

VMS Map View Displays Vessels/Vehicles On-the-Move

### Introduction

The Roaming Oceanic Satellite Server (ROSS) is an integrated location server that works in conjunction with our Vipersat Management System (VMS) to facilitate on-the-move satellite communications for oceanic vessels. ROSS enables remote modems to interface with stabilized, auto-tracking antennae, maintaining connectivity as vessels move through footprints of different satellites. Vessel position data, satellite signal and management status are constantly monitored to determine when satellite handoff is necessary. ROSS stores the operational and configuration information on-board remote terminals, including satellite footprint maps, shoreline contour vector maps, exclusion areas, link budget information, multiple modem configurations and other administrative information. ROSS is implemented in the remote terminals in a fully distributed architecture, eliminating a potential single point of failure in the mobility system.

The ideal complement to our Vipersat Management System and bandwidth-efficient modems, the Roaming Oceanic Satellite Server is suited for use on cargo ships, workboats, freight liners, tankers, cruise ships and military vessels.

### Key Features

- Robust platform
- World vector shoreline database
- Interfaces with antenna control unit
- Event log
- Tracking log

### Robust Platform

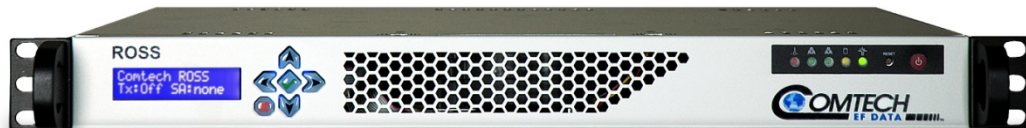
ROSS is based on a rack-mountable hardware platform with a powerful onboard CPU and software. It offers the flexibility of 10/100/1000Base-T network interfaces, RS-232 for console connectivity and USB for re-imaging and upgrading.

The operational and configuration information (satellite footprint maps, shoreline contour vector maps, exclusion areas, link budget information, multiple modem configurations and other administrative information) are stored in non-volatile flash memory for increased reliability and enabling the server platform to retain the stored information even when not powered on.

### World Vector Shoreline Database

A database of world vector shorelines is provided. It has better resolution than the Federal Communication Commission (FCC) and Earth Station on Vessels (ESV) requirements.

Regions are identified as transmit or don't transmit, and transmission can be disabled based on location.



## Interfaces with Antenna Control Unit

ROSS enables remote modems to interface with stabilized, auto-tracking antennae, maintaining connectivity as roaming vessels move through footprints of different satellites. Vessel position data, satellite signal and management status are constantly monitored to determine when beam or satellite handoff are necessary.

## Event Log

The server includes a system event log capable of storing 500+ events. Utilizing a circular file format, the events will wrap when the buffer is filled. Each event is identified with an event type/category and a time stamp. The events can be retrieved and viewed locally or over the air at specified intervals via the ROSS client or the Configuration Editor application.

## Tracking Log

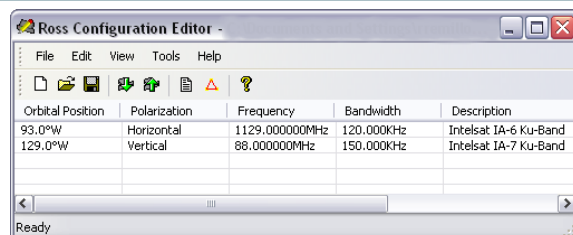
ROSS provides a timed/dated tracking log for vessel position and transmission parameters. Each entry is timed at 20 minute intervals and complies with FCC part 25.221(c). Utilizing a circular file format, the server can store 32,000+ entries or 450+ days of vessel position, transmission frequencies, transmit status, data rates and modulation.

## Map View

Available with the Vipersat Management System v3.6 and later is a 3D globe map view with zooming and latitude/longitude site placement. The movement of vessels can be viewed by way of GPS feedback. In environments where it is not desirable to have location data displayed, the function can be disabled.

## User Interface

The ROSS Configuration Editor (RCE) is the main user interface to the database files in the ROSS unit. The information in these files enables the system to keep all of the remote vessels in constant communications with hubs and each other as they traverse the globe. Modem configuration files and service areas are uploaded and downloaded through the network to the ROSS unit to coordinate parameters and performance with the system to maintain these communications.



The RCE gathers different elements and consolidates them into a single structure which is uploaded to the ROSS file manger. The RCE also provides the capability for file uploads and downloads either through local LAN or over the air interface.

## System Specifications

### Server Components

CPU	Intel Celeron, 2.6 GHz, 1 x 100mm blower fan
Operating System	Linux 2.6.16.2
RAM	512 MB
Flash Drive	1 GB Disk-On-Module (DOM)

### Front Panel

Buttons	Power On/Off button System Reset button
LEDs	Power LED Hard drive activity LED 2 x network activity LEDs system overheat LED

### Power Supply

AC Voltage	100 – 240V, 60 – 50Hz, 5Amp
LCD front panel display	Status, control, and configuration

### Rear Panel Ports

2 x Network Interface	Ethernet 10/100/1000Base-T, NIC 1, left port only used
1 x RS-232	Fix console, user interface
2 x USB	Re-Imaging or Upgrades

### Operating Environment

Operating Temperature	32° to 104°F, (0 to 40°C)
Non-Operating Temperature	-40° to 158°F, (-40 to +70°C)
Operating Humidity Range	8 to 90% non-condensing

### Dimensions

Footprint	1U rack mount
Dimensions (height x width x depth)	1.7" x 16.8" x 14" (43 x 427 x 356 mm)
Gross Weight	14 lbs (6.4 kg)



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