



Features

- **Lowest Entry Level Price: Starting at \$50,000 for a fully-functional Hub including 4 inbound carriers (Upgradeable to 96)**
- **Maximum Flexibility: Economically Scalable**
- Up to 155 Mbps Forward link*
- Up to 24 Mbps Return Link*
- Support for 10 to 500 terminals
- DVB-S/S2/ RCS and/or DVB-SCPC
- Includes an Advantech Wireless Layer 3 Router!
- Up to 12 Mbps inbound per carrier (option)
- DVB-S2 CCM outbound maximizes bandwidth efficiency (VCM/ACM option)
- Optimized for IP and multi-media content
- Open standard design (DVB-RCS)
- Qualified with multiple IP/DVB broadcast platform vendors
- Interoperable with 3rd party SatLabs certified terminal vendors
- Unique and powerful multi-carrier demodulation technology
- World-class scheduling efficiency, maximizing bandwidth utilization
- Always-on
- User-friendly Network Management System (IMS100)
- Mesh Overlay (peer-to-peer) capability (option)
- TCP acceleration (option)

*Higher rates available on special order

Overview

The Discovery Hub 100 is the perfect starter system offering better value for your dollar than any other manufacturer. You get a fully functional hub, with 4 inbound carriers, scalable as your needs grow via software license, all for \$50,000. This means no downtime for throughput upgrades.

We have removed all barriers to entry. Advantech Wireless has configured many systems for quick turnaround. For example: If you are looking for a turnkey package, a complete fully functional Hub along with 50 Remote Terminals (our S4120), you can be operational for less than \$100,000.

Advantech Wireless, a world leader in satellite communications, offers the world's leading, two-way, open standard (DVB-RCS), broadband satellite access system. The Discovery Hub and in particular its Return Link Sub-System (RLSS), the RLS100, is at the heart of the broadband access system.

Hubs (including the RLS100, FLS100) are turn-key systems which can be installed in days to enable a wide range of public and/or private network topologies with satellite interactive terminals.

The RLS100 is a modular hub sub-system which can be integrated with new or installed IP/DVB broadcast platforms and IP switch/routing equipment to provide two-way satellite broadband access services. It is designed to receive inbound traffic, handle inbound and outbound signalling, schedule and control networks of satellite interactive terminals (available from multiple suppliers). A single scalable RLSS unit can support networks ranging from ten to 500 simultaneously logg-on terminals.

The FLS100 is the outbound equivalent of the RLS100. The FLS100 takes IP traffic and using Multi-Protocol Encapsulation (MPE) transforms the data into an MPEG2 format for transmission on the outbound using its embedded DVB-S/S2 modulator.

System Costs

Advantech Wireless' Hubs and Terminals are highly flexible and several different network architectures are possible. Some key features of the DVB-RCS Hub include:

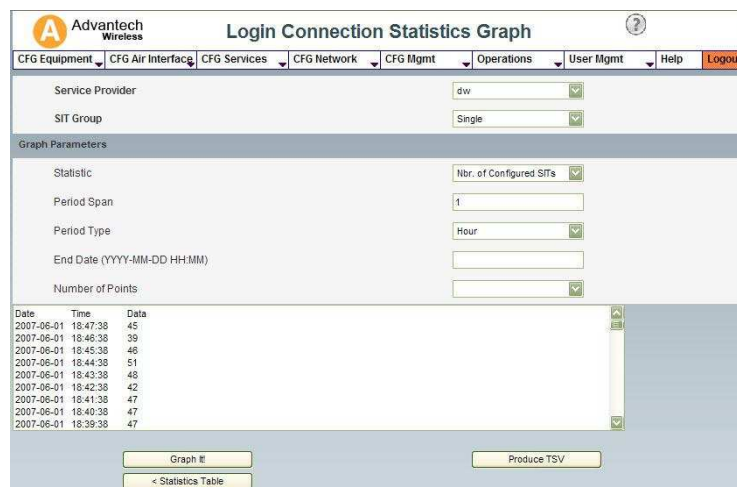
- Multi-carrier demodulation (MCD) card upgradeable to up to 96 carriers by remotely installed software license.
- Frequency independent—hubs, terminals and onboard processors can be operated in any frequency band (e.g., Ku, Ka, C, X or hybrids of these).
- Satellite versatility—the system can operate with the forward and return link on the same satellite, or on different satellites.
- Terminal diversity—networks can support receive-only terminals at the same time as two-way terminals, as well as both mesh and star topologies of terminals.
- Network Architecture supported – DVB-RCS, DVB-SCPC, Multi-mode (DVB-RCS/DVB-SCPC), Mesh/ Star, OBP.

Advantech Wireless' entire system, as well as the DVB-RCS standard, have been designed to minimize the cost of scaling a broadband access network from terminal populations as small as a few tens of terminals to hundreds.





Performance of access layer protocols is highly dependent on traffic profile. Advantech Wireless' implementation of DVB-RCS, utilizing dynamic assignment techniques mandated in the DVB-RCS specification, has been specifically designed and tuned for multi-media traffic. In comparison, other VSAT systems are less dynamic and less flexible.

IMS100

Advantech Wireless' has responded to market demands by developing a powerful management system capable of meeting the functional and scalability requirements of a variety of system configurations. The Hubs feature the IMS100, which provides Hub & Network Operator Tools, Service Provisioning Tools and Multiple User Interfaces. The management of SLAs, Return Link and Forward Link Quality of Service (QoS) and the daily management of SITs, is made easy with the use of the IMS100.



Advantech Wireless Hub Systems Offerings

	Discovery 100	Discovery 200	Discovery 300	Raptor
				
Standard Rates Supported				
Forward Link Mbps*	155	n x 155	n x 155	155
Return Link Mbps*	24	72 (3x24)	120 (5x24)	24
# of Terminals Supported	10 – 500	100 – 1,500	1,000 +	10 – 500
*Maximum. Other rates are available on special order. n = number of outbound links				

Air Interface—Outbound

Modulation
Information Rates

Air Interface—Inbound

Modulation
Max Burst Info rates

Coding

MAC Layer—Inbound

Protocol
QoS
Capacity Requesting
Bandwidth on Demand (Return Link)

Interfaces

Network
NMS

Tx & Rx

Features

Fade Countermeasure
Redundancy
Network Architecture
Scalability
Multicast

Options

Geographic Redundancy
Mesh
Higher Layer Protocol Options

Access Technology

DVB-S or DVB-S2, CCM/VCM/ACM (option), IP over MPEG QPSK (DVB-S), QPSK, 8PSK, 16APSK, 32APSK (DVB-S2)
Up to 155 Mbps (1MSPS to 45MSPS)
DVB-RCS, IP over ATM or MPEG, Multiple Access Method MF-TDMA
QPSK, 8PSK (option)
128 kbps—12 Mbps
RS/Convolutional or LDPC on the outbound; Turbo Convolutional Coding (TCC) on the inbound
CF-DAMA (Combined Free & Demand-Assigned Multiple Access)
Constant Rate Assignment (CRA), Volume Based Dynamic Capacity (VBDC), Rate Based Dynamic Capacity (RBDC), Free Capacity Assignment (FCA)
0-8 Mbps updated every 26.5 ms, framed in 1, or 2 ATM or 1 MPEG packet, with in-band and out-of-band capacity requesting mechanisms
IP over Ethernet (10/100/1000BaseT)
NMS100, web interface control, remote terminal management, VNO
3rd Party Equipment—Standard SNMP interfaces available
Frequency Independent (can use any combination of C, Ku, Ka, X, etc.)
Can interface with any frequency at L-band IF frequency

ClearSky™
Non-Redundant, Hitless Redundant Switching (option)
DVB-RCS, DVB-SCPC, Multi-mode (DVB-RCS/DVB-SCPC), Mesh/ Star
Scalable forward & return link capacities + number of supported remotes
From hub or from behind remote

Automatic switchover between geographically redundant gateways
Mesh overlay
IPSec/VPN, VLAN, VCM/ACM, TCP/HTTP Acceleration & Data Compression, Virtual Telephony™, Advanced QoS
MF-TDMA, SCPC, A-SAT™

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