



**Linux® Based, Cost Effective, Ultra High Speed IP to DVB Multiprotocol Encapsulator for Seamless Delivery of IP or Private Data and Video Over Satellite or Terrestrial Networks – Complies with MPE 301-192**

## Features

- Unlimited number of remote IP addresses (clients), depending on server memory
- Based on a SuperMicro server
- Linux® based architecture for 24/7 operation
- Implements Unicast, Multicast, and QoS routing
- Fully complies with all IEC standards for multiprotocol DVB encapsulation
- Typical forwarding delay is 1/ 10th of others – latency of 6 milliseconds
- Supports C, Ku, and Ka bands
- Tested with major brands of multiplexers and modulators –Tandberg, Radyne, Harmonic, Newtec, Motorola, EF Data, and Work-Microwave
- Field proven on major satellites and teleports
- Aggregate throughput up to full ASI (213 Mb)
- QoS for guaranteed services
- Inputs: GigE and DVB-ASI
- Output: DVB-ASI
- Easy to use remote monitoring and control via secure shell access
- Low jitter
- Supports opportunistic data insertion (SMPTE 325M)
- Used currently in DVB-S/S-2, DVB-T/T2, and DVB-C environments – DVB-C2 coming soon
- Optional RoHS compliant standard industrial PC with redundant power supply and hot swappable disk drives
- Optional IP Multicast File Delivery Client Software/ Hardware for transmitting to Mobile and Handheld devices – Instacast 4.0

## Applications

- Satellite and Internet Service Providers (ISPs)
- Broadcast networks and stations
- Data service providers
- Large retail organizations
- Financial institutions



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## Overview

A great many communications satellites now beam DVB based video transport streams all over the earth. An encapsulator is a device specifically created to inject IP content or other types of data into DVB transport streams, which are used frequently in these communications satellites. When used in such a way a single “Rocket” can be dedicated to deliver Internet Services to an unlimited number of users.

The Internet service provided in this way typically exceeds the speed of land based Internet services. In order to select the “Content Pages” the end user of the service communicates with his ISP via a regular phone line. Two types of receivers can be used for reception: set top boxes with IP outputs that are designed to filter out IP packets to an IP port, or PC based solutions with QPSK tuners and PCI interfaces that route the IP traffic to the computer just like a network interface. All Internet browsers can be configured to work in this manner.

The **DVB Rocket™** is a simple yet elegant design for an encapsulator. It is based on a SuperMicro 1 RU Server along with our proven 3rd generation DVB Master FD™, running Linux®. It is fully compliant with all international standards that govern multi protocol encapsulation, such as EN 301 192. Not only does the Rocket function as a router where it forwards packets based via easily managed routing tables, but it also acts as a switch whereby it creates virtual connections that remain open until closed.

The Rocket typically is located at the premises of a teleport. The DVB output of the Rocket is typically “fed” directly to a multiplexer or a modulator. Thereafter the stream is sent across great distances to satellite and down to a network of dishes where a personal computer with a satellite receiver card can enjoy first class Internet or data service.

## Highlights

- A low cost, high performance IP to transport stream converter
- Full control of configuration parameters and routing tables
- Provides a smooth system upgrade to IP protocol based multimedia systems



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# DVB Rocket™

## Routing Capabilities

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DVB Rocket uses IETF standard routing policies. Static routes are configured for IP-unicast packets (e.g., TCP and UDP user traffic) and for IP multicast (UDP) traffic.

The IP/DVB switch completes the routing information with the MPEG-2 transport stream packet identifier (PID) and receiver's Ethernet MAC address information.

## Support for Newer Applications

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- **Fast (broadband) mobile Internet access**
  - High-speed Internet delivery to handhelds
  - Combine GSM/GPSR (mobile telephony) with DVB-T/ATSC
- **Embed multimedia services in DTV**
  - Multimedia Home Platform (MHP)
  - Multimedia Car Platform (MCP)
- **Stream IP multicast**
  - MPEG-4 video over IP multicast
  - Deliver content (Webcasting, VOD, Ticker)

The DVB Rocket can insert IP multicast and unicast in MPE (multi protocol encapsulators), addressable sections, data piping, and object carousels. For example, DVB Rocket runs with S & T's (www.s-and-t.com) Object Carousel generator/transmitter.

## Reliability

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- Linux® is a very stable, enterprise oriented environment with very high uptime
- Typical empirical MTBF (mean time between failures): 30,000 hours
- Easy remote login via secure environment for remote maintenance
- Optional dual redundant power supplies and dual channel hot swappable disk drives

## Compatibility & Interoperability

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### Tested compatible with:

- Motorola Cherry Picker™ - Mux
- Newtec Modulator
- Radyne Modulators
- EF Data Modulators
- Work-Microwave Modulators
- Harmonic Data Multiplexers

## Compliance

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- DVB-S EN 300 471
- MPEG-2 System 13818-1
- DVB Multiprotocol Encapsulation EN 301-192

## Specifications

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### Input & Output Ports

- Two Fast Ethernet input ports/output ports
- One optional ASI input port
- One optional ASI output port

### Virtual Channels

- Up to 50
- Simultaneous and independent
- Transmission rate can be set to any rate between 2Kbps and 60 Mbps
- One PID per channel

### Data Piping

- Sourced from 1 GB port

### SI Tables

- PAT and PMT

### Protocols

- TCP/IP, Unicast, Multicast

### Traffic Statistics

- Sent/dropped packets for each IP/Mac address
- Total transport stream packets sent
- Total transport stream packets sent on each PID

## QoS Function

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- Fully implements industry standard QoS for guaranteed levels of service in QoS oriented router environments
- Each route can be assigned as bandwidth limit
- QoS can be turned on or off by management

# DVB Rocket™

## Standards Compliance

- Fully implements MPEG-2 program specific information (PATs/PMTs)
- DVB service information (NIT/SDT/BAT/TDT) according to DVB standard
- PSI and SI table implementation including necessary service descriptors
- Can run in ATSC compliant environments
- Complies with ETR 290
- Fully tested to be compliant using WWG's DTS-A ATSC/DVB protocol analyzer

## Instacast Client/Server Option

**High Speed Scalable Overlay From 256 KBPS to 20 MBPS, Based on DVB Technology – Ideal for Transmitting to Mobile and Handheld Devices**

Instacast provides a turnkey hardware and software solution for connecting multi-continental based LANS and/or users into a seamless single whole LAN via our DVB encapsulators and receivers. Instacast is a satellite overlay solution for terrestrial intranets and Internet connections. It combines a broadband receive-only satellite link with a terrestrial IP network infrastructure.

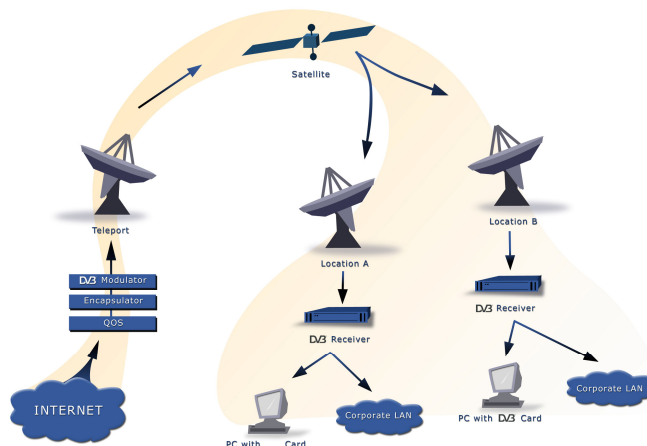
- Implements a platform for delivery of value-added, IP-multicast channels and multimedia, such as live webcasting and real-time news delivery
- Improves performance through higher bandwidth return channel
- Provides an asymmetric overlay that does not disrupt existing network infrastructures

## Ordering Information

- DVB Rocket Ultra High Speed IP to DVB Encapsulator
  - Standard DVB Rocket in 1 RU SuperMicro system, non-redundant box
- DVB Rocket/HA IP to DVB Encapsulator
  - High-end DVB Rocket in standard industrial PC (IPC) with:
    - Redundant power supply
    - Hot swappable disk drives

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## Application Diagram



## GUI's

destination	netmask	MAC	PID	mode
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	MPE

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**Add Table Entry**

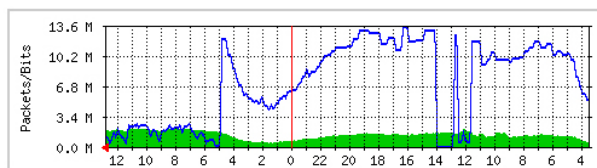
speed [bps]	IP/MAC copy bytes	default PID	Packet length
<input type="text" value="42000000"/>	<input type="text" value="2"/>	<input type="text" value="0"/>	188

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**Change Configuration**

The statistics were last updated Tuesday, 24 October 2006 at 12:51

'Daily' Graph (5 Minute Average)



Max **Packs**: 2137.9 k/sec Average **Packs**: 1458.8 k/sec Current **Packs**: 1902.7 k/sec  
 Max **Bits**: 13.5 M/sec Average **Bits**: 7275.3 k/sec Current **Bits**: 907.2 k/sec

### Traffic for Services



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