Broadband IP Network via Satellite

VIPERSAT Networks, Inc.
VIPERSAT Networks Inc. History

1981 Vitalink satellite communications Division founded.
1988 Vitacom is spun out of Vitalink as separate company. Focus is on U.S. Market.
1994 Vitacom purchased by Cable & Wireless.
1995 Vitacom opens office in Beijing, China
1997 Vitacom purchased by Global Light Communications
1998 Vitacom ships first IP based network (CAS Internet Application) – the Vipersat Solution is born.
1999 Vitacom’s IP based products division and China organization purchased by NeTrue Communications, a Global Light Company.
2002 VIPERSAT Networks Inc. is started by previous mgt. team and privately owned.
VIPERSAT IP Advantage

- Satellite Space Segment Management
- Scaleable Hub 1/10th Competition
- Dynamic Bandwidth Allocation
- Dynamic Upstream Switching
  - Load
  - Application
- Broadcast Interactive
- Asymmetrical Bandwidth
- IP Redundancy
- Packet Priority
- Single Hop Solutions

User 1
User 2
User n
VIPERSAT Networks, Inc.

Presence in the Market

**Applications / Features**

- **100Mbps Ethernet**
- **TCP/IP Acceleration (Spoofing)**
- **Integrated DVB receiver**
- **Block Encryption**

- **IPVC (Meshed)**
- **VoIP Gateways (Meshed)**
- **Data Rates (9.6Kbps - 5 Mbps Meshed)**

- **MF-TDMA (64Kbps - 2Mbps)**
- **IPVC**
- **VoIP Gateways**
- **Auto Access Switching (Load or Applications)**
- **Data Rates (9.6 - 5Mbps)**
- **Turbo Products Code**

- **TDMA (Star Topology)**
- **Streaming Video (RX only)**
- **VoIP (Low Quality)**
- **Rural Telephony**
- **Point of Sale**
- **Data Rates (2.4Kbps - 512Kbps)**
VIPERSAT Solutions

VIPERSAT Core Products

• VMS Network Management System
  ➢ Opt. Automatic Upstream switching (load and Applications)
  ➢ Opt. STDMA or TDMA
  ➢ Opt. Web based DAMA IP Meshing software

• Satellite Modem Router (SMR5000) Family
  ➢ Opt. SMR5000 (70 / 70)
  ➢ Opt. SMR5000HL (70 / L-band)
  ➢ Opt. SMR5000L (L-band / L-band)

VIPERSAT Value Added Products

➢ KU-Band 2,4,8,16 Watt (OTU) Outdoor Transmit Unit
➢ C-band 5,10,20,25 Watt (OTU) Outdoor Transmit Unit
➢ L-Band Block Up converters (BUC)
➢ Opt. Remote Integration Kits
➢ Opt. VoIP Gateways
➢ Opt. Antennas (1.2 and up), LNA’s and LNB’s
SMR5000 Family

- Full 2-way over satellite solution using wideband Outbound with Multiple Access Inbound channels utilizing STDMA or TDMA (Fixed / Dynamic BOD)
- Standard IP Interfaces with embedded routing / firewall filtering connectivity between Network Nodes
- Dynamic Bandwidth Allocation with Dynamic Power Control (DPC)
- Programmable data rates: 9.6 Kbps to 4.92 Mbps Inbound and Outbound
- Star / Virtual Mesh / Full Mesh Topologies supported
- Entrance link options:
  - 70 MHz or 140 MHz
  - 70 MHz TX and L-Band Rx
  - L-band TX and L-band RX (Available Sept. 02)
- High Speed Upstream Switching supported:
  - Manual and Scheduled
  - Automatic (Application & Load)
Example: TDM/MF-STDMA
(Switched IP SCPC/DAMA)
Example: DVB/MF-STDMA
(Switched IP SCPC/DAMA)
Standard Hybrid Remote Station

SMR5000HL

- 70 MHz Uplink
- L-Band RX

Connections:
- Video Broadcast Server (streaming)
- VOIP
- ISP
- Ethernet 10/100
- IPVC H.323
- VOIP

C or Ku-Band

OTU

OCXO osc

LNB
“New” L-band TX & RX Remote Station

SMR5000L

- L-Band Uplink
- L-Band RX

C or KU-Band L-band BUC

Video Broadcast Server (streaming)
IPVC H.323
VOIP
ISP
DVB Remote Station

- SMR5000HL
- DVB Decoder
- 70 MHz Uplink
- L-Band RX
- C or Ku-Band OTU
- OCXO osc
- Uplink

- VMS
- Video Broadcast Server (streaming)
- VOIP
- H.323
- IPVC
- Ethernet 10/100
- ISP
L-band TX DVB Remote Station

- SMR5000L
- DVB Decoder
- L-Band TX
- L-Band RX
- ISP
- Video Broadcast Server (streaming)
- IPvC H.323
- VOIP
- C or Ku-Band L-band BUC
- UHF
STDMA Functions

- Selective Time Division Multiple Access (STDMA)
- STDMA Operates in a Star Network with switching capabilities
- STDMA supports 100’s to 1000’s of low rate users
- STDMA can switch from conditional access to non-conditional access for additional bandwidth and throughput performance
- STDMA Operates in Fixed or Dynamic Bandwidth Mode
- STDMA Networks are cost effective solutions with a scaleable hub cost 1/10th the competitors
TDMA Functions

- Time Division Multiple Access (TDMA)
- TDMA Burst Demodulator with Capabilities from 512K - 2Mbps per group
- TDMA Operates in a Star Network with switching capabilities
- TDMA supports 100’s to 10,000’s of low rate users
- TDMA can switch from conditional access to non-conditional access for additional bandwidth and throughput performance
- TDMA Operates in Fixed or Dynamic Bandwidth Mode
- TDMA Networks are cost effective solutions which give high performance
Applications

- Kiosk Solutions (VoIP, V/C, Internet with Pre-paid Cards)
- VoIP with Priority
- IP Video Conferencing
- Broadcasting Video Streaming
- IP Multicasting, Video and Data distribution
- Telemedicine
- Distance Learning
- Disaster Recovery
- Gas & Oil Infrastructures
- Military Communications
- Enterprise Infrastructures
- POS (Point of Sale)
Network Management System

- Inband NMS using VMS
- Allows system dynamic component configuration, port configuration, satellite link statistics reporting and adjustment
- Upstream switching mgt. and Dynamic switching configuration
- Graphical map overlay to allow intuitive representation of systems component location
- Dynamically allocating and re-assigning satellite transponder channel allocation
- Controls Multiple Access Bandwidth On Demand
- Controls the Video Conferencing Scheduling via Web
- Global Access
- Redundancy available
SMR5000 Monitor & Control

- Telnet
  Configuration & Statistics
- VMS
  Network Management
- Direct Terminal Connection
  Configuration & Statistics

Front panel display

Front panel soft key setup
Complete and compliant IP high-speed broadband via satellite
Best-of-breed products and solutions
Fully proven network management system, time-tested over 15 years while maintaining cutting edge technology
Most advanced and reliable multimedia content distribution system
A flexible, scalable and expandable architecture that supports open and standards-based systems
Leading edge switching capabilities
Space segment savings, up to 50% with dynamic bandwidth mgt.
Efficient and cost effective solutions
Strong development and software support team
New leading edge solutions in Development
Scaleable Hub cost 1/10th of the competitors

Compatible today and expandable tomorrow!