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## *Obsta GPRS modem*

### Lieu d'essais

#### **OBSTA - Usine**

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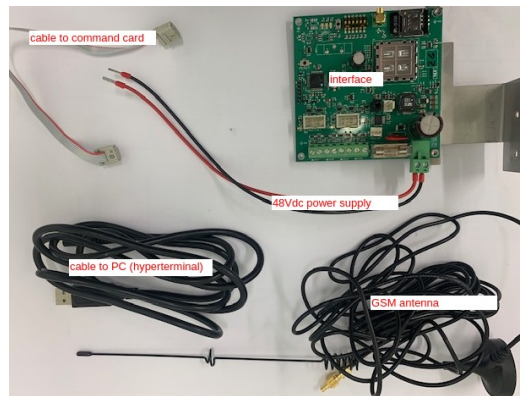
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## Revisions

Version	Note	Author	Approbator	Date
A	Initial revision	RP	AnG	23/03/2021

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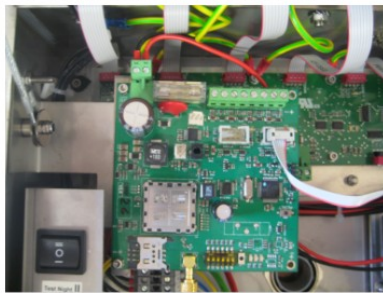



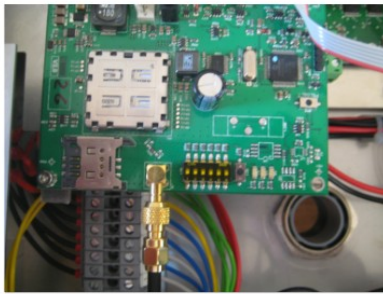
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## 1 Products requested to configure the modem:

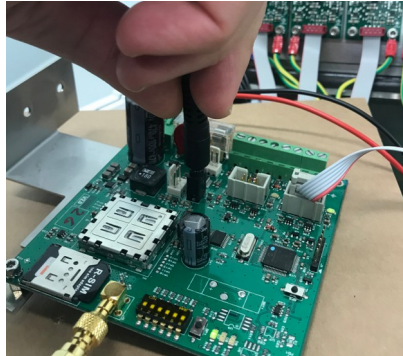
- 1 SIM card and its parameters (PIN1/PIN2 ; APN (+ login, password if required)
- 48V DC power supply (existing power supply of the obstaflash could be used to program the modem)
- 1 mobile phone with SIM card adaptor
- PC with USB port
- cable : TTL-232R-3V3-AJ (provided by OBSTA)
- software such as « Hyper-Terminal » under Windows XP, or equivalent such as « TeraTerm », « Putty », etc.) that could use a USB port for communication

## 2 Installation of the modem in a flashhead (it could be done in any flashhead after programming the network and SIM card parameters in the modem):

<p>Fix the interface inside flashhead</p> 	<p>Plug the serial port on the command card</p> 	<p>Plug the 48Vdc power supply on the interface</p> 
<p>Plug the 48Vdc on the terminal connection of the flashhead</p> 	<p>Connect the antenna</p> 	<p>Place antenna outside</p>

## 3 Setting of the parameters in the modem using a PC and its USB port :

The cable must be connected first to the PC and second to the GPRS modem



if requested, drivers are available on this address :  
<http://www.ftdichip.com/Drivers/VCP.htm>

Once installed, the USB port is seen as a serial port that can communicate through the « hyper-terminal » or equivalent

Start the hyper-terminal »

**Parameter of the serial port (USB):**

- Speed: **115200** bps, No parity,
- No flow control (neither hardware nor software),
- 1 stop bit,
- 8 data bit

**Carriage return :**

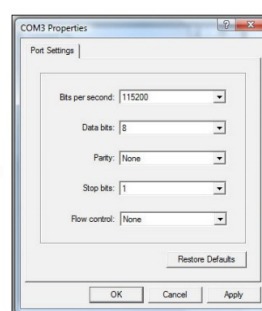
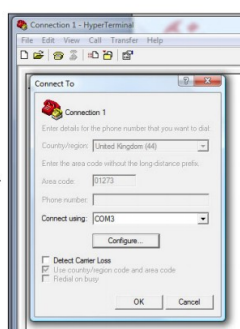
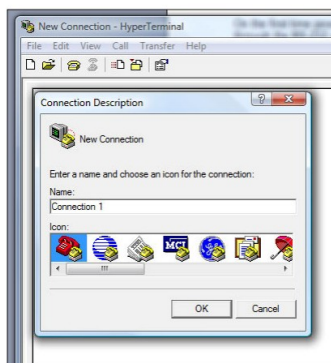
- Reception = CR (Carriage Return)
- Emission = CR +LF (CR+ Line Feed)
- Local echo activated

exemple using hyperterminal on windows :

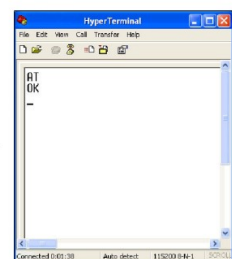
Select Hyperterminal from the Start Menu



Start the HyperTerminal program and assign any name for a new session.



On the terminal screen, type "AT" to check the "OK" response from the modem



- 1 The instructions are made of alphanumeric characters said to be « printables »:
  - 1.1.1.1 There is no space in the string of the instruction
  - 1.1.1.2 The separator dash is the minus sign
  - 1.1.1.3 The separator bar is the vertical bar
- 2 The instructions have to be finished by a carriage return (**[CR]** = **Entry**) to be executed
- 3 backlog does not work
- 4 When a parameter is on 4 digits, as a number, the 4 digits must be entered and completed by additional 0 : exemple '4' has to be entered as '0004'. When an instruction is valid, the modem answers « **OK** » once executed. When an instruction is wrong, the model answers « **NO** ».

#### **4 Programming the modem(long notice for advanced informations, go to paragraph 5 directly for short notice to program your SIM card and network parameter in the modem)**

##### **Reading the serial number**

**GSERN[CR]**

Answer

**OK-SERN-aaaaaaaaaaaa**

The string «aaaaaaaaaaaa» contains 12 ASCII characters representing the serial number in hexadecimal format. Exemple : 4C5E5698CD0E (to be noted)

##### **Reading the GPRS configuration**

**GGPRS[CR]**

Answer

**OK-GPRS-pin|apn|serv|port**

The answer contains 4 strings separated by the character '|'. No intermediate space :

- String « **pin** » : field with a fixed length coded on 4 ASCII characters representing the PIN code of the SIM
- String « **apn** » : field with variable length giving the address of the APN related to the SIM card.
- String « **serv** » : field with variable length, this is the server on which the modem connect. This field is either an IP address or a DNS (name of the server), in all cases in alphanumeric form  
Our server « **servicegprs.obsta.com** »
- String « **port** » : field with a fixed length coded on 5 ASCII characters, it defines the port of the server  
Our port : « **01530**»

**Remark :** if the GPRS modem does not have a valid configuration, it returns

**OK-GPRS-NOCFG**

##### **Programming the GPRS configuration**

**SGPRS-pin|apn|serv|port[CR]**

The parameters are described in the previous instruction « **GGPRS** ».

*If this instruction is used to modify existing parameters in the modem, the modem must be switch off a few seconds, disconnect the power supply and switch on again, so that the new parameters be applied*

If the configuration is to be deleted in the modem (modem will stop communication to the network), the instruction is **SGPRS-CLEAR[CR]** *the modem will have to be switch off and on again*

## Reading the GPRS advanced configuration

### GAPN1[CR]

#### Answer

**OK-APN1-pin2|login|pwd**

The answer contains 3 strings separated by the character '|'. No intermediate space :

- String « **pin2** » : field with a fixed length coded on 4 ASCII characters representing the PIN2 code of the SIM
- String « **login** » : login of the APN to be used, 31 characters maximum, **keep empty if not used**
- String « **pwd** » : password of the APN, 31 characters maximum, **keep empty if not used**

**Remark** : if the modem does not have APN configuration (default configuration), it returns **OK-APN1-0000||**

It means 0000 for the PIN2 and no login & no password used

If the initial configuration GPRS (code PIN, APN, server and port) has never been configured, it is important to program it first before using the instruction SAPN1.

**Normally used first the instruction SGPRS and second the instruction SAPN1**

## Programming the GPRS advanced configuration

### SAPN1-pin2|login|pwd[CR]

The parameters are described in the previous instruction « **GAPN1** ». If those parameters are not necessary, send the instruction « **SAPN1-0000||[CR]** »



## 5 Programming the modem (short notice)

One SIM card with big size (or used an adaptor)

Having 2 mandatory information : **a pin code**, and **APN from US with login and password have to be programmed** (if login and password are required)

exemple in blue below of 2 instructions to program the modem : '0000' is the PIN code of the SIM, 'internet.telekom' is the APN, '0000' is the PIN2 code of the SIM, 't-mobile' is the login and 'tm' the password

`SGPRS-0000|internet.telekom|servicegprs.obsta.com|01530[CR]`

`SAPN1-0000|t-mobile|tm[CR]`

Normally those 2 instructions are enough to set up the modem

**There is no space in the string of the instruction**  
**The separator dash is the minus sign**  
**The separator bar is the vertical bar**

### Description of the LED indicators on the modem

The modem do have 4 LED indicators : a green led close to the connector, and 3 other ones (green, orange, red) close to the dip switch. First one is on if voltage is present on the first flashing light. The table gives a quick status of the modem depending on those 3 other ones:

Signification	green LED	orange LED	red LED
Card not configured	OFF	ON	ON
Card configured, standby (no connection attempt)	ON	OFF	OFF
Card waiting the connection or disconnection	ON	ON	OFF
Card connected to the GSM network but not to the server	ON	ON	ON
Card connected to the server ( <b>everything pass, connection OK</b> )	ON	OFF	ON
Error SIM card	OFF	OFF	ON

### Status of the GPRS

When the modem is switch on, the card try automatically to connect to the server if the connection is valid. The following instructions give the status of the modem :

#### **GTGSM[CR]**

The modem should return one of the 3 codes :

**OK-TGSM-NOCFG** if no GPRS configuration has been memorized

**OK-TGSM-SIMPB** if a problem on the SIM card occurs (no SIM card detected, bad PIN code, SIM card blocked)

**OK-TGSM-STATS-a-bb-c** if none of the 2 above problems has been detected ; the files a bb and c provide the following information :

- « a » = 'C' if the card has successfully connect to the server, 'G' if the card only found the GSM network (no connection to the server yet) and 'N' if the card did not find yet the server

and the GSM network

- « bb » = level of GSM quality, between 00 et 31 if already connected, and 99 if not yet connected before or cannot connect
- « c » = 'N' if normal connection, 'R' if roaming

## **6 See the light on the server**

Go to <http://servicegprs.obsta.com:8080/login/auth>

User Id: STL

Password: kg3sS45\*!

Modem id : 00AD162558111