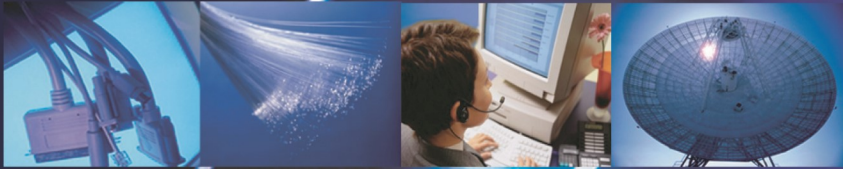# SATPATH *SkySwitch*™

SkyWeb™ 1100 Satellite Router
Packet Switching VSAT Network for Total Telecom Services
Highest Channel Efficiency VSAT Network

Applications:
- WAN via Satellite
- Remote Database Replication
- Faster Internet Access by Packet Compression
- Com-On-The-Move
- SCPC P-to-P and P-to-MP
- MPLS Connections
- Private VSAT Network
- Rural Telecommunications

Advantages:
- Lower RFT (BUC/ANT) Cost
- 100% Channel Efficiency, No Multiplexing Overhead
- Fast Response Time
- Packet Compression
- Expandable for mesh connection

Features:
- Data Rates up to 13.8 Mbps (16/32QAM)
- Standalone SCPC Mode
- 5% Roll-Off/Alpha Factor
- UPC & ACM/Power Boost
- Web GUI with Traffic Statistic
- Layer-3 Satellite Router
- Multicasting
- Traffic Filtering
- Automatic Beam Switching
- Adaptive Bandwidth On Demand (ABOD)
- Automatic Tx Level Control

SkyWeb™ 1100 satellite routers are popular among VSAT network operators around the world due to their high performance, ease of use, fast acquisition, widest range of data rates from 8 Kbps to 13.8 (TPC)/22.0 (Optional LDPC) Mbps in SCPC mode, and most importantly, their high channel efficiency for low cost network operations. These benefits directly minimize the bottom line of every VSAT network operator. SkyWeb™ 1100 smart terminal is a family member of SatPath's innovative SkySwitch® VSAT network system. When the terminal operates in the **Network Mode**, it functions as a Layer-3 router with a WAN port using a single channel satellite modem in a star network. Due to its low latency and high channel efficiency, it is a superior alternative to TDM/TDMA or DVB-RCS (TDMA) terminals. It results faster carrier acquisition for shorter response time for clock sensitive applications such as GSM, 3G, 4G/LTE backhaul.

When the terminal is used in **Standalone Mode**, it functions as a high performance and high rate pre-assigned SCPC digital modem in a satellite router. Using SkyWeb™ 1100 series terminals in standalone mode with SkySwitch® multi-channel modems at the center site provides the most cost efficient point-to-multipoint connections. Application in SCPC star connectivity is particularly suitable for wireless backhaul connection as well as corporate headquarter-to-branches connections. Users of standalone SkyWeb™ 1100 smart terminals have the option to upgrade their fixed SCPC connections to an intelligent packet switching network with on-demand **PSMA** (**Packet Switching Multiple Access**) and BOD (Bandwidth on Demand) capability by adding SkySwitch® NMCS (Network Management and Control Subsystem).

SATPATH
Optimized Bandwidth Efficiency

When used in **Network Mode**, SkyWeb™ 1100 smart terminals provide high performance two-way links to network hub. 1100 terminal supports **Sub-Networking** function of SkySwitch® network by connecting to a remote **control site** located at user headquarter. **RNO** (Remote Network Operation) allows direct communications between branches and headquarter and bypasses VSAT network hub.

Using network structure as configured in NMCS, each smart terminal validates its connectivity and does traffic filtering.

SkySwitch® smart modem carrier is dynamically sized to support a single-site traffic without inefficient multiplexing. SkySwitch® uses small carrier resulting at least 25% bandwidth savings and much more power savings with smaller antenna and BUC.

When used in **DVB-SCPC Mode**, SkyWeb™ terminal provides highly efficient SCPC return channel in broadband access applications. The combined benefit of 5% roll-off, 16/32QAM high modulation, and data compression of SkySwitch® SCPC return channel results the lowest possible OPEX for broadband network operator.

SkyWeb ™ 1100 Terminal Specifications

Service Applications

- High performance, broadband IP, 2-way services for STAR networks, Point to Point PAMA VSAT links,
- Multi-channels: Single channel, expandable to 5 channels

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) streamlining Inbound traffic to reduce Carrier rate with adaptability to match real time IP traffic demands

IP Features and Routing Function

- Intranet/Internet, Multicast, TCPAcceleration
- RTP Header and Payload Compression
- L-3 Routing, L-2 Bridging with VLAN,-tagging
- QoS & DSCP(TOS) Prioritization; TCP UDP RIP ARP DHCP ICMP IGMP Telnet PPP FTP HTTP SMTP SNMP OpenAMIP, DRoSP

Mechanical & Environmental

- RJ-45, 10/100 Base T Ethernet Interface
- RS-232 Asynchronous Serial Interface to ACU
- RS-530 Synchronous Serial Interface (optional)
- AC Power, IEC-320 Interface 110-240 VAC 47-63 Hertz, 120 watts, 24VDC @ 3.5A
- Dimensions: 43 x 250 x 310 mm Desktop/Rack Mount Unit
- Weight: 2.2 Kg
- Operational: 0 to +45 degrees Centigrade
- Humidity: Up to 95 % non-condensing
- Storage: -30 to +70 degrees Centigrade

Outbound Carrier

- Proprietary TDM with PSMA, or SCPC/MCPC
- BPSK/QPSK/8PSK/16QAM/32QAM
- Turbo Product Code FEC, 0.72, 0.79, 0.87 Rates, Approx.
- 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, DAMA, ALC, ACM, & Power Boost
- On-Demand SCPC / MCPC with BOD for IP traffic
- BPSK/QPSK/8PSK/16QAM/32QAM
- Turbo Product Code FEC, 0.72, 0.79, 0.87 Rates, Approx.
- Carrier Data Rate 8 Kbps to 13.8 Mbps, 1.05, 1.10, 1.20 or 1.30 Symbol Rate Carrier Spacing
- Inbound Carrier rate adaptability to match actual site traffic Real Time Demand

ODU Interface

- Transmit: 950-1850 MHz L-band 1Hz step & 2.5KHz soft step; +24 VDC @ 2.7A and 10 MHz Reference @ 5 dBm, Type F(f) Coaxial connector, 75 ohms, Level: -45 to -0 dBm in 0.5 dB steps
- Receive: 950-1850 MHz L-band 1Hz step & with 2.5KHz soft step; +24 VDC @ 0.3A and 10 MHz Reference @ 5 dBm, Type F(f) Coaxial connector, 75 ohms, Level: -75 to -35 dBm desired carrier

Options

- LDPC Code FEC, 1/2, 2/3, 3/4, 4/5, 8/9
- 1000 Base T with Jumbo Frame Support
- AES Encryption 256
- 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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