

# iDirect® Series 12100 Universal Hub (Commercial 4-Slot)

## The ideal market-entry size hub for service providers operating multiple high performance IP broadband networks

The Series 12100 Universal Hub (Commercial 4-slot) chassis is a cost-effective, compact, and highly scalable solution for service providers operating more than one network, who benefit from the same level of flexibility, efficiency, and reliability as larger iDirect hub solutions for deployment at a teleport or an enterprise location.

### Smart Design With Great Scalability

The hub consists of 4+1 slots and up to 4 IF interfaces enabling multiple in- and outbound networks on 4 satellites. The fifth line card slot can be used for configuration. The compact design enables service providers to start with a smart and feature-rich solution when building new networks, while offering the same functionality as iDirect's larger hubs including integrated IP routing, TCP/IP acceleration, advanced Group QoS, encryption, iVantage™, iDirect's industry-leading NMS (network management system). Scalability is furthermore achieved through a hub daisy chaining capability.

### Maximum Flexibility

The hub is highly flexible, supporting the entire array of topologies and access schemes including star, mesh, SCPC, deterministic MF-TDMA and TDM or DVB-S2/ACM all in the same chassis. Bandwidth can be increased on the fly up to 20 Mbps per iINFINITI line card, and up to 138 Mbps per Evolution line card on the outbound and up to 10 Mbps on the inbound. Furthermore, the hub supports up to 4 IF interfaces, supporting up to 4 satellite connections.

### 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.

### Greater Efficiencies Through Bandwidth Optimization

With iDirect's most advanced built-in Group QoS functionality, service providers can increase quality of service levels, bandwidth optimization, and traffic prioritization. Group QoS allows for unparalleled flexibility when partitioning bandwidth groups by allowing traffic differentiation by groups of remotes, by applications, and by VLANs.

### Ease of Mind With Built-in Redundancy

Uncompromised reliability is achieved through redundant components: power, fan, RCM, as well as optional outdoor power modules and future line card redundancy.



## Features

- ◆ Compact, scalable 4-slot design for operation inside a teleport or enterprise
- ◆ Interface with up to 4 satellites from one hub
- ◆ Integrated, hub daisy chaining
- ◆ Supports multiple topologies including star, mesh and SCPC
- ◆ Supports DVB-S2/ACM or iINFINITI TDM rates up to 138 Mbps on the outbound
- ◆ High level of redundancy with integrated, convenient, plug-in modules

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### Network Configuration

<b>IFM</b>	1IF or 4IF (via plug-in modules)
<b>SatCom Interfaces</b>	Please refer to line card specification sheets for detailed frequency ranges
<b>Line Cards Slots</b>	4 plus 1 (5th slot can be used for configuration)
<b>Remote Requirements</b>	Works with any iNFINITI® or Evolution™ remotes

### Line Card Specifications

<b>Model</b>	Designed for use with iNFINITI line cards: M1D1, M0D1, M1D1-T, M1D1-TSS, M1D1-iSCPC Designed for use with Evolution line cards: XLC-10, XLC-11, XLC-M, eM1D1
<b>Max. IP Data Rates Per Line Card</b>	Downstream: up to 20 Mbps (iNFINITI) or up to 138 Mbps (Evolution) Upstream: up to 10 Mbps (QPSK, 0.793 FEC, unlimited NMS under optimal conditions)
<b>Network Access Scheme</b>	TDM, DVB-S2/ACM and deterministic MF-TDMA
<b>Topologies</b>	Star, mesh, iSCPC
<b>LAN Interface</b>	RJ-45, Cat 5e, 10/100/1000 Mbps Ethernet

### Power Specifications

<b>Input Voltage Range</b>	100 – 240 VAC
<b>Frequency</b>	47 – 63 Hz
<b>Outdoor Power Module (OPM) — Optional</b>	24 VDC or 48 VDC, 1+1 redundancy, hot-swappable (BUC up to 20W C-Band, 16W Ku-Band)
<b>Main Power Module</b>	525 Watt, 1+1 redundancy, hot-swappable
<b>BTU</b>	1793 BTU/hr.

### Mechanical and Environmental

<b>LED Display Module</b>	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 temperature status
<b>Size</b>	W 17.5" x D 19" x H 10.5" (6U) (W 44.45 cm x D 48.26 cm x H 26.7 cm)
<b>Weight Empty</b>	60 lbs (27.2 kg)
<b>Operating Temperature and Humidity</b>	0° to 45°C (+32° to +113°F), 0–95% non condensing
<b>Operational Altitude</b>	Up to 10,000 feet (< 3,048 meters)
<b>Fans</b>	One fan status module, 2 fans 1+1 redundant, hot-swappable
<b>Management Control Module</b>	Power reset switch, audible alarm on/off switch, over temperature sensor, fan status module reset switch
<b>Start of Frame (SOF)</b>	Start of Frame toggle switches (on front panel) for timing group configuration
<b>Reference Clock Module</b>	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)
<b>Safety Standards</b>	Complies with IEC 60950, EN 60950-1, UL 60950-1, CSA C22.2 No.60950-1-03
<b>Emission Standard</b>	Complies with EN 61000-3-2, EN 61000-3-3, EN 55022 Class A, FCC Part 15 Class A, CISPR 22 Class A
<b>Immunity Standard</b>	Complies with EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11