Running AT Commands Remotely Application Note

For GM862-QUAD, GM862-QUAD-PY, GM862-GPS, GE863-QUAD, GE863-PY, GE863-GPS, GE864-QUAD, GE864-PY, GC864-QUAD, GC864-PY, GT863-PY,GT864-QUAD, GT864-PY, GE863-SIM, GE863-PRO^3, GE864-QUAD AUTOMOTIVE, GE864-QUAD ATEX, GE864-QUAD ANTENNA and GE865-QUAD

80000NT10029a Rev.0 – 2009-08-28

Making machines talk.

This document is relating to the following products:

APPLICABILITY TABLE

PRODUCT
GT863-PY
GT864-QUAD
GT864-PY
GM862-QUAD-PY
GM862-QUAD
GM862-GPS
GC864-PY
GC864-QUAD
GC864-PY w/ SIM holder
GE863-PY
GE863-QUAD
GE863-GPS
GE863-SIM
GE863-PRO^3
GE864-PY
GE864-QUAD
GE864-QUAD AUTOMOTIVE
GE864-QUAD ATEX
GE864-QUAD ANTENNA
GE865-QUAD

From SW Version:
7.03.x01 10.0.1

Contents

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1 Introduction

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1.2 Text Conventions

Danger – This information MUST be followed or catastrophic equipment failure or bodily injury may occur.

Caution or Warning – Alerts the user to important points about integrating the module, if these points are not followed, the module and end user equipment may fail or malfunction.

Tip or Information – Provides advice and suggestions that may be useful when integrating the module.

All dates are in ISO 8601 format, i.e. YYYY-MM-DD.

1.3 Related Documents

- AT Commands Reference guide, 80000ST10025a

1.4 Document History

Rev	Date	Change
0	2009-08-28	First Issue

2 SMSATRUN

2.1 Requirements

- Two kinds of SMS are valid for the SMS ATRUN service:

    1. Simple ATRUN SMS:
        a) the SMS originating address shall match with a number defined in a white list in the module
        b) the text has to begin with the string "AT" or "HAT"
        c) the SMS coding alphabet has to be default GSM 7 bit or 8 bit
    2. Digest ATRUN SMS:
        a) The SMS User Data has to contain an header comprising a MD5 digest calculated on the useful text with a password belonging to a white list in the module
        b) the text has to begin with the string "AT" or "HAT"
        c) the SMS coding alphabet has to be 8 bit

- In the Digest SMS case the SMS User Data has the following format:

Offset	Size	Value	Description
0	3	0xD0D0D0	RUNAT SMS Code
3	1	0	Transaction Id
4	1	0x11	Segment 1 of 1
5	1		Session Id
6	24		Digest: B64(MD5(B64(MD5(Pwd)):B64(MD5(Useful Text))))
30			Useful Text

Table 1 Digest ATRUN SMS User Data Format

The format is the same of OTA service SMS protocol: obviously the first 3 bytes code value is different

- If the text begins with the "AT" string, then the AT command response has to be sent to the sender by one or more **response SMS**. If the text begins with the "HAT" string, then the AT command response hasn't to be sent to the sender

- After the "AT" (or "HAT") string there are the commands. For example: AT+CGMR;+CGSN or HAT+CGMR;+CGSN

- The response SMS from the module to the sender are coded with the same alphabet and is of the same kind of the received SMS (Simple SMS or Digest SMS)

- The received SMS hasn't to be concatenated, but the response SMS can be concatenated. In the case of Digest SMS, the MD5 digest is calculated on the portion of text contained in the same SMS; the User Data has the following format:

Offset	Size	Value	Description
0	3	0xD1D1D1	Response RUNAT SMS Code
3	1	0	Transaction Id
4	1	0x11	Segment 1 of 1
5	1		Session Id
6	24		Digest: B64(MD5(B64(MD5(Pwd)):B64(MD5(Useful Text))))
30			Useful Text

Table 2 Response Digest ATRUN SMS User Data Format

- When the SMS RUN AT service is enabled setting to 1 the parameter <mod> of the AT command #SMSATRUN, then the AT instance specified by the parameter <muxInstance> of the AT command #SMSATRUNCFG is reserved to run the AT commands inserted in the received validated SMS

- If the SMS RUN AT service is disabled setting to 0 the parameter <mod> of the AT command #SMSATRUN, then the used AT instance is returned to the previous user, if there is

- The <mod> of the AT command #SMSATRUN and <muxInstance> parameter of the AT command #SMSATRUNCFG are stored in the NVM. At boot, if the <mod> parameter is set to 1, then the AT instance specified in the <muxInstance> is automatically reserved to run the AT commands inserted in the received validated SMS

2.2 Alerts

- If the <mod> parameter of the AT command #SMSATRUN is set to 1, then all received SMS are subjected to a test to validate them as ATRUN SMS

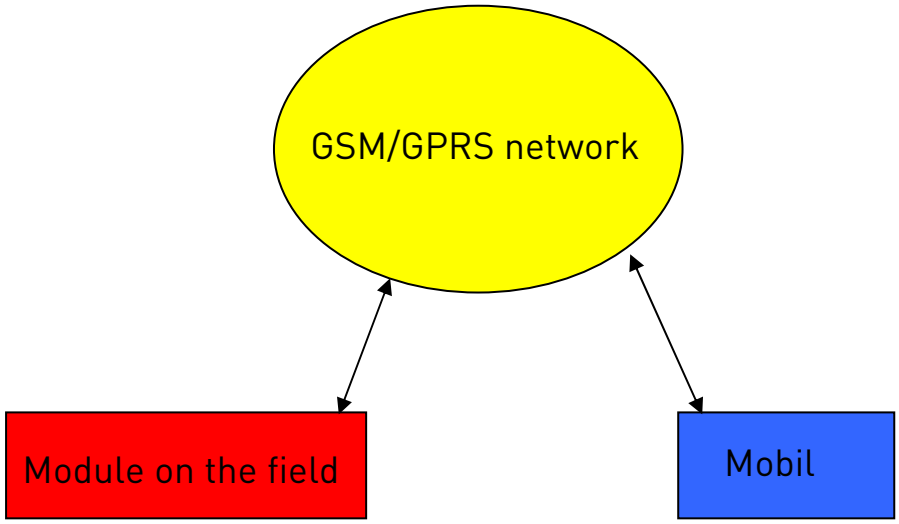
- If a SMS is recognized as ATRUN SMS, it is handled and silently discarded

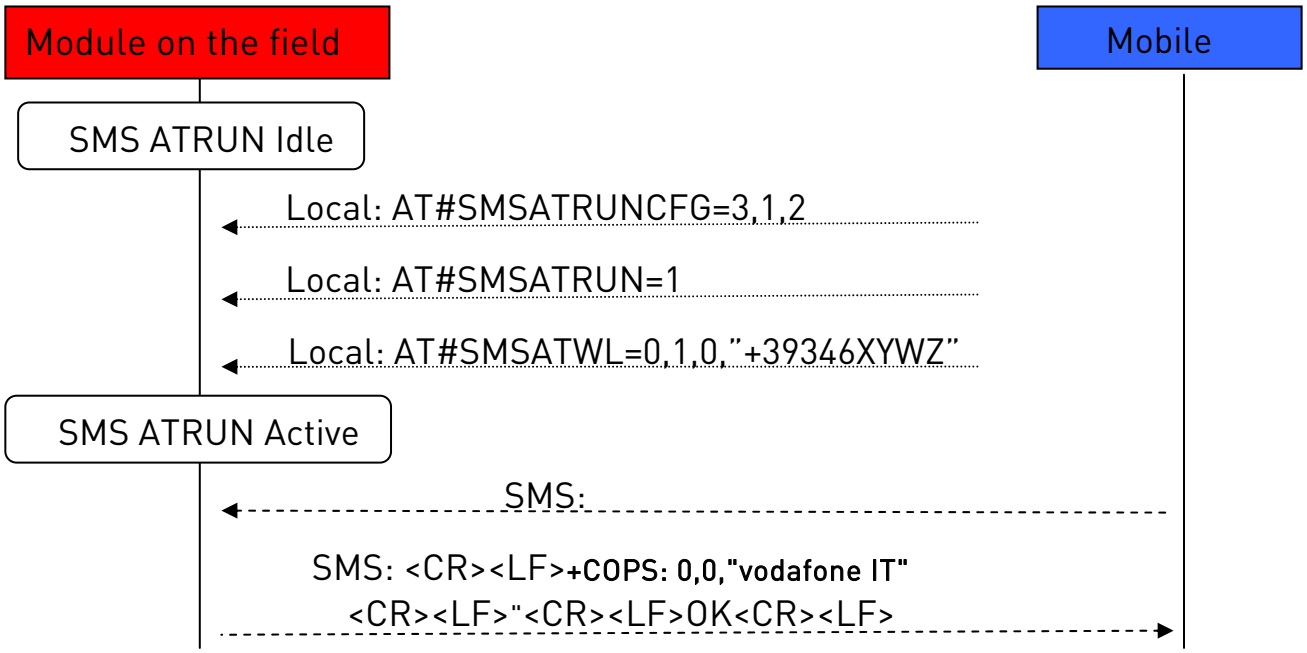
- When an AT instance is reserved for the SMS ATRUN service, then every other request to use it, coming from other services, is refused: only the OTA service can subtract the AT instance reserved to SMS ATRUN service.

- if the service is activated on the first instance (<muxInstance> = 1 in AT#SMSATRUNCFG), the control of that instance will be loosed and there will be the need of the multiplexer to deactivate the service by the second or third instance.

2.3 Description

This service allows an user to run an AT Command via SMS. The user can send an SMS requesting the module to know the selected network operator or to set a GPIO
The scenario is the following:





First of all, the SMS ATRUN service is locally configured and enabled in the *module on the field* by the command #SMSATRUNCFG and :

AT#SMSATRUNCFG=3,1,2
// the service is configured to run on the third instance, the unsolicited is enabled and
// the timeout for the response to the AT commands is set to 2 minutes

AT#SMSATRUN=1 // the service is enabled

and the *mobile* number is added in the white list by the command #SMSATWL:

AT#SMSATWL=0,1,0,"+39346XYWZ" //the number +39346XYWZ is added in the
// first position of the white list

At this point the SMS ATRUN service is enabled and AT commands can be issued to the *module on the field* via SMS from another device containing the SIM with the number added in the white list.

For example another *mobile* can set the GPIO of the *module on the field* issuing the command AT#GPIO=2,1 using the following standard AT command

AT+CMGS=346XYWZ
> AT#GPIO=2,1

The *module on the field* let run the AT+COPS? on the third instance and will send back to the *mobile* an SMS with the response. The *mobile* reads the arrived SMS:

+CMTI: "SM",1
AT+CMGR=1
+CMGR: "REC UNREAD","+39346XYWZ","","08/05/28,11:04:37+08"

+COPS: 0,0,"vodafone IT"

OK

If the *mobile* doesn't want to receive back the response, it can issue the following command:

AT+CMGS=346XYWZ
> HAT+COPS?

If the *mobile* wants to communicate to the *module on the field* using the Digest ATRUN SMS, a common password has to be inserted locally in the white list of the *module on the field* by the command AT#SMSATWL:

```
AT#SMSATWL=0,2,1,"1234567890123456"      //the password has to be 16
                                         // characters length and is
                                         // inserted, in this example, in
                                         // position 2 of the white list
```

A maximum number of 2 passwords can be inserted in the white list.
Now the *mobile* can also change the SIM because the sender number isn't checked from *module on the field* in the case of Digest ATRUN SMS.
So the *mobile* can interrogate the *module on the field*, to know the selected network operator, issuing the command AT+COPS? using the following standard AT command

AT+CMGS=53
>0791934329002000110000C919343868676110015AD26D0D0D000110157696A437032715633734E762B61727532305A5561773D3D41542B434F50533F

Where the User Data portion Is formatted according to Table 1 as follows:

Offset	Size	Value	Description
0	3	D0D0D0	RUNAT SMS Code
3	1	00	Transaction Id
4	1	11	Segment 1 of 1
5	1	01	Session Id
6	24	57696A437032715633734E762B61727532305A5561773D3D	Digest: B64(MD5(B64(MD5(Pwd)):B64(MD5(AT+COPS?))))
30		41542B434F50533F	AT+COPS?

The *module on the field* let run the AT+COPS? on the third instance and will send back to the *mobile* an SMS with the response. The *mobile* reads the arrived SMS:

+CMTI: "SM",1
AT+CMGR=1
+CMGR: 0,"",83
07919343290020000 40C91934386867611001580509221028180 40D1D1D10011014A756E72613772306B4945634839715635343 26E33513D3D0D0A2B434F50533A20302C302C22766F6461666F6E65204954220D0A0D0A4F4B0D0A

Where the User Data portion Is formatted according to Table 2 as follows:

Offset	Size	Value	Description
0	3	D1D1D1	Response RUNAT SMS Code
3	1	00	Transaction Id
4	1	11	Segment 1 of 1
5	1	01	Session Id
6	24	4A756E72613772306B4945634839715635343 26E33513D3D	Digest: B64(MD5(B64(MD5(Pwd)):B64(MD5(<CR><LF>+COPS: 0,0,"vodafone IT"<CR><LF>"<CR><LF>OK<CR><LF>))))
30		0D0A2B434F50533A20302C302C22766F6461666F6E65204954220D0A0D0A4F4B0D0A	<CR><LF>+COPS: 0,0,"vodafone IT"<CR><LF>"<CR><LF>OK<CR><LF>

2.4 Example SMS ATRUN

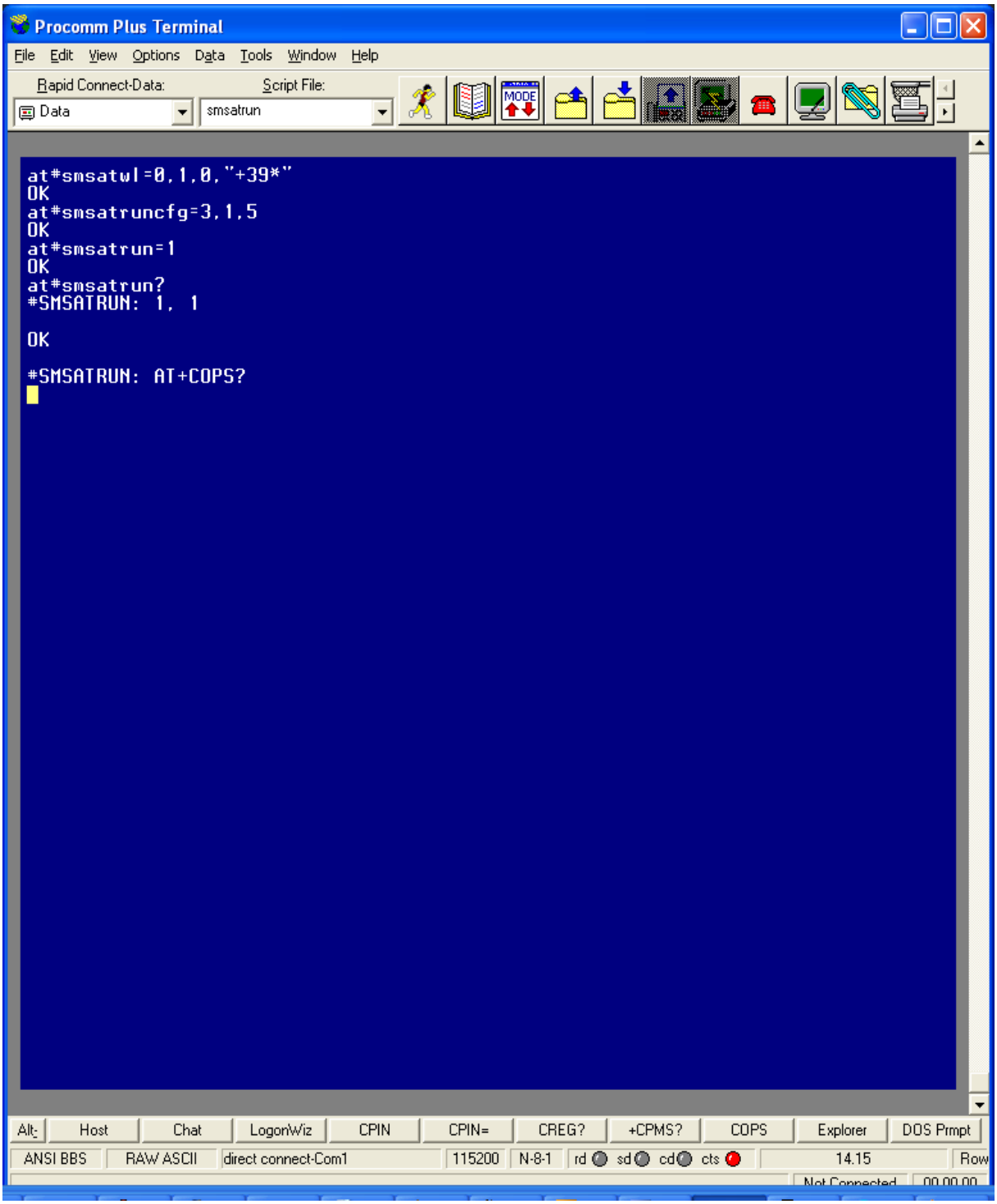


Figure 1: Module in the field

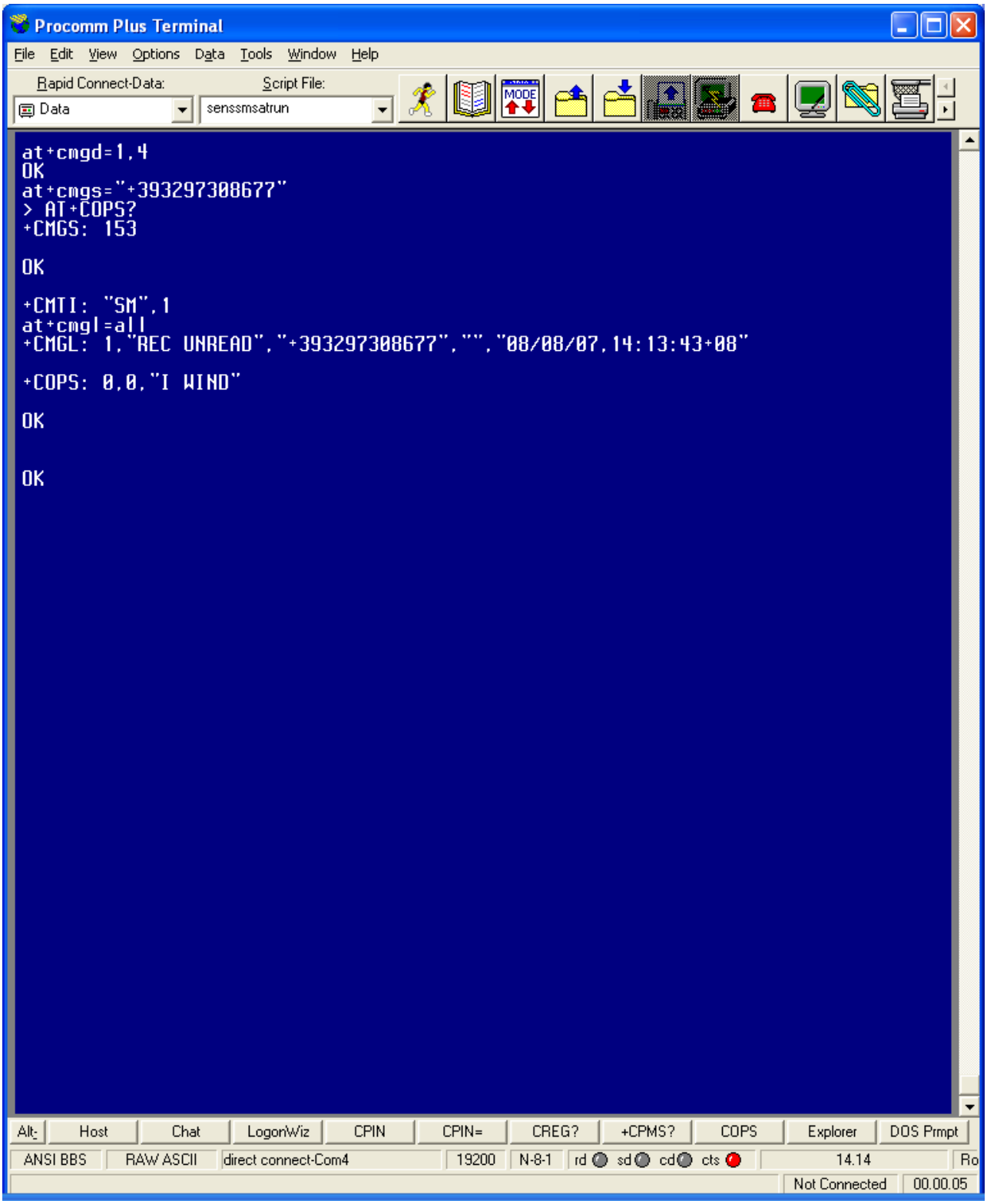


Figure 2: Mobile

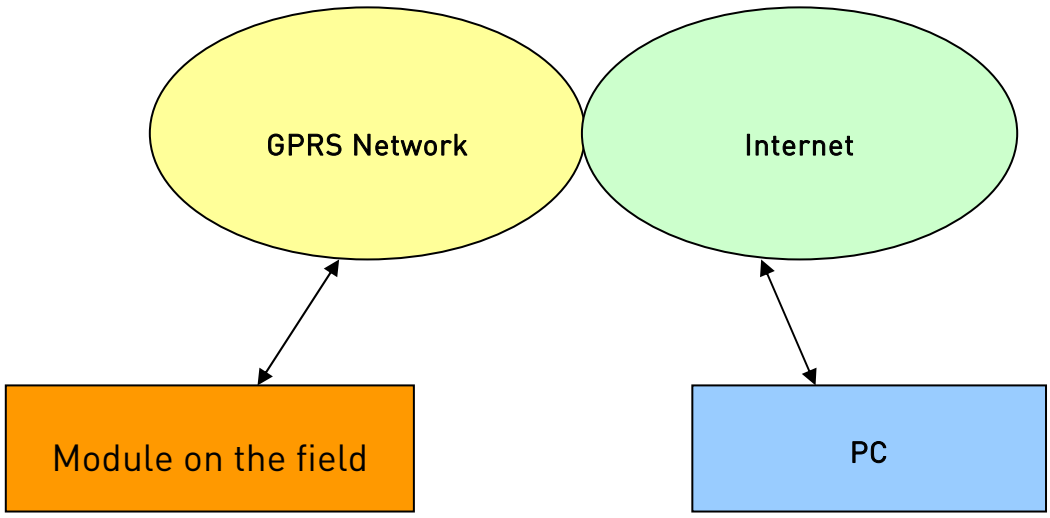
In *Figure 1: Module in the field* it's shown the local configuration:

- All the numbers starting with +39 are added in the white list by the command #SMSATWL
- the service is configured with the command #SMSATRUNCFG to run on the third instance, the unsolicited is enabled and the timeout for the response to the AT commands is set to 2 minutes
- the service is enabled with the command #SMSATRUN

In *Figure* 2: *Mobile* the mobile sends to the module in the field an SMS with the text containing the string AT+COPS?.
At the SMS reception, the module on the field runs automatically the command AT+COPS?, puts on the instance the URC *#SMSATRUN: AT+COPS?* (as shown *in Figure 1: Module in the field*) and sends back the response SMS.
As shown in *Figure 2: Mobile*, the SMS received from the mobile contains the response to the command AT+COPS? that the module on the field has executed.

3 TCPATRUN

AT command execution can also be requested via TCP. The AT interface input and output will be redirected to the TCP socket.



There are two kinds of TCP ATRUN service, differing the one from the other in the way the module connects to the remote PC.
In the first kind of TCP ATRUN, the module acts as a server, that is to say it is in TCP listen state, waiting for an incoming TCP/IP connection from a client.
In the second one, the module acts as a client, that is to say it tries, as soon as the service is enabled, to connect to a server.
In next paragraphs we describe the AT command sequence to start the TCP ATRUN service and how the service behaves. Please refer to the AT commands specification for the exact commands syntax.

3.1 Configuration

To start TCPATRUN service, either in server mode or in client mode, it is necessary that a PDP context is opened, through the command AT#SGACT:

AT#SGACT=1,1 for example, here we open the PDP context with id 1

The answer, in case of success, will be the IP address of the module:

#SGACT: "212.141.113.92"

It is recommended to use the command "AT#SGACTCFG" to set the context "auto-activation": in this way the context will be automatically activated in case of switching off/on, in case of deactivation from Network and in case of SIM removal.

AT#SGACTCFG=1,1 the auto-activation is set on context 1

It is suggested to configure the socket parameters through the command AT#SCFG (please read the paragraph "*Alerts*"), using the socket identifier (the first parameter). For example:

AT#SCFG=1,1,300,0,600,1

Now, some configuration parameters have to be set for both type of service, through the command AT#TCPATRUNCFG:

AT#TCPATRUNCFG =1,2,1024,12345,`"212.141.125.127`",1,5,1,5,2

The first parameter is the identifier of the socket that will be used, the second one is the instance (in the module the AT interface can use three instances) that will be dedicated to the TCP ATRUN, the third one is the TCP port for listen (used in server mode), the fourth one and the fifth one are respectively the TCP port and IP address of the host (for the client mode), the sixth one is for enabling the unsolicited that advises of the connection/disconnection from server, the seventh one is the timeout for an AT command execution, the eighth one is for choosing the authentication mode (in server mode), the ninth one is the number of attempts to connect that the module will do in case of automatic re-start of the service (in client mode), the last one is the delay (in minutes) from one attempt and the other (in client mode).

3.2 TCPATRUN in server mode

3.2.1 Description

The TCP ATRUN service in server mode is enabled locally by the AT command AT#TCPATRUNL.
This command puts the module in listen state on a determined port, so that a client can connect from remote opening a TCP socket to the IP address and port of the module. Once connected, the client can issue AT commands to the module.

Note that the TCP ATRUN service in server mode is useful with static IP address.

The TCP access to the module is controlled by a firewall.
In the case of TCP ATRUN service, this firewall can be set (and saved in memory) by the following command

AT#TCPATRUNFRWL=1,"212.141.112.216","255.255.255.255"

The two strings represent the IP address and mask

The service is also protected by the authentication parameters: Username and Password.
These parameters are set (and saved in memory) through the following command

AT#TCPATRUNAUTH=1,"testuser","testpassw"

The user can choose between two kinds of authentication procedure, as we will see in the next paragraph.

Finally, the TCP ATRUN service can be enabled using "AT#TCPATRUNL":

AT#TCPATRUNL =1

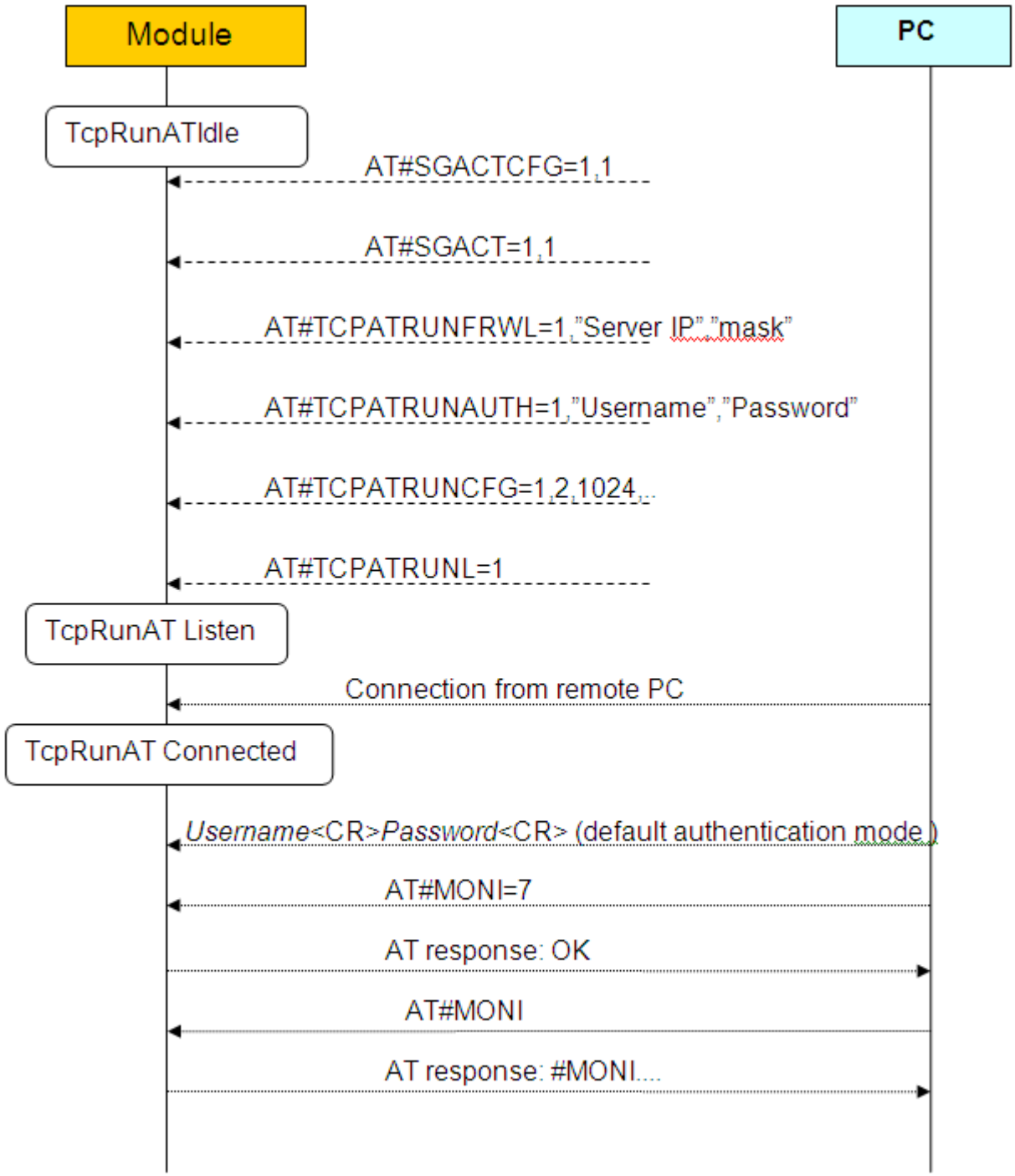
Now, referring to the parameters configuration that has been set in this example through the command AT#TCPATRUNCFG:

the socket 1 is in listen state on port 1024, and the IP address is the one given by the AT#SGACT command.
The client can connect to the module if its address is included in the firewall.
It can use Telnet or a dedicated program to open the socket and communicate with the module. Once connected, username and password have to be transmitted in a way that depends on the authentication mode set with AT#TCPATRUNCFG.

After authentication, an AT command can be issued and the module will parse the command and send the response.

For example, client can interrogate the module about all the cells in the neighbour of the serving cell, by the commands AT#MONI=7 and AT#MONI.

If the TCP ATRUN service is not disabled, it automatically starts at every start-up of the module as long as the PDP context auto-activation has been set by AT#SGACTCFG.
The same happens in case of a deactivation from Network and in case of SIM removal.



3.2.2 Authentication mode

Setting the *authentication mode* parameter in the command AT#TCPATRUNCFG, the user can choose between two kinds of authentication: "automatic" and "step-by-step". The first one is useful for easily automate the procedure, the second one is more graphically pleasant.

3.2.2.1 Automatic mode (default)

Once the connection between server and module is opened and before issuing any AT command, username and password have to be transmitted in the following way:

userid<CR>*passw*<CR> (where <CR> means Carriage Return and is equal to 0x0d)

After these strings, AT commands can be sent to the module.
The couple *Username – Password* has to be included in the authentication parameters list built through the command AT#TCPATRUNAUTH, otherwise the module will immediately close the connection.
If a timeout expires in the module without receiving one of the two parameters, then the module will close the connection.

3.2.2.2 Step-by-step

Once the connection between server and module is opened, the module first requests the Username and then, if the Username has been received and accepted (*userid*<CR>), requests the Password. Once the Password has been received and accepted (*passw*<CR>), the module transmits a "Login successful" message.

Username: *userid*
Password: *passw*
Login successful.

From this moment AT commands sent by the server are parsed by the module.
Also in this case, if the couple *Username – Password* is not included in the authentication parameters list, or if the timeout expires without receiving a parameter, the module will close the connection.

3.3 TCPATRUN in client mode

3.3.1 Description

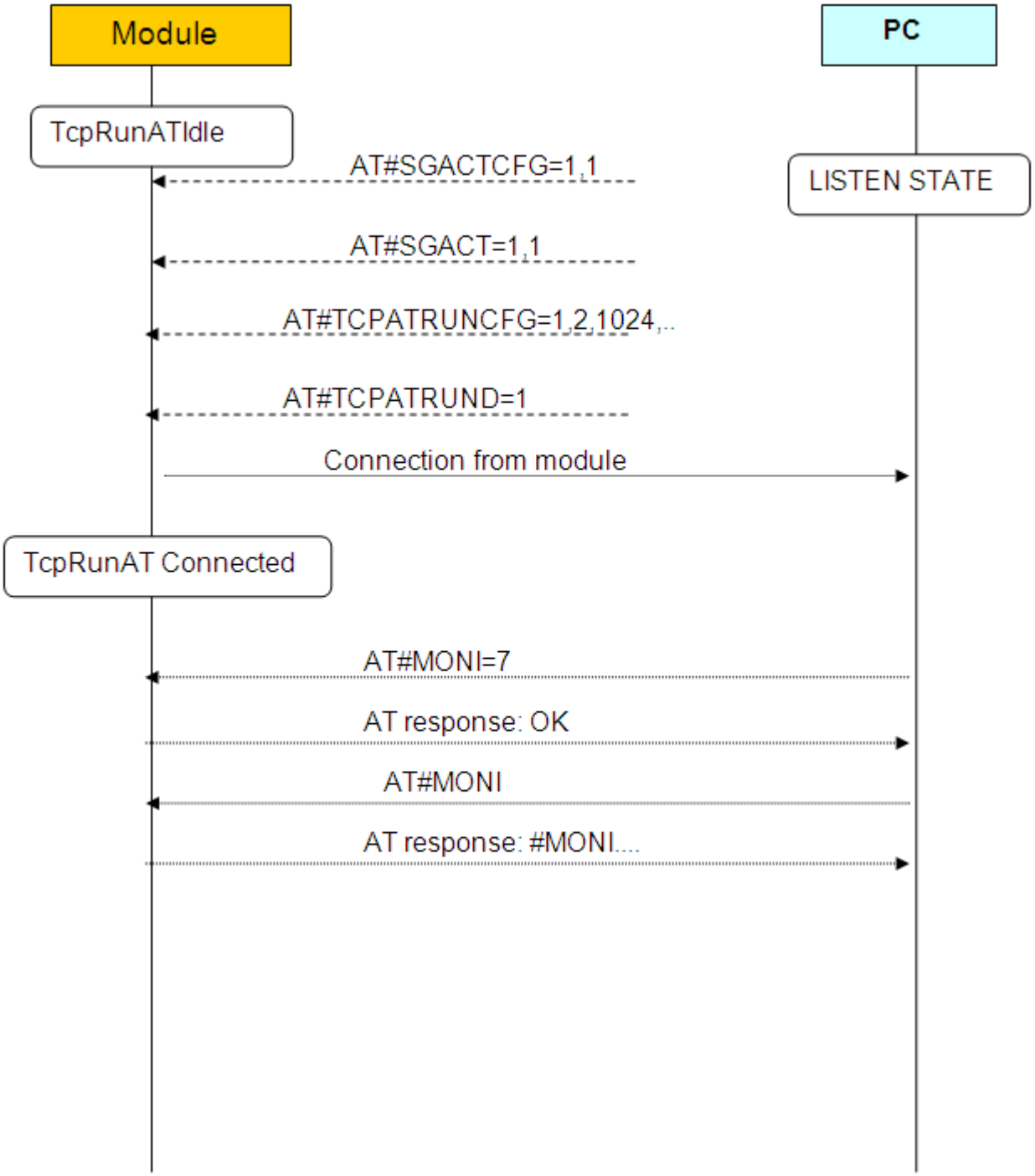
This TCP ATRUN service is enabled locally by the AT command AT#TCPATRUND:

AT#TCPATRUND = 1

This command opens a TCP socket to connect to the Host IP address and to the Host port specified in AT#TCPATRUNCFG.

To allow the module to connect, the server (the remote PC) has to have been put in listen through a dedicated program at the port specified with AT#TCPATRUNCFG command (in the previous example 12345).
If the response to AT#TCPATRUND command is "OK", the module is connected to the remote PC and ready to receive AT commands.

If the TCP ATRUN service is not disabled, it automatically starts at every start-up of the module as long as the PDP context auto-activation has been set through AT#SGACTCFG.
The same happens in case of a deactivation from Network and in case of SIM removal. This means that the module will automatically try to connect to the Host IP (the one set through AT#TCPATRUNCFG), and if connection is not successful, it will retry. The number of attempts and the delay between one and the other will be those set through AT# TCPATRUNCFG.


Module
PC
TcpRunATIdle
AT#SGACTCFG=1,1
LISTEN STATE
AT#SGACT=1,1
AT#TCPATRUNCFG=1,2,1024,..
AT#TCPATRUND=1
Connection from module
TcpRunAT Connected
AT#MONI=7
AT response: OK
AT#MONI
AT response: #MONI....

ALERTS:

For the connection used by the TCP ATRUN service, a particular socket identifier is used (see the first parameter of AT#TCPATRUNCFG). So all the settings on that socket can affect the connection: please refer to the module Easy GPRS User Guide for the use of the AT commands concerning TCP sockets.
In particular, by the command AT#SCFG, the user can read and change the packet size, the Transmission Timeout and the Idle Activity Timeout. Note that, if there is no data exchange within the Idle Activity Timeout period, the connection is closed.
To summarize briefly the meaning of the Transmission Timeout: if the bytes to be sent from the module are less than packet size, then they will be sent just at Transmission Timeout expiry. So in the case of TCP ATRUN service, it is suggested to set the minimum Transmission Timeout to avoid to wait for responses. It is strongly recommended to avoid having it set to infinite.
If the TCPATRUN service, in server or client mode, is activated on the first instance (<muxInstance> = 1 in AT#TCPATRUNCFG), the control of that instance will be loosed and there will be the need of the multiplexer to deactivate the service by the second or third instance.

3.4 AT commands in sequence

The standard usage of AT interface consists in waiting for response to an AT command before issuing another one. Each command ends with the delimiter character (<CR> is the default). In alternative, AT commands can be issued separated by ";", being treated like a single command. For example, the response to

```
AT# SGACT=1,1;#SS
```

could be

```
#SGACT: 212.141.252.44

#SS: 1,1,212.141.121.05, 1024,212.141.121.148,1332
#SS: 2,0
#SS: 3,0
#SS: 4,0
#SS: 5,0
#SS: 6,0

OK
```

What happens if the remote application doesn't wait for an AT command response before issuing another one?
If AT commands are issued with the delimiter character but without waiting for response, some commands can be ignored, for example in the sequence

```
AT#SGACT=1,1
AT#SS
```

The AT#SS would be ignored.

In the case of AT commands issued through TCP ATRUN service, a new feature has been introduced that solves this problem.
This feature is enabled through the command

AT#TCPATCMDSEQ=1.

If enabled, the response to the sequence

```
AT#SGACT=1,1
AT#SS
```

could be for example

```
#SGACT: 212.141.252.44

OK

#SS: 1,1,212.141.121.05, 1024,212.141.121.148,1332
#SS: 2,0
#SS: 3,0
#SS: 4,0
#SS: 5,0
#SS: 6,0

OK
```

The command AT#TCPATCMDSEQ can be set from any instance, but it just affects AT commands issued through ATRUN service.

3.5 Transparence

From TCP ATRUN service, it is possible to connect directly to a serial port of the module, in transparent mode, that is to say that data will be transferred directly between TCP ATRUN and the serial port specified. So any data in input on the serial

port will be sent to the remote PC via TCP/IP (and vice-versa). This connection is opened issuing the command AT#TCPATCONSER=<port>,<rate> from the TCP ATRUN instance.

After this command has been issued, if no error has occurred, then a "CONNECT" will be returned from module to advise that the TCP ATRUN instance is in *online mode* and connected to the port specified.
To exit from online mode and close the connection, the escape sequence (the default is "+++") has to be sent on the TCP ATRUN instance, taking into account that the escape sequence needs to be sent in one single packet. (So the use of Telnet for Windows, sending every single byte in a TCP packet, is not appropriate in this case).

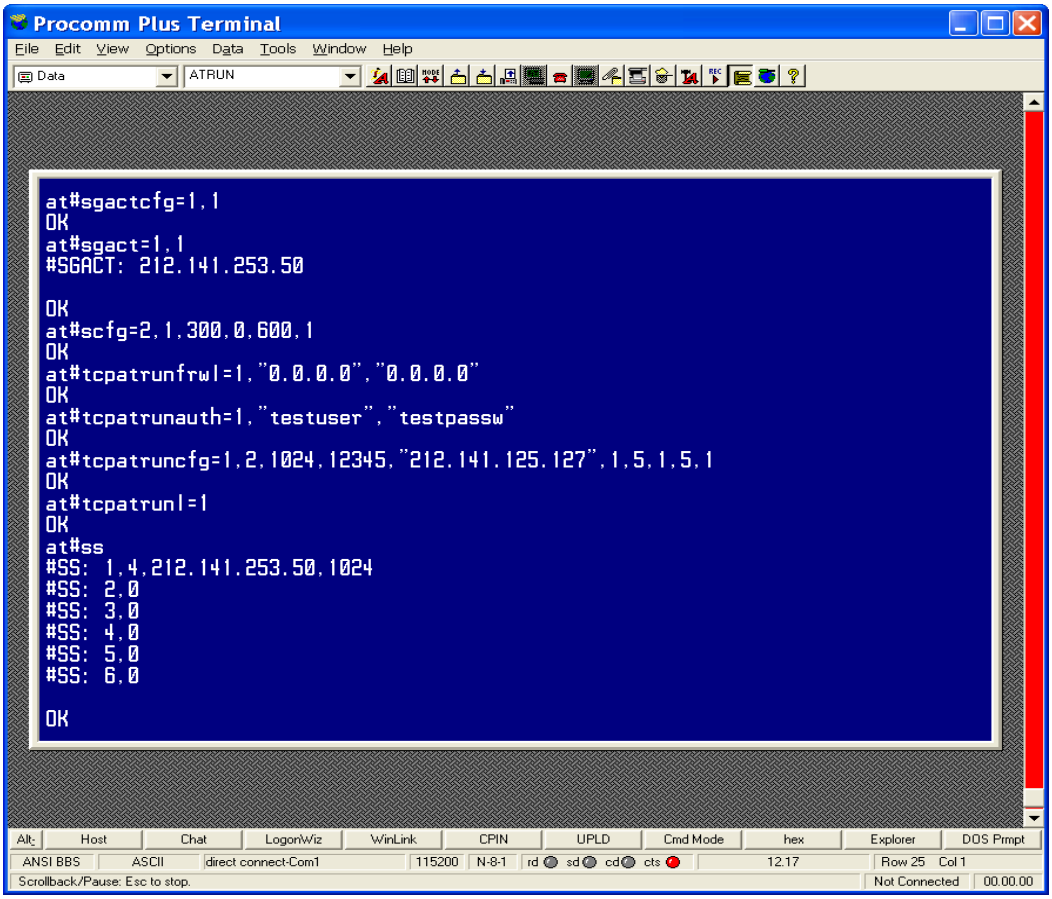
3.6 Locally socket closing

In a situation where the remote PC doesn't close the socket, it's important to permit to locally close the socket. In order to close the connection, the AT#TCPATRUNCLOSE command has to be called: the TCP ATRUN status is still enabled after this command, so the service re-starts automatically.

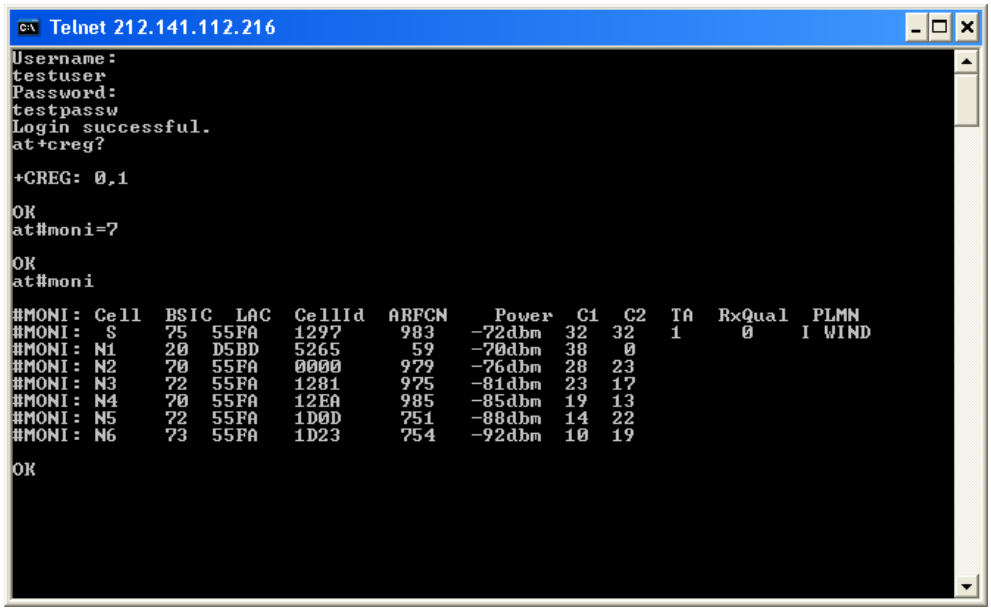
3.7 Examples

3.7.1 TCP ATRUN in server mode and AT commands

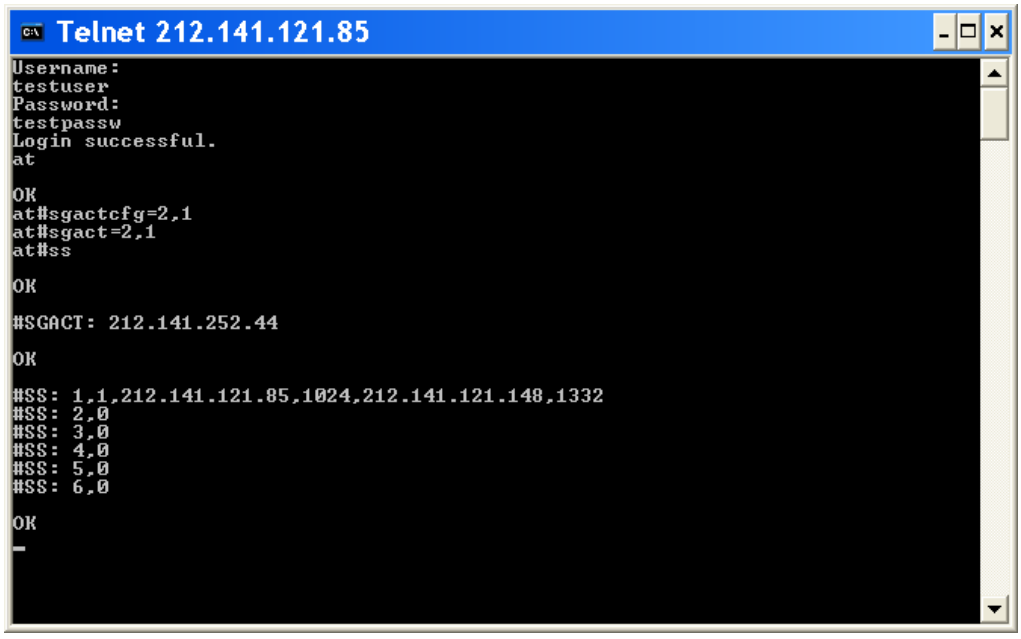
Remote Mobile



PC (telnet)



3.7.2 TCPATCMDSEQ feature



ALERTS:

Some AT commands can fail if set through ATRUN service, due to an interaction of the AT command execution with the SMS service in case of SMS ATRUN, or to an interaction of the AT command execution with the GPRS in case of TCP ATRUN. These problems can be avoided inserting a delay before AT command execution (e.g. AT+COPS=? using TCP ATRUN).

This delay is set through the command AT#ATRUNDELAY:

AT#ATRUNDELAY=0,5 sets for TCP ATRUN commands a delay of 5 seconds

AT#ATRUNDELAY=1,5 sets for SMS ATRUN commands a delay of 5 seconds

Once set, the delay is valid till a new AT#ATRUNDELAY is issued.

Some other commands can block the AT command sending-AT command response receiving mechanism if set through ATRUN service, see below.

3.8 TCP ATRUN

3.8.1 Delays

The following table shows the suggested delays (in seconds) for TCP ATRUN.

AT+COPS=?	10
AT#CSURV AT#CSURVC AT#CSURVU AT#CSURVUC AT#CSURVB AT#CSURVBC AT#CSURVP AT#CSURVPC	10

3.8.2 Notes

1) AT+CGATT=0, AT+CGACT=0, AT+CGCLASS="CC", AT#SHDN, AT#BND=2, AT#BND=3, ATQ1, ATQ2, AT#SIMDET=0, AT+CFUN=2 and AT+CFUN=4 commands cause an irreversible block of the TCP command exchange mechanism;
2) The commands of AT#CSURV family can have the response truncated if too long: these commands in fact send their responses during the network search, but while they are executed, the GPRS service is suspended and so the TCP ATRUN cannot transmit anything. It stores these responses in a buffer till the network search completes;

3) AT#SKTOP,AT#GPRS, AT#SKTRST and AT#QDNS:
refer to corresponding notes in par. 3.2.2

3.9 SMS ATRUN

3.9.1 Delays

The following table shows the suggested delays (in seconds) for SMS ATRUN.

AT+COPS=? AT+CGCLASS AT+CFUN=10 AT#GPRS AT#SIMDET AT#CSURV AT#CSURVC AT#CSURVU AT#CSURVUC AT#CSURVB AT#CSURVBC AT#CSURVP AT#CSURVPC	10
AT#SGACT AT+CGACT AT+CGATT	5

3.9.2 Notes

1) To send AT\x and AT^xxx commands it is necessary to set the outgoing SMS's Data Coding Scheme (DCS) so that they are 8 bits coded, because characters '\ 'and '^' are not included in the standard GSM 7 bit alphabet. AT#SMSMODE must be set to 1, and the SMS text must be in hexadecimal format; the answer SMS received to the sent command is also 8 bit coded (hexadecimal format);

2) AT#REBOOT and AT#SHDN commands do not send back the answer SMS before powering down the "module in the field";

3) AT#SIMDET=0, AT+CGDATA="PPP",1, AT#FTPPUT, AT$GPSNMUN=3, ATQ1 and ATQ2 commands cause a block of the SMS exchange mechanism, until the "module in the field" reboots after timeout set with AT#SMSATRUNCFG command expires;

4) AT+CMUX=0, AT#BND=3, AT+CFUN=2 and AT+CFUN=4 commands cause an irreversible block of the SMS exchange mechanism;

5) AT+CGCLASS="CG" and AT+CGSMS=0 commands cause an irreversible block of the SMS exchange mechanism, until a new AT+CGCLASS or AT+CGSMS command is sent with TCP ATRUN;

6) enabling of FDN phonebook in the "module in the field" causes an irreversible block of the SMS exchange mechanism if the "mobile" phone number is not in the FDN list; FDN must then be disabled using TCP ATRUN;

7) if ATD command is sent to the "module in the field" to start a data call the response SMS, containing the CONNECT or NO CARRIER result, is received only after the call has been disconnected by the called party;

8) AT#SKTD, AT#SKTL:
Initial setting for TCPATRUN service(through AT#TCPATRUNCFG) has to be done:
<connId> different from <muxInstance>.

9) AT#QDNS:

a) Initial setting for TCPATRUN service(through AT#TCPATRUNCFG) has to be done:
<muxInstance> = 1.

b) Initial setting by the command AT#SCFG has to be done:
<connId> set for TPCATRUN service(through AT#TCPATRUNCFG) has to be associated to a <cid> different from 1.

10) AT#GPRS: same as 9b)

11) AT#SKTOP: same as 9) and furthermore:
Initial setting for TCPATRUN service(through AT#TCPATRUNCFG) has to be done:
<connId> different from 1.

12) If initial setting for TCPATRUN service(through AT#TCPATRUNCFG) has done:
<connId> = <muxInstance>,
then parameters set by AT#PKTSZ, AT#SKTTO, AT#DSTO affect the same <connId> socket on which TCPATRUN service is running

13) AT+CMGS, AT+CMGW, AT#SEMAIL, AT#SSEND, AT#WSCRIPT and all commands that require to insert data after a prompt is received cannot be executed via SMS ATRUN, because the prompt is not sent back in an SMS response;

14) The commands of AT#CSURV family will have their response truncated if too long (response text longer than the text that can fit into a concatenated SMS made up of the maximum number of SMS that can be concatenated, i.e. 15);

15) AT#SD command causes a block of the SMS exchange mechanism, until the "module in the field" reboots after timeout set with AT#SMSATRUNCFG command expires, if connection mode is set to default value of 0 (online mode connection).