



Ultra eSAM

RS232/RS485 USER GUIDE



INTRODUCTION

The eSAM and Ultra eSAM modems are both equipped with a single RS232 or RS485 port, accessible using the included terminal block. By combining this Serial port with the modems software and embedded 4G Modem, it is possible to connect two separate RS232 devices using the eSAM as a Serial to 4G LTE Bridge.

In this configuration two eSAM's will be required, one at each end of the RS232 Link. One will act as a server and the other will act as a host, but both RS232 Devices will be able to transmit and receive.

This document will explain how to configure the eSAM for this function.

Note: For RS485 devices, you will require an RS485 compatible eSAM model. Please contact intercel@intercel.com.au for further details.

SERVER CONFIGURATION

In this part of the guide, we will configure the DTU Server on one of the eSAM Modems.

1. First, we must ensure that this eSAM can be contacted by the Client eSAM. To do this, the server eSAM must either be connected to the same VPN as the Client or it must have a publicly accessible IP Address.

The IP Address can be read from the 'Status>Modem' Window

Status	modem	
Basic Information	Modem Select	0
LAN	Up Time	2466 seconds
WAN	Modem Status	connected
WLAN	Network Type	LTE
WLAN	Signal	(31)
Modem	IP Address	120.157.100.168
Routing Table	DNS	10.4.130.164
Network	SIM Status	ready
Applications	SIM ICCID	89610185001917598063
VPN	SIM IMSI	505013506992663
Forward	LAC	12447
	CELL ID	135911169

[Refresh](#)

Public IP Addresses are any addresses that are not in any of the following ranges:

10.x.x.x
192.x.x.x

It is not required for clients to have a Public IP Address, only the Host needs to have one.

2. Once we have confirmed that the Host is visible to the client, we can now configure the DTU Server.

The DTU Service is the function within the eSAM that is used to access the RS232/RS485 Port.

To configure the DTU Server, open the 'Applications>DTU/MODBUS' window

DTU Service

Connection Type dtu ▼

Basic Settings

 Work Mode Server ▼
 Local Port 1002 * 1-65535
 Protocol TCP UDP
 Received Timeout 100 * 1-65535 ms
 RS232 Data Timeout 100 * 1-65535 ms

Rs232 Setting

 Rate 57600 ▼
 Parity none ▼
 Databits 8 ▼
 Stopbits 1 ▼

3. Configure the DTU Server as follows:

Parameter	Setting
Connection Type	DTU
Basic Settings	
Work Mode	Server
Local Port	Whichever Port you want to use for DTU Communication
Protocol	TCP or UDP
Received Timeout	Set according to your application (100ms typical)
RS232 Data Timeout	Set according to your application (100ms typical)
RS232 Settings	
Rate	Set this to match your RS232 Device
Parity	Set this to match your RS232 Device
Databits	Set this to match your RS232 Device
Stopbits	Set this to match your RS232 Device

4. Save your settings, and ensure the service is enabled.
5. Connect the host to your RS232 Device

CLIENT CONFIGURATION

Now, we will configure the second eSAM Modem to act as a DTU Client.

- As described in the host configuration, the Host must have a public IP Address, so the client is able to contact it. The Client does not require a public address.
We can test the connection between client and host using the 'System>Network Test' Window. Enter the host IP Address as the destination and attempt to ping the Host. If communication fails, the Host is not able to respond to the client and we know the network configuration is incorrect.
- Open the 'Applications>DTU/MODBUS' window

DTU Service	<input checked="" type="checkbox"/> Enable <input type="checkbox"/> Disable
Connection Type	dtu ▼
Basic Settings	
Work Mode	Client ▼
Local Port	1002 1-65535
Protocol	<input checked="" type="radio"/> TCP <input type="radio"/> UDP
Channel Type	<input checked="" type="radio"/> TREBLE <input type="radio"/> BACKUP
Received Timeout	100 * 1-65535 ms
RS232 Data Timeout	100 * 1-65535 ms
Data Center Configure	
Server IP or Domain	<input type="text"/> Max length is 64
Server Port	<input type="text"/> 1-65535
Server IP or Domain 2	<input type="text"/> Max length is 64
Server Port 2	<input type="text"/> 1-65535
Server IP or Domain 3	<input type="text"/> Max length is 64
Server Port 3	<input type="text"/> 1-65535
Connect Interval	<input type="text"/> 1-65535 s
Retry Times	<input type="text"/> 1-65535
Heartbeat Settings	
Heartbeat Data	<input type="text"/> Max length is 64
Heartbeat Interval	<input type="text"/> 1-65535 s
Rs232 Setting	
Rate	57600 ▼
Parity	none ▼
Databits	8 ▼
Stopbits	1 ▼
<input type="button" value="Save"/> <input type="button" value="Refresh"/>	

- Configure the DTU Server as follows:

Parameter	Setting
Connection Type	DTU
Basic Settings	
Work Mode	Client
Local Port	Set the same as your Host
Protocol	Set the same as your Host
Channel Type	Treble
Received Timeout	Set the same as your Host
RS232 Data Timeout	Set the same as your Host
Data Center Configure	
Server IP or Domain	IP Address of your DTU Host
Server Port	Set the same as your Host
Connect Interval	Set according to your application
Retry Times	Set according to your application
Heartbeat Settings	
Heartbeat Data	Set according to your application
Heartbeat Interval	Set according to your application
RS232 Settings	
Rate	Set the same as your Host
Parity	Set the same as your Host
Databits	Set the same as your Host
Stopbits	Set the same as your Host

- Save your settings
- Connect the Client to your RS232 Device

At this point, your host and server device should connect and link the two RS232/RS485 Devices. If you encounter any issues, please contact intercel@intercel.com.au for support and troubleshooting.



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