RST100 –
Alert & Tracking Solutions

The Beam Remote Satellite Terminal RST100 provides reliable and convenient global telecommunications access voice, data & messaging services via the Iridium satellite network.

By using the add on TrackALERT terminal enables the Beam Remote Satellite terminal to support a Ship Security Alert System (SSAS) along with tracking and monitoring applications.

For years the maritime market has been the largest user of satellite communications and today is no exception. In providing alert, monitoring and tracking solution access to a high quality communication service is essential to maritime users all over the world.

Beam provides solutions for the following key maritime applications;

- Voice calling
- Data services
- Crew calling
- Alert Systems
- Tracking / Monitoring

Iridium Satellite System

Iridium is the only provider of truly global satellite voice and data solutions with complete coverage of the earth. Iridium delivers essential communications services to and from remote areas where no other form of communication is available.

The Iridium system is the largest fully meshed satellite network constellation in the world and consists of 66 low-earth orbiting (LEO), cross-linked satellites and has multiple in-orbit spares

Total Peace Of Mind

The peace of mind to be able to access communication services anywhere, anytime is what makes the Iridium suite of services so unique. These services include;

- World Voice Communications
- Internet & Email Access
- Messaging
- Tracking & Control
- Security & Monitoring

Ship Security Alert System

The Beam / Iridium SSAS solutions incorporating the RST030 TrackALERT with the Beam Remote Satellite Terminals, enables full compliance with all SOLAS XI-2/6 mandated SSAS regulations.

Requirements

The key requirements for the SSAS system are as follows;

- Covert alert notification
- No physical signs of alert raised
- At least 2 alert buttons
- Full test of the system
- Notification to multiple parties
- Alert to specify ship details
- Alert to specify location data
- System cannot be locally reset
- Continuous alerting until reset

Cost Benefits

The benefit of the Beam Ship Security Alert System solution is that it can be easily integrated into standard Iridium voice and data services, therefore removing the need to pay additional monthly access fees specifically for the SSAS system.

BEAM SATELLITE ...KNOW HOW

Key Features & Benefits

- Fully compliant with Solas XI-2/6
- Simple installation / configuration
- Global access pole to pole
- Local & Remote configuration
- Remote Diagnostics & testing
- Passcode protected
- Support multiple alert buttons
- Support simultaneous tracking
- Multiple alert notifications
- Can support Ships NMEA feed
- Support separate GPS antenna
- No additional monthly fees

Alert Systems Applications

As the TrackALERT input is designed to provide support for multiple applications, it is possible to also combine the tracking and reporting functionality with an emergency alert system.

The TrackALERT interface can handle multiple alarm activation points. These activation points can be from physical buttons or digital /analog inputs.

Secure Alert Reset

The TrackALERT terminal is programmed to have a security Passcode. Once this is set this is the only way an alert can be deactivated. This can be performed locally or remotely using SMS commands.

Alert Notification

When an alarm is raised this will automatically generate the delivery of an alert notification to the predetermined destination. This delivery destination can be to another Iridium service, another mobile service (Selected Service Providers) or to any email address as specified.

REMOTE SATELLITE SYSTEMS (888) 989-8199
www.remotesatellite.com support@remotesatellite.com

IRIDIUM

Alert Priority

Whilst Beam gives you the flexibility to use the Remote Satellite Terminal for other Iridium Services, in the event of an emergency, the Beam terminal intelligence will always give priority to alerts and terminate any active Voice or Data calls in order to transmit the SSAS alert notification when used with the Beam RST100

System Testing

The TrackALERT system can be easily tested locally or remotely. The test enables a full test of the security system including the real alert buttons and delivery notification protocols, whilst not sending alerts to the Emergency Response centre.

Tracking Applications

The TrackALERT interface provides an intelligent vessel tracking interface and enables you to configure individual reporting fields such as long/lat/speed/direction/height as well as the status of alarms or other digital / analog inputs as configured on the terminal.

Movement Reporting

For tracking applications the intelligent system also allows the unit to be configured so that position reports are only sent when the vessel is moving; this is a great cost saving measure. However, at anytime the unit can still be remotely polled for a current position as required.

Installation

The TrackALERT terminal can be easily installed either as a standalone terminal connected to the communication device or in the case when used with the RST100 it can be simply joined to the main interface using the mounting brackets.

The TrackALERT Interface

The Beam TrackALERT, alert and monitoring interface, delivers a highly intelligent tracking, monitoring and alert system for various applications.

Specifically the interface supports the Ship Security Alert System (SSAS) and enables anyone to easily and covertly transmit an emergency distress signal to the ship owner and any nominated Authority.

The RST030 provides an integrated intelligent voice, data and tracking solution using the Beam Remote Satellite Terminal RST100.

Intelligent Configuration

The TrackALERT interface units allow full configuration through the intelligent processor onboard the terminal.

This allows customization of various settings, notification addresses, notification types, test configuration, notification intervals, loop configuration, remote control as well as remote polling when required. All parameters can be configured remotely via SMS and retrieved by either SMS or SBD.

Inbuilt GPS

The RST030 has a built in GPS engine providing the flexibility to use any type of GPS antenna. The terminal will also take a GPS input from any NMEA feed.

The TrackALERT terminal priority can be set between the main and backup GPS inputs.

GPS Antenna Options

There is various GPS antenna option available to connect to the TrackALERT interface units.

BEAM
SATELLITE ...KNOW HOW

SSAS & TrackALERT Features

- Supports multiple GPS inputs
- Active GPS antenna
- Ships NMEA input

Multiple notification methods

- SMS
- Short Burst Data (SBD)
- SBD to 5 email addresses
- SMS to email

SSAS / Equipment test

- Full Test Remote or Local
- Configurable delivery advice

Intelligent Tracking

- Remote Polling on Demand
- Periodic Transmission
- Movement Activated

Intelligent Processor

- Fully configurable
- GPS signal monitoring
- Remote test of SSAS
- Remote software download
- SMS confirmation

Configurable Settings

- SSAS Information
- Alert notification
- Remote or local alert reset

LED Status

- GPS signal
- Power / Antenna

Intelligent alarm buttons

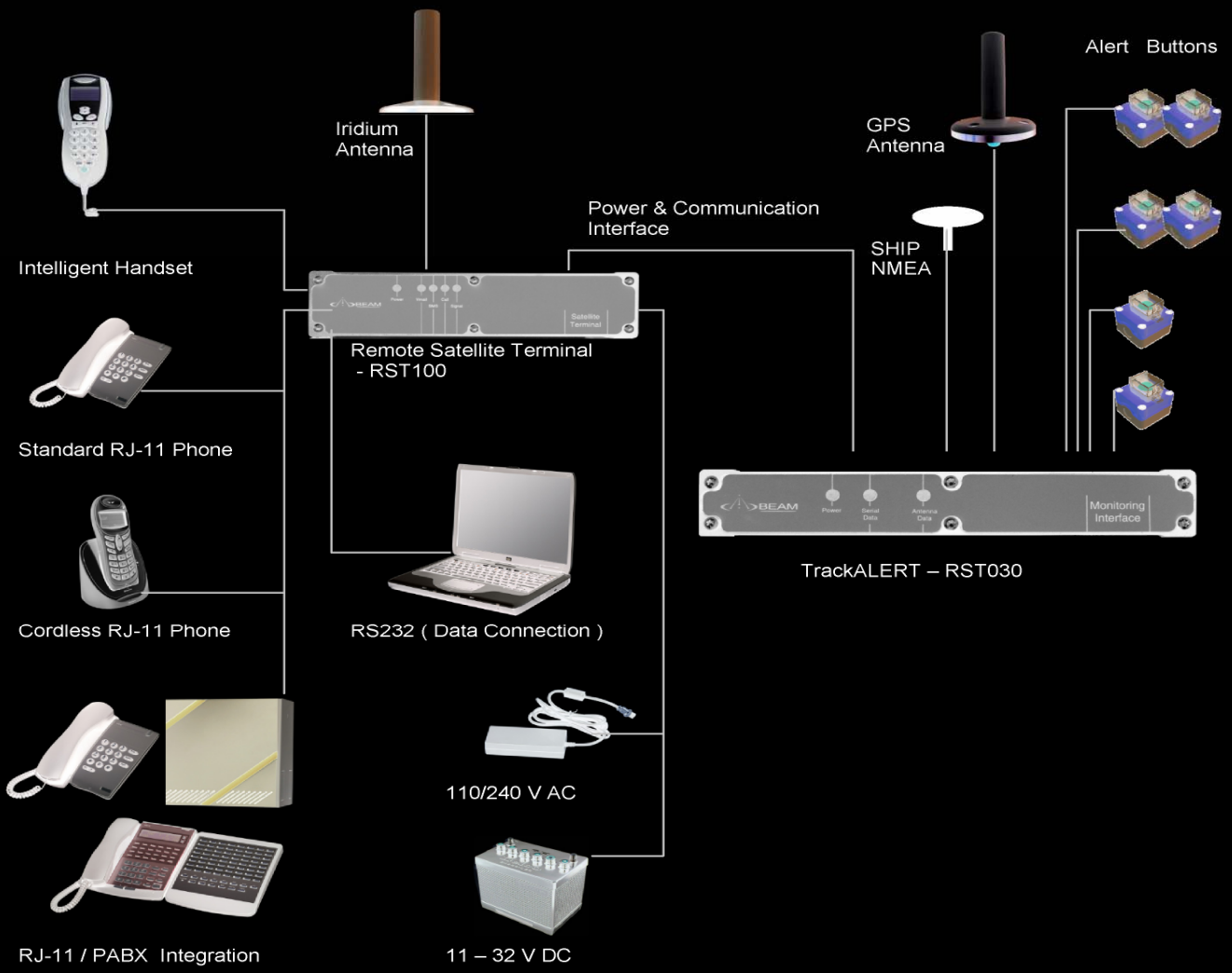
- 4 Individual loops
- Used for Alarm/ Monitoring
- Multiple buttons per loop
- Up to 500m cable length

REMOTE SATELLITE SYSTEMS (888) 989-8199
www.remotesatellite.com support@remotesatellite.com

IRIDIUM

RST100 & RST030
TrackALERT - Installation

BEAM
SATELLITE ...KNOW HOW



Technical Specifications

Power Specifications		
Power input voltage DC	7.5 V DC	
Powered from RST100 Terminal		
Power Consumption		
@ 7.5V DC	200mA	1.5W

Environment Specifications		
Temperature	Degrees ˚C	Degrees ˚F
Operating Range	-15 to +55	+5 to +131
Storage	-30 to +70	-22 to 158
Humidity	93% non condensing	
Vibration	2 Hz - 13.2 Hz & 13.2 Hx - 100 hz	
Corrosion	40 ˚C with 90% - 95% relative humidity after 2h salt spray	

Connectors / Interfaces	
Log Port	RS232 Serial Interface
Connection to RST100	RS232 Serial Interface
Serial Data Port NMEA	RS232 Serial Interface
GPS Antenna	SMA
Antenna Selection	Not Used
Loops 1,2,3 & 4	4-way Terminal Block
Analog Output	6-way Terminal Block

Kit Contents
RST030 Main terminal
Serial data cable to connect to RST100
Mounting Brackets
SSAS Software
Beam Management System - Configuration software
User & Installation Manual
CD - Beam Management System, AT Commands, Manuals

Physical Specifications	Unit only	Packed
Dimensions - mm	110 x 225 x 45	300 x 283 x 63
Dimensions - inches	4.3 x 8.8 x 1.7	12.9 x 11.1 x 2.4
Weight - kg	0.8	1.1
Weight - lbs	1.7	2.4

SSAS Specification
Supports multiple alarm inputs
GPS
GPS - Inbuilt Garmin GPS module
GPS - Support external NMEA feed
Message delivery via SBD or SMS
Remote or local system test
Passcode protected

Certification
Germanischer Lloyd
American Bureau of Shipping
RTTE
United States Coast Guard
IEC6045 including Vibration/Corrosion
C tick
CE Compliance

LED / Display	
Power	Green
GPS Antenna Data	Red / Green
Serial NMEA Data	Green

Accessories	
GPS Antenna - Mast Mount	RST909
GPS Antenna - Patch mount	RST901
Dual Mode Iridium Helix / GPS Patch antenna	RST902
GPS Antenna Cable - 6m / 18'	RST942
GPS Antenna Cable - 30m / 90'	RST941

Remote Satellite Terminal RST100 - Maritime

The Beam Remote Satellite Terminal provides reliable and convenient global telecommunications access voice, data & messaging services via the Iridium satellite network.

Ease of Use

The Beam equipment provides the ability for various installation options making it very simple to install and use the satellite system. Being able to use standard phone equipment provides a simple and easy to use solution.

World Voice Services

The Iridium system provides truly global voice services by covering areas that cellular and landline do not. The excellent signal strength provided by the Iridium constellation supports reliable connectivity across wide ranging landscapes and situations.

Inexpensive Calling

The ability for Iridium to provide standard pricing structure for calling from anywhere to anywhere without the need for confusing zones or bands, no unpredictable roaming charges provides an inexpensive means of communicating anytime, from anywhere to anywhere.

World Internet & Data Services

Using Iridium Data Services you now have access to the world from anywhere on earth. The complete range of Iridium data services allows you to simply and conveniently gain access to Internet, Email, and corporate LAN.

Standard Telephone Services

Standard telephone service features are available using the Beam RST100 including such services features as Call Forwarding, Call Barring, Voicemail, Auto-dial and Speed dial.

PBX / In-building Integration

The RST100 can be easily integrated into a PBX system using the RJ11 connection, enabling calls to be made or received from any extension within a building via the satellite network. In-building integration is ideal for lower costs satellite to satellite calling from shore to ship and ship to shore.

Intelligent Handset Interface

The optional Intelligent Handset, RST970, provides voice and SMS communications.
The handset is compact, lightweight, easy to install and comes complete with hang-up cup and inbuilt ringer. The unit supports full SMS functionality as well as an easy menu system to access phone settings.

Iridium Prepaid Services

With Iridium prepaid services, users have a cost-effective communications system at their fingertips, eliminating the headaches of monthly bills or subscription fees. Unused minutes carry forward so your minutes can be used in future months. Prepaid SIM's are ideal for situations with one SIM and one user.

Data & Messaging Service (SMS)

The Iridium SMS can send and receive messages of up to 160 alphanumeric characters, in a single message. The service operates in the same way as a generic SMS service does providing;

- Two-way global text messaging
- Send to and from other Iridium subscribers
- Send to and from cellular subscribers (Selected Providers)
- Send to and receive from email addresses.

Short Burst Data

Iridium Short Burst Data (SBD) service is a data service that enables value-added applications to send and receive short data transactions efficiently over the Iridium network. The SBD service is ideal for tracking and monitoring applications whereby small amount of data can be sent or retrieved at a high frequency level cost effectively.

BEAM SATELLITE ...KNOW HOW

Network Access Features

- Global coverage –pole to pole
- Low cost airtime rates
- No regions or zones
- Crew calling service
- Pre or post paid
- Itemised billing
- Support all data services
- Support all Voice services

Terminal Features

- Supports intelligent handset
- Uses standard phone equipment
- Connect to PABX
- SMS / SMSMO from terminal
- Supports SMS over POTS
- SSAS compatible
- Tracking & Monitoring Capable
- Intelligent Processor & Interface
- Phone Number Processing
- Line Reversal for Pay phone use
- Secure SIM Card Enclosure
- Local and Remote Configuration
- External Ringer available
- Supports Back up Battery
- Incorporates Call Logging
- Fully Certified – corrosion/vibration
- Easy to install

Power Inputs / Backup Battery

Beam terminals support 11-32V DC power input. A DC power cable is supplied along with an AC 110/240 plug-pack which makes it easy to install.

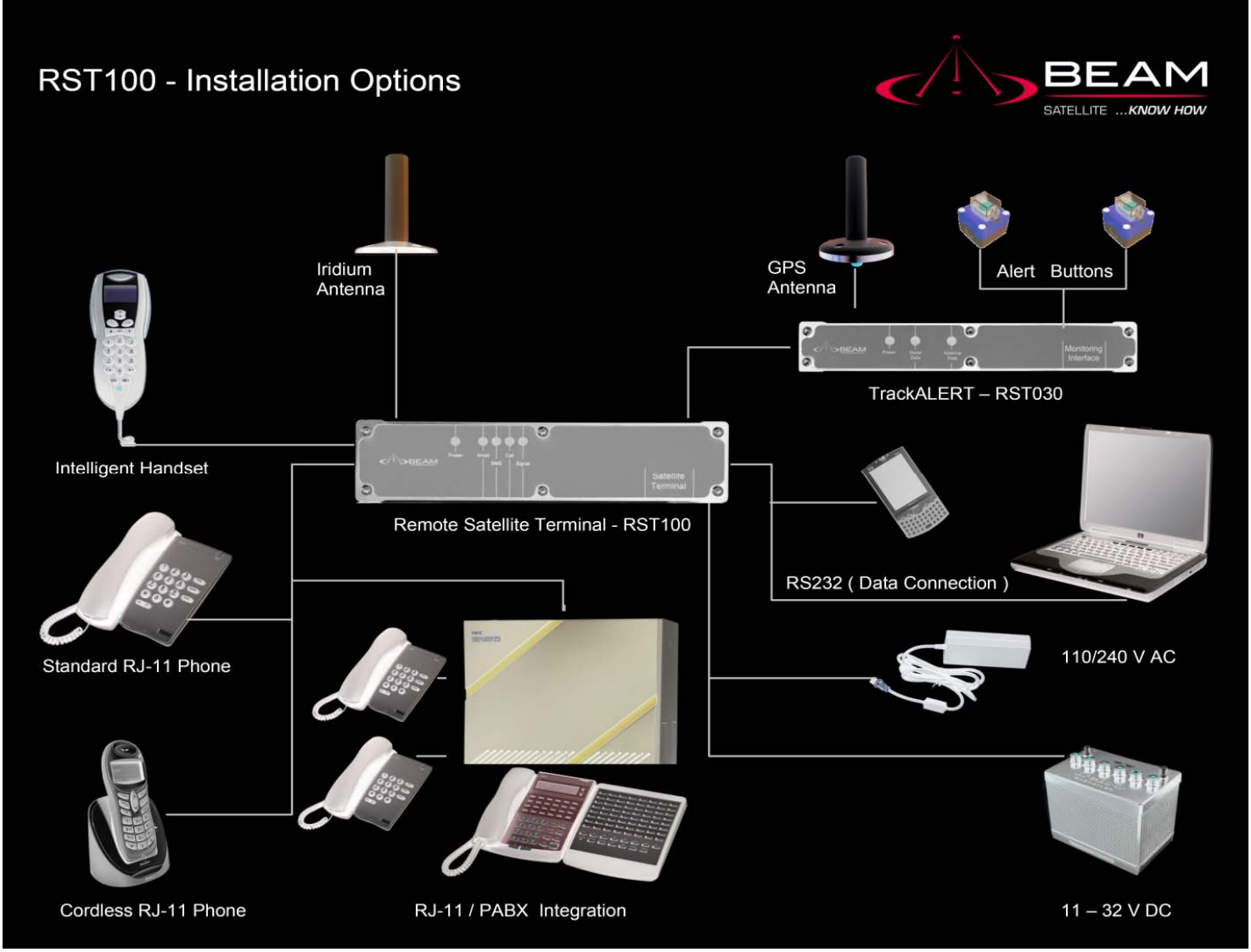
Configuration

The Intelligent processor inside the RST100 interface enables the terminal to be configured remotely or locally. Locally it can be simply configured with a PC using the Beam Management System (BMS) software supplied with the TrackALERT terminal.

REMOTE SATELLITE SYSTEMS (888) 989-8199
www.remotesatellite.com support@remotesatellite.com

IRIDIUM

RST100 - Installation Options



Technical Specifications

Iridium Network

L-Band transceiver frequency	1616 - 1625 MHz
Compressed Data	2.4 kbps
Voice / data modulation	10 - 12 kbps

Satellite Constellation

Intersatellite Links	23.18-23.38 GHz, Ka-band
Ground Segment Links	
Downlinks	19.4-19.6 GHz, Ka-band
Uplinks	29.1-29.3 GHz, Ka-band

RST100 - Remote Satellite Terminal

Power Specifications		
Power input voltage	11 - 32 V DC	
Power Consumption (AMPS)	12 V DC	24 V DC
Stand-by	0.35	0.16
Transmit	0.51	0.25
Stand-by - inc handset	0.47	0.22
Transmit - inc handset	0.59	0.29

Physical Specifications	Unit only	Packed
Dimensions - mm	225 x 271 x 45	400 x 325 x 90
Dimensions - inches	8.8 x 10.6 x 1.2	15.7 x 12.8 x 3.5
Weight - kg	2.25	3.25
Weight - lbs	4.9	7.1

Environment Specifications		
Temperature	Degrees ˚C	Degrees ˚F
Operating Range	-15 to +55	+5 to +131
Storage	-30 to +70	-22 to 158
Humidity	93% non condensing	
Vibration	2 Hz - 13.2 Hz & 13.2 Hx - 100 hz	
Corrosion	40 ˚C with 90% - 95% relative humidity after 2h salt spray	

Certifications
IEC60945
Germanischer Lloyd
American bureau of Shipping
electrical Safety
EMC Compliance

Connectors / Interfaces	
Intelligent Handset	RJ45 DPL BUS
Telephone / POTS	RJ-11 2 -wire / TN12 or 600Ω
Data Port	RS232 Serial Interface
Log Port	RS232 Serial Interface
Power	2 Pin screw type

LED / Display	
Power	Green
Signal	3 Colour
Call	Yellow
Voicemail	Green

Kit Contents
RST100 Main terminal
Mounting Brackets
AC 110/240V Plug Pack
DC 1.5m Power Cable
Data Cable
User & Installation Manual
CD - Beam Management System, AT Commands, Manuals

Accessories	
Mast mount antenna	RST910
Intelligent handset	RST970
TrackALERT- SSAS Unit	RST030
6 m / 18 f	RST932
9 m / 27 f	RST930
12 m / 36 f	RST933
SSAS / TrackALERT	RST030
External ringer / alarm	RST952

Beam Communications Pty Ltd
8 Anzed Court, Mulgrave,
Victoria Australia 3170

T: +61 3 9560 9999
F: +61 3 9560 9055
E: beaminfo@beamcomm.net

www.beamcomm.net

IRIDIUM