



Remote Management Systems

## **Remote Telemetry Unit (RTU)**

### **Setting up an RTU for SMS**

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## Purpose of This Document

This document is a quick guide to the settings you need to enter in order to configure an RTU to send SMS messages. Please refer to the RTU Quick Setup Guide and RTU Configuration Page Setup Manual for more information. Both these documents are available on the Downloads page of the RTU web site ([www.rmsystems.com](http://www.rmsystems.com)).

## Connecting the Modem to the RTU

It is best to connect the modem to the RTU *after* you have configured the RTU. This makes it less likely that the RTU will cause block your GSM SIM card because of an incorrect PIN number setting.

If possible, check that your SIM card works and has been configured for SMS messaging. You can do this by inserting the SIM card into a suitable mobile phone and sending an SMS message manually.

Remove the SIM card tray from the GSM modem (note that the tray can fall right out onto the floor, so be careful to do this over a clear surface such as a desk). The tray is found between the antenna and the LED. Use a pen to push the button to the right of the tray, and the tray will be pushed out.

Place the SIM card in the tray and place the tray, with the SIM card, back into the modem.

The GSM modem is supplied with a cable that has a female DB9 connector at one end and a male DB25 connector at the other. Plug the DB25 connector into the female connector on the modem. Plug the DB9 connector into the male DB9 connector in the back panel of the RTU, labelled COMM1 RS232 (MODEM).

When this has been done, and the RTU configured, connect the power to the modem. The power supply plugs into the power connector to the right of the DB25 connector.

## RTU Settings

To set up the SMS settings, you will need to adjust a few settings to suit your situation.

### ***Using the Front Panel***

You can use the front panel to adjust the settings for SMS usage.

Following is a quick summary on how to use the front panel. The name of the menu being displayed is shown in the top left corner of the LCD. The first menu shown when you power up the RTU is the TOP menu.. Use the *left* and *right* arrow keys to navigate to a menu item. The menu item may show a value or it may allow access to a sub menu. To access a sub menu, press the *tick* (select) button; this is the rightmost button of the front panel. Pressing the *large back arrow* (cancel) button will:

- If you are editing a value, the change will be discarded.
- Move up a menu level.

When you save a new setting, the logo portion of the front panel will flash, and a “C” character will flash in the lower left of the LCD. ***You must not make any other changes until this flashing has stopped.*** This could take 20-30 seconds when you change some DEVICE SETTINGS and ETHERNET PORT SETTINGS.

To change the settings to allow SMS messages to be sent, start at the TOP menu. Use the *left* and *right* arrow keys to move the cursor to the DEVICE menu icon, then click the *tick* button.

- From here, use the *left* and *right* arrow keys to navigate to the following sub menus, then use the *tick* button to select each one.

### **SERIAL PORT Settings**

- Set EQUIPMENT TYPE to GSM MODEM.
- Set BAUD RATE to 9600.
- Set FLOW CONTROL to HARDWARE.
- Set MODEM TYPE to 0.
- Set MODEM PIN to the PIN number of your SIM card. It is *vital* that you enter this number as 4 digits, correctly.
- Leave the other settings blank.

### **SMS Settings**

- Set SMS A ENABLED to YES if you wish to send SMS messages.
- Set DIAL NUM A to the number to which you want SMS messages to be sent.
- Set SMS B ENABLED to YES if you wish to send SMS messages to a second number as well as the SMS A number.
- Set DIAL NUM B to the second number to which you want SMS messages to be sent.
- Set MIN MINUTES BEFORE REDIAL to a suitable number. Once the RTU has sent SMS messages, it will wait this number of minutes before sending another message when a new event happens. This setting is designed to reduce the number of messages sent and congestion at the receiving end.

### **DEVICE Settings**

- Set CONN to SER (SMS) ONLY.

## ***Using the ViewRTU Program***

If you are using the ViewRTU program, you will first need to connect the RTU to your network. You will need to use the front panel to change the ETHERNET SETTINGS (found under the DEVICE item in the TOP menu) to a setting suitable for your network.

You can download the ViewRTU program from the ViewRTU Utility Installation Files entry on the Downloads page of the RTU web site ([www.rmsystems.com](http://www.rmsystems.com)).

Once you have installed and started the program, it will request the IP address of the RTU. Once you enter the IP address, the program will contact the RTU and display its settings.

Click the *Settings* item on the menu bar.

### **Serial Settings**

Click the *SMS* tab.

Click the *Serial Settings* button.

Change the following settings:

- Set EQUIPMENT ATTACHED to GSM Modem.
- Set Baud Rate to 9600.
- Set Flow Control to Hardware.
- Set Modem Variant to 0.
- Set GSM PIN to the PIN number of your SIM card. It is *vital* that you enter this number as 4 digits, correctly.
- Leave the other settings blank.
- Click the *Save* button to send the settings to the RTU.

### **SMS Settings**

Click the *SMS* tab.

- If you wish to send SMS messages, tick the box to the left of Notification Phone for A and enter the number in the box to the right.
- If you wish to send SMS messages to a second number, tick the box to the left of Notification Phone for B and enter the second number in the box to the right.
- Set Minutes Before Redial to a suitable number. Once the RTU has sent SMS messages, it will wait this number of minutes before sending another message when a new event happens. This setting is designed to reduce the number of messages sent and congestion at the receiving end.
- Click the *Save* button to send the settings to the RTU.

## RTU (Device) Settings

For the RTU to send SMS messages, you will need to set the RTU's communication method appropriately. Once the RTU enters this mode, it will lose connection with your network and you will no longer be able to communicate with it using the ViewRTU program.

## Checking Your Setup

If you have entered an invalid PIN for your GSM SIM card, the ViewRTU program will place an indicator next to the GSM PIN setting on the Serial Settings tab. (Note: you get to the serial settings by clicking on the SMS tab, then clicking the *Serial Settings* button). This check is only made when the RTU actually attempts to send an SMS message.

Apart from the PIN number, you can only check your setup using the front panel.

- From the TOP menu, navigate to the RUN TIME INFORMATION icon (this is displayed as an "i" character).

- Navigate to the RPA menu item. This shows some messages as the RTU performs its tasks.
- Activate an alarm (eg short circuit one of the input ports) so the RTU will attempt to send an SMS message.
- The RPA menu item will show SMS START when the RTU first attempts to send a message.
- If the RTU cannot communicate with the modem (eg it is not connected properly or not powered up) it will show TOUT in the RPA menu.
- If the GSM PIN is incorrect, the RPA menu item will display BAD PIN as it tries to set the PIN for the SIM card in the modem.
- If the PIN number fails, the RTU will not attempt to send an SMS message again until a new PIN number has been saved.
- If the PIN is correct, the RPA menu item will display the number to which it is trying to send a message.
- If the message is sent successfully, the RPA menu will display SMS RDY.
- If it is unable to send the message, SMS FAIL will be displayed in the RPA menu item. If you navigate to the right (to the RPI menu) the RPI menu item will show the steps taken as short "SMS nn" messages where nn is a step number.
- Be aware that the first time you connect the modem to the RTU, it will usually fail once or twice before the mobile network will accept the SMS message. This will not be a problem after that.