
Roll-off	5, 10, 15, 20, 25 and 35%
Data throughput	2 Gbps
Pre-distortion	Equalink

Return Channel

Mx-DMA High-Resolution Coding (HRC)

Modulation	VLSNR, QPSK, 8PSK, 16APSK, 32APSK
Carrier bandwidth	0.030 to 20 Msps

Mx-DMA Multi-Resolution Coding (MRC)

Modulation	QPSK, 8PSK, 16APSK, 64APSK
Carrier bandwidth	0.1 to 100 Msps

Hub Architecture

Modulator/Demodulator	Up to 32 slots per rack
Modem Hardware	MCM7500 Multicarrier Modulator MCD7500 Multicarrier Demodulator
Modem Redundancy	N:M redundancy
Fan in/out baseband matrix	
Private Cloud Infrastructure	
Scalable Compute & Storage options	

Hub Interfaces

Ethernet User data	10 GbE (Optical or RJ45)
Ethernet Management data	1 GbE (RJ45) or 10 GbE (Optical or RJ45)
Out of Band Management	1 GbE (RJ45) or 1 GbE (Optical)
RF Output per satellite network	L-band (950 - 2150 MHz)
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Reference Input	IEEE1588v2 or 10 MHz

Mechanical & Environmental

Operating temperature	10° to 30°C / 50° to 95°F
Humidity	10 to 85% relative, non-condensing
Storage temperature	-30° to 60°C / -22° to 140°F

Mains Power Supply

Power Supply	380-400 VAC	3PH+N+GND (EU+AUS)
	208 VAC	3PH + GND (US)

DBR2000 / DCR2100

Specifications

Hub Modulator and Demodulators

The flexible state-of-the-art hub infrastructure is equipped with the latest virtualization and cloud technologies for strengthened security, streamlined operations and scalable deployment option and with modulators and multicarrier demodulators according to the satellite network requirements. Full detailed specifications can be found on the respective product sheets on our website.

MCM7500 Multi-Carrier Modulator

DVB-S2 / DVB-S2X

Modulation	QPSK to 256APSK
Carrier bandwidth	Max. 500 Msps, 525 MHz
Roll-off	5, 10, 15, 20, 25 and 35%
Pre-distortion	Equalink
Number of Carriers	1
Data throughput	2 Gbps

TFR210 PTP Grandmaster

Timing Source

Reference Clock	Internal: Oven-controlled crystal oscillators (OCXO) External: 10MHz reference input
PTP Probe Option	1588v2 PTP Grandmaster Clock 1588v2 PTP Slave Clock
Management	1x GigE management interface supporting WebUI, CLI and REST-API
Outputs	1x GigE output supporting PTP

MCD7500 Multi-Carrier Demodulator

Mx-DMA High -Resolution Coding (HRC)

Modulation	VLSNR, QPSK, 8PSK, 16APSK, 32APSK
Carrier Options:	Up to 24 carriers in range 0.03 - 20 Msps
Processing bandwidth	72 MHz
Data throughput	216 Mbps

Mx-DMA Multi-Resolution Coding (MRC)

Modulation	QPSK, 8PSK, 16APSK, 64APSK
Carrier Options:	Up to 512 carriers in range 0.1 - 100 Msps
Processing bandwidth	105 MHz
Data throughput	400 Mbps