



# Remote Satellite Terminal RST100

## Installation and User Manual



# Remote Satellite Terminal RST00

## Installation and User Manual

### **BEAM Communications Pty Ltd**

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Product name: RST100 User & Installation Manual

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## Package Contents

Check that your RST100 package contains:

- 1 x RST100 unit
- 1 x Universal plug-pack power adapter, 110-240V AC
- 1 x Country Specific PC Monitor / Kettle Cord
- 1x DC Power Cable (for use only on 11 – 32V DC input)
- 1 x 9-pin-to-9-pin RS-232 cable (Male to Female)
- 1 x User Manual (printed)
- Allen Key, screws & washers
- 2 x Mounting Brackets
- 1 x Beam Starter CD

## Optional Accessories

The following optional accessories are available for your RST100.

- *FX2600 – Fax Adapter*
- *RST050 - Battery Backup Sub-System*
- *RST978 - In-vehicle Hands-free kit*
- *RST970 - Intelligent handset*
- *Cable Kit*
- *Antenna*
- *External Ringer*

See your Service Provider for pricing and availability of these quality accessories.

## User information

Please record your serial number here for future reference:



**Model:** BEAM RST100

**Serial no.:**



--	--	--	--	--	--	--	--	--

This number can be copied from the white shipping label on the RST100 box

Eg. 100A2800

The following PIN codes may be required to use your RST100, please complete these details for future reference.

PIN Name	Function	Symptom	Your PIN						
<b>SIM PIN</b> <i>Supplied by your Service Provider</i>	Unlocks SIM card to enable calls to be made	Signal LED flashes Red	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> </tr> </table>						
<b>PUK</b> <i>Supplied by your Service Provider</i>	Unlocks a locked SIM card	Signal LED flashes Red	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> </tr> </table>						
<b>User PIN</b> <i>Supplied here</i>	Allows access to user menu of RST100 via log port	Enter PIN on console	<b>9 8 7 6</b> <i>Default setting</i>						
<b>Supervisor PIN</b> <i>Supplied here</i>	Allows access to supervisor menu of RST100 via log port	Enter PIN on console	<b>3 1 7 0</b> <i>Default setting</i>						

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## Safety Information

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**IMPORTANT!** Please read the following information carefully before installing and using this BEAM equipment. Failing to follow instructions may compromise the safety of the product and may result in personal injury and/or equipment damage. Please consult your supplier if you have any further questions.

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Your RST100 is a low power radio transmitter and receiver, when ON, it receives and sends out radio frequency (RF) signals.

The design of your RST100 system complies with international safety standards.

Refer to the appropriate section of this *RST100 Installation & User Manual* for additional safety information.

---



**Warning:**

Do not open equipment. There are no user-serviceable parts inside.

If a DC power supply is to be used, its output must comply with the Safety Extra Low Voltage (SELV) requirements of IEC60950.

All connectors except the Line and Accessory sockets must only be connected to equipment ports which comply with the Safety Extra Low Voltage (SELV) requirements of IEC60950.”

---

## Conventions in this Manual

Warnings, cautions and notes appear throughout this manual and are represented by following conventions.



**Warning:** This symbol and associated text indicate a warning note providing information to prevent personal injury or damage to equipment.



**Note:** This symbol and associated text indicate a note providing general operating information.



**Interference:** All wireless phones may get interference, which could affect performance.



**Record:** Write details of your unit for easy reference when required. Ideal when troubleshooting.

## About BEAM Communications



BEAM Communications, is an authorised manufacturer of Iridium Satellite products.

BEAM develops subscriber products that utilise the Iridium satellite network of Low Earth Orbit Satellites, known as LEOs. The Iridium network is extensively used around the world by commercial enterprises and defence agencies.

BEAM products address the needs of individuals, communities, government agencies and the corporate sector, providing voice and data access without the need for traditional wire-line or mobile phone infrastructure.

As the Iridium satellite network is global, BEAM products address global markets, across the spectrum of rural and remote users, including households, motor vehicles, telemetry, maritime and emergency services.

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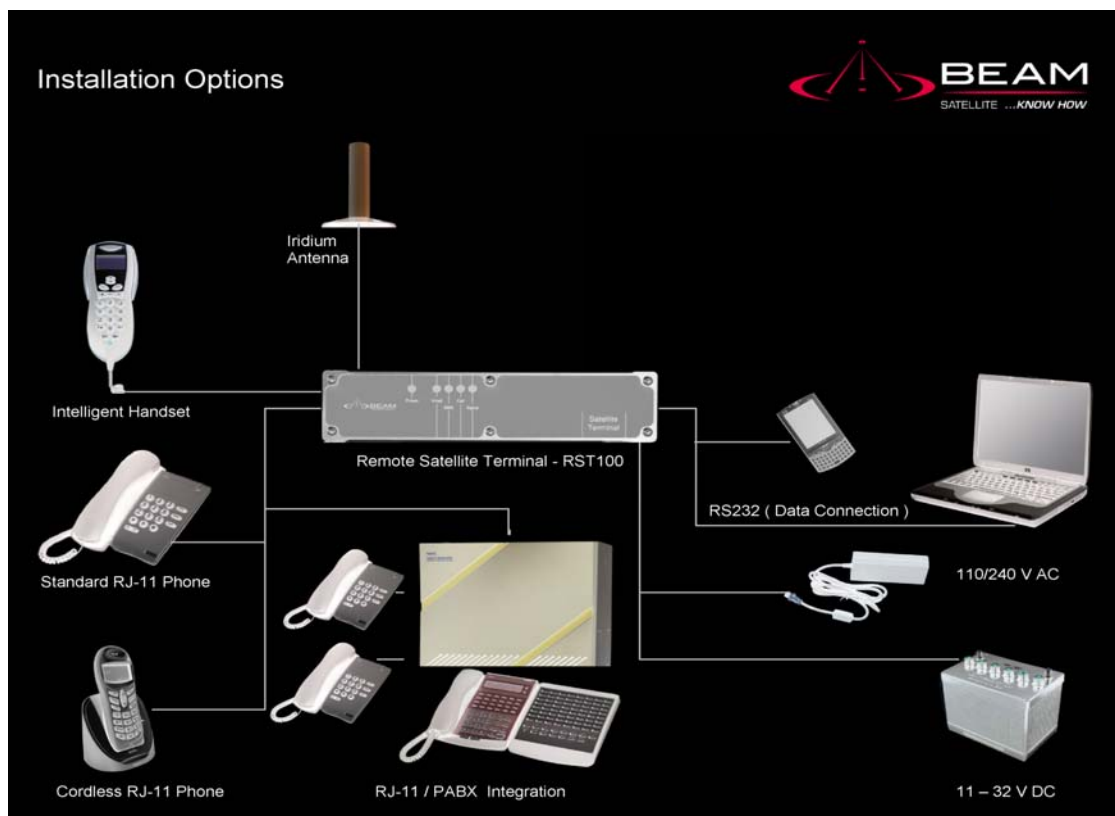
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## About the RST100



The RST100 - Remote Satellite Terminal:

- provides a reliable and cost effective telephone or data service connection when a wired connection is not available, via the Iridium network — a satellite-based, wireless communications network.
- allows the connection of standard telephone handsets and other telecommunications devices.
- emulates the functionality of the Public Switched Telephone Network (PSTN).
- includes two wire voice connections, a Hayes compatible modem, providing a serial socket for a computer, a socket for the connection of a plug-pack type mains power supply and a connection to an external antenna.
- provides a serial control interface and audio input and outputs by way of the transceiver's control and connection interface.





## The Front Panel

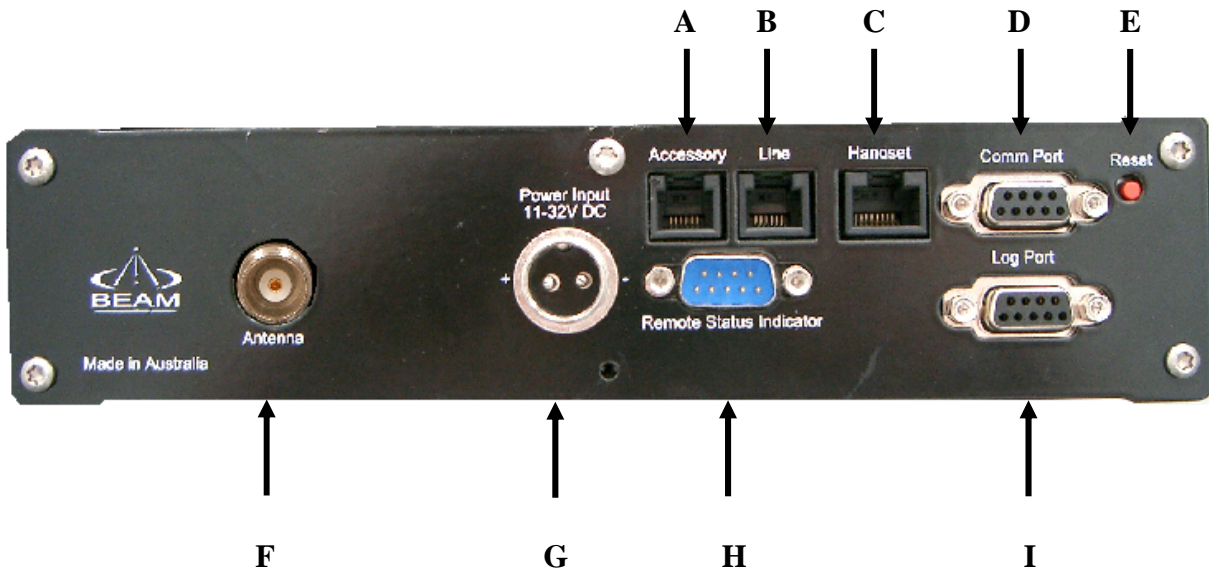


### Status LEDs

1. Power
2. Voicemail waiting\*
3. SMS waiting
4. Call status
5. Signal strength

\* Subject to network availability

## The Rear Panel



- A: RJ11 Phone Socket
- B: Parallel RJ11 Phone Socket
- C: Intelligent Handset
- D: Comm (Data) Port
- E: Reset Button
- F: Iridium Antenna Port
- G: DC Power Input
- H: Remote Status Indicator – Not used
- I: Log Port – Configuration Port using BEAM Management System

## The RST100 Status Indicators

The status indicators are located on the front panel of the RST100. The LED lights on the front panel show the RST100 status.



**Note:** The LEDs will blink in different combinations to indicate transmission status, signal strength and power.

---

### Power

When powering up the RST100, the Power LED flashes while it carries out internal self-diagnosis, and then illuminates a steady green

### Vmail

The Voicemail LED flashes to indicate message(s) are waiting in your voice mailbox to be retrieved. This service is subject to network support and not available from all providers.

### SMS

The SMS LED flashes to indicate an SMS message is waiting.

### Call

The Call LED indicates the status of the call, which can be:

- In Call
- Waiting to connect
- Incoming call

### Signal

The Signal LED indicates the strength of the signal from the Iridium network at your location. This LED displays different colours to indicate the strength of the RF (Radio Frequency) signal and different on/off conditions to indicate the terminal status.

Signal LED colour	Signal strength
Flashing	RST100 is registering with the network – please wait
Green	Strong
Orange	Acceptable
Red	No signal, or is not registered on the Iridium network

For further information about these aspects, refer to the troubleshooting section of this manual.

## Getting Started

### What is a SIM Card?

A SIM Card is a Subscriber Identity Module (computer chip) that contains identity information for accessing the Iridium network. It functions as the digital memory of the RST100 and also stores your personal information, including received SMS messages.

### SIM Card Protection

Handle the SIM card with care, avoid exposing the card to static electricity, water or dirt. Scratching or bending the SIM card will damage the card or its metal contacts.

### Installing & Removing the SIM Card

The SIM card is stored in a recess in the SIM card compartment located at bottom of your RST100.



If your Service Provider has not installed the SIM card for you, follow these steps to install it.



**Warning:** Make sure the RST100 is switched off before you insert or remove the SIM card. If you do not, the memory on your SIM card and or the SIM card itself may be damaged.

---

**Step 1:** Using a Phillips-head screwdriver, remove the holding screw and keep it in a safe place.



**Step2:** Slide-open the compartment cover.

**Step 4:** Remove the screws with the Allen Key provided to expose the SIM Holder of the RST100



**Step 5:** Gently insert the SIM card into the slot making sure that the golden connectors are facing downwards

**Step 6:** Replace the cover and secure with Allen screws

**Step 7:** Slide the compartment cover back into place

**Step 8:** Secure the cover with the holding screw removed in Step 1(above).

## Installing RST100

This chapter explains how to install the **RST100**.



**Warning:** Make sure the **RST100** is switched off before you connect any cables. If you do not, the **RST100** may be damaged.



**Note:** Before you install the **RST100**, determine if the unit is preconfigured or needs customer configuration.

## Mounting the RST100

The **RST100** comes with two (2) right angle brackets that allow mounting for mobile and fixed positioning.



**Note:** To ensure a secure installation:

1. Mount the **RST100** on a clean, even surface.
2. Clean the mount surface of the **RST100**.
3. Use the correct type of screws (as supplied).
4. If mounting on wood, ensure wood is structurally sound.
5. Leave enough room around the **RST100** to allow easy access to the rear panel.
6. Do not install the unit in a permanently concealed area. Access must be possible in the event future service be required.

The mounting brackets provide for two mounting methods:

**A:** Drop-in (inside corner) mount.



**B:** Flush (outside corner) mount



**Mounting the RST100 unit (continued):**

**Step 1:** Attach the two (2) mounting brackets securely to a suitable structure making sure the space between the brackets is wide enough to smoothly slide in the **RST100**.



**Step 2:** Secure the **RST100** to the mounting brackets using supplied screws.



**Step 3:** Carefully slot the RST100 between the two mounting brackets and secure with the retaining screws.

## Connecting the AC Power Cable

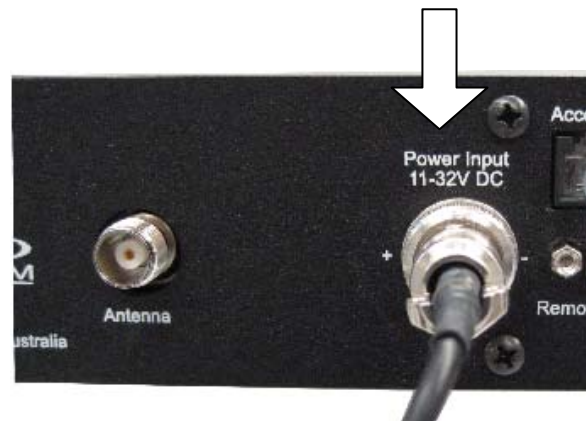
1. Make sure the AC power switch supplying the RST100 power pack is OFF.
2. Plug in the power cable into the power jack located on the rear panel of the **RST100**.



3. Secure the cable by tightening the plug collar.
4. Using a country specific PC Monitor or kettle cord connect this to the AC plug pack for accessing Mains power.

## Connecting the DC Power Cable

1. Connect the DC termination terminal of the cable to your DC power source
2. Plug the remaining end with the screw connector into the power jack located on the rear panel of the **RST100**.



3. Secure the cable by tightening the plug collar.

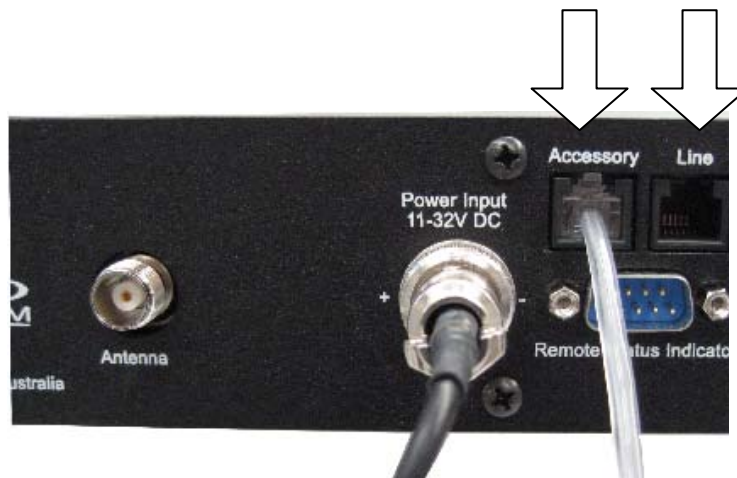
## Connecting a Handset or other POTS/RJ 11 device

1. Connect a telephone, answering machine or cordless phone into the Line or Accessory socket. This socket supports an RJ11 plug.
- 2.



*Facsimile Messaging via a standard RJ11 connection is not supported on the Iridium Network – see your Service Provider to discuss the dedicated FX2600 Iridium Fax Unit or visit us at [www.beamcommunications.com](http://www.beamcommunications.com)*

3. The Accessory & Line sockets work in parallel



## Connecting the optional Intelligent RST970 Handset

1. Connect to the Iridium Intelligent Handset, if supplied, directly to the Handset socket of the **RST100**.



*Figure: RST970 Handset cable connected to Handset Port*



*Only use the extension cables for this handset provided. Cables up to 30 metres in length are available; consult with your Service Provider.*



## Connecting a laptop or PC

1. Plug the laptop cable into the **Comm Port** of the **RST100**.



*Figure: Serial cable connected to Comm Port*



For more information on accessing Iridium Data Services with your RST100, please refer to the Beam Data Guide (available at [www.beamcommunications.com](http://www.beamcommunications.com))

## Connecting to the Log Port

1. Plug the laptop cable into the **Log Port** of the **RST100**.



*Figure: Serial cable connected to Log Port*



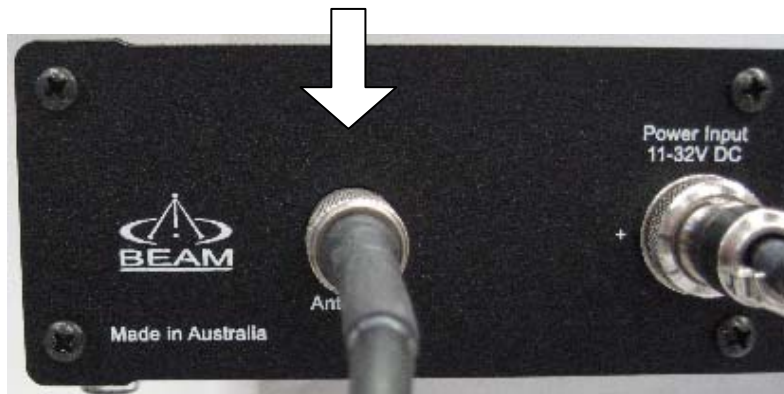
The Log Port should only be used for configuration and control of the terminal equipment. The Log Port cannot be used for communications or data services.

The **Log Port** can also be used when using a **BEAM Alert/Monitoring Device**, refer to the instruction provided with the accessory device for configuration and installation.

## Connecting an Antenna Cable

1. Plug the antenna cable into the antenna jack located on the rear panel of the **RST100**, as shown below. Secure this cable by tightening the connector collar.
2. The specified cable being used must not exceed the Iridium 3dB maximum loss rating. This will ensure maximum performance of your **RST100**.

*Refer to your Service Provider for full details or to purchase an approved cable.*



*Figure: Antenna cable connected to a RST100*

## Installing the External Antenna

Refer to the separate **“Iridium Antenna Installation Guide”** for complete instructions. This guide is supplied with your RST100, or available for download at [www.beamcommunications.com](http://www.beamcommunications.com)

## RJ11 / POTS Equipment

The **RST100** supports:

- multiple variations of standard telephone equipment including: standard corded, cordless, multiple handset cordless, answering machines, and other external ringing devices.
- a telecommunication standard of 3REN, which allows it to support multiple extension of the line.
- long cable runs off the RJ11 socket. This provides flexibility for installation as well as running long line distances from power in remote environments.
- most RJ11 equipment that can be purchased in most countries. It is advisable to purchase equipment that is endorsed or certified by the telecommunication authority in your country.

## PIN Codes

To activate your **RST100** to make and receive calls, you may need to enter a PIN code, described below.

RST100 Signal LED	Handset tone	Action required
Flashing Red LED	Distinctive dial tone: two tones of <i>equal</i> length	Enter four digit <b>SIM PIN</b> and await a change of tone (up to 10 seconds), then hang up.  When successful the phone will register and proceed with normal use
Flashing Red LED	Distinctive dial tone: high tone is <i>longer</i> than low tone	Enter the <b>PUK code</b> , await a change of tone (up to ten seconds) and hang up.  When successful the phone will register and proceed with normal use
Constant LED	Normal dial tone	No action required



The PUK code is required to be entered if the SIM PIN is entered incorrectly 3 times in a row. The SIM card will be permanently disabled if an incorrect PUK is entered 10 times in a row.

## Making a phone call

### Logging on to Iridium Network

With the power turned on, the **RST100** will attempt to register with the Iridium network. The **Signal LED** uses colours to indicate how strong the Iridium signal is at your location.

Signal LED colour	Signal strength definition
Green	Strong
Orange	Acceptable
Red	No signal, no calls possible refer to "Troubleshooting" section

In most cases the indicator will show green after a short period of approximately 15 seconds – orange indicates an acceptable but marginal signal strength.



*If the indicator remains solid red, there is a problem with the installation and/or the SIM card – calls cannot be made or received. To resolve this situation refer to "Troubleshooting" section of this manual.*

---

### Making a phone call

To successfully make a call on the Iridium network, you need the following:

- *Dial tone on the telephone handset*
- *Call LED must shine green or orange continuously.*

Continue to make your phone call as you normally use a traditional phone, noting any dialling prefix instructions advised by your service provider.

Once you have entered the phone number you will hear progress pips from the Iridium network. It can take up to 30 seconds for the Iridium network to connect a call, so a pause at this stage is not unusual.

You will shortly hear the called party end ringing, or hear a busy tone and voice message indicating why your call was not possible. When the other party answers the Call LED will change from steady orange to flashing orange, indicating 'call in progress'. This is a normal operating procedure.

To end the call, hang up the handset. The Call LED light will then turn off.

## Accessing Vmail and SMS on your RST100

### Voicemail

When a Voicemail message has been received by the **RST100** the **Vmail** LED will flash. The LED will stop flashing when the message has been cleared when the user connects to the Voicemail retrieval number programmed in the **RST100**.

### SMS - Short Message Service

When an SMS has been sent to the **RST100**, the SMS LED will flash. This means that the SMS is ready to be read. The indicator is cleared when the SMS has been read and cleared from the RST100 memory.



**Note:** Refer to the *RST100 Configuration and Beam Management System Manual* for details of how to connect a PC to the RST100 to read and send SMS messages.

---

## Connecting your RST100 with a PABX

The **RST100** RJ11 port presents as an FXS line, that is, it looks like an exchange or central office line to a standard DTMF telephone attached to the RJ11 analog port.

If instead of a standard telephone, a PABX is connected, then the **RST100** is performing the role of the network trunk as shown below:

Call Progress	FXS
Initiate incoming call	Sends ring to PBX
Call Progress state	Indicated by configured service tones
Detects outgoing call from PBX	Detects off-hook from PBX
Progress state	Sends dial tone to PBX
Signalling in-call	DTMF
Detect disconnect	Detects on-hook from PBX

The **RST100** RJ11 default port setting is set to an “International Default” to operate out-of-the-box with most phones and PABXs available.

Within this International Default the line impedance is set to *600 Ohms* and the levels in the up and downlink directions to suit the expected deployment scenarios.

Specific implementations and terminal equipment may require adjustment of these parameters in association with your Service Provider.

## Configuring the RJ11 port parameters

The ability to configure the RJ11 port parameters is one of the major features of the **RST100**. Port parameters can be configured using the BEAM Management System (BMS).

The BMS allows the configuration of:

- Dialed number processing (to support crew calling and specialised applications)
- Line settings such as dial tone frequency and sound (in order to make the **RST100** sound like any other phone in the network)
- Gain settings (to allow optimisation for short and long copper tails up to 500m)
- Impedance (to accommodate a large range of terminals equipment including PBXs)

This ability to adapt the **RST100** to particular applications opens up new areas of use in:

- *Crew Calling*
- *Rural Community Centres*
- *SOHO use*
- *Universal Service Obligation activities.*

The RST100 is designed to support multiple phones in parallel, and can operate with many common calling card platforms allowing the creation of specific solutions to address specific needs.

The configuration of the RJ11 interface is covered in the *RST 100 Configuration and Beam Management System Manual*, a companion to this document.

## Configuring SMS-POTS Feature



**Note:** The **SMS-POTS** Functionality is only available on RST100 terminals with the following serial number type :

*Serial Numbers 100AXXXX “ The serial number must contain an “A” to support the SMS-POTS Functionality. Refer to the User Information section to verify your RST100 is SMS capable.*

The **RST100** can support the use of an SMS-POTS telephone to provide SMS messaging over the Iridium network without the need to use an Intelligent handset or a Computer to send and receive SMS messages.

Using a POTS-SMS telephone it is possible to initiate an SMS message and send it to another Iridium user or to another cellular user (selected Service Providers only).

Do not use an Intelligent handset in conjunction with an SMS-POTS telephone as the Intelligent handset and the SMS-POTS telephone cannot receive SMS messages sequentially. The SMS-POTS telephone will always have priority.

Using an SMS-POTS telephone connected to an RST100 enables the handset to be run long distances from the RST100 over whilst still supporting SMS. Typically the Intelligent type handsets are limited to less than 10m/30' whereas the SMS-POTS being on the RJ11 line will support 100s metres / 1000s feet.

### **Connecting an configuring an SMS-POTS telephone**

An SMS-POTS telephone is easily connected to the RST100 terminal via the RJ11 connection (as mentioned in 'Connecting a Handset or other POTS/RJ 11 device' section of this document).

Using the BEAM Management System the **RST100** must be configured to enable the SMS-POTS feature.

For more information, consult the *RST100 Configuration and Beam Management System Manual*, Available on the Beam Starter CD supplied with the terminal, or available for download from [www.beamcommunications.com](http://www.beamcommunications.com)



## Remote Configuration

The Supervisor Menu items are available for remote configuration via a combination of the Iridium Short Burst Data and or SMS services. *Refer to your Service Provider on how to register for this service.*

To configure your RST remotely you will need to know its Phone Number, Supervisor PIN and International Mobile Equipment Identifier (IMEI) number.

Multiple configuration commands can be sent in one SMS and the Supervisor PIN is only required once at the start.

Once the PIN has been entered the top of hierarchy for each subsequent command in the message is the Supervisor menu.

Digits can be entered exactly as you would enter them if you were on a directly connected terminal. All replies to your commands come back in one SBD email attachment and the original entered command is echoed back so you can see what each reply is for.

### Eg. To set the Ringer Frequency remotely to 20Hz

Send an SMS to the phone number containing: **RST RMT 3170 4120**.

Where **RST RMT** is the start of command message flag and **3170** is the default Supervisor PIN, **4** selects the tone menu, **1** selects ring frequency and **20** (Hz) is the new ring frequency required. The automatic confirmation reply returned via email will contain:

```

From: <Iridium SBD Service (Tempe, AZ)>
Sent: Tuesday, August 13, 2002 12:49 PM
Subject: SBD Msg From Unit: 304050607080903

MOMSN: 23
Time of Session (UTC): Tue Aug 13 16:51:04 2002
Session Status: TRANSFER OK
Message Size (bytes): 351

Unit Location: Lat = 59.372463 Long = 75.309806
CEPradius = 3

Message is Attached.
```

The attached .sbd file returned will contain:

**3170 OK**

**Confirms PIN OK41 25 OK**

Advises content of parameter before the change is effected.

## Accessories & Options

### BEAM RST970: Intelligent Handset



The **RST100** is capable of supporting voice services on the Iridium network through the use of an (optional) Intelligent handset .

This Intelligent Handset enables you to access Voice and SMS services over the Iridium network in conjunction with the **RST100**.

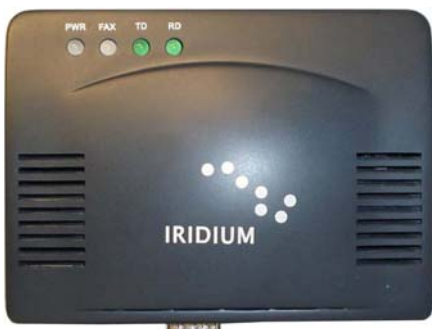
#### Connecting an Intelligent Handset

The Intelligent handset is easily connected to the RJ45 socket located on the RST100 Voice Data module.

The unit should be powered off before inserting the connector and then reset once connected.

An extension cable to the Intelligent handset can be sourced and used if required.

### FX2600 : Fax Adapter



The FX2600 Fax Adapter allows you to send faxes from any Group 3 fax machine to anywhere in the world.

The RST973 simply connects to the COMM Port on the RST100 module.

The installation instructions supplied with the FX2600 kit will provide more detailed instructions.

## Specification Summary

<b>Electrical</b>	
Power	11-32V DC 2.5A
Plug-pack (if provided)	90-250VAC 50/60Hz input
<b>Power Consumption (Average)</b>	12Volt                      24Volt
Standby Mode	0.350A                      0.165A
Talk/Transmit Mode	0.515A                      0.255A
<b>Subscriber Line Interface</b>	
Ring Equivalence Number	3 REN
Impedance	600 $\Omega$ or TN12 2-wire interface
Open circuit voltage	-48V DC $\pm$ 5%
Ring Voltage	> 56V RMS
EMC Compliance	C-Tick and A-Tick, CE mark,
<b>RF Interface (L-Band Transceiver)</b>	
Frequency range	1616MHz to 1626.5MHz
Average Power	7W during a transmit slot (max)
Average Power	0.6 W during a frame (typical)
Receiver Sensitivity	-118.5 dBm at 50W (typical)
Receiver Spurious Rejection at offsets > 1 MHz (typical)	60 dB
Duplexing method	TDD (Time Domain Duplex)
Oscillator stability:	$\pm$ 1.5ppm
Input/output impedance	50 Ohms
Multiplexing method:	TDMA/FDMA
<b>Environmental</b>	
Operating Temperature Range	-15°C to +55°C ambient
Operating Humidity Range	<85% RH non-condensing
Storage temperature	-30C to +70C
Weight	2.5 kg
Dimensions	225 x 277 x 53mm
Compliance	Full IEC60945

## RS232 Specification

The RST-100 is provided with two RS232 serial ports for log and data connection. Both are 9-pin D-type (female) sockets, wired DCE for connection to a standard PC with a 1:1 cable.

### Physical Connection

The pin-out of both connectors is described in the following table:

Pin	Signal	Direction	Description
1	DCD	RST→PC	Data Carrier Detect
2	RXD	RST→PC	Received Data
3	TXD	PC→RST	Transmitted Data
4	DTR	PC→RST	Data Terminal Ready
5	GND		Signal Ground (Common)
6	DSR	RST→PC	Data Set Ready (CTS and DCD)
7	RTS	PC→RST	Request to Send
8	CTS	PC←RST	Clear to Send
9	RI	RST→PC	Ring Indicate (7.5V on Log port)

## RS232 Port Signal Support and Handshaking

On the data logging port, DCD and DSR output signals are related to DTR input and CTS is tied to RTS as shown.

The Data port supports full software XON/XOFF handshaking on data (AT commands bypass this as standard for Hayes modems) or full hardware handshaking on RTS/CTS with DCD carrier indication.

The Log port has no software handshaking support and hardware handshaking is loop-back only since the command set requires a minimal buffer.

RS232 Port	
LBT Data Port	Data Logging Port
DCD	DCD = DTR
RXD	RXD
TXD	TXD
DTR	DTR
DSR	DSR = DTR
RTS	RTS
CTS	CTS = RTS
RI	RI not connected

## RS232 Port Electrical Parameters

The LBT “Comm” Port and Log Ports conform to the RS232 interface specification with the following parameters, however the Log Port communicates only at 9600.

Parameter	Specification
Communication Rate	220 to 115,200 Baud
Protocol	1 start bit, 8 data bits, no parity, 1 stop bit, asynchronous.
Voltage Levels and Sensitivity	RS232 compliant

## Troubleshooting

This chapter provides information to help you troubleshoot problems you may encounter while running the **RST100**.

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**Q** **No LEDs on RST100**

**A** *Check power is connected and switched on at the wall.*

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**Q** **RST100 fails to register with the Iridium service after 30 seconds**

**A** *Press reset button*

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**Q** **No dial tone**

**A** *Check if a data call is in progress and power is connected and equipment is in a normal state*

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**Q** **Cannot make call, two tone signal heard**

**A** *Phone requires a PIN or PUK, refer to the handbook*

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**Q** **PC cannot connect to RST100**

**A** *Check that the correct cable is used on the correct port, and that the bit rate is set the same for both terminal and RST100*

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**Q** **You cannot make calls.**

**A** *Check that the antenna is properly mounted.*  
*Do you have a clear view of the sky?*  
*Did you enter the number in international format?*  
*All calls made from the Iridium System require a special calling sequence; please refer to your Service Provider for these details.*  
*Check the signal strength meter. If the signal is weak, move the antenna to a more open area.*  
*Check the Network Selection settings.*  
*Check your Operator coverage map.*  
*Is Restricted displayed? Check the Call Barring setting.*  
*Has a new SIM card been inserted?*

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**Q You can't receive calls**

**A** *Check to see that your phone is powered on.  
Check the antenna. Is it properly mounted?  
Do you have a clear view of the sky?  
Check the signal strength. If the signal is weak, move the vehicle to a more open area.  
Check the Call Forwarding and Call Barring settings.  
Check the Ringer setting. If it is off, there is no audible ringer.*

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**Q You can't make international calls.**

**A** *Have you included the relevant codes?  
Press and hold the (+) key to display the international dialling prefix (+), and then enter the appropriate country code, followed by the phone number.*

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**Q Your PIN is blocked**

**A** *Enter the PIN unblocking key (PUK1) or contact your service provider*

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**Q Your PIN2 is locked.**

**A** *Enter the PIN2 unblocking key (PUK2) or contact our service provider.*

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**Q Your SIM card won't work.**

**A** *Is the card inserted the correct way?  
Is the gold chip visibly damaged or scratched? Return the card to your service provider.  
Check the SIM and phone contacts. If they are dirty, clean them with an antistatic cloth.*

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**Q You can't cancel call forwarding or call barring**

**A** *Wait until you are in an area with good network coverage and try again.*

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**Q The SMS or VMAIL indicator keeps flashing**

**A** *There is not enough memory available to store another message. Or there is a message waiting Use the message menu to read, delete messages and free up some space.*

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**Q** Your terminal has the SIM card inserted but the display says: Enter PUK

**A** *Enter the PIN unblocking key (PUK1) or contact your service provider*

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**Q** Your PIN is blocked

**A** *Check Card or Insert Card.*

*Check the card is inserted correctly*

*Check the contacts of the card are clean*

*Clean the chip with a soft cloth*

*See your Service Provider if continues*

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