

iDirect® Series 12200 Universal Hub (Industrial 4-Slot)

The ideal sized hub for deploying multiple high performance IP broadband networks in harsh environments

At 17.5 inches wide by 10.5 inches high, the iDirect Series 12200 Universal Hub (Industrial 4-slot) chassis is a cost-effective, compact, and durable solution for military, comms-on-the-pause, first responders, disaster recovery, or other field operations, who will benefit from the flexibility, efficiency, and reliability of an iDirect hub solution. The hub consists of 4+1 slots and up to 4 IF interfaces, enabling multiple in- and outbound networks on four satellites.

Industrial Design

The industrial, compact hub chassis' design is based on guidelines of MIL-STD 810F for operation and storage in the field. Created by the U.S. government, the MIL-STD 810F standard specifies test procedures to measure levels of operational and storage durability under harsh environmental conditions. The Series 12200 Universal 4-Slot Hub is tested in accordance of the standard for temperature, altitude, humidity, shock and vibration performance.

Scalability and Maximum Flexibility

Service providers are able to start with a smart and feature-rich solution while offering the same functionality as iDirect's larger hubs, including: integrated IP routing, TCP/IP acceleration, advanced Group QoS, and military-grade encryption. Scalability is furthermore achieved through a hub daisy-chaining capability. The hub is highly flexible, supporting star and mesh topologies and bandwidth can be increased on the fly up to 138 Mbps on the outbound and up to 10 Mbps on the inbound.

Greater Control and Manageability

Convenient plug-in modules, with an extensive LED array, offers even more control and manageability. The management control module includes power and fan status module reset switches, audible alarm on/off, and over temperature sensor switches. The LED array provides instant status checks on IF modules, line cards, power supplies, fans, RCM and chassis conditions. Simple and intuitive, the iVantage™ network management system is a complete suite of software-based tools for configuring, monitoring, and controlling an entire satellite network from a single or multiple locations.

Ease of Mind with Built-in Redundancy

Reliability is achieved through redundant components: power, fan, RCM, as well as optional outdoor power modules.



Features

- ◆ MIL-STD 810F certified for temperature, altitude, humidity, and shock/vibration
- ◆ Compact design with four line card slots and fifth slot for configuration
- ◆ Interface with up to four satellites from one hub
- ◆ Supports DVB-S2/ACM or iNFINITI TDM rates up to 138 Mbps on the outbound
- ◆ Supports star and mesh topologies
- ◆ High level of redundancy with integrated, convenient plug-in modules

iDirect Series 12200 Universal Hub (Industrial 4-Slot)



Network Configuration

IFM	4IF
SatCom Interfaces	Please refer to line card specification sheets for detailed frequency ranges
Line Cards Slots	4 plus 1 (5th slot can be used for configuration)
Remote Requirements	Works with any iFINITI® or Evolution Series remote

Line Card Specifications

Model	Designed for use with Evolution eM1D1 line card and iFINITI line cards: M1D1-IND, M1D1-T-IND Compatible with iFINITI line card M1D1-TSS*
Max. IP Data Rates Per Line Card	Downstream: up to 20 Mbps (iFINITI) or up to 138 Mbps (Evolution) Upstream: up to 10.8 Mbps (QPSK, .793 FEC, unlimited NMS under optimal conditions)
Network Access Scheme	iFINITI TDM or DVB-S2/ACM on the outbound, deterministic MF-TDMA on the inbound
Topologies	Star, mesh
LAN Interface	RJ-45, Cat 5e, 10/100/1000 Mbps Ethernet

Power Specifications

Input Voltage Range	100 – 240 VAC, single Phase, 50-60 Hz, 6A max at 100 VAC, 3A max at 240 VAC
Frequency	47 – 63 Hz
Outdoor Power Module (OPM) — Optional	BUC - 24 VDC or 48 VDC, 1+1 redundancy, hot-swappable (BUC up to 20W C-Band, 16W Ku-Band) LNB - 14 or 19 VDC
10 MHz Reference	10 MHz reference to BUC and LNB available via line card
Main Power Module	525 Watt, 1+1 redundancy, hot-swappable
BTU	1793 BTU/hr.

Mechanical and Environmental

LED Display Module	Line Card Status, IF module status, Fan status module (FSM), RCM A and B alarm, BUC power supply A and B alarm, main power supplies, A and B over temperature status and A and B power good, control module status, chassis over temp status
Size	W 17.5 in (44.45 cm) x D 19 in (48.26 cm) x H 10.5 in (26.67 cm) (6U)
Weight Empty	60 lbs (27.2 kg)
Temperature	Operational: -22° to 140°F (-30° to 60°C), tested in accordance with MIL-STD 810F Storage: -40° to 176°F (-40° to 80°C), tested in accordance with MIL-STD 810F
Humidity	Operational over range of 0 to 95% non-condensing, tested in accordance with MIL-STD 810F
Altitude	Operational: Up to 10,000 feet (< 3,048 meters), tested in accordance with MIL-STD 810F Storage: Up to 35,000 feet (< 9,144 meters), tested in accordance with MIL-STD 810F
Vibration and Shock	Operational and storage profile tested in accordance with MIL-STD 810F
Fans	One fan status module, 2 fans 1+1 redundant, hot-swappable
Management Control Module	Power reset switch, audible alarm on/off switch, over temperature sensor, fan status module, reset switch
Start of Frame (SOF)	Start of Frame toggle switches (on front panel) for timing group configuration
Reference Clock Module	10 MHz, 1+1 redundant, with auto fail-over, hot-swappable, external GPS Ref. capable Hub daisy chain capable — 4-slot to 4-slot (2 maximum)
Radio Standards	EN 301-428 v1.3.1 — Ku-Band System Level Specification EN 301-443 v1.3.1 — C-Band System Level Specification
Safety Standards	Complies with IEC 60950, EN 60950-1, UL 60950-1, CSA C22.2 No.60950-1-03
Emission Standard	Complies with EN 61000-3-2, EN 61000-3-3, EN 55022 Class A, FCC Part 15 Class A, CISPR 22 Class A
Immunity Standard	Complies with EN 55024, EN 301-489-1, EN 301-489-12, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
Certification	FCC, CE & RoHS compliant

* M1D1-TSS line card does not meet industrial-grade standards as specified in MIL-STD 810F