

# 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 iNFINITI 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 iNFINITI TDM rates up to 138 Mbps on the outbound
- ◆ High level of redundancy with integrated, convenient, plug-in modules

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



### Network Configuration

IFM	1IF or 4IF (via plug-in modules)
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 iINFINITI® or Evolution™ remotes

### Line Card Specifications

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

### Power Specifications

Input Voltage Range	100 – 240 VAC
Frequency	47 – 63 Hz
Outdoor Power Module (OPM) — Optional	24 VDC or 48 VDC, 1+1 redundancy, hot-swappable (BUC up to 20W C-Band, 16W Ku-Band)
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 temperature status
Size	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)
Weight Empty	60 lbs (27.2 kg)
Operating Temperature and Humidity	0° to 45°C (+32° to +113°F), 0–95% non condensing
Operational Altitude	Up to 10,000 feet (< 3,048 meters)
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)
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 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11