# Terminus Demo Guide
## Serial to GPRS Bridge

Issue: R00

# Instruction Demo Guide for Terminus Serial to GPRS Bridge



## JANUS REMOTE COMMUNICATIONS

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# Terminus Demo Guide - Serial to GPRS Bridge

This document includes all information needed to successfully alter, compile, download and run the Terminus Serial to GPRS Bridge Demonstration. You may need to alter the demonstration, as well as configure your server to match your specific settings.

Relevant Telit Documentation for the application includes:

- Telit AT Commands Reference Guide
- Telit Easy Script in Python
- Telit GC864 Software User Guide

All can be accessed via Telit's website at www.telit.com

## Terminus Serial to GPRS Bridge Demonstration contents:

Terminus Serial to GPRS Bridge Demo.zip

| | | |
|---|---|---|
| 1.1. | | Python Scripts |
| | 1.1.1. | TerminusS2G.py |
| | 1.1.2. | GSM864QP_SER.py |
| | 1.1.3. | ATC.py |
| | 1.1.4. | timers.py |
| | 1.1.5. | exceptions.py |
| 1.2. | | Terminus Serial to GPRS Bridge Demonstration Guide.doc |
| 1.3. | | Netcat application |
| 1.4. | | Realterm application |

## Terminus Serial 2 GPRS Bridge demonstration requirements:

1. Personal Computer (**The Development Computer**)
   1.1. Windows OS (WINXP, 2000)
   1.2. Internal Serial Port (DB9 Connector)
   1.3. Pythonwin IDE installed
   1.4. Realterm installed
2. Personal Computer (**The Customer Server**)
   2.1. Windows OS (WINXP, 2000 or NT4)
   2.2. Connected to Internet
   2.3. Firewall to allow TCP/IP socket connections to PORT 5556
   2.4. Netcat installed

# 1 Getting Started –

The Development Computer

## 1.1 Installing Terminus Serial 2 GPRS Bridge Demonstration

• Unzip the contents of the Terminus Serial to GPRS Bridge Demo.zip file to a local drive on the Development Computer.

## 1.2 Installing Pythonwin IDE

• Install the Pythonwin IDE per the instructions in the GSM864Q Terminus User guide.
• Once the IDE is installed and configured, open the TerminusS2G.py script.

## 1.3 Installing Realterm

• Install Realterm application and follow installation instructions.

## 1.4 Customizing Demonstration Properties

In order to evaluate the Terminus Serial 2 GPRS Bridge demonstration, the customer *must* customize the following properties in the TerminusS2G.py file.
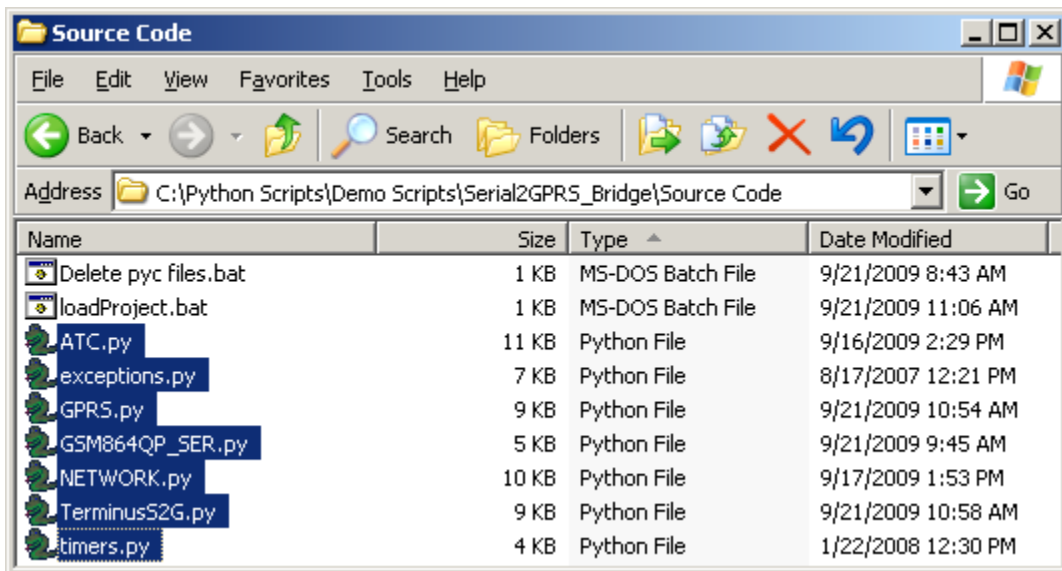
▶ **Python Script**

```
##----------------------------------------------------------------------------------------------------------------
## Application Specific Configuration
##----------------------------------------------------------------------------------------------------------------

## BAND
## Please refer to AT Command guide for AT#BND
## If Terminal used in North America (BAND = '3')
myApp.BAND = '3'

## NETWORK
## If Terminal used on ATT / Cingular in North America (NETWORK = 'ATT')
## Else (NETWORK = 'GSM')
myApp.NETWORK = 'GSM'

## APN
## Gateway Address for GPRS traffic
## This setting is GSM Provider and possible customer specific when a VPN is used
## This demo is defaulted with 'internet' that is used for ATT wireless settings from pre-Cingular days
## You MUST obtain the APN setting for your GSM account.  Please call GSM provider!  Janus can't help you with this.
myApp.APN = 'YOUR NETWORKS APN'

## IP
## IP address of server on the Internet which Terminus will connect to send and receive data
## Address in this example is not operational for customer evaluation.  Customer must have their own server
## setup to interact with this demo.
myApp.IP = 'YOUR SERVERS IP ADDRESS'

## PORT
## PORT number of server on the Internet which Terminus will connect to send and receive data
## PORT number in this example is not operational for customer evaluation.  Customer must have their own server
## setup to interact with this demo.
myApp.PORT = '5556'

## PROTOCOL
## If customer is using TCPIP (PROTOCOL = 'TCPIP')
## Else leave blank (PROTOCOL = '')
myApp.PROTOCOL = 'TCPIP'

## GPRS USER NAME
## If GSM Provider requires GPRS User Name (USERNAME = 'JOE')
## Else leave blank (USERNAME = '')
myApp.USERNAME = ''

## GPRS PASSWORD
## If GSM Provider requires GPRS Password (PASSWORD = 'JOE123')
## Else leave blank (PASSWORD = '')
myApp.PASSWORD = ''
```

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## 1.5 Compiling Python Scripts

▶ Open the directory that contains the Terminus Serial to GPRS Bridge demonstration scripts with explorer.exe.
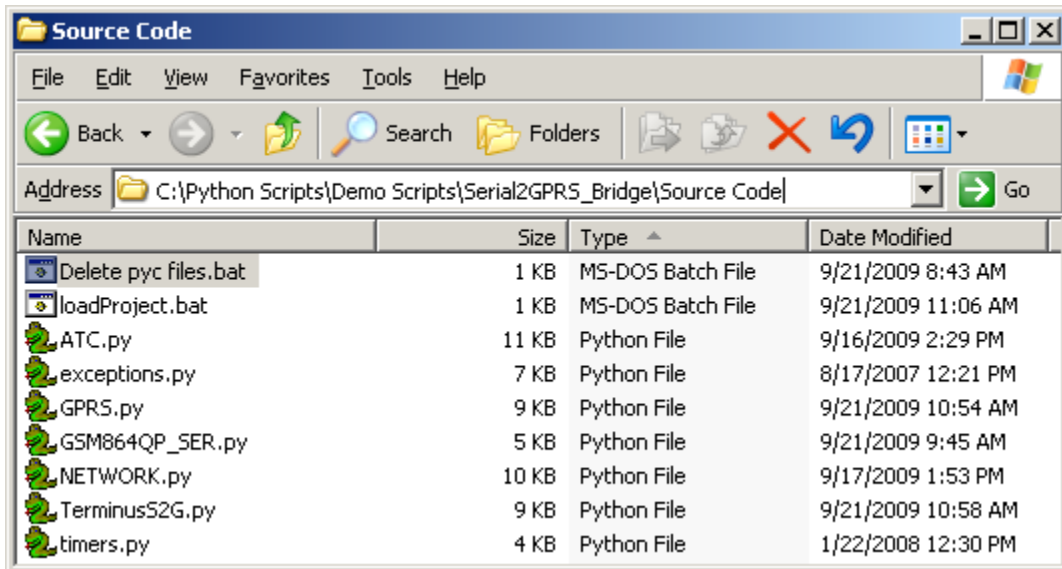


▶ Right click on all the python scripts and select <u>compile</u>.



- All files should compile and additional files should exist with *.pyo extension.
- Move these files to the directory named <u>Deployment</u>.

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## 1.6 Downloading Python Scripts to Terminus

▶   Connect the Terminus serial port (DB9 connector) to the development computer serial port. The serial port of the development computer should be the serial port configured as the MDM interface in the Telit COM Port Selection Tool. Refer to the Terminus GSM864Q User Manual under Installing Pythonwin IDE for more information.

▶   Open the directory that contains the Terminus Serial to GPRS Bridge demonstration compiled scripts with explorer.exe.
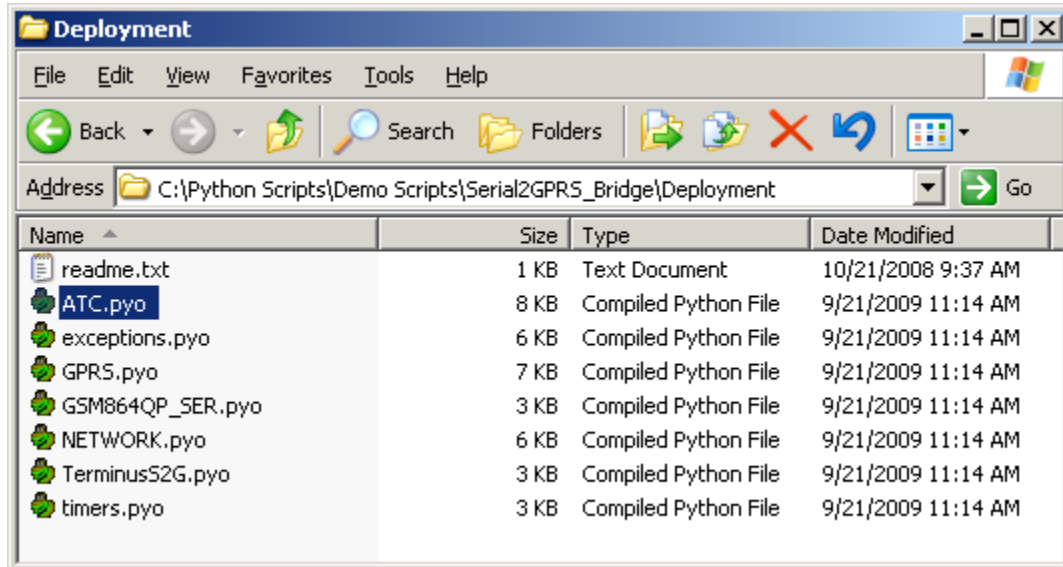


▶   Right click <u>download</u> for each file in the <u>Deployment</u> directory.

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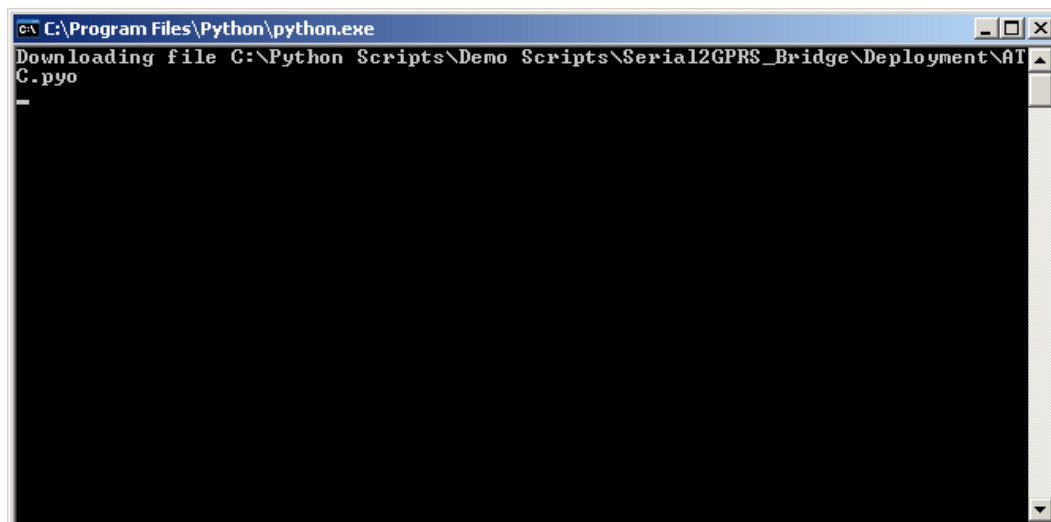
## 1.7 Enable Terminus Serial to GPRS Bridge Demonstration to Execute on Power On

▶ Disconnect power from the Terminus. Open Realterm, and select the 'Port' tab. Select the following serial port parameters:

| | |
|---|---|
| **Baud:** | **115200** |
| **Port:** | **Your PC's Port #** |
| **Parity:** | **None** |
| **Data Bits:** | **8** |
| **Stop Bits:** | **1** |
| **Hardware Flow Control:** | **None** |

▶ Apply power to the Terminus.

▶ Open the serial port and send the following commands.

**AT#STARTMODESCR=1,10**

**AT#ESCRIPT="TerminusS2G.pyo"**
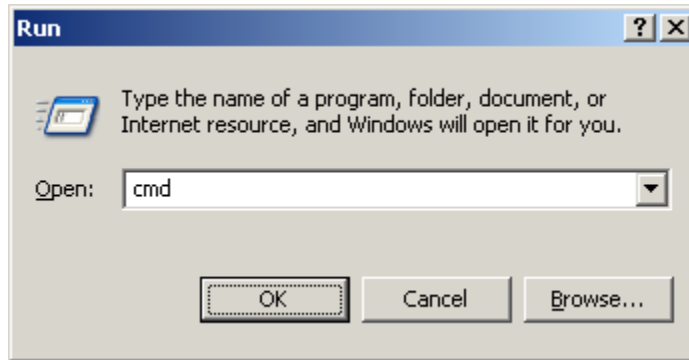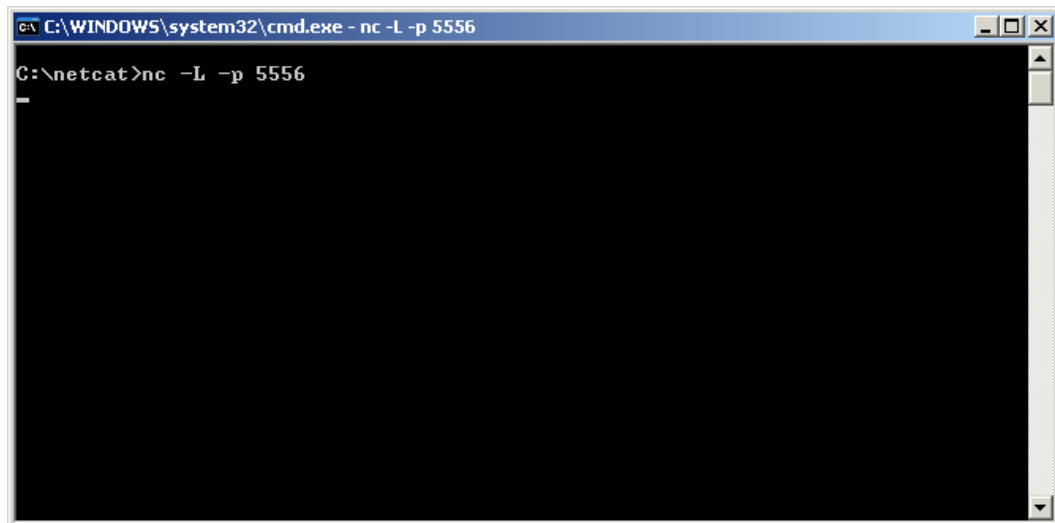
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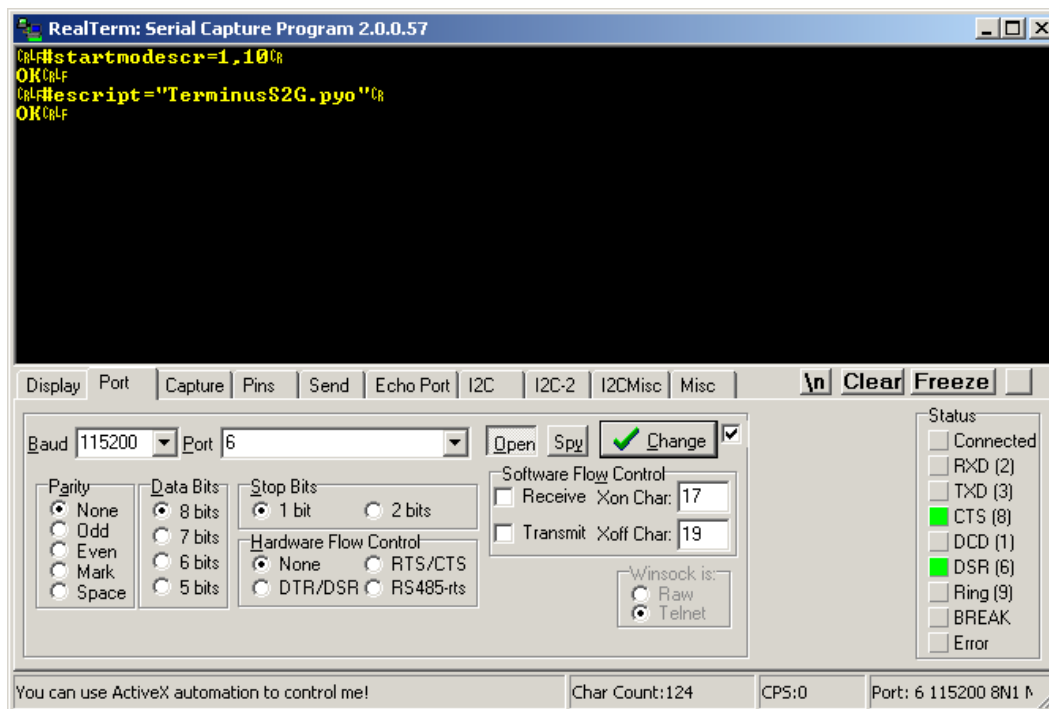
## 2 Getting Started –

The Server Computer

### 2.1 Installing Netcat on the Server Computer

▶ Copy the directory netcat and all files to the following directory on the Server Computer.  C:\netcat.

▶ Open the command prompt.

▶ Execute the following commands.

Note:  The Server Computer must be connected to the Internet and able to accept TCP/IP socket connections to the PORT defined in the TerminusS2G.py script. Please make sure the firewall is configured to allow this type of network traffic. If behind a wireless router you will need to specify routes to the Server Computer. Please call your IT professional to make sure your computer and network has the correct configuration for this. Janus cannot help you with your network settings.

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## 3 Getting Started –

### Running the Demonstration

▶ Remove power from the Terminus.

▶ Connect GSM antenna to SMA connector of the Terminus.

▶ Reapply power to the Terminus.

▶ Wait for the DCD light in Realterm to turn green.  When DCD is active the Terminus will have an open socket connection to your server (Netcat application).

▶ Type 'Hello Netcat!' in terminal window.
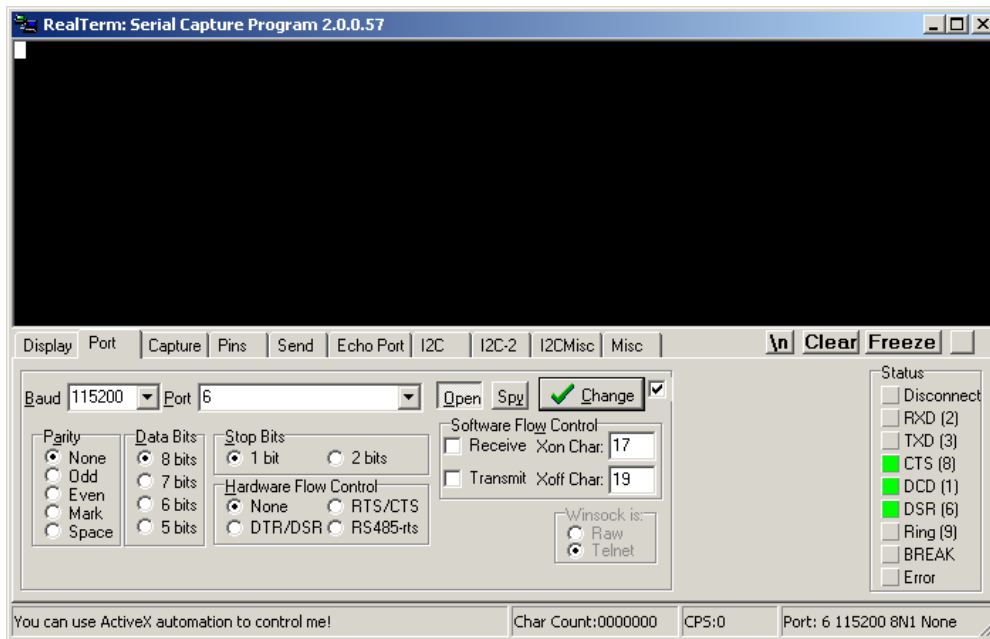


▶ On the Server Computer you should see data appear in netcat session

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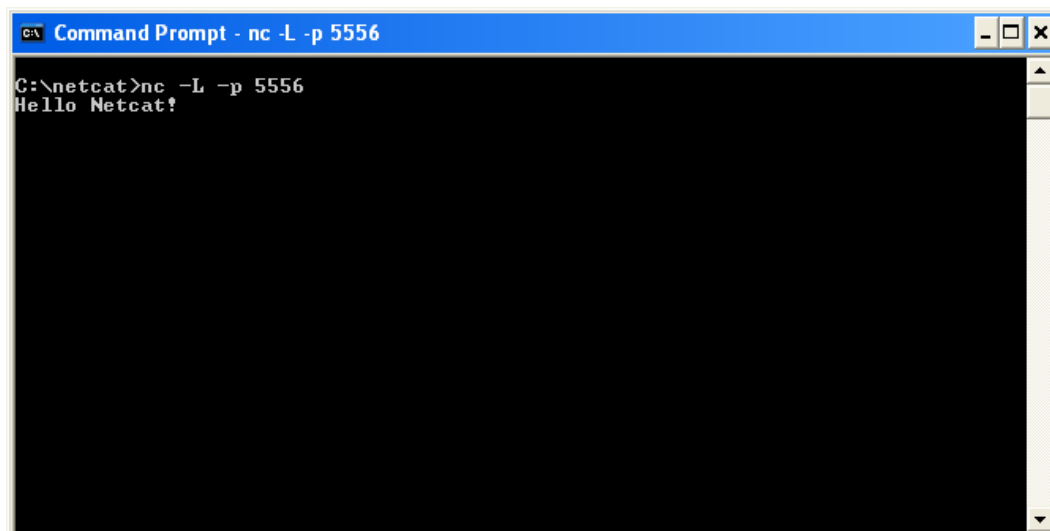
## 4 Getting Started –

### Debugging Demonstration

The following causes of the Terminus Serial to GPRS Bridge demonstration failing to transmit TCP/IP socket data to Server Computer are as follows:

| Cause | Resolution |
|---|---|
| SIM card not provisioned for GPRS services. | Call your GSM provider and ask for this service. |
| APN not configured for your GSM provider and/or account type | Call your GSM provider and ask for APN settings for your account type. |
| Server not connected to Internet | Call your IT professional.  Janus is unable to help configure your network settings |
| Server firewall blocking TCP/IP traffic at configured PORT. See TerminusS2G.py file. | Call your IT professional.  Janus is unable to help configure your network settings |
| Server computer behind a router that doesn't have routes setup to the server. | Call your IT professional.  Janus is unable to help configure your network settings |

## Appendix A – Terminus Serial to GPRS Bridge Demonstration Python Scripts

Python Scripts included in the Terminus Serial to GPRS Bridge Demonstration

| Script File Name | Script Description | Script Author |
|---|---|---|
| TerminusS2G.py | Main script that will need to be enabled to run on power-on. | Janus RC |
| GSM864QP_SER.py | Script contains methods to send and receive data from the Terminus serial port (DB9 or 50pin Header). | Janus RC |
| ATC.py | Script contains methods and properties that relate to the sending and receiving of AT commands. | Janus RC |
| NETWORK | Script contains methods and properties that relate to GSM network configuration. | Janus RC |
| GPRS.py | Script contains methods and properties that relate to sending and receiving GPRS data. | Janus RC |
| timers.py | Script contains methods and properties to implement timer routine. | Telit |
| exceptions.py | Script contains exception handling methods | Telit |

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