

SATPATH SkySwitch™



SkySwitch® Pro Satellite Router Digital Packet Switching VSAT Network for Total Telecom Services High Channel Efficiency VSAT Network Operation

Applications:

- Mesh Voice Connections
- MCPC Videoconference
- Remote Database Replication
- Internet Access
- SCPC PTP and MCPC PTMP
- Surveillance & SCADA
- COTM (On-the-Move) and COTP (On-the-Pause)
- Emergency Response

Advantages:

- Mesh/Multi-Star Connection
- Lower RFT (ODU & ANT.) Cost
- Highest Channel Efficiency
- Fast Response Time

Features:

- Multiple Channels (up to 32)
- Data Rates up to 13.8 (or optionally 22.0) Mbps per channel
- 5% Roll-Off Factor
- Standalone or Network Mode
- Web GUI with Traffic Statistic
- Satellite IP Router
- Automatic Channel Switching
- Multicasting
- Traffic Filtering
- Connectivity Management
- Adaptive Bandwidth On Demand (ABOD)
- Automatic Tx Level Control

SkySwitch® Pro Chassis is a high performance IP satellite router/modem with



leading edge technology for applications of SCPC, MCPC to VSAT networks. The chassis can accommodate up to 4 Channel Cards of different types. Each card comes with MCPC modem featuring highly efficient TPC and optional LDPC Code. It supports data rates from 8 kbps to 13.8 (TPC) /22.0 (LDPC) Mbps. The Pro chassis provides high channel unit capacity up to 4 modulators and 32 demodulators. SkySwitch® Pro is mainly used at the network center (hub) to house network service channels, or at the remote center (gateway) in a SkySwitch® SCPC/MCPC/PSMA network. The standard package of the chassis comes with Header Compression, SNMP, TCP acceleration and embedded router. Multiple Pro chassis can be daisy chained in a single site with high volume concentrated network traffic. For mission critical applications, optional Self-Switch 1+1 hot standby redundancy is provided without the need of separate protection switch. The Pro chassis carries real-time network control signaling and plays an important role in implementing distributed architecture of SkySwitch® network.

SkySwitch® Pro terminal provides management data protection that uses separate LAN's for user and administration traffic at hub site with embedded IP router.

SkySwitch® smart terminals in Standalone Mode can provide pre-assigned point-to-point and point-to-multipoint connections to other SkySwitch® remotes. Application in MCPC mesh connectivity is particularly suitable for real time traffic such as voice and multicasting videoconference.

When used in Networking Mode, SkySwitch® smart terminals feature high performance simultaneous links to multiple sites including network hub, remotes, and remote center sites located at end user headquarters. The ability to connect to two or more central sites al-

lows direct traffic routing between corporate branches and their headquarter, while the traffic bypasses hub.

Based on network structure as configured in NMCS, each smart terminal validates its own connectivity and does its own traffic filtering and routing. Each terminal's carrier is dedicated and sized to support its own traffic. Comparing with shared TDMA carrier, SkySwitch® carrier uses smaller antenna and BUC.

SkySwitch® Pro provides highest economic scale with the largest number of channels in a compact case.

SkySwitch® Pro Terminal Specifications

Service Applications

- High performance, broadband IP, multiple 2-way services for mesh and multi-STAR networks VSAT links
- Multiple Channels: Expandable from one to 32

Access Methodology

- On-Demand Composite TDM Outbound Carrier using Packet Switching Multiple Access (PSMA)
- Contention Access Slotted Aloha Inbound (CSC-IB) to initiate DAMA activation
- SCPC / MCPC Inbound Carrier for IP traffic services Adaptive Bandwidth-On-Demand (ABOD) automatic Inbound Carrier rate adaptability to match real time IP traffic demands

IP Features and Routing Function

- IP routing, Multicast, TCP Acceleration,
- Layer 3, Layer 2 VLAN Bridging, DNS Caching
- Standard & Customized QoS traffic Prioritization Protocols: TCP UDP RIP ARP DHCP ICMP IGMP Telnet PPP FTP HTTP SMTP DSCP SNMP v2

Mechanical & Environmental

- Dual RJ-45, 10/100 Base T Ethernet Interface
- AC Power, IEC-320 Interface 100-240 VAC 50/60 Hertz, 160 watts, -48VDC 2.8A optional
- ODU Power 24VDC 3.2A optional
- Dimensions: 89 x 448 x 483 mm Rack Mount Unit
- Weight: 9.1 Kg
- Operational: 0 to +45 degrees Centigrade
- Humidity: Up to 95 % non-condensing
- Storage: -40 to +85 degrees Centigrade

Outbound Carrier

- Proprietary TDM with PSMA, or SCPC/MCPC
- BPSK/QPSK/8PSK/16QAM/32QAM Modulation

- Turbo Product Code FEC, 0.72, 0.79, 0.87 Rates, Approx.
- Optional LDPC Code FEC, 1/2, 2/3, 3/4, 4/5, 8/9
- Carrier Data Rate 8 Kbps to 13.8 Mbps, 1.05, 1.10, 1.20 or 1.30 Symbol Rate Carrier Spacing Options

Inbound Carrier

- Shared Slotted Aloha at 24/48 Kbps for initial network entry and DAMA
- SCPC / MCPC with ABOD for IP traffic
- BPSK/QPSK/8PSK/16QAM/32QAM Modulation
- Turbo Product Code FEC, 0.72, 0.79, 0.87 Rates, Approx.
- Optional LDPC Code FEC, 1/2, 2/3, 3/4, 4/5, 8/9
- Carrier Data Rate 8 Kbps to 13.8 Mbps
- Inbound Carrier rate adaptability to match actual site traffic Real Time Demand, 1.05, 1.10, 1.20 or 1.30 Symbol Rate Carrier Spacing Options

ODU Interface

- Transmit: 70±18MHz or 950-1850 MHz L-band with 2.5 KHz steps; selectable on/off +24 VDC @ 2.7A and 10 MHz Reference @ 5 dBm; Type BNC 50 ohms/F(f) 75 ohms Coaxial connector, Level: -45 to -0 dBm in 0.5 dB steps
- Receive: 70±18MHz or 950-1850 MHz L-band with 2.5 KHz steps; selectable on/off +24 VDC @ 0.3A and 10 MHz Reference @ 5 dBm; Type BNC 50 ohms/F(f) 75 ohms Coaxial connector, Level: -60 to -30 dBm (70MHz)/-45 to -20 dBm (L-band) desired carrier

Options

- LDPC Code FEC, 1/2, 2/3, 3/4, 4/5, 8/9
- FSK Smart ODU M&C, High Stability Clock

Certification

- 47 CFR FCC Part 15, Subpart B; Canada ICES-003, issue 4; CE EN-55022 Class A, EN 61000-3-2, EN-61000-3-3, EN-55024, EN-61000-4-3/5/8.

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SATPATH

Optimized Bandwidth Efficiency