iDirect Hub Baseband XBB

ST Engineering

The XBB delivers unmatched performance and efficiency for modern IP broadband networks in a compact, high-density design. iDirect's on-prem, universal baseband system, XBB, delivers flexibility, efficiency, and high-througput capabilities across all markets.

Best-in-Class Density

This highly compact universal baseband system consists of a 1RU chassis housing two iDirect Baseband Modules (DXM2100) in either modulator or demodulator mode. The modular architecture of the XBB allows for easy integration of the DXM2100 combined with easily accessible, hot-swappable power supply units and cooling fan modules reducing downtime and simplifying operational support costs.

Best-in-Class Performance

The DXM2100 in modulator mode supports up to 32 DVB-S2X forward (physical) carriers with up to 500Msps per carrier. In demodulator mode, the DXM2100 module supports throughput in Mx-DMA MRC up to 800 Mbps aggregate or in DVB-S2X* returns with up to 1.5 Gbps throughput. The 10GbE LAN interfaces combine traffic to minimize cabling and switch costs, while the built-in DIFI interface allows for the digital conversion of signals within a standard IP network, resulting in more efficient data handling and better interoperability between digital systems.

Flexible Deployment Architectures

The XBB's compact design makes it highly versatile and suitable for a wide range of deployment scenarios. For new distributed HTS gateways, the XBB can be deployed in the iDirect Baseband Rack (DBR2100), enabling seamless scalability to support hundreds of high-capacity beams in large-scale satellite communication operations. This adapability ensures the XBB meets the demands of diverse network sizes and configurations.

Markets

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

Main Advantages:
- 1RU, rack mountable chassis (XBB) with 2 module slots enables multiple in and outbound networks and support for DVB-S2/S2X* and MRC.
- 10GbE/25GbE SFP+ LAN interfaces aggregate traffic to minimize cabling and switching costs.
- 100G QSFP28 LAN interfaces for DIFI support.*
- Redundant and hot swappable power supply/cooling modules.
- Chassis architecture ensures flexibility and opportunities for future upgrades and enhancements

INTUITION

iDirect

XBB Front

XBB Back

iDirect Hub Baseband Specifications

XBB Chassis	Compact modular chassis, housing iDirect Modules (DXM2100) in both modulator and demodulator modes
Number of Modules	Up to two modules (DXMs) that support iDirect's return technology Mx-DMA MRC as well as DVB-S2 / DVB-S2X*

Power Specifications

Input Voltage Range	100-240V
Power Frequency	50/60 Hz
Power Consumption	Maximum 402W (fully loaded chassis)

RF Specifications (DXM2100)

IFL Frequency Range	950 - 3450 MHz
IFL Interface	L-Band, SMA, reference clock
IFL Impedance	50 Ω
IFL Return Loss	15 dB typical

DXM2100 Modulator Mode

Network Technology	DVB-S2X
Aggregate Symbol Rate	1.5 GHz bandwidth
Symbol Rate	5 to 500 Msps per carrier
Number of Carriers	Up to 32 physical carriers Up to 40 virtual carriers
Throughput	Up to 8.4 Gbps aggregate throughput
Roll-off Factor	5, 10, 15, 20, 35%

Platform and release dependent

Mechanical and Environmental

XBB Chassis Size	1RU 19-inch width, 20.4 inch depth
Weight	10.4 kg (fully loaded chassis) 9.0 kg (with 1 x DXM)
Temperature	Operating: 0°C to +50°C Storage: -40°C to +70°C
Humidity	93%, non-condensing at 30°C
Power Supply / Fan Module	2x modules, Hot swappable Each module includes one power supply and three fans. The two modules operate in a 1+1 redundant power scheme. XBB is tolerant to the loss of a single fan.

DXM2100 Demodulator Mode

Network Technology	Mx-DMA MRC
Aggregate Symbol Rate	Up to 210 MHz
Symbol Rate	Up to 100 Msps per carrier
Number of Carriers	Up to 4 iNets, Up to 1024 carriers
Throughput	Up to 800 Mbps aggregate throughput

Network Technology	DVB-S2X*
Aggregate Symbol Rate	Up to 2.5 GHz
Symbol Rate	5 to 500 Msps per carrier
Number of Carriers	Up to 4 carriers of 500Msps Up to 16 carriers of 100Msps
Throughput	Up to 6 Gbps aggregate throughput