



The SkyStream Edge Media Router 5520S and 5540S are versatile and powerful satellite networking platforms that receive and manage content at the network edge. Using the EMR-5520S/40S, service providers and enterprises can deliver mission critical real-time information to large communities of users over broadcast and broadband networks. The modular and highly reliable design allows providers to customize and deploy the EMR-5520S/40S for applications today and easily add future services.

Residing at the edge of the data-delivery network, the EMR-5520S/40S can extract or pass through encrypted IP content from incoming DVB MPEG-2 transport streams. It decrypts and routes content to edge networks for delivery over 10/100 Fast Ethernet connections. Supporting a wide range of intelligent distribution capabilities, network topologies and performance options, the EMR-5520S/40S is fully integrated with SkyStream's Source Media Routers, zBand Content Distribution Platform and E-Manager management suite.

#### APPLICATIONS

- Real time data dissemination
- e-Learning and training
- Remote site IP based video distribution
- Internet over Satellite services
- Broadcast content, file and data distribution
- Global IP network connectivity

#### GENERAL HIGHLIGHTS

- Superior performance—highest throughput
- Reliable operation—no moving parts
- High-speed IP conditional access
- US Military specification rated (MIL Spec)
- Ideal for high-volume global deployment
- E-Manager suite simplifies management of large scale deployments
- Advanced data handling—broad routing support

## FEATURES AND BENEFITS

### Superior performance

- Performance, reliability and scalability to handle real-time delivery to massive audiences
- High speed IP decryption – decrypt and route a full transponder of AES scrambled IP services
- Dual tuner support (EMR-5540S) – tune and demodulate two full transponders simultaneously
- Fully integrated with Irdeto Access Cyphercast content security encryption system
- Highest small-data packet processing throughput – 64 Byte packets for streaming media applications
- Full transponder support – tune and demodulate full transponder bandwidth

### Reliable operations and robust manageability

- Embedded Linux operating system
- 100% solid state – direct conversion digital tuners
- MIL specification tested and certified
- In-band and out-of-band remote management using E-Manager
- SNMP V1/V2 MIB/MIB II and Enterprise MIB
- Command Line interface (CLI)
- Remote Web interface

### Advanced data handling

- Protocol translation – UDP to TCP
- Multicast IP packet forwarding – IGMP (V2), DVMRP, static rules, TTL manipulation
- Support for real time IP data AES decryption – Irdeto Access Cyphercast
- Multicast to unicast conversion
- Network Address Translation (NAT)

### Investment protection

- Scalable from basic receiver to sophisticated data handling capabilities
- Modular software and hardware upgrades
- Software upgrades accomplished via flash memory
- Optional features to grow with new services: internal modules for ISDN, analog modem and synchronous port (RS-422)

### High-volume global deployment

- Bundled SkyStream network management software
- Reliable operations – no moving parts to replace (fans, etc.)
- E-Manager – standalone NMS or integrated into HP OpenView™

## SPECIFICATIONS

### Platform

- 19-inch rack-mountable chassis
- Rack height: 1 RU
- Dimensions: 1.75 x 17 x 9.75 inches (4.5 x 43.2 x 24.7 cm)
- Weight: 6.5lbs for single tuner (5520S) and 7.5 lbs for dual tuner (5540S)
- Power Input: 100 to 240 VAC @ 2/1 Amps 50/60 Hz
- One flexible option slot – 5520S only
- Two 10/100 Ethernet ports
- One RS-232 serial port / console port
- Embedded Linux operating system
- Smart card reader:
  - Internal built-in
  - Optional external via serial port(Smart cards provided by Irdeto Access)

### Satellite Receiver RF Tuner (single and dual tuner models)

- Receiving Frequency: 950 MHz – 2150 MHz
- Input Signal Level: -25 dBm to -65 dBm
- RF Input Impedance: 75 ohm
- Optional second tuner card (EMR-5540S)

### Demodulation and Error Correction

- QPSK and BPSK demodulator
- 1.5 – 45 Msymbols/sec
- Reed-Solomon outer code: (204, 188), T=8
- Viterbi inner code: K=7, R=1/2, 2/3, 3/4, 5/6, 7/8

### LNB Power and Switching

- Supply voltage selectable: Off, 13V or 18V
- Max LNB Current: 400mA per L-Band Interface
  - 400mA for one tuner in EMR5520
  - 200mA for each tuner in EMR5540
- Antenna Control: 22kHz signal
- DiSeqC: 1.1 Ready
- Over current and short circuit protection

### Modes of Operation at Transport Stream

- MPE forwarding to 10/100 Ethernet (IP)
- Up to 64 PID filters per MPEG-2 transport input
  - 64 PIDs for EMR5520
  - 39 PIDs (per tuner) for EMR5540
- Single Tuner configuration (EMR-5520S):
  - Maximum IP decryption rate: 72 Mbps (at 1500 byte packet length)
- Dual Tuner card configuration (EMR-5540S):

- Maximum IP decryption rate per tuner card: 40Mbps (at 1500 byte packet length)
- Total maximum decryption: 80Mbps (at 1500 byte packet length)
- Decryption - 128 bit AES and 56 bit DES (Irdeto Access Cyphercast) for EMR5520
- Decryption - 128 bit AES (Irdeto Access Cyphercast) for EMR5540

### Data Handling Capability

- UDP to TCP conversion
- NAT (RFC 1631) – Address mapping, including multicast to unicast conversion
- DHCP Server and Client (RFC 2132)
- DVMRP (RFC 1075)
- PPP (RFC 1661) return path, with support for dialup modems
- IPsec, PPTP
- SSL, SSH
- RIP2
- Dual tuner routing is designed to route incoming traffic from separate data services

### Safety:

- UL60950 3rd Edition
- CSA 22.2 No.950
- EN60950
- IEC-950 CB Report and Certificate

### EMC:

- FCC Part 15 Class A
- EN55022 Class A
- CISPR 22 Class A

### Immunity:

- EN55024, EN6100-4-2, EN6100-4-4, EN6100-4-6, EN6100-4-3, EN6100-4-11

### Environmental:

- Thermal Operation ANSI T1 – 304 (7 day Operational at -5° to +50° C)
- ISTA 2A Transportation and Handling
- Shock MIL-STD-810F Method 516.5
- Random Vibration MIL-STD-810F Method 514.5
- Altitude MIL-STD-810F Method 500.4



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