RS232 Transparent
Python Script
V0.0.10

Transfers RS232 data through GPRS to remote IP.

PYTHON program runs on Telit Modem.

Setup by RS232 or SMS.

Remote PC connected to Internet with static IP and port.

Sample: what the field unit sends to the RS232 side
Temp 29.5
Hum 70%

Sample: what the unit send to the IP side trough GPRS
Temp 29.5
Hum 70%

RS232 information sent by GPRS connection to remote PC

Temp 29.5
Hum 70%

The unit can work in three connection modes in order to establish connection with the remote computer. Once the connection established all the data will be mirrored to\from the RS232 port from\to the GPRS socket.

1. Client mode:

   The unit will connect to remote IP and try reestablishing the connection every time it would lose.

2. Server mode:

   The unit will wait for incoming connections from the remote computer.

3. Hybrid client server mode:

   The unit waits for incoming connections from the remoter computer as in server mode, but once data appends in the RS232 port, the unit stop waiting for incoming connections, connect to the remote computer and sends the data.

   After a time out that there is no data send to\from the RS232 port or the GPRS socket, the unit would close the socket and start wait for incoming connections again.

Normal operation

- **After getting the NOT READY FOR SETTINGS reply, unit starts its normal operation.**
- **The unit connects to the GPRS using the APN, USER NAME and GPRS password, afterward, according to its connection mode, the unit connects to the IP ADDRESS with the REMOTE PORT or waits for incoming connections with the LOCAL PORT.**
- **After the connection to the remote computer has been established the unit replies: CONNECT and from now on, all the data that send to the unit transfer to the remote computer and all the data from the remote computer transfer to the serial port.**
- **When the connection has lost the unit reply: NO CARRIER and according to its connection mode try to reconnect to the remote computer or waits for incoming connections.**

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Default baud rate is 9600.

Setup

- Turn on the unit
- Wait for reply: READY FOR SETTINGS
- The unit is waiting 10 seconds to get in the setup mode,
  if within this 10 seconds the word: set has been hit, the unit goes to setup mode.
- When the unit has got in to setup mode the unit's reply: GO TO SETTINGS MODE
  If the unit didn't get in setup mode, the unit's reply: NOT READY FOR SETTINGS
- The following commands can be send to the unit during setup mode:

1. Help - Gives the list of all supported commands
2. 0:APN, GPRS USER, GPRS PASSWORD - Setup the GPRS parameters
3. 1:IP ADDRESS, REMOTE PORT - Setup the remote IP and port for client and hybrid modes
4. 2:LOCAL PORT - Setup the local port for server or hybrid modes
5. SERVER={0-2} - Connection mode, 0-client, 1-server, 2-hybrid (default)
6. BR=BAUDE RATE - Setup of the baud rate (default: 9600)
7. STO={5-600} - Setup the socket time out in seconds, default 600.
8. DGB={0,1} - Set if the debug data will be sent thru the RS232 port
9. BND={0-3} - Setup the cellular network band.
   0 - GSM 900MHz + DCS 1800MHz (Default)
   1 - GSM 900MHz + PCS 1900MHz
   2 - GMS 850MHz + PCS 1800MHz
   3 - GMS 850MHz + PCS 1900MHz
10. SM={0,1} - Setup the start mode, see start mode appendix
11. CS=Connection string - Setup the string that the unit will send when the connection establish. Set blank string for no connection string.
12. RST=GPRS reset time, HW reset time - Set the times for GPRS connection reset and for hardware reset. If no resets required, set it to 0 (default). GPRS reset time is in minutes. Hardware reset time is in hours.
13. INFO - Retrieve the current settings
14. VER - Retrieve the firmware version
15. RECEP - Retrieve the GSM reception level
16. EXIT - Exit setup mode and reboot the unit

Examples for unit setup:

```
0:internet,orange,mobile54
1:192.168.1.5,10101
2:5003
SERVER:2
STO:300
BND:0
DBG:0
SM:0
CS:CONNECT
RST:0,0
```

SMS commands:

All the command can be send to the unit while it's running via SMS.
The unit will pars the commands when it won't be on connection and reset itself with the new settings.
The commands can be gathered together with the ";" character between them.

SMS command example:

```
2:567;SERVER:1
```

The command changes the listening port to 567 and changes the connection mode to "server".

Start mode appendix

Every time the unit restart it prompt READY FOR SETTINGS waits 10 seconds and if set hasn't been hit it prompt NOT READY FOR SETTINGS and continue to normal mode operation.

In order to save these 10 seconds, there is a possibility to step in SETUP MODE by RTS pin instead of set command. In order to control the start mode, use the SM command.

If SM=0 is set, the unit will prompt the READY FOR SETTINGS string every time it restart and wait 10 seconds for the set string.

If SM=1 is set, the unit will check the RTS pin instead of prompt the READY FOR SETTINGS string. If the RTS pin is present, the unit goes to SETUP MODE, if not, it continues to normal operation.