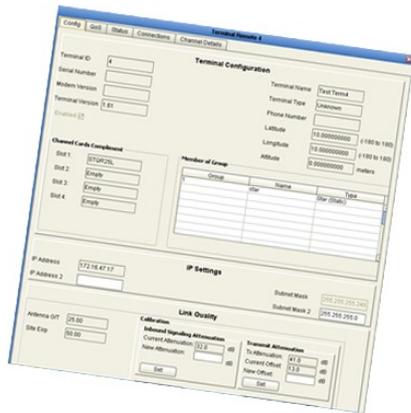


SATPATH SkySwitch™



SkySwitch NMCS System Network Management and Control System for MCPC/PSMA VSAT Network



Features:

- Optimized for IP Routing VSAT Network
- HTN for Broadband Network
- Distributed Processing Computing Platform
- Client/Server Architecture
- Modular Design
- Real-Time Database Management
- Subnet and Remote Network Operation (RNO)
- Multiple Satellites and Transponders
- Variable Network Structures & Topology

SkySwitch NMCS is a full featured and sophisticated FCAPS network management system designed to support Total Telecom Operation over a VSAT satellite network. The system features easy-to-use **Graphical User Interface (GUI)** using client computers with any Internet web browser to log in to the NMS server, which manages with one or more NCS servers or Front End Processors.

The entire network management workload is distributed over one or multiple NCS servers in a distributed computation structure so to allow unlimited network capacity for traffic growth and remote sites expansion. With the flexibility, the NMCS can support networks from small to large with cost/performance tailored to different application(s). A single **NCS** can support a typical network up to 2,000 remote sites operating in a single satellite. Multiple NCSs are used in large network installations to support sub-networking and Remote Network Operation (**RNO**), which can span over multiple satellites for different groups of individual or corporate users.

High Throughput Network (**HTN**) architecture provides unlimited hub outbound capacity for broadband applications over HTS satellite.

Both NMS/NCS servers can be optionally configured with hardware redundancy for high availability operation. For critical operation, each network system can be configured with 1+1 redundant NMCSs that include a primary and a backup NMCS subsystem at the main control site (hub). Additionally, a geographic redundant NMCS at an alternate location can be configured as a backup hub site.

Powerful NMCS GUI (graphic user interface) allows the operator to easily and conveniently manage and operate the SatPath SkySwitch® network. The system offers network bandwidth, traffic, and connectivity management over satellite including MODCOD selection, traffic switching and routing capabilities.

SkySwitch® network supports multiple topologies and various structures within a single network. SkySwitch® NMCS provides the tools that network administrators and engineers can configure each network with different vertical and horizontal layers of subnets and connection groups.

Connection groups facilitate dynamic routing of network traffic over satellite. Static routes at both terminal and network levels can be configured to complement the dynamic routing capability to meet each individual user's traffic routing requirements over Internet or Intranet.

Connections between any two sites for mesh and star can be individually set and defined by network operator. The capability is suitable for governmental and large corporation organization's internal communications or commercial open telecommunications with different connection services.

SkySwitch® NMCS provides reliable, always-on monitor and control (M&C) functions intended to give network operators all equipment status and control for SkySwitch® satellite VSAT terminal as well as common ground communication equipment at remote locations. The system is configured to communicate with remote equipment via inbound and outbound signaling channels from each Control Site, and presents a common interface to the user.

Satellite resources management of the NMCS optimizes bandwidth efficiency to meet traffic requirements.

SkySwitch NMCS Specifications

Network Structure

- Multi-layers star, mesh, and hybrid subnets
- Sub-networking over multiple satellites, frequency bands, and transponders
- Maximum Remotes in one network: Unlimited

Bandwidth Management

- On Demand Carrier (DAMA)
- Adaptive Bandwidth On Demand (ABOD)
- QoS Policy (IIR/LIR/CIR/HIR)
- 6 Priority Levels

Connectivity Management

- On-Demand Link Activation
- Link and Traffic Validation
- Dynamic IP Routing over Satellite
- Local and Network Static Routing Entry

Resource Management

- License Sharing/Distributions over Multiple NCS's
- Transponder Bandwidth Pool Sharing
- Network (hub and remotes Hardware) inventory

Link Management

- Variable MODCOD selection/assignment

Carriers from hub and remotes are activated on-demand and assigned frequency channels from the shared bandwidth pool without additional multiplexing overhead to achieve 100% efficiency. Network signaling adds less than 1% overhead in bandwidth consumption. The NMCS keeps network OPEX at minimum at all time while maintaining high level of quality of services.

The system continually polls monitored devices for their real-time status, which along with dynamic links can be viewed on zoomable maps. It saves all statistics, events and alarms in its database server to complement real-time analysis with historical analysis and to assist with capacity planning.

SkySwitch® NMCS is easy to deploy and runs on Linux operating system. Authenticated log-ins, user permission profiles and auditing of all user actions ensure a secure operation. Event and fault management notifications are sent when important status changes occur.

SkySwitch® NMCS is more than a traditional VSAT network manager because it was designed to implement a new generation network based on IP Switching technology. Its powerful visualization tools, management tools and ease of use make SkySwitch® NMCS invaluable tool in the management of satellite VSAT network.

- TPC and LDPC coding selection by group

Monitor and Control

- Traffic and Network Map Display
- Runtime Traffic Monitoring
- Remote Equipment Monitor and Control
- Fault and Alarm and Notification

Security and User Management

- User name and password control of Level of Access and Local/Remote Log in

Traffic Control

- Multicasting/Broadcasting
- Videoconference
- Pre-Assigned Multiple Access (PAMA) Activation

Reporting

- CDR
- Event Log

System Requirements

- Server: Linux Enterprise Server, Red Hat, Ubuntu
- Client: Windows XP/7, Linux Desktop, or Mac OS with IE, Firefox, Safari, or Chrome

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