User Manual
GSM/GPRS Network Termination

SAGEM RT3000

SAGEM

⚠️

FCC Part 15

IMPORTANT USER INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.

– Increase the separation between the equipment and receiver.

– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer / installer or an experienced radio/TV technician for help.

FCC part 15.19

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

FCC part 15.21

Modifications not expressly approved by this company could void the user's authority to operate the equipment.

Installation by qualified personnel only

You may only use the SAGEM RT3000 with the antenna delivered together with the RT3000.

The installation of the RT3000 and the antenna as well as servicing is to be performed by **qualified technical personnel** only. When servicing the antenna, or working at distances closer than those listed below, ensure the transmitter has been disabled.

RFExposure mobil

Keep distance !

Typically, the antenna connected to the transmitter is an omni-directional antenna with 0dB gain. Using this antenna the total composite power in PCS mode is smaller than 1 watt ERP.

The internal / external antennas used for this mobile transmitter must provide a separation **distance of at least 20 cm from all persons** and must not be co-located or operating in conjunction with any other antenna or transmitter."

Safety Notes

General: Please read this manual carefully before using the device. The device is for indoor use only. Keep the device out of the reach of children, especially infants. Do not expose the device to moisture, splashes, drips or spray. To avoid the risk of demagnetisation please do not store diskettes, credit cards or similar objects in the vicinity of the device.

Purpose: The sole purpose of the device is to connect telephones, fax machines and modems (or PCs) to the GSM radio networks. Use of this device for any other purpose is prohibited and can be dangerous.

In some countries the use of a GSM-Gateway to access an outside line may constitute a breach of contract.

Installation: For security reasons, the telephone cables must remain exclusively inside the house and must not go outside the house. Never remove a plug from its socket by pulling on the lead and do not lay cables over sharp edges or corners. Do not switch on the device if the lead, another cable or the device itself is damaged. Before connecting or disconnecting other cables please unplug the mains power for all the involved equipment. Never use the device in areas where radio transmission is prohibited.

Health: The device contains a radio transmitter which may affect the operation of medical electronic devices such as hearing aids or heart pacemakers. Your doctor and the manufacturer of such devices can provide you with further advice.

SIM card: The device must be opened before being put into operation to insert the SIM card. Before opening the device, always make sure that the cables have been disconnected and the power supply has been directly disconnected at the RT3000, since otherwise dangerous voltages may be present in the device. After the installation remount the cover and fasten it with the supplied screw.

Power supply: Only use the manufacturer's original power supply units. Connect the device's power supply unit only via protective conductor sockets and take care that it is always easily accessible. The voltage specified on the rating plate of the power supply unit must match that of your mains supply. Disconnect the mains plugs of all devices during thunderstorms. In the event of malfunctions disconnect all other cables.

Rechargeable Battery: The battery only serves for short-term bridging of power failures. In case of changing the rechargeable battery installed in the device please take notice of the following:

The device must be opened for the installation of the new rechargeable battery. Opening the equipment during operation may be dangerous. Therefore, make sure to unplug all the connectors before opening. After the installation of the battery, close the cover again and secure both parts with the delivered screw.

Caution! Danger of explosion during inappropriate replacement of the battery!

The battery must not be short-circuited. If the device is removed from service or during works on it, all connections of the battery are to be disconnected.

When replacing the battery, do not dispose of it in the household refuse, but dispose of it properly, in accordance with the local facilities and regulations.

Content

1 Introduction

Purpose of the device

The SAGEM RT3000 is a GSM/GPRS Network Termination, a kind of wireless telephone socket. The following devices can be connected to the SAGEM RT3000:

- one or more analogue telephone devices to make telephone calls
- other analogue telecomms equipment: e. g. fax machine or fax modem to send and receive facsimile messages; telephone devices are possible, too.

You can also connect a PC to send or receive data or facsimile messages, further to surf in the internet or send and receive E-mails via GPRS.

The GSM network is used to communicate with the remote party. The connected devices will function almost as though they were connected to the fixed telephone network. There are only some small differences.

To learn about them and to put the device into operation please study this guide.

PC-Port

Phone Port

Fax/Modem/ Phone Port
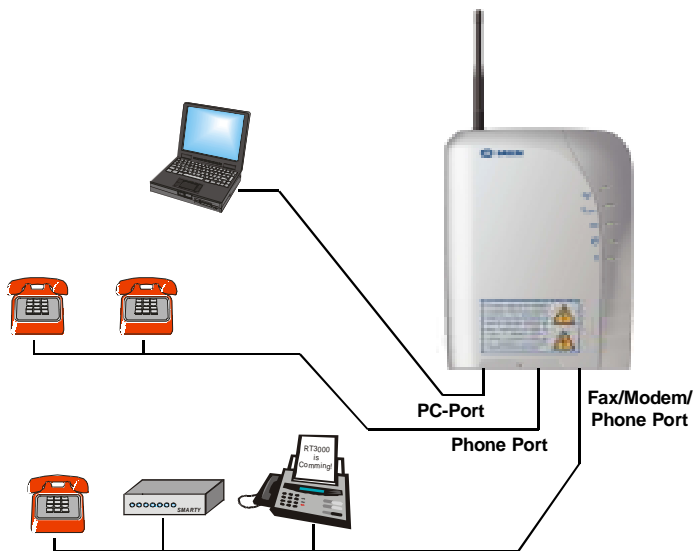
PC based functions

Also all functions related to a PC (GPRS, PC-Modem, PC-FAX, SMS) are described in this user manual.

2   The LEDs on the device

The LEDs inform you about the operation status.

(icon)	SLOW Flash	Search Net
	ON	High Signal Quality
(icon) i/pin	RAPID Flash	PIN SIM missing
	Cadence Flash	Enter PUK Code
	SLOW Flash	Search Net or Low Signal Quality
	On	Medium or High Signal Quality
	Off	No Signal
(icon)	RAPID Flash	FAX Warning, please check the fax machine connected to the SAGEM RT3000
	SLOW Flash	SMS Received
(icon)	ON	Offhook on Phone, Fax/Modem/Phone or PC port
	RAPID Flash	FAX Warning, please check the fax machine connected to the SAGEM RT3000
	SLOW Flash	Call Barring / Call Forward enabled
(icon)	Off	No Power
	Red on	Powered from internal battery
	Green on	Powered from mains

2.1   GSM Signal Quality Indication

	(icon)	(icon) i/pin
Search Net	SLOW Flash	SLOW Flash
No Signal	OFF	OFF
Low Signal Quality	OFF	SLOW Flash
Medium Signal Quality	OFF	ON
High Signal Quality	ON	ON

3   Putting the device into operation

3.1   Survey

Do the following steps:

		page
1.	Insert the SIM card	9
2.	Connect the power supply and at least one telephone. You may connect your other devices, too.	9
3.	Enter the PIN number so that the device can communicate via the GSM network.	11
4.	Option: If you have connected a Personal Computer to the SAGEM RT3000, install the corresponding driver on the computer.	18

Now the SAGEM RT3000 is ready to be used.

4.	Configure the device according to your needs	22

3.2   Inserting the SIM Card

Precondition   ➲ The SAGEM RT3000 must not be connected to any device. Even the power supply must be disconnected from the SAGEM RT3000.

⚠   ➲ **Please do not touch the electronic components inside the SAGEM RT3000.**

Perform the following steps:

The steps...   1. Remove the antenna.

2. Remove the lock screw and the bottom part of the housing cover.

3. Open the SIM card holder.

4. Insert the SIM card.

5. Close the SIM card holder.

6. Close and lock the housing with the screw.
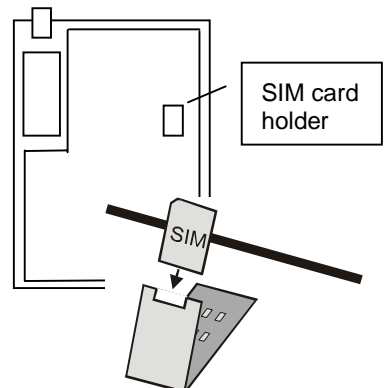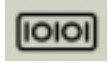
SIM card holder

When the SIM card is inserted and the SIM card holder is closed, the gold-metal plated areas of the SIM card must be at the bottom.

3.3   Connecting the telecomms equipment

To put the device into operation you have to connect at least

- the power supply so that the device gets power
- one telephone device, so that you can enter the PIN number.

| Power Supply |
| PC via RS232 |
| PC via USB |
| Telephone |
| Fax machine, Modem or Telephone |

Power Supply	Connect the Power Supply adapter here. Use only the Power supply adapter supplied with the RT3000. Plug-in the Power supply adapter into the mains socket.
RS232 (optional)	Connect this interface with the COM port (serial RS-232 interface) of your computer, if you want to have access to the internet or if you want to use your computer for fax and data communication. If you connect a device to the USB port, the RS-232-Port will be deactivated.
	Default settings:
	Transmission speed 57,600 bps
	Data bits 8
	Parity N (none)
	Stop bits 1
USB (optional)	If you want to connect your computer via its USB interface instead of its COM port to the SAGEM RT3000, please first install the drivers and then plug in the USB cable.
Telephone	You can connect here analogue telephones.
Fax/Modem/Phone	You can connect here analogue telecomm equipment, e.g. analogue fax machine (or a combi fax), analogue modem or analogue telephones

➲ The total number of telephones and telecomm equipment connected to the RT3000 may not exceed a REN (=Ringer Equivalent Number) of 5. A standard analogue telephone has the REN of 1.

➲ All devices connected to one port of the SAGEM RT3000 are switched in parallel. That means they react in the same way: For example when there are 2 telephone sets connected to the **Telephone** port and a call comes in, both telephone sets will ring and you can answer the call using any of them.

➲ If you connect a Personal Computer, you have to install the modem driver of the SAGEM RT3000 on the computer.

➲ For security reasons, the telephone cables must remain exclusively inside the house, not go outside the house. The maximum distance between the RT3000 and conventional telephone sets or fax machines is 300 meters with 0,4 mm cable assuming a total loop impedance including telephone equal to 500 Ω maximum. The maximum distance between the RT3000 and PC should not exceed 3 meters.

➲ If the power supply adapter is disconnected, the SAGEM RT3000 is shut down. Even if the RT3000 is powered by the internal battery (in case of a mains failure), the power supply adapter shall be connected to the SAGEM RT3000.

3.4   Enter the PIN number

Before you can use the RT3000, enter the PIN (Personal Identification Number). You will receive the PIN number with the SIM card from your network provider.

➲ If you have received a RT3000 with Autopin function read chapter 3.5 before going on.

To enter the PIN use a telephone set connected to the **Telephone** port or the **Fax/Modem/Phone** port of the RT3000. Use the telephone to enter the PIN (by sending DTMF codes to the RT3000) just as you would dial a number:

When you pick up the handset (go off hook), you will hear a recurrent short beep tone, that prompts for the PIN. Enter the PIN as shown below, then hang up (place the handset on hook).

 To enter the PIN:

📞   * 8   PPPP ⚠ ☎

It means:

PPPP   Please enter your PIN number here .
Allowed PIN numbers are 0000 to 99999.

⚠   means: listen to the confirmation tone:
a high pitched beep signals: OK
a low frequency beep-beep signals: Wrong PIN

You may have to wait 3 seconds before hearing the confirmation tone.

means lift up the handset

means hook on the handset

If you have entered a wrong PIN, the [4/pin] LED will flash rapidly. You have one last
try to enter the right PIN. This last try is indicated by a special beep tone. If you have
entered two times the wrong PIN, the SIM card is locked and you need to unlock it by
entering the PUK (see chapter 3.6).

3.5   Autopin option

Autopin is a special function to prevent against the use of the SAGEM RT3000's SIM
card in an other terminal.
Please insert the SIM card as described on page 9 and turn-on the SAGEM RT3000.
Enter the PIN of the SIM card. The SAGEM RT3000 will automatically change the PIN
number by a secret value. Be careful, you can enter only once a wrong PIN (instead of
two times as in section 3.4).
If the SAGEM RT3000 restarts again with this same SIM card, you will no more have to
enter the PIN: the SAGEM RT3000 will use its secret value.

SAGEM RT3000 with Autopin function can also work with SIM cards with PIN function
deactivated: in this case you will not have to enter the PIN and the SAGEM RT3000 will
not change the PIN of the SIM card.

3.6   Enter the PUK number

If you have entered the three times in sequence a wrong PIN, the [4/pin] LED will
flash with a significant cadence. In this case you have to enter the PUK (Personal
Unblocking Key) which you should have received from your network provider with your
SIM card. This will unblock the SIM card.

To enter the PIN:

$\mathcal{C}$ * 9   PUK   *   nPI N   *   nPI N   # $\triangle$ ⌣

It means:

PUK   Please enter your PUK here.

npi n   Please enter a new PIN here.
        Allowed PIN numbers are 0000 to 99999.

3.7 Wall-mounting

⚠️ ➲ **Please operate the SAGEM RT3000 only in upright position with the antenna pointing upwards. This will ensure best signal quality.**

The SAGEM RT3000 is intended to be mounted on the wall. You can fix it to the wall with screws. Before mounting the SAGEM RT3000 make sure that you have a good signal quality at the chosen position.

To mount the device on the wall, first disconnect all the cables. In particular make sure that the power cable is not connected.
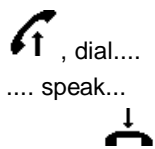
We suggest that you check the reception before finally fixing the mounting.

4   Operation: Making and answering telephone calls

➲ Though you can connect many of devices to the SAGEM RT3000 only one call - incoming or outgoing - is possible at a time, because there is only a single "wireless" line for communication. Other devices will get a busy tone.

➲ You can connect analogue telephone sets either to the **Telephone** port or to the **Fax/Modem/Phone** port of the SAGEM RT3000. Up to five devices can be connected to each port but the total number of devices connected to the RT3000 shall not exceed five. You can make or answer telephone calls with each telephone set.

➲ Please note that the maximum REN (=Ringer Equivalent Number) at the RT3000 may not exceed 5. A standard analogue telephone has the REN of 1. All devices connected to one port of the SAGEM RT3000 are switched in parallel and react in the same way. That means they react in the same way: For example when there are 2 telephone sets connected to the **Telephone** port and a call comes in, both telephone sets will ring and you can answer the call using any of them.

➲ DTMF dialling as well as pulse (decadic) dialling are supported.

➲ Depending on the network, when a number is dialled to make a call, you may need to enter the local area code, even if it is a local call.

4.1   Call a remote party

To make a call...   Lift up the telephone handset and enter the phone number of the remote party.

You will hear:

➲ the common call progress tones, like the dialling tone (before entering the phone number),

➲ the ringing tone (during the time the remote party gets the RING signal),

➲ or a busy signal (if the remote party is busy or the connection cannot be established).

🕻 , dial....

.... speak...

➲ If an active connection (GPRS, GSM data, Fax or another voice connection) has already been established using the SAGEM RT3000 and you try to make a call, you will hear a busy signal since another device is currently using the only "wireless" line.

To terminate the call...   Hang-up the handset.

4.2   Emergency call

You may place an Emergency calls e.g. to your local police or fire department without a SIM card inside the RT3000. Just dial the number.

4.3   To answer an incoming phone call

When the telephone is ringing...   An incoming phone call is indicated by a RING signal of the telephones connected to the **Telephone** port or to the **Fax/Modem/Phone** port of the SAGEM RT3000.

Lift up the handset of the telephone set and speak.

🕻 ... speak...

➲ By default you cannot have two calls at the same time. So if a call comes in during an active connection (GPRS, GSM data, Fax or voice connection), this incoming call will not be signalled to you. And the calling party will get a busy signal, because the only "wireless" line is used by an other device.

➲ In some cases you can continue speaking even when you have hung up and then lifted up the handset within 1 minute. (See Parameter *hang-up delay* in the section *Advanced Configuration* in the User Manual.)

4.4 Option: Having two calls at the same time

➲ During making a telephone call it is possible to receive a second call or to establish a second call, if this service is supported by:
- the network
- and your subscription
- and if configured (see *Call waiting*, page 30).

By default this function is <u>not</u> activated.

To establish a second call...	To put the call already established in Call Hold state press the following keys in sequence:	r 2
	Then you can make another call.	

To answer a second call during a call...	When a second call comes in during a call, you hear a Call Waiting Advising Tone to inform you about the incoming second call.	
	Then you can:	
⇒	Put the first call in Call Hold state and switch to the second call by pressing the following keys in sequence:	r 2
	You can toggle between the two calls by pressing the keys in sequence.	
	OR	
⇒	Hook on the handset to finish the first call. In this case the call in Call Waiting state is not rejected. It is indicated like any normal incoming call by ringing.	
	OR	
⇒	Do nothing, continue with the first call. After some time - the duration depends on the network - the second call is transferred to the voice mail box (Call Forwarding on No Reply - CFNRy), if this feature is enabled. Otherwise the calling party will hang-up, because his call is not answered.	

To manage two calls (3-party conference calls)

In a situation with two established calls with one in Call Hold state (see above) you can:

⇒ Switch from one call to the other by pressing the following keys in sequence**:**

r 2

The active call will change to Call Hold state and vice versa.

⇒ • Transform the two calls in a 3 parties call (multi party call):
• Press the following keys in sequence:

r 3

➲ You can configure the telephone functions according your needs. See *Configuration* page 22.

5   Operation: Send and receive fax with a facsimile device

 You can send and receive G3 fax with a standard analogue facsimile device which is connected to the **Fax/Modem/Phone** port of the SAGEM RT3000.
Please install and operate the facsimile device in accordance to its user manual.

 If you want to send or receive a fax with a Personal Computer, which is connected to the RS-232 port or USB port, you have to configure the SAGEM RT3000 accordingly.

Please note:

The "wireless telephone line" provided by the SAGEM RT3000 has special characteristics you should know:

* Please configure the connected facsimile device so that an incoming call is answered after the first, second or the third RING signal - not later. Otherwise you may have problems to receive a fax.

* In case of a faulty fax transmission to a remote party, it might happen nevertheless that your facsimile will report that the transmission was successful. So in the case of faulty fax transmission the SAGEM RT3000 will send an error message report to your facsimile device to correct this problem. Only if you are not receiving such an error message report, you can be sure, that the fax was transmitted successfully. You can also activate a mode, that you will receive a transmission report (transmission successful / not successful) after each fax transmission to a remote party.

* While receiving a fax from a remote party, it might happen that the sending party already receives the confirmation that the fax has been transmitted to you successfully even though you did not yet receive it completely for any reason (i.e. out of paper). In such a case the undelivered part of the fax will be stored inside the SAGEM RT3000. It will indicate this by both FAX Warning LEDs rapidly flashing (see LED description on page 8). The SAGEM RT3000 will do some retries to deliver the rest of the received facsimile. If it is not successful, it continues to indicate this by both FAX Warning LEDs rapidly flashing.
You can request the delivery of the partly stored fax by entering a DTMF command by a connected telephone set (see below *In case of a FAX Warning*, page 18).

5.1   To receive a Test Fax

To check if your facsimile device can receive a fax from the SAGEM RT3000 correctly, you can make a test:

$\mathcal{C}$ # * 1 1 1 # ⚠ ☎	A test fax of 1 page will be transmitted from the SAGEM RT3000 to your facsimile device.
⚠	means: wait for the confirmation tone (up to 3 sec): a high pitched beep signals: OK a low frequency beep-beep signals: Wrong entry.

5.2   In case of a FAX Warning

If both FAX Warning LEDs are rapidly flashing, the SAGEM RT3000 is indicating that it could not transfer a received fax to the connected facsimile device completely (see above). The part that is not transferred is stored in the SAGEM RT3000. Please check your facsimile device. Be sure that it is in correct operation mode. Then give the command to the SAGEM RT3000 to transfer the stored fax to your facsimile device. Use a telephone connected to the **Telephone** port or to the **Fax/Modem/Phone** port to give the following command:

	Description:
𝄞 # * 222# ⚠ ☎	After you have entered the code, the SAGEM RT3000 will start to send the saved fax part to your facsimile device.
𝄞 # * 999# ⚠ ☎	This command will delete the partly saved fax and will reset the FAX Warning.
⚠	means: wait for the confirmation tone (up to 3 sec): a high pitched beep signals: OK a low frequency beep-beep signals: Wrong entry.

➲ You can configure the fax function according your needs. See page 31.

6   Operation: Analogue Modem connections

➲ With an analogue modem connected to the **Fax/Modem/Phone** port of the SAGEM RT3000 you can send and receive data to/from a remote modem being connected to an analogue telephone line. Please install and operate the modem in accordance to its user manual and the manual of the software you run on the computer connected to the modem.
The called party can be a GSM modem or a fixed network modem.

➲ If the called party's modem is connected to the fixed network, it should support 9600 bps (V.32) / V.42 for the connection into the fixed network. This is necessary for the communication to the GSM network.

➲ The SAGEM RT3000 supports

• modem connections up to 9600 bps
• modem connections according to the ITU-Standards V.21, V.22, V.22bis and V.32.

Your modem should support MNP2 to ensure that no data are lost due to flow control problems.

➲ For data communication you can also connect your PC to the SAGEM RT3000 directly using this device as GSM modem (see details page 39).

➲ You can configure the function according your needs. See *Data Call Configuration*, page 32.

7   Operation: Send and receive fixed network SMS

If you have connected a telecomm equipment to the SAGEM RT3000 that is capable of sending and receiving fixed network SMS (see note), you can use the fixed network SMS (SMS = Short Message Service).

The RT3000 is a SMS centre for fixed network SMS. It can receive fixed network SMS from a connected telecomms equipment and forward it through the GSM network to the final recipient. It can also receive SMS from the GSM network and forward it to a connected fixed network SMS telecomms equipment.

To receive fixed network SMS the device you use must be connected to the port on which incoming SMS are delivered (Default: PC-port).

The function requires some configuration:

Do the following steps:

		page
1.	Select the port of the RT3000 to which incoming SMS should be sent.	33
2.	The RT3000 supports fixed network SMS in accordance to ETSI standard ES 201 912 Protocol 1, Deliver mode 0 and Protocol 2. Check if your fixed network SMS telephone supports Fixed network SMS in accordance protocol 1 or protocol 2. You should find the information in the user guide of the telephone. May be that you have to ask your provider for these number.	
3.	Choose the right protocol in accordance to your telecomms equipment. Configure the SMS centre number for protocol 1 or SMS centre number and Local number for protocol 2.	33

How to enter an SMS, how to send it and how you can receive a SMS is described in the user guide of your telecomms equipment.

7.1   In case of error

Sending a SMS   In case of error the RT3000 can send an error report on the telecomms equipment you have used to send the SMS. You can activate or deactivate this function (see page 35).

Receiving a SMS   When the Sagem RT3000 detects an incoming SMS it will give notice to the device that is connected to its configured SMS-port (see *Select port to receive SMS*, page 33), so that this device will ring, receive the SMS and display it.

When the Sagem RT3000 is not successful to transfer the SMS it will retry to repeat the transmission 2 times.

If the Sagem RT3000 is still not successful to transfer the SMS after these retrials, the user can invoke a retransmission when his device is ready.

To do this enter the following sequence:

Description:	
🖕 ＊ 1 〇# ⚠ ↓ 📞	After you have entered the code, the SAGEM RT3000 will restart the transmission.

⚠ means: wait for the confirmation tone (up to 3 sec):

a high pitched beep signals: OK
a low frequency beep-beep signals: Wrong entry.

8   Configuration

Your SAGEM RT3000 is a sophisticated device with a wide range of modes of operation. You have to decide which operation modes are appropriate for your needs and then enable them by configuring the SAGEM RT3000.

The configuration process   Use a telephone connected to the **Telephone** port or the **Fax/Modem/Phone** port of the RT3000 to enter a special sequence (see below) just as you would dial a number. (The telephone must use tone (= DTMF) dialling.)

The icons in the following descriptions mean:

⚠ listen to the confirmation tone:
a high pitched beep signals: OK
a low frequency beep-beep signals: Wrong entry.

You may have to wait 3 seconds before hearing the confirmation tone.

📞 lift up the handset.

📞 hook on the handset.

ACCESS means: access code; by default it is OOOOOO

8.1   Access code for DTMF configuration

8.1.1   Changing the DTMF access code

The configuration of your SAGEM RT3000 is protected against unauthorised modification by an access code. The access code is part of each DTMF configuration code apart from the DTMF codes to configure call forwarding and call barring.

The access code consists of 6 numeric digits. The default value is OOOOOO.

📞 * 5 OLDACC 023 NewACC # ⚠ 📞

It means:

OLDACC : old access code

newACC : new access code

8.2   Ports for incoming calls; volume of voice signal

8.2.1   To select ports for incoming telephone calls

By default, the **Telephone** port and the **Fax/Modem/Phone** port will RING when a call comes in.

To change the setting enter the following sequence:

Default access code: 000000	**Incoming phone call is signalled on:**
⌁ * 5 ACCESS 009 1 # ⚠ ☎	Only on **Telephone** port
⌁ * 5 ACCESS 009 2 # ⚠ ☎	Only on **Fax/Modem/Phone** port
⌁ * 5 ACCESS 009 4 # ⚠ ☎	**Telephone** port and **Fax/Modem/Phone** port (Default)

8.2.2   Volume of voice signals in telephone calls

You can adjust the volume of the voice signal which is sent to the remote party. You can also adjust the volume of the voice signal which is received from the remote party.

To change the setting enter the following sequence:

Telephone port:

Default access code: 000000	**Description:**
⌁ * 5 ACCESS 001 VV # ⚠ ☎	Volume sent to remote party
⌁ * 5 ACCESS 002 VV # ⚠ ☎	Volume of voice signals received from remote party

Fax/Modem/Phone port:

To change the setting enter the following sequence:

Default access code: 000000	Description:
☎ * 5 ACCESS 003 VV # ⚠ 📞↓	Volume sent to remote party
☎ * 5 ACCESS 004 VV # ⚠ 📞↓	Volume of voice signals received from remote party
Meaning: VV	= 00 .... 20 with 00 = maximum volume with 20 = minimum volume

Factory setting: 07

Example:

You want to increase the volume of voice signals received from the remote party when you use the **Telephone** port:

Lift up the handset ☎ ,

then enter: * 5 000000 002 03 #

and wait for the confirmation tone ⚠,

then hang-up the handset 📞↓.

8.3   Configuration of network services

Your SAGEM RT3000 is a sophisticated device with a wide range of modes of operation. You have to decide which operation modes are appropriate for your needs and then enable them by configuring the SAGEM RT3000.

The configuration process   Use a telephone connected to the **Telephone** port or the **Fax/Modem/Phone** port of the RT3000 to enter a special sequence (see below) just as you would dial a number. (The telephone must use tone (= DTMF) dialling.)

The icons in the following descriptions mean:

⚠   listen to the confirmation tone:
        a high pitched beep signals: OK
        a low frequency beep-beep signals: Wrong entry.

You may have to wait 3 seconds before hearing the confirmation tone.

☎   lift up the handset.

↓ hook on the handset.

ACCESS means: access code; by default it is OOOOOO

8.3.1 Call forwarding unconditional (CFU)

If *call forwarding unconditional* is activated incoming calls will be forwarded to the configured telephone number. You can configure this for each type of call (voice, data, fax) independently.

To change the setting enter the following sequence:

		Description:
$\mathcal{C}$ * * 2 1 * _{<Telnumber>} #	⚠ ↓⌒	Activates for all call types
$\mathcal{C}$ * * 2 1 * _{<Telnumber>} * <call_type> #	⚠ ↓⌒	Activates for selected call types (see below)
$\mathcal{C}$ # # 2 1 #	⚠ ↓⌒	Deactivates call forwarding unconditional
$\mathcal{C}$ * # 2 1 #	⚠ ↓⌒	Status Checking (see p. 30)

Meaning:

<Telnumber> = the telephone number, the call will be forwarded to

<call_type> = 1 1 : Incoming **phone calls** will be forwarded.

<call_type> = 1 3 : Incoming **fax calls** will be forwarded.

<call_type> = 2 5 : Incoming **data calls** will be forwarded.

Both prefix commands * and * * are supported to activate the service.

Both prefix commands # and # # are supported to deactivate the service.

8.3.2   Call forwarding if busy (CFB)

If *Call forwarding if busy* is activated, incoming calls will be forwarded to the configured telephone number, if the SAGEM RT3000 is just busy in performing a telephone, fax or data call when calls come in. You can configure this for each type of call (voice, data, fax) independently.

To change the setting enter the following sequence:		**Description:**
$\mathcal{f}$ * * 67 * <Telnumber>$\#$	⚠ ↓☎	Activates for all call types
$\mathcal{f}$ * * 67 * <Telnumber> * <call_type>$\#$	⚠ ↓☎	Activates for selected call types (see below)
$\mathcal{f}$ $\#\#67\#$	⚠ ↓☎	Deactivates call forwarding if busy
$\mathcal{f}$ * $\#67\#$	⚠ ↓☎	Status Checking (see p. 30)

Meaning:

> **<Telnumber>** = the telephone number, the call will be forwarded to
>
> **<call_type>** = 11 : Incoming **phone calls** will be forwarded.
>
> **<call_type>** = 13 : Incoming **fax calls** will be forwarded.
>
> **<call_type>** = 25 : Incoming **data calls** will be forwarded.
>
> Both prefix commands $*$ and $**$ are supported to activate the service.
>
> Both prefix commands $\#$ and $\#\#$ are supported to deactivate the service.

8.3.3   Call forwarding if no answer (CFNRy)

If *call forwarding if no answer* is activated, incoming calls will be forwarded to the configured telephone number, if the call is not answered by a connected telecomms equipment. You can configure this for each type of call (voice, data, fax) independently. You can also configure the delay after the call is forwarded.

To change the setting enter the following sequence:		**Description:**
$\mathcal{f}$ * * 61 * <Telnumber>$\#$	⚠ ↓☎	Activates for all call types
$\mathcal{f}$ * * 61 * <Telnumber> * * <delay_time>$\#$	⚠ ↓☎	Setting the delay after which the call is forwarded for all call types
$\mathcal{f}$ * * 61 * <Telnumber> * <call_type>$\#$	⚠ ↓☎	Activates for the selected call types (see below)
$\mathcal{f}$ * * 61 * <Telnumber> * <call_type> * <delay_time>$\#$	⚠ ↓☎	Specifies the target number, the call type and the delay.

$\mathbf{6}$ # # 6 1 #	⚠ 📞	Deactivates call forwarding if no answer
$\mathbf{6}$ * # 6 1 #	⚠ 📞	Status Checking (see p. 30)

Meaning:

    <Telnumber> = the telephone number, the call will be forwarded to

    <delay_time> = the delay, after which the call is forwarded in seconds

    <call_type> = 11 : Incoming **phone calls** will be forwarded.

    <call_type> = 13 : Incoming **fax calls** will be forwarded.

    <call_type> = 25 : Incoming **data calls** will be forwarded.

    Both prefix commands $*$ and $**$ are supported to activate the service.

    Both prefix commands $\#$ and $\#\#$ are supported to deactivate the service.

8.3.4 Call forwarding if not accessible (CFNA)

If *call forwarding if not accessible* is activated, incoming calls will be forwarded to the configured telephone number, if your SAGEM RT3000 is not accessible in the GSM network so that the call can not be answered by telephone, fax or data device. You can configure this for each type of call (voice, data, fax) independently. You can also configure the delay after the call is forwarded.

To change the setting enter the following sequence:

		Description:
$\mathbf{6}$ * * 62 * <Telnumber>$\#$	⚠ 📞	Activates for all call types
$\mathbf{6}$ * * 62 * <Telnumber> * <call_type>$\#$	⚠ 📞	Activates for selected call types (see below)
$\mathbf{6}$ # # 62 #	⚠ 📞	Deactivates call forwarding if not accessible
$\mathbf{6}$ * # 62 #	⚠ 📞	Status Checking (see p. 30)

Meaning:

    <Telnumber> = the telephone number, the call will be forwarded to

    <call_type> = 11 : Incoming **phone calls** will be forwarded.

    <call_type> = 13 : Incoming **fax calls** will be forwarded.

    <call_type> = 25 : Incoming **data calls** will be forwarded.

    Both prefix commands $*$ and $**$ are supported to activate the service.

    Both prefix commands $\#$ and $\#\#$ are supported to deactivate the service.

8.3.5 Call barring all of outgoing (To block all outgoing calls)

If *call barring all of outgoing* is activated, all outgoing calls will be blocked.
To change the setting enter the following sequence:

		Description:
⌀ * 3 3 * <password>#	⚠ ↓☎	Activates for all call types
⌀ * 3 3 * <password * <call_type>#	⚠ ↓☎	Activates for selected call types (see below)
⌀ # 3 3 * <password>#	⚠ ↓☎	Deactivates call barring all of outgoing for all call types
⌀ # 3 3 * <password >* <call_type>#	⚠ ↓☎	Deactivates for selected call types (see below)
⌀ * # 3 3#	⚠ ↓☎	Checks the status (see p. 30)
⌀ * # 3 3 * * <call_type>#	⚠ ↓☎	Checks the status (see p. 30)

Meaning:

<password> = the password to protect this service: any number

<**call_type>** = 1 1 : Configuration is related to **phone calls** only.

<call_type> = 1 3 : Configuration is related to **fax calls** only.

<call_type> = 2 5 : Configuration is related to **data calls** only.

8.3.6 Call barring incoming (To reject all incoming calls)

If *call barring incoming* is activated, all incoming calls will be rejected.
To change the setting enter the following sequence:

		Description:
⌀ * 3 5 * <password>#	⚠ ↓☎	Activates for all call types
⌀ * 3 5 * <password >* <call_type>#	⚠ ↓☎	Activates for selected call types (see below)
⌀ # 3 5 * <password>#	⚠ ↓☎	Deactivates call barring incoming for all call types
⌀ # 3 5 * <password >* <call_type>#	⚠ ↓☎	Deactivates for selected call types
⌀ * # 3 5#	⚠ ↓☎	Checks the status (see p. 30)
⌀ * # 3 5 * * <call_type>#	⚠ ↓☎	Checks the status (see p. 30)

Meaning:

    <password> = the password to protects this service: any number

    <call_type> = 11 : Configuration is related to **phone calls** only.

    <call_type> = 13 : Configuration is related to **fax calls** only.

    <call_type> = 25 : Configuration is related to **data calls** only.

8.3.7   Call Barring international outgoing (To block all outgoing international calls):

If *call barring all international outgoing* is activated, all outgoing calls to destinations abroad will be blocked.

To change the setting enter the following sequence:

		Description:
ℱ * 3 3 1 * <password>#	⚠ ↓📞	Activates for all call types
ℱ * 3 3 1 * <password> * <call_type>#	⚠ ↓📞	Activates for selected call types
ℱ # 3 3 1 * <password>#	⚠ ↓📞	Deactivates this function for all call types
ℱ # 3 3 1 * <password> * <call_type>#	⚠ ↓📞	Deactivates for selected call types
ℱ * # 3 3 1 #	⚠ ↓📞	Checks the status (see p. 30)
ℱ * # 3 3 1 * * <call_type>#	⚠ ↓📞	Checks the status (see p. 30)

Meaning:

    <password> = the password to protects this service: any number

    <call_type> = 11 : Configuration is related to **phone calls** only.

    <call_type> = 13 : Configuration is related to **fax calls** only.

    <call_type> = 25 : Configuration is related to **data calls** only.

8.3.8   Change Password for Call Barring

		Description:
ℱ * * 0 3 * <old pw> * <new pw> * <new pw>#	⚠ ↓📞	Change password

Meaning:

<old pw> = recently active password for call barring

<new pw> = new password for call baring: any number

8.3.9 Call waiting

If the *call waiting* function is activated, during active telephone calls an incoming call will be indicated by a signal tone.

To change the setting enter the following sequence:

			Description:
$\int_1^r$ * 4 3 #	⚠	☏	Function activated
$\int_1^r$ # 4 3 #	⚠	☏	Function deactivated (Default)
$\int_1^r$ * # 4 3 #	⚠	☏	Check the status (see p. 30)

8.3.10 Check status for call forwarding, call barring and call waiting

When you check the status for call forwarding, call barring or call waiting, the status will be indicated by signal tones from the telephone handset:

	Description:
___ Beep ____ Beep	Status on / DTMF code correct
___ Beep _ Beep____ Beep	Status off / DTMF code correct
___ Beep_ Beep	DTMF code not correct or service not provided by the network

8.4 FAX-Configuration

8.4.1 Fax Report on success

To change the setting enter the following sequence:

Default access code: 000000	**Description:**
⌒ * 5 ACCESS 013 0 # ⚠ ☎	Only error reports are transmitted to your facsimile device (Default)
⌒ * 5 ACCESS 013 1 # ⚠ ☎	After each transmission to a remote station a report is sent to your facsimile device reporting whether the transmission was successful or not.

➲ In case of a faulty fax transmission to a remote party, it might happen nevertheless that your facsimile will report that the transmission was successful. So in the case of faulty fax transmission the SAGEM RT3000 will send an error message report to your facsimile device to correct this problem. Only if you are not receiving such an error message report, you can be sure, that the fax was transmitted successfully. You can also activate a mode, that you will receive a transmission report (transmission successful / not successful) after each fax transmission to a remote party.

8.4.2 Select Port for Fax Calls

To change the setting enter the following sequence:

Default access code: 000000	**Description:**
⌒ * 5 ACCESS 011 02 # ⚠ ☎	Receive Fax on **Fax/Modem/Phone** port (Default)
⌒ * 5 ACCESS 011 03 # ⚠ ☎	Receive Fax with Fax software on the PC connected to the RS-232 or USB port

8.4.3   Disable Modem/Phone on Fax/Modem/Phone port

To change the setting enter the following sequence:

Default access code: 000000	**Description:**
☏ * 5 ACCESS 012 00 # ⚠ ☎	The **Fax/Modem/Phone** port will allow outgoing fax, modem and voice calls (Default)
☏ * 5 ACCESS 012 01 # ⚠ ☎	The **Fax/Modem/Phone** port will only allow outgoing fax calls

8.5   Data Call Configuration

8.5.1   Select Port for Data Calls

To change the setting enter the following sequence:

Default access code: 000000	**Description:**
☏ * 5 ACCESS 010 02 # ⚠ ☎	Receive data call on the **Fax/Modem/Phone** port (Default)
☏ * 5 ACCESS 010 03 # ⚠ ☎	Receive data call on the PC port: RS-232 or USB

8.6   SMS Configuration

8.6.1   Select port to receive SMS

You can enter or read a SMS message either by AT commands through the PC port or by using a telephone, being capable of fixed network SMS. You need to select the port, where the SMS is delivered to. To change the setting enter the following sequence:

Default access code: 000000

	Description:
☏ * 5 ACCESS 019 01 # ⚠ ↓☎	Receive SMS on the **Phone** port (fixed network SMS)
☏ * 5 ACCESS 019 02 # ⚠ ↓☎	Receive SMS on the **Fax/Modem/Phone** port (fixed network SMS)
☏ * 5 ACCESS 019 03 # ⚠ ↓☎	Receive SMS on the **PC**-port (Default)

8.6.2   Configuration for fixed network SMS protocol 1

If your telephone supports fixed network SMS protocol 1, please enter the following sequence:

Default access code: 000000

☏ * 5 ACCESS 027 1 # ⚠ ↓☎	Select Fixed net SMS protocol 1

Your fixed network SMS telephone needs the telephone number of the SMS centre. Choose any number and configure this number in both, your telephone and the RT3000.

For the configuration of the RT3000 please enter the sequence below:

Default access code: 000000

☏ * 5 ACCESS 024 <SMS_Center> # ⚠ ↓☎	Enter the number of the SMS centre for fixed network SMS (Send / Receive)

Meaning:

<SMS_Center> = the telephone number of the fixed network SMS centre

Example:

You have entered the SMS-Service-Centre number **0193010** in your telecomm equipment, or this number has already been configured by factory setting. Please enter the same number in the RT3000 as the SMS centre number:

> ⌂ * 5 ACCESS⊃24⊃193010#   ⚠ ⏚

8.6.3   Configuration for fixed network SMS protocol 2

If your telephone supports fixed net SMS protocol 2, please enter the following sequence:

Default access code: 000000

| ⌂ * 5 ACCESS⊃27 2 # ⚠ ⏚ | Select Fixed net SMS protocol 2 |

Your fixed network SMS telephone needs two telephone numbers to exchange SMS with the SMS centre. One number to send SMS and one number to receive SMS. Choose any number and configure two numbers in both, your telephone and the RT3000. First configure the SMS centre number for sending SMS by entering the following sequence:

Default access code: 000000

| ⌂ * 5 ACCESS⊃24 <SMS_Center> # ⚠ ⏚ | Enter the number of the SMS centre to send fixed network SMS |

Meaning:

<SMS_Center> = the telephone number of the fixed network SMS centre

Then configure the SMS centre number for receiving SMS by entering the following sequence   Default access code: 000000

| ⌂ * 5 ACCESS⊃26 <Local_Number> # ⚠ ⏚ | Enter the local number configured in your telephone to receive fixed network SMS. |

Meaning:

<Local_Number> = the telephone number configured in your telephone set, to which the RT3000 delivers received SMS.

Example:

You have entered the SMS-TX number **900716800** in your telecomm equipment, or this number has already been configured by factory setting. Please enter the same number in the RT3000 as SMS centre number:

$$\text{ℸ} * 5 \text{ ACCESS } 024 \text{ } 900716800 \text{ \# } \triangle \text{ ⌣}$$

You have entered the SMS-RX number **90071680** in your telecomm equipment, or this number has already been configured by factory setting. Please enter the same number in the RT3000 as local number::

$$\text{ℸ} * 5 \text{ ACCESS } 026 \text{ } 90071680 \text{ \# } \triangle \text{ ⌣}$$

8.6.4 Enable/Disable error report

If the SAGEM RT3000 cannot deliver a SMS to the remote station, there it can send an error report to the telecomms equipment you have used to send the SMS. You can activate or deactivate this function.

Default access code: 000000

ℸ * 5 ACCESS 025 0 # △ ⌣	Deactivate error report
ℸ * 5 ACCESS 025 1 # △ ⌣	Activate the error report

8.7   Additional Configuration

8.7.1   Enable/Disable CLIR (Calling Line Identification Restriction)

(CLIR = Calling Line Identification Restriction) When you are making a call, your telephone number will be displayed to the called party, if there is the right equipment available.

To change the setting enter the following sequence:

Default access code: 000000	**Description:**
☏ * 5 ACCESS 0070 # ⚠ ☎↓	Phone number **will not** be displayed to called party
☏ * 5 ACCESS 0071 # ⚠ ☎↓	Phone number **will be** displayed to called party

8.7.2   Dialling Timeout

The SAGEM RT3000 must wait until you have dialled the complete telephone number before it will establish the connection to the remote station. To detect the end of your dialling it waits for a certain duration of time (the dial timeout) after each entered digit. If you do not enter a further digit during this dial timeout the device "thinks" that you have finished to enter the dial sequence and so it will start to establish the connection.

You can configure the duration of this period of time (dial timeout):
(Default: 600 = 6 sec.)

For the Telephone port:

Default access code: 000000	**Description:**
☏ * 5 ACCESS 005 TTTT # ⚠ ☎↓	Dial Timeout

For the Fax/Modem/Phone port:

Default access code: 000000	**Description:**
☏ * 5 ACCESS 006 TTTT # ⚠ ☎↓	Dial Timeout

Meaning:

$\top\top\top\top$ = the duration of the time out :

      Min value = $4\bigcirc\bigcirc$: **400 * 10 ms = 4 s**

      Max value = $1\,2\bigcirc\bigcirc$: **1200 * 10 ms = 12 s**

        Recommended value: 600 (= 6 s)

Option: If activated you can stop the dial timeout by pressing $\#$ after the last entered digit of the phone number (fast dialling key). (Default: Not activated; to activate this function please check the User manual)

8.7.3   Flash signal detection (used to manage two calls simultaneously)

The RT3000 is capable to detect the so called Flash signal.

On most telephone sets the Flash signal is sent by pressing the R key. In some seldom cases the length of the Flash signal of a telephone differs from the standard the SAGEM RT3000 is configured for by default. If the SAGEM RT3000 does not detect the Flash signal of your telephone in the right way please adjust the setting of the SAGEM RT3000 using the following DTMF codes:

For the Telephone port:

Default access code: 000000	Description:
☎ * 5 ACCESS ↄ14 ⅥⅠN # ⚠ 📞	Minimum duration
☎ * 5 ACCESS ↄ15 ⅥAX # ⚠ 📞	Maximum duration

For the Fax/Modem/Phone port:

Default access code: 000000	Description:
☎ * 5 ACCESS ↄ16 ⅥⅠN # ⚠ 📞	Minimum duration
☎ * 5 ACCESS ↄ17 ⅥAX # ⚠ 📞	Maximum duration

Meaning:

All Flash signals with a duration > MIN and < MAX will be detected.

With MIN = $7\dots 55$: that means 70 ms .... 550 ms

With MAX = $1\,2\dots 65$: that means 120 ms .... 650 ms

8.7.4 Enable / Disable SMS Configuration

Remote configuration of you SAGEM RT3000 is possible by sending special SMS (SMS = Short Message Service) to the device. This function can be enabled/disabled:

Default access code: 000000	Description:
📞 * 5 ACCESS ᗡ18 O # ⚠ ☎	SMS configuration OFF
📞 * 5 ACCESS ᗡ18 1 # ⚠ ☎	SMS configuration ON (Default)

9   Installing the RT3000 modem driver on a Windows-PC

If you connect your PC to the SAGEM RT3000 via the RS-232 interface or via the USB interface you have the following facilities:

- access to the Internet via GPRS (page 52)
- send and receive fax (page 59)
- transmit and receive data (page 60)
- send and receive SMS (page 61)

If you connect a Personal Computer to the SAGEM RT3000 via the RS-232 interface or via the USB interface, you have to install the modem driver of the SAGEM RT3000 on the computer.

➲ If you connect a device to the RS-232 port of the SAGEM RT3000 and another device to the USB port of the SAGEM RT3000, the USB port has priority. That means the RS-232 port is switched off.

You want to connect the SAGEM RT3000

- to an **USB plug** of your computer, then install   →   1. first the USB driver

    2. then the modem driver

- to a **COM port** of your computer, then install   →   only the modem driver
    (page 48)

Installing the driver for the USB interface	If you want to connect the SAGEM RT3000 to an USB plug of your computer, you have to do the following steps:
	The computer must not be connectd to the SAGEM RT3000.
	1. Install the USB-driver for the SAGEM RT3000 on your computer. This driver creates a virtual COM port on your computer that will be used by the modem driver you install afterwards. During this process you have to install the cable connection.
	2. Install the modem driver for the SAGEM RT3000.
	The following instructions show dialogues that are displayed when doing the installation process on a computer running the operating system Windows XP®. If you have another Windows version (2000, ME, 98SE) do the appropriate steps.
	Using Windows 2000 or Windows XP you must be logged in as **Administrator**.
	Follow the instructions below and those on the screen:
	1. **The SAGEM RT3000 must not be connected to your**

computer.

Start your computer.

2. Insert the provided CD-ROM into the CD-ROM drive of your computer.

3. Click **Start, Execute...**

   In the *Execute* dialogue click **Browse** and switch to the CD-ROM drive.

   Select the installation program **TUSB3410_2K.exe** and click **OK** to execute this program.

   Effect:

   The installation program creates a folder on your hard disk and copies the required driver files to this folder.

   By default this folder is:

   Drive:\Program Files\Texas Instruments\TI TUSB3410 WinXX Driver Installation Files Setup
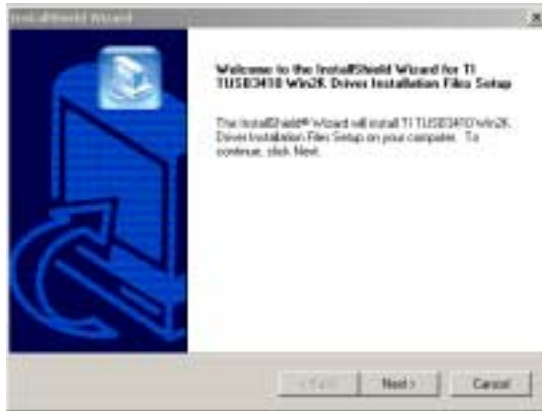
   Click Next and click Yes for the license agreement

Click Next (remember the Destination Folder)

After copying the following dialogue is displayed.

Click Finish

4. Now connect the SAGEM RT3000 to an USB plug of your computer.

5. When Windows detects the new device it prompts for a driver via the *Found New Hardware Wizard*:
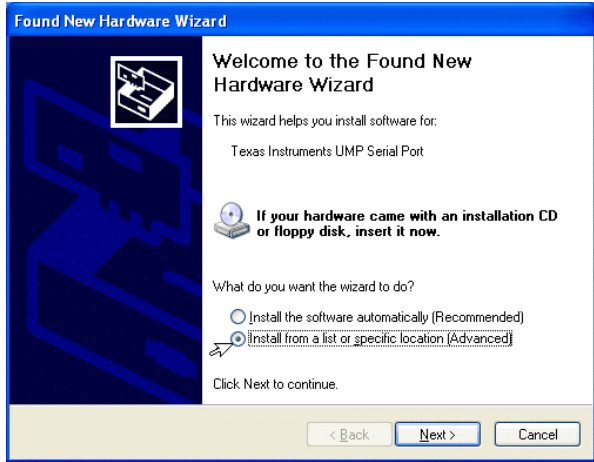
Select **Install from a list or specific location (Advanced)**, then click **Next >**.

6.
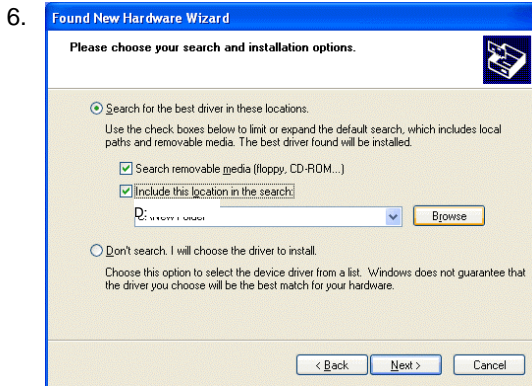
Select the drive / folder: *Drive*:\Program Files\Texas Instruments\TI TUSB3410 WinXX. Activate the options as shown and then click **Next >**.

7.

8.
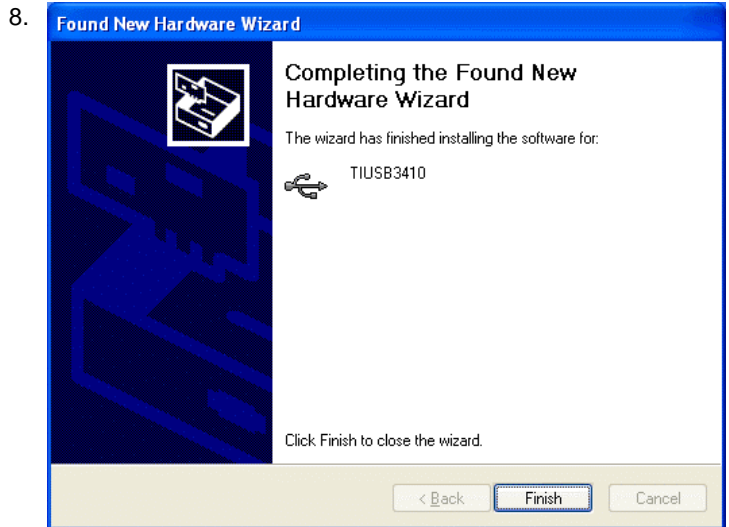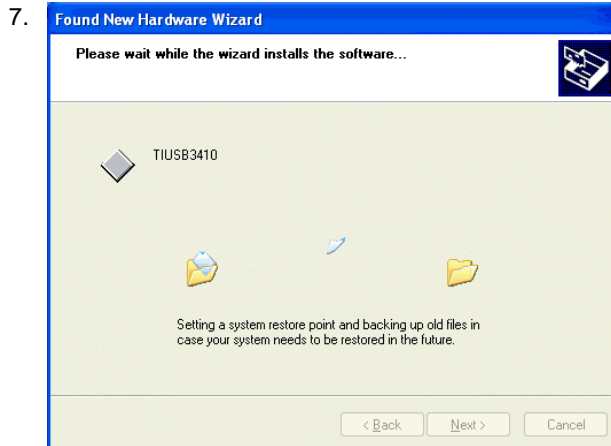
Click **Finish**.
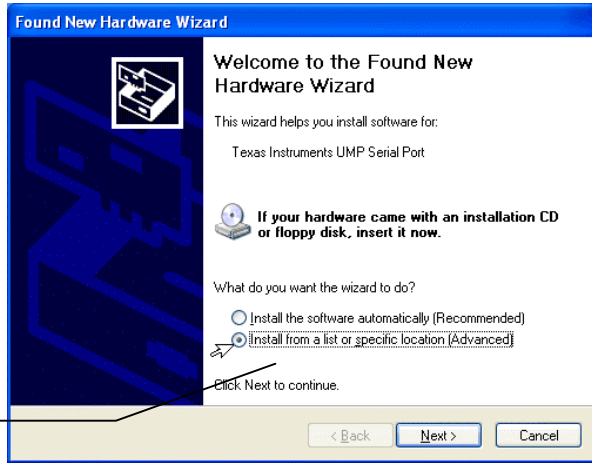
Select
Install from a
list or specific
location
(Advanced)

Select **Install from a list or specific location (Advanced)**,
then click **Next >**.

9.
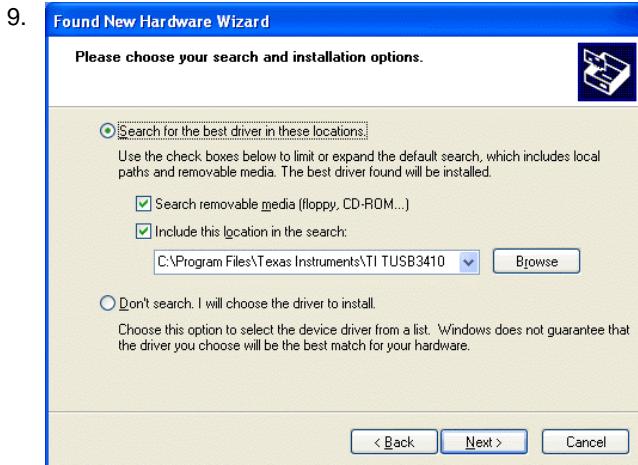
Select the folder the installation program has created in step 5:

Drive:\Program Files\Texas Instruments\TI TUSB3410
WinXX Driver Installation Files Setup

Activate the options as shown and then click **Next >**.

10. The serial port driver for the USB interface will be installed.
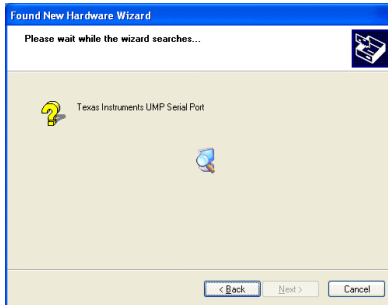
11. When this dialogue is displayed:

Click **Continue Anyway**.

12.
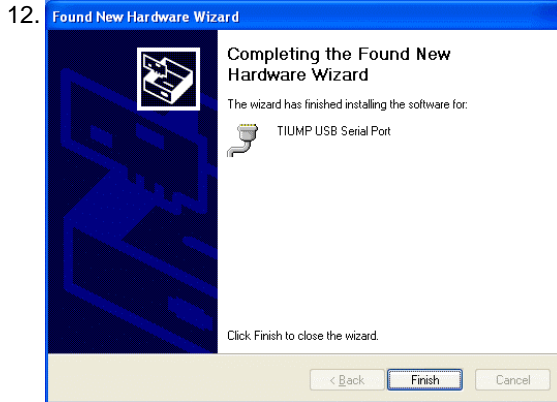
Click **Finish**.

Now your computer has an additional emulated COM port.

13. Find out what number the new COM port has.

Explanation:

Afterwards you have to install the modem driver of the SAGEM RT3000. When doing so you have to select the COM port the modem driver shall use. So you have to know: Is it COM3, COM4, COM5...?

So do the following steps:

a) With the right mouse button click on the icon **My Computer** on the desktop.

In the Context menu click **Properties**.

b) In the **System Properties** dialogue select the **Hardware** card.

c) Click on the button **Device Manager**.

The *Device Manager* dialogue is displayed:
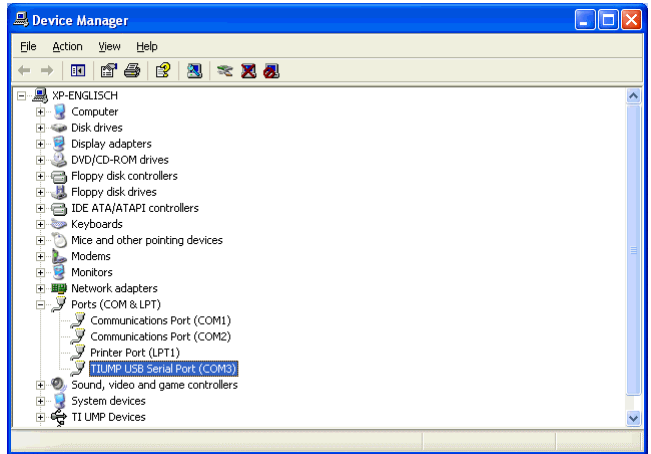
Click the +-sign next to *Ports*, if necessary.

Look for **TIUMP USB Serial Port (COM...)**

Is ist COM3, COM4, COM5 ...?

You want to connect the SAGEM RT3000

- to an **USB plug** of your computer, then install → 1. the USB driver (page 39)
  2. the modem driver

- to a **COM port** of your computer, then install → only the modem driver

Installing the modem driver of the SAGEM RT3000	The following instructions show dialogues that are displayed when doing the installation process on a computer running the operating system Windows XP. If you have another Windows version (2000, ME, 98SE) do the appropriate steps. Using Windows 2000 or Windows XP you must be logged in as **Administrator**. Follow the instructions below and those on the screen: 1. Insert the provided CD-ROM into the CD-ROM drive of your computer.

2. Click **Start, Control Panel**

   Result:

   The *Control Panel* dialog appears. Choose *Classic View*.

   Double-click on **Phone and Modem...**

3. Result: The dialog *Phone nad Modem Options* is displayed.

   Example:
   No modem
   driver is installed
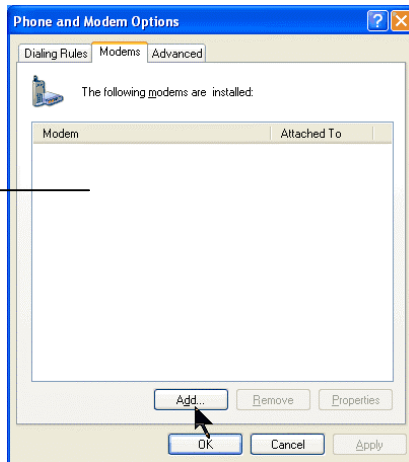
   On the *Modems* card click **Add...**.

4. The *Hardware Wizard* will be displayed to install a new modem.

    When this dialog is displayed...

Select **Don't detect my modem; I will detect it from a list**
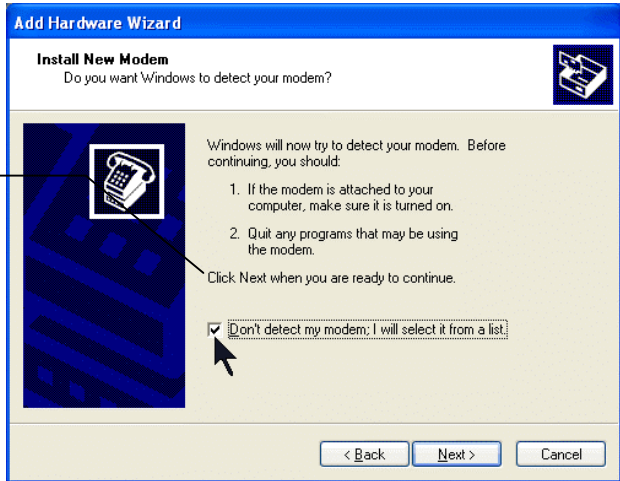
Select **Don't detect my modem; I will detect it from a list** and then click on **Next>**.

5.
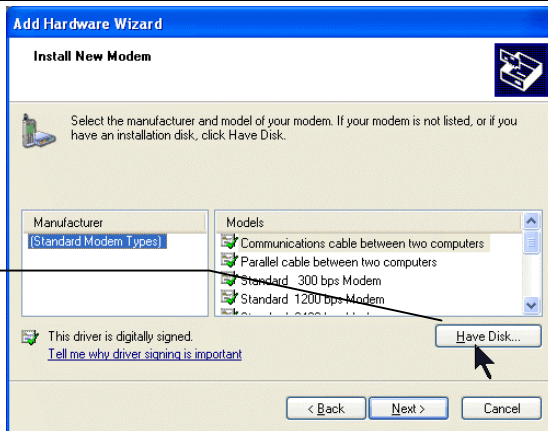
Select **Have Disc...**

Select **Have Disc**...., then click **Next >**.

6. In the next dialog change to the directory *Driver* on the CD-ROM.
   Select the **Dr. Neuhaus Rt3000.inf** file.

   Follow the instructions on the screen.

   Click **Next >**.

7.
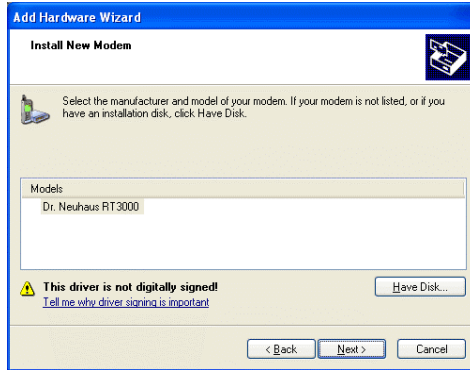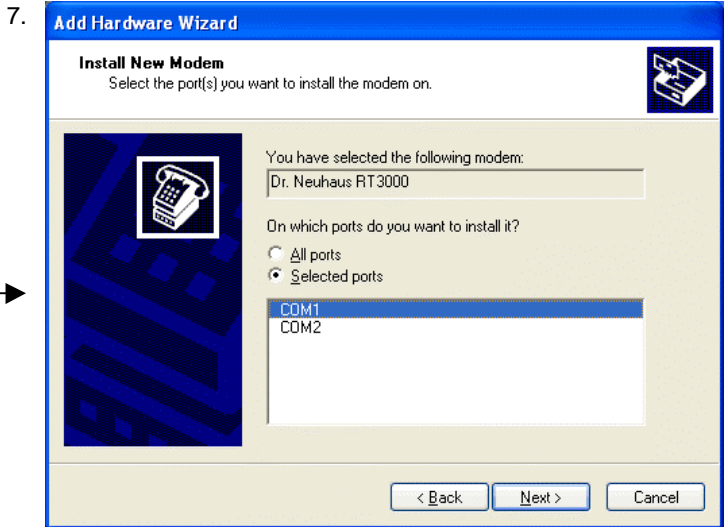
If you have installed the USB Serial Port look up the number of the created COM port → page 45.

   When you are asked to choose the **COM** port, select the COM port of your coputer that is connected to the SAGEM RT3000.

8. When this dialog is displayed...

Click on **Continue Anyway**
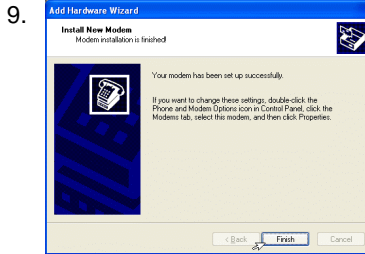
9. Click **Finish**.

10. When the installation is finished the installed modem driver ist listed in the *Phone and Modem Options* dialogue:

Example
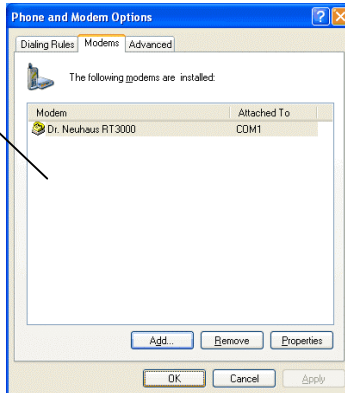
Click **OK** to close the window.

Now the device is ready for operation.

10 Operation: Internet via GPRS with a PC

➲ Your Personal Computer is directly connected to the SAGEM RT3000 via its RS-232 port or its USB port. Make sure that you have installed the corresponding driver (see, page 18). When you connect it to the USB port, then the RS-232 port is switched off.

➲ With the connected PC you have access to the Internet via the GPRS (**G**eneral **P**acket **R**adio **S**ervice) of the GSM network. You can use Internet services like World Wide Web or E-Mail.

Precondition:
- Windows operating system (XP, 2000, ME, 98SE)
- Installed Windows dial-up network connection configured for the GPRS connection to the Internet (see below)
- Your GSM provider must provide the GPRS service.

➲ While you are using the GPRS function of the SAGEM RT3000 for example to surf in the Internet, incoming telephone calls will not be indicated.

➲ The telephone number to dial-up the GPRS network is always: ***99***1#**
The APN (Access Point Name) of your GSM provider to the Internet should be predefined in the SAGEM RT3000.

You can add a new APN by entering the AT command AT+CGDCONT=<APN> or by editing the configuration file "para.ini" see *GPRS Configuration*, page 98.

10.1 Installing the Windows dial-up network connection

The following instructions show dialogues that are displayed when doing the installation process on a computer running the operating system Windows XP. If you have another Windows version (2000, ME, 98SE) do the appropriate steps.

Preconditions   You have installed the modem driver of the SAGEM RT3000.

In Windows 2000 or Windows XP you must be logged in as **Administrator**.

The process   1. Click **Start, Control Panel**
The *Control Panel* dialog appears. Choose *Classic View*.
Double-click on **Network Connections.**
The *Network Connections* dialogue is displayed.
Click **Create new connection**.

2. The *New Connection Wizard* is started.

Click **Next >**.

3.

Select **Connect to Internet**
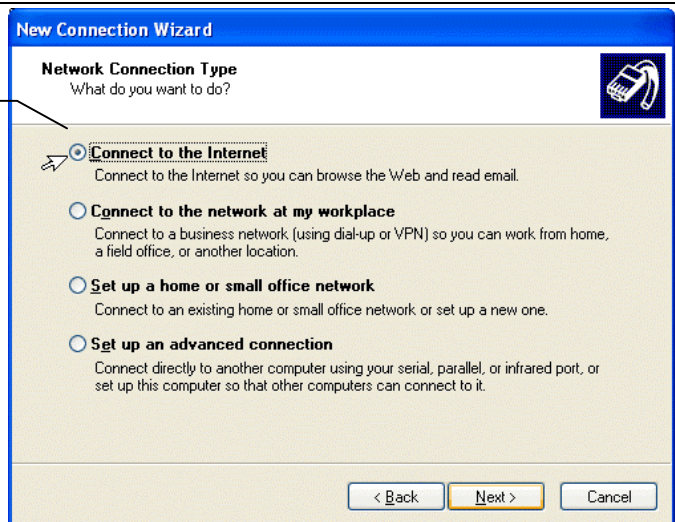
Select **Connect to Internet** and click **Next >**.

4.

New Connection Wizard

Getting Ready
The wizard is preparing to set up your Internet connection.

How do you want to connect to the Internet?

○ Choose from a **l**ist of Internet service providers (ISPs)

⊙ Set up my connection **m**anually
For a dial-up connection, you will need your account name, password, and a phone number for your ISP. For a broadband account, you won't need a phone number.

○ Use the **C**D I got from an ISP

[< **B**ack] [**N**ext >] [Cancel]

Select
**Set up my
connection
manually**
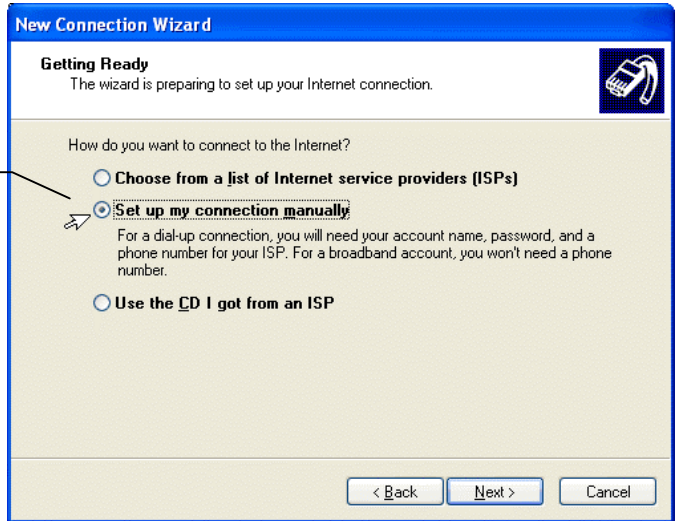
Select **Set up my connection manually** and click **Next >**.

5.

New Connection Wizard

Internet Connection
How do you want to connect to the Internet?

⊙ **C**onnect using a dial-up modem
This type of connection uses a modem and a regular or ISDN phone line.

○ **C**onnect using a broadband connection that requires a **u**ser name and password
This is a high-speed connection using either a DSL or cable modem. Your ISP may refer to this type of connection as PPPoE.

○ Connect using a broadband connection that is **a**lways on
This is a high-speed connection using either a cable modem, DSL or LAN connection. It is always active, and doesn't require you to sign in.

[< **B**ack] [**N**ext >] [Cancel]

Select
**Connect using a
dial-up modem**

Select **Connect using a dial-up modem** and click **Next >**.

6. If prompted to select the modem select:
   Dr. Neuhaus RT3000.

7.
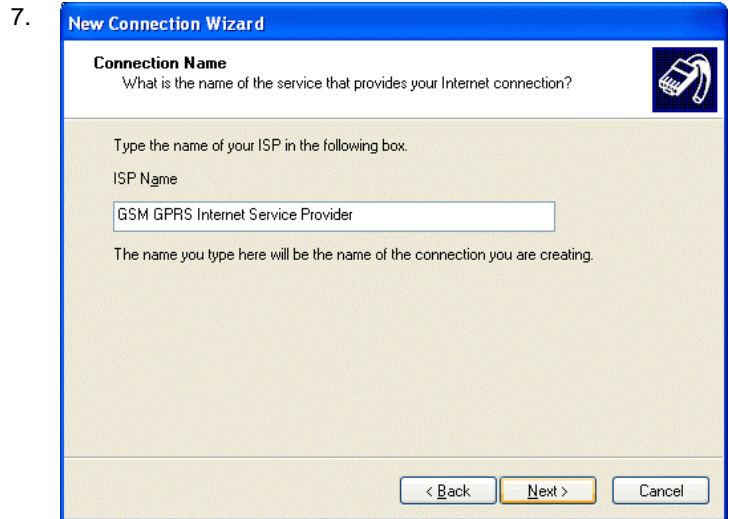
Write any name that describes the purpose of the Dial-up connection. Then click **Next >**.

8.

*99***1#
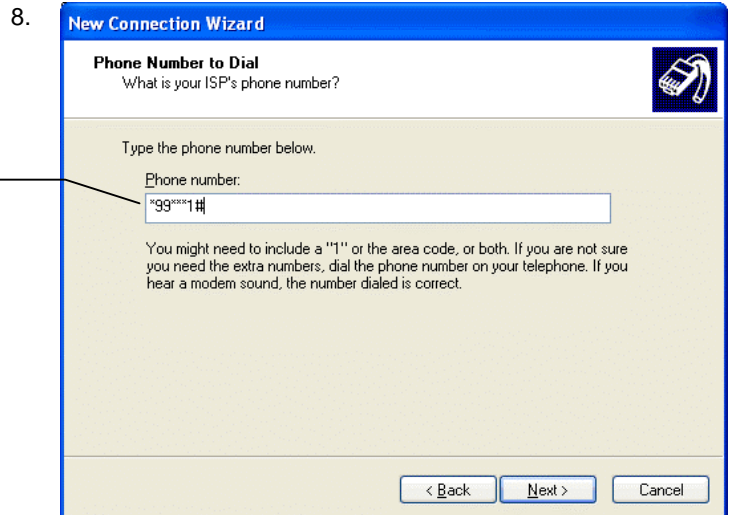
Enter the phone number for access to the Internet: ***99***1#**

Then click **Next >**.

9.

Enter your user name and password.

Look them up in your subscription. Or ask your GSM telephone company.

Click **Next >**.

10.

Click **Finish**. The installation of the dial-up network connection to the Internet is done.

For Windows 98 users...	By default Windows 98 will use the local area code when dialling the ***99***1#** number to establish the Internet connection.
	To prevent this do the following:
	In the *Dial-up Network* dialogue (Double-click the icon **My Computer**, then the icon **Dial-up Network**) the installed Dial-up network connection via the SAGEM RT3000 is represented by an icon.

1. a) Click on the icon with the <u>right</u> mouse button.

   b) In the context menu select **Properties**.

2. In the displayed dialogue select that the local area code is not to be used.

DNS server address configuration	If you like to enter „common" Internet addresses (i.e. *www.sagem.com*), when surfing the World Wide Web with your Internet browser, you need to configure before a DNS server address.
	To configure the DNS server address, please do the following steps:

1. Open the **Properties** dialogue of the *Dial-up Network* installed before for the SAGEM RT3000.

2. Depending on the used operating system you will find fields to enter the address of a Primary and a Secondary DNS server under **TCP/IP settings** or **Networking**. Enter at least the address of a Primary DNS server.

Your GSM/GPRS operator will tell you the DNS server addresses. Check the documents you have received with your SIM card, have a look to the operator's WEB side or call the Hotline.

10.2   To connect and disconnect to/from the GPRS / Internet
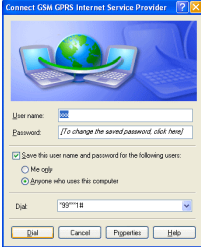
To connect
1. Double-click the icon that represents the connection.
   Result:
   The dialog for establishing the connection appears.

2. Click **Dial**.

 When the connection is established an icon appears down on the right side of the screen representing the connection.

To use Internet services you can use the suitable software, for example your browser or your E-Mail program.

To disconnect
1. Click on the icon representing the active connection (down on the right side of the screen) with the <u>right</u> mouse button to open the context menu.

2. In the context menu click **Disconnect**.

11 Operation: Using a PC to send and receive fax

➲ Your Personal Computer is directly connected to the SAGEM RT3000 via its RS-232 port or its USB port. Make sure that you have installed the modem driver of the SAGEM RT3000 (see, page 18). When you connect your PC to the USB port, then the RS-232 port is switched off.

➲ With the fax software installed on your computer you can send and receive fax documents. The remote fax machine may be any facsimile device.
Your fax software must be compatible to fax class 1.

➲ While you are sending or receiving a fax with your PC, the single "wireless" telephone line of the SAGEM RT3000 will be engaged. You cannot make a telephone call or send / receive a fax with your analogue facsimile device at the same time.

➲ By default a received fax comes in at the **Fax/Modem/Phone** port of the SAGEM RT3000, so that a facsimile device connected to this port receives the fax. If you want to receive fax documents by the PC connected to the SAGEM RT3000, you have to make the corresponding setting. See *Select Port for Fax Calls*, page 31.

12 Operation: Using a PC to transmit and receive data

➲ Your Personal Computer is directly connected to the SAGEM RT3000 via its RS-232 port or its USB port. Make sure that you have installed the modem driver of the SAGEM RT3000 (see, page 39). When you connect your PC to the USB port, then the RS-232 port is switched off.

➲ The SAGEM RT3000 is functioning like a GSM modem. The called party can be a GSM modem or a fixed network modem.
If the called party's modem is connected to the fixed network, it must support 9600 bps (V.32) / V.42 for the connection into the fixed network. This is necessary for the communication to the GSM network.

➲ To use the GSM modem functions of the SAGEM RT3000 for data communication you can use any terminal program, e. g. *HyperTerminal*.
Like an analogue modem the SAGEM RT3000 is controlled by AT commands. You will find a list of the AT commands on page 62.

➲ By default an incoming data call comes in at the **Fax/Modem/Phone** port of the SAGEM RT3000, so that a device connected to this port gets the call. If you want to receive data calls by the PC connected to the SAGEM RT3000, you have to make the corresponding setting. See *Select Port for Data Calls*, page 32.

Data communication with a terminal program	On the computer start any terminal program which you normally use for data transfer, e.g. *HyperTerminal*.

To set up the connection you have to know:

- the telephone number of the remote party
- *RT3000* is the device for making the connection.
-

Be sure that the following connection settings are enabled:

Transmission speed:	57,600 bps
Data bits:	8
Parity:	N (none)
Stop bits:	1

You can either control the GSM-Gateway directly using AT commands (see page 62) or perform the functions via menu commands of your Terminal program (e. g. HyperTerminal). Where not specified otherwise the commands are executed on accordance with the V.25ter convention.

13 Operation: Using a PC to send and receive SMS

➲ Your Personal Computer is directly connected to the SAGEM RT3000 via its RS-232 port or its USB port. Make sure that you have installed the modem driver of the SAGEM RT3000 (see, page 18). When you connect your PC to the USB port, then the RS-232 port is switched off.

➲ With a SMS-Software running on a PC connected to the SAGEM RT3000, you can send and receive SMS (Short Message Service).

The SMS-Software must support the SMS AT commands listed in chapter 0.

➲ By default an incoming SMS enters like any data call at the **PC**-port of the SAGEM RT3000. So you can receive SMS by the PC connected at the RS-232 or USB port of the SAGEM RT3000. If you want you can change this setting. See *Select port to receive SMS*, page 32.

14 For experienced Users: AT commands

14.1 AT Command Interface

The SAGEM RT3000 has an AT command interface. Using a terminal program like *HyperTerminal* (belongs to Windows) on your PC you can

- communicate with a remote party (see *Operation: Using a PC to transmit and receive data*, page 60) and
- configure the SAGEM RT3000.

Configuration of the SAGEM RT3000 by AT commands	On the computer start any terminal program which you normally use for data transfer, e.g. *HyperTerminal*. • Be sure that the following connection settings are enabled: Transmission speed: 57,600 bps Data bits: 8 Parity: N (none) Stop bits: 1 There must not be any connection to a remote party so that the SAGEM RT3000 is in command mode. Enter the appropriate AT commands to configure the SAGEM RT3000. To switch echo on so that all entered characters are displayed on the screen enter: ATE1

14.2 AT commands supported by the SAGEM RT3000

Default settings are printed **Bold**.

Command	Function (factory setting in bold print)
ATA	Accept call
ATB[*n*]	Setting of the transfer parameter ***n*** for data connections. Options for ***n***: 7 2400 bps, asynchronous, V.22bis 11 4800 bps, asynchronous, V.32 **13 9600 bps, asynchronous, V.32** 25 2400 bps, asynchronous, V.110 ISDN 27 4800 bps, asynchronous, V.110 ISDN 29 9600 bps, asynchronous, V.110 ISDN
ATD*[n] [;] [x]*	Dial number Parameters: n = String of dialling digits and optionally V.25ter modifiers

Command	Function (factory setting in bold print)
	(dialling digits): 0-9, * , #, +, A, B, C
	; Only required to set up voice calls. The device remains in command mode.
	x =: i Activates CLIR (disables presentation of own phone number to called party)
	I Deactivates CLIR
ATE[*n*]	Command echo Parameters: *n* = 0: Echo mode off 1: Echo mode on
ATH[*n*]	Hang up Parameters: n= 0: Terminate call
ATI[*n*]	Output product code 0 'RT-3000 DNT8115' 3 'Firmware Version: 1.004' 4 'GSM-Module-Firmware: SAGEM JE3,7D' 8 Output supported operating modes (see ATB) 9 Identification of the modem and the mobile phone
ATQ[*n*]	Specifies whether or not the device transmits any result code to the connected TE. Information text transmitted in response is not affected by this setting. Parameters: *n* = 0: result codes transmitted by TA 1: no result code transmitted by TA
ATS0=*n*	Writes value *n* into status register *0*. Set number of rings before automatically answer the call. This command is valid only for data calls. Parameters: n = 0: automatic answering deactivated 1-255: number of rings before automatically answering
ATS0?	Displays the value of status register 0
ATS3=*n*	Writes the value *n* into status register 3. This parameter determines the character recognised by TA to terminate an incoming command line (13 = <CR> by default) Parameters: n= 0 – 127 : command line termination character
ATS3?	Displays the value of status register 3
ATS5=x	Writes the value X into status register 5. Determines the command line editing character. Parameters:

Command	Function (factory setting in bold print)
	n=0 – 127 : command line editing character
ATS5?	Displays the value of status register 5
ATV[*n*]	Set result code format mode. This parameter setting determines the contents of the header and trailer transmitted with result codes and information responses. Parameters: *n* = 0 Information response: **`<text><CR><LF>`** Short result code format: **`<numeric code><CR>`** 1 Information response: **`<CR><LF><text><CR><LF>`** Long result code format: **`<CR><LF><verbose code> <CR><LF>`**
ATZ	Load standard configuration
AT&C[*n*]	Set circuit Data Carrier Detect (DCD) function mode. Parameters: *n* = 0 : DCD line is always ON **1** : DCD line is ON in the presence of data carrier only (Default).
AT&D[n]	Set circuit Data Terminal Ready (DTR) function mode. Parameters: *n* = 0: TA ignores status on DTR. 1: ON->OFF on DTR: Change to command mode while retaining the connected call. **2**: ON->OFF on DTR: Disconnect call, change to command mode. During state DTR = OFF is auto-answer off. (Default)
AT&F	Load factory setting
AT&k[n]	Local data flow control (DTE ⇔ DCE)
&k0	Data flow control OFF
&k3	**Data flow control RTS/CTS**
AT&V	Displays current configuration
AT&W	Save configuration
A/	Repeat previous command line
AT+FCLASS=*n*	Setting the Faxclass Parameters: *n* = **0**: normal operation 1: PC Fax enabled
AT+CGATT=*n*	PS attach or detach Parameters: *n* = 0 detached 1 attached
AT+CGDCONT=	Define PDP context.

Command	Function (factory setting in bold print)
APN	*APN* = Access Point Name
AT+CPIN=*PIN*	Enter the PIN number of the SIM card
AT+CCLK=*time*	Set real time clock.
	time = string type value; format is "yy/MM/dd,hh:mm:ss", where characters indicate year (two last digits), month, day, hour, minutes, seconds
AT+CCLK?	Displays the time: **+CCLK:** *time (see above)*
AT+CGMI	Request manufacturer identification
AT+CGMM	Request model identification
AT+CGMR	Request revision identification
AT+CPWD=*oldpw, newpw*	Change Password. *oldpw* shall be the same old password specified for the facility *newpw* is the new password; maximum length of password can be determined with *pwlength*
AT+CPWD= *pwlength*	Sets integer type maximum length of the password for the facility
AT+CREG=*n*	Network registration Parameters: *n* = 0: disable network registration unsolicited result code 1: enable network registration unsolicited result code +CREG: <stat> 2: enable network registration and location information unsolicited result code +CREG: <stat>[,<lac>,<ci>] <stat>: 0: not registered, ME is not currently searching a new operator to register to 1: registered, home network 2: not registered, but ME is currently searching a new operator to register to 3: registration denied 4: unknown 5: registered <lac>: string type; two byte location area code in hexadecimal format (e.g. "00C3" equals 195 in decimal) <ci>: string type; two byte cell ID in hexadecimal format
AT+CCFC=*reas, mode* [,*number* [,*type* [,*class* [,*subaddr* [,*satype*	Call forwarding number and conditions control *reas* = 0: unconditional 1: mobile busy 2: no reply 3: not reachable 4: all call forwarding

Command	Function (factory setting in bold print)

[,*satype*
[,*time*
[,*status*]]]]]]]
	5: all conditional call forwarding
	mode =
	       0 disable
	       1 enable
	       2 query status
	       3 registration
	       4 erasure
	number =
	       string type phone number of forwarding address in format specified by *type*
	type =
	       type of address octet in integer format
	class =
	       is a sum of integers each representing a class of information (default 1)
	       1: voice
	       2: data
	       4: fax
	subaddr
	       string type subaddress of format specified by satype
	satype
	       type of subaddress octet in integer format
	time
	       1...30 when "no reply" is enabled or qurred, this gives the time in seconds to wait before call is forwarded (default value is 20)
	status
	       0: not active
	       1: active

AT+CSQ	Displays the Signal Quality
	Parameters:
	rssi =
	       0 -113 dbm or less
	       1 -111 dbm
	       2...30 -109... -53 dbm
	       31 -51 dbm or greater
	       99 not known or not detectable
	ber = (in percent)
	       0...7 as RXQUAL values in the table in GSM 05.08 [20] subclause 8.2.4
	       99 not known or not detectable

AT+CNUM	Displays Subscriber Number
AT+CIMI	Request international mobile subscriber identity

Command	Function (factory setting in bold print)
AT+CGSN	Request product serial number identification
AT+CGQREQ=[*cid* [,*precedence* [,*delay* [,*reliability* [,*peak* [,*mean*]]]]]]	This command specifies a Quality of Service Profile that is used when the device sends an Activate PDP Context Request message to the network. If a value is omitted for a particular class then the value is considered to be unspecified. *cid* = a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands) *precedence* = a numeric parameter which specifies the precedence class *delay* = a numeric parameter which specifies the delay class *reliability* = a numeric parameter which specifies the reliability class *peak* = a numeric parameter which specifies the peak throughput class *mean* = a numeric parameter which specifies the mean throughput class
AT+CGQMIN= [*cid* [,*precedence* [,*delay* [,*reliability* [,*peak* [,*mean*]]]]]]	Quality of Service Profile (Minimum acceptable) *cid* = a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands) *precedence* = numeric parameter for the precedence class 0: network subscribed value 1: High Priority Service commitments shall be maintained ahead of precedence classes 2 and 3 2: Normal priority Service commitments shall be maintained ahead of precedence class 3 3: Low priority *delay* = numeric parameter for the delay class *reliability* = numeric parameter for the reliability class 0: network subscribed value 1: Non real-time traffic, error-sensitive application that cannot

Command	Function (factory setting in bold print)

	cope with data loss
	2: Non real-time traffic, error-sensitive application that can cope with infrequent data loss
	3: Non real-time traffic, error-sensitive application that can cope with data loss, GMM/SM, and SMS
	4: Real-time traffic, error-sensitive application that can cope with data loss
	5: Real-time traffic, error non-sensitive application that can cope with data loss
	
	peak = numeric parameter for the peak throughput class
	  0: network subscribed value
	  1: Up to 1000 (8 kbit/s)
	  2: Up to 2000 (16 kbit/s)
	  3: Up to 4000 (32 kbit/s)
	  4: Up to 8000 (64 kbit/s)
	  5: Up to 16000 (128 kbit/s)
	  6: Up to 32000 (256 kbit/s)
	  7: Up to 64000 (512 kbit/s)
	  8: Up to 128000 (1024 kbit/s)
	  9: Up to 256000 (2048 kbit/s)
	
	mean = a numeric parameter which specifies the mean throughput class

AT+CBST=
[*speed*
[,*name*
[,*ce*]]]
	Select bearer service type. This command selects the bearer service *name* with data rate *speed*, and the connection element *ce* to be used when data calls are originated.
	
	speed =
	  0 autobauding (automatic selection of the speed; this setting is possible in case of 3.1 kHz modem and non-transparent service)
	  4 2400 bps (V.22bis)
	  6 4800 bps (V.32)
	  7 9600 bps (V.32)
	  68 2400 bps (V.110 or X.31 flag stuffing)
	  70 4800 bps (V.110 or X.31 flag stuffing)
	  71 9600 bps (V.110 or X.31 flag stuffing)
	name =
	  0 data circuit asynchronous (UDI or 3.1 kHz modem)
	  1 data circuit synchronous (UDI or 3.1 kHz modem)
	ce =
	  0 transparent
	  1 non-transparent

14.2.1   AT Command Interface (SMS)

SMS	
+CMGD	See below.
+CMGF	See below.
+CMGL	See below.
+CMGR	See below.
+CMGS	See below.
+CMGW	See below.
+CMSS	See below.
+CNMI	See below.
+CPMS	See below.
+CSCA	See below.
+CSMP	See below.

AT+CMGD – Deleting a message:

AT+CMGD=<index>		Deletes the message
Values for:	<index>	Message storage location
	1 – n	Message storage location on SIM, n depends on SIM card capacity

AT+CMGF – Setting Text / PDU mode:

AT+CMGF=[<mode>]		Sets the mode
AT+CMGF?		Calls up the current mode
AT+CMGF=?		Lists the modes supported
Values for:	<mode>	
	0	PDU mode
	1	Text mode

AT+CMGL – Listing the stored messages:

AT+CMGL[=<stat>]			Lists the messages according to various characteristics
AT+CMGL=?			Shows the message display options supported
	Values for:	<stat>	Message status
		0	„REC UNREAD" (Messages received but unread)
		1	„REC READ" (Messages received and read)
		2	„STO UNSENT" (Messages stored but not sent)
		3	„STO SENT" (Messages stored and sent)
		4	„ALL" (All types of message)

AT+CMGR – reading a message:

AT+CMGR=<index>		Reads the message
	Values for: <index>	Message storage location
	1 – 10	Message storage location on SIM, n depends on SIM card capacity

AT+CMGS – Sending a message

Text Mode activated (AT+CMGF=1)

AT+CMGS=<da><CR> <Txt> <CTRL Z>		Sends the message
	Value for: <da>	"Recipient's telephone number"
	Value for: <Txt>	The text to be sent

AT+CMGS – Sending a message:

PDU mode activated(AT+CMGF=0)

AT+CMGS=<length><CR> coded PDU text <CTRL Z>		Sends the message
	Value for: <length>	No. of PDU characters

AT+CMGW – Writing a message into memory:

Text Mode activated (AT+CMGF=1)

AT+CMGW=<oa/da><CR> <Txt> <CTRL Z>		Writes the message into the memory
	Value for: <oa/da>	"Recipient's telephone number"
	Value for: <Txt>	The text to be sent

AT+CMGW – Writing a message into memory:

PDU mode activated(AT+CMGF=0)

AT+CMGW=<length>[,<stat>]<CR>	Writes the message into the memory
coded PDU text <CTRL Z>	
Value for : <length>	No. of PDU characters

AT+CMSS – Sending a SMS message from memory:

AT+CMSS=<index>[,<da>]	Sends the SMS message from the memory
Values for: <index>	SMS storage location
1 – 10	Message storage location, n depends on SIM card capacity
Values for: <da>	"Recipient's telephone number"

AT+CNMI – New SMS message indication:

AT+CNMI= [<mode>][,<mt>][,<bm>] [,<ds>][,[bfr]	Indicates new SMS message
AT+CNMI?	Response: +CNMI: <mode>,<mt>,<bm>,<ds>,<bfr>
AT+CNMI=?	Lists the options
Values for: <mode>	
0	Buffer unsolicited result codes in the device. If ist buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with new received indications.
1	Not supported
2	Buffer unsolicited result codes in the TA when TA-TE link is reserved (e. g. in online data mode) and flush them to the TE after reservation. Otherwise forward them directly to the TE.
3	Not supported
Values for: <mt>	
0	No SMS-DELIVER indications are routed to the TE.
1	If SMS-DELIVER
2	Not supported
3	Not supported

Values for:	<bm>		
	0	No CBM indications are routed to the TE.
	1	Not supported
	2	New CBMs are routed directly to the TE using unsolicited result code: CBM: **<length><CR><LF><pdu> (PDU mode enabled)** or +CBM: **<sn>,<mid>,<dcs>,<page>,<pages> <CR><LF><data>** (text mode Enabled).
	3	Class 3 CBMs are routed directly to TE using unsolicited result codes defined in <bm>=2.
Values for:	<ds>		
	0	No SMS-STATUS-REPORTs are routed to the TE.
	1	Not supported
	2	Not supported
	<bfr>		
	0	The buffered notification are sent.
	1	Not supported

AT+CPMS – Selecting the SMS memory location:

AT+CPMS= <mem>		Sets the memory location
AT+CPMS?		Calls up the current memory location
AT+CPMS=?		Lists the memory locations supported
Values for:	<mem>	
	„SM"	SIM card

AT+CSCA – Setting the Service Center address:

AT+CSCA=<sca>[,<tosca>]		Sets the Service Center address
AT+CSCA?		Displays the address currently set
AT+CSCA=?		Lists the characters allowed for the telephone number
Value for::	<sca>	"Service Center telephone number"
Value for:	<tosca>	129, 145

AT+CSMP – Setting the text mode parameters:

AT+CSMP=[<fo>[,<vp>[,<pid>[,dcs]]]]		Sets the parameters
AT+CSMP?		Calls up the current settings
AT+CSMP=?		Response "OK"
Values for:	<fo>	17
Values for:	<vp>	Message storage time in the SMS Center
	71	6 hours
	167	24 hours
	173	7 days
	255	63 weeks
Value for:	<pid>	0
Value for:	<dcs>	0

14.2.2   AT Command Interface (SIM APPLICATION TOOLKIT)

SIMTOOLKIT	
+KSTC	See below
+KSTE	See below
+KSTER	See below
+KSTF	See below
+KSTIA	See below
+KSTIR	See below
+KSTIS	See below
+KSTP	See below
+KSTR	See below
+KSTV	See below

In addition to the listed AT commands, in this operating mode the GSM-Adapter recognises, accepts and acknowledges a series of AT commands which are, however, not executed. These commands are:

ATL*n*, ATM*n***,** ATX*n*, ATP, ATT

AT+KSTC – SIM Application toolkit command

AT+KSTC:<type>,<TLVs>			Generic notification used by the module to indicate a proactive command to the DTE
Values for:		<type>	
	0		Debug (no response awaited by the module, no action required by DTE)
	1		action (response awaited by the module)
	2		Information 1 (response awaited by the module) The module will send a +KSTE notification to indicate the command end
	3		Information 2 (no response awaited by DTE)
	4		Information 3 (response awaited by DTE)
		<TLVs>	TLVs in HEX format

AT+KSTE – End of a toolkit command

AT+KSTE:<TLVs>		Notification
Values for:	<TLVs>	TLVs in HEX format

AT+KSTER – Response to an envelope command

AT+KSTER:<TLVs>		Notification
Values for:	<TLVs>	TLVs in HEX format

AT+KSTF – Type error

AT+KSTF:<type>,<details>		Is sent to the module when a command has been received with an incorrect or unmanageable type.
	Response: **OK**	
Values for:	<type>	Type of command received as the payload of the unsolicited code +KSTC
	<details>	Command details in HEX format

AT+KSTIA – Access to an instance of an icon

AT+KSTIA=<action>,<icon id>,<instance>		Access an instance of a given icon identifier	
	Response: If <action>=1: **+KSTIA:<icon id>,<instance>,<num>,<size>** If <action>=0: **OK**		
Values for:	<action>		
		1	To ask the device to initiate the read of the Image Instance Data File corresponding to the <instance> of the <icon id>.
		0	To tell the device that the transfer from the device to the DTE is finished
	<icon id>	integer type; icon identifier of the icon	
	<instance>	integer type; instance number selected for this icon	
	<num>	integer type; number of data blocks for the current instance	
	<size>	integer type; maximum size of one block	

AT+KSTIR – Get a data block of an icon instance

AT+KSTIR=<num>		Sets the parameters
	Response: **+KSTIR:<data>,<checksum>** **OK**	
Values for:	<num>	Integer type; block number
	<data>	string type (in HEX format); data block
	<checksum>	string type (in HEX format)

AT+KSTIS – Retrieve the icon

AT+KSTIS		Sets the parameters
	Response: **+KSTIS:<num>,<details1>[,...<detailsi>]** **OK**	
Values for:	<icon id>	Integer type; icon identifier of the icon
	<num>	integer type; number of instances for this icon
	<details1>...<details*i*>	String type in (HEX format) instance number image instance width (in pixel) image instance height (in pixel) image coding scheme ('11', '21' ...) length of image instance data (in bytes)

AT+KSTP – Profile supported by DTE

AT+KSTP=?		Test command
	Response: **+KSTP:<support>,<setup profile>** **OK**	
AT+KSTP?		Read command
	Response: **+KSTP:<current profile>,<default profile>** **OK**	
AT+KSTP=<support>[,<DTE profile>]		Write command
	Response: **OK**	
Values for:	<support>	
	0	No SIM Application Toolkit support
	1	SIM Application Toolkit support
	<xxx profile>	Profile in HEX format

AT+KSTR – Terminal Response

AT+KSTR=?		Test command
	Response: **+KSTR:(list of supported <type of responses>** **OK**	
AT+KSTR=<type of response>,<TLVs>		Write command
	Response: **OK**	
Values for:	<type of response>	
	0	final response
		(other values will be added later)
	<TLVs>	TLVs in HEX format

AT+KSTV – Envelope command

AT+KSTV=<envelope>		Sets the parameter.
	Response: **OK**	
Values for:	<envelope>	TLVs in HEX format

15 Configuration methods

The complete configuration of the SAGEM RT3000 is written in a parameter file called *para.ini* which is stored in the non-volatile memory of the device. When configuring the SAGEM RT3000, the parameter file *para.ini* will be modified. The SAGEM RT3000 can be configured by following methods:

- Local configuration by entering DTMF codes (using a telephone set). Using this method the user can change only those parameters that are changed most often. He cannot set all parameters by this method.
- Loading the configuration file **para.ini** on the <u>local</u> or a <u>remote</u> PC by a FTP program, then editing the file **para.ini** with a text editor and then upload the edited file back to the device.
- Remote configuration by sending configuration SMS.
- Sending AT commands using a Terminal program on the local PC

- **Local configuration:**   **Remote configuration:**

by DTMF codes
(using a telephone)   Para.ini   by SMS

by editing the config.
file para.ini
(download and upload
by FTP program)

by editing the config.
file para.ini
(download and upload
by FTP program)

by sending AT
commands

To understand the various configuration methods you have to know how the parameters to be set are identified. So lets have a look in an excerpt of the file para.ini:

Excerpt of the file *para.ini*:	
[DIALING]	SECTION The file para.ini consists of various sections.
;settings for channel a	Comment that gives instructions to the user
CHA_FAST_DIAL=NO	
CHA_DIAL_TIMEOUT=600	
CHA_LOCAL_CALL_WAIT=NO	PARAMETER This is the name of the parameter to be set.
CHA_LOCAL_CALL_CTRL=NO	
CHA_TX_VOICE_LEVEL=-7	VALUE This is the value for the parameter. Note the equatation mark (=) between parameter and value. No blank!
CHA_RX_VOICE_LEVEL=-7	

The parameters that can be set by DTMF codes (using a telephone set) are also identified by a command ID that is not listed in the *para.ini*.

Nomenclature:

➲ Port A is the configuration name for the **Telephone** port.

➲ Port B is the configuration name for the **Fax/Modem/Phone** port.

➲ Port C is the configuration name for the **PC** port (through USB or RS232).

Power Supply

Fax machine, Modem or Telephone

PC via RS232

PC via USB
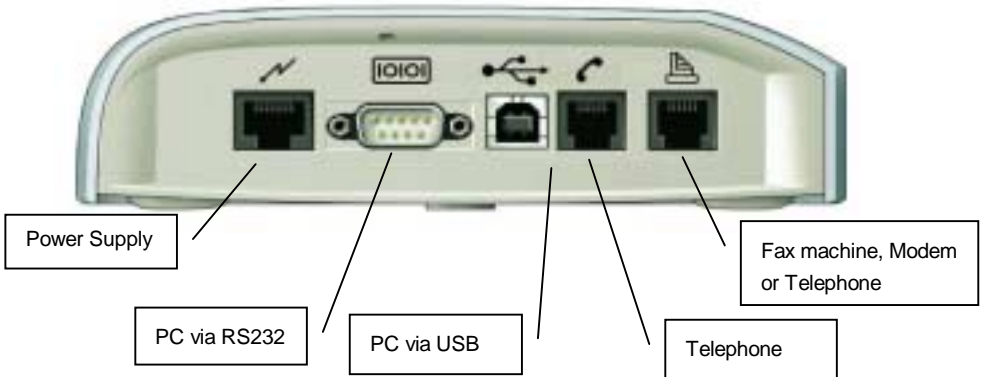
Telephone

15.1   Configuration by DTMF

The parameter values in *para.ini* may be changed by DTMF codes sent by a telephone connected to the **Telephone** port or the **Fax/Modem/Phone** port. The configuration by DTMF is limited to those parameters the user may change most likely according to his operation needs.

The inputs always have the following format:

* 5	ACCESS	PAR	XXXXXX	#
Command ID	Access code	Parameter no.	Value	Save

* 5	The command prefix informs the device that a configuration setting is to be made.
ACCESS	The Access code (DTMF PASSWORD) protects your configuration against intervention by others. Default: 000000 The command ID and the access code together ensure that accidental incorrect inputs do not change your configuration.
PAR	You use the 3-digit **command ID** to specify which parameter you wish to set.
XXXX	These digits (max. 6) set the new value for this parameter.
#	This character is the signal that the command ends here.

When entering DTMF tones using a connected analogue telephone correct entries are acknowledged by an Accepted Programming Tone. If the input is incorrect you hear the Non Accepted Programming Tone.

Example: * 5 ACCESS OO1 15#

(sets in para.ini in section [DIALING] the parameter CHA_TX_VOICE_LEVEL to 15dB)

The table below shows the parameters that can be configured by DTMF codes. These settings are described in chapter *Configuration*, page 22. The table shows the command ID that is to be entered when using the telephone in order to set the according parameter value. The table shows also the section and the name of the parameters so that you can change the parameter settings by sending an SMS to the SAGEM RT3000 or by editing the *para.ini* file

Cmd ID	section	parameter	Min value	Max value	unit
001	DIALING	CHA_TX_VOICE_LEVEL	0	20	*(-1)[dB]
002	DIALING	CHA_RX_VOICE_LEVEL	0	20	*(-1)[dB]
003	DIALING	CHB_TX_VOICE_LEVEL	0	20	*(-1)[dB]
004	DIALING	CHB_RX_VOICE_LEVEL	0	20	*(-1)[dB]
005	DIALING	CHA_DIAL_TIMEOUT	10	1200	*10[ms]
006	DIALING	CHB_DIAL_TIMEOUT	10	1200	*10[ms]
007	MOBILE_CONFIG	CLIR	0	1	NO/YES
008	MOBILE_CONFIG	SIMPIN	0000	99999999	
009	CALL_MUX	VOICE_ALERT	1	4	A,B,AB
010	CALL_MUX	DATA_ALERT	1	4	A,B,C,AB
011	CALL_MUX	FAX_ALERT	1	4	A,B,C,AB
012	CALL_MUX	FAX_PORT_B	0	1	NO/YES
013	CALL_MUX	FAX_REPORT_ON_SUCCESS	0	1	NO/YES
014	FLASH	CHA_FLASH_MIN	7	55	*10[ms]
015	FLASH	CHA_FLASH_MAX	12	65	*10[ms]
016	FLASH	CHB_FLASH_MIN	7	55	*10[ms]
017	FLASH	CHB_FLASH_MAX	12	65	*10[ms]
018	DEVICE_ACCESS	SMS_CONFIG	0	1	NO/YES
019	DEVICE_ACCESS	SMS_PORT	1	3	P1/P2
020		SYSTEM_TIME	0	235959	hh:mm:ss
021	MOBILE_CONFIG	SIMPIN	0	0	DELETE
022	MOBILE_CONFIG	SIMSTATE	0	0	DELETE
023	DEVICE_ACCESS	DTMF_PASSWORD	000000	999999	
024	PSTN_SMS	PSTN_SMS_CENTER	Phone number		Number
025	PSTN_SMS	ERROR_REPORT	0	1	NO/YES
026	PSTN_SMS	LOCAL_NUMBER	Phone number		Number
027	PSTN_SMS	SMS_PROTOCOL	1	2	Protocol

15.2   Remote configuration by SMS

You may change the file *para.ini* with a configuration SMS. You have to send a SMS to the SAGEM RT3000 from a remote location. You can configure up to 5 remote stations that are allowed to send a configuration SMS (see *Settings for the configuration access via SMS and FTP*, page 85).

➲ The character "_" occuring in section names has to be replaced by space character.

    Example: #5OOOOOOCALL MUX,VOICE ALERT,B#

The SMS has to be in the following format:

#5 OOOOOO SECTION,PARA,XX

#5	The command prefix informs the device that a configuration setting is to be made.
OOOOOO	The DEVICE PASSWORT protects your configuration against intervention by others.
	The command prefix and the access code together ensure that accidental incorrect inputs do not change your configuration.
SECTION	this specifies the section of the *para.ini* to which the parameter belongs to. (_ occurring in section names has to be replaced by space character.)
,	separator
PARA	this specifies the parameter of the *para.ini* you wish to set. (_ occurring in parameter names has to be replaced by space character)
,	separator
XX	These 2 characters or digits (alphanumeric) set the new value for this parameter.
#	This character is the signal that the command ends here.

➲ The section and parameter you want to change have to exist in the *para.ini* file.

➲ Configuration by SMS is only possible if in the section [DEVICE_ACCESS] the parameter SMS_CONFIG=YES is set (Default).

➲ If SMS_CONFIG =YES is set, the telephone numbers of the stations that are allowed to send a configuration SMS have to be set in the section [DEVICE_ACCESS] as parameter SERVICE_CLIP_0 to SERVICE_CLIP_4.

➲ The SIMPIN and the parameter SMS_CONFIG can not be modified by a SMS.

15.3   Configuration by FTP (Local and Remote)

The configuration of the SAGEM RT3000 is written in the file *para.ini* that is stored in the memory of the device. You can edit this file with a text editor (capable of writing plain text).

To do this do the following steps:

To edit the configuration file para.ini: 1. Download by FTP 2. Edit 3. Upload by FTP	1. Download the file para.ini from the SAGEM RT3000 to your computer using a FTP program. (FTP programs are available in the Internet as freeware.) You can download the *para.ini* file • from a <u>local</u> PC that is connected to the SAGEM RT3000 via its RS-232 port or its USB port • from a <u>remote</u> PC that can establish a PPP connection via CSD (Circuit Switched Data) connection to the SAGEM RT3000. You can configure up to 5 remote stations that are allowed to download and upload files (see *Settings for the configuration access via SMS and FTP*, page 85). To establish the connection to the SAGEM RT3000 with a Windows computer you have to establish and start 1. the DIAL UP NETWORK connection to the SAGEM RT3000 (see connection data below) and 2. establish the FTP connection to the SAGEM RT3000 (see connection data below).

Download from: **Local PC:**

<u>Dial Up Network:</u>
   Dial string: ***98#**
   User name: **service**
   Password: **service**
   Use the modem driver that belongs to the SAGEM RT3000: Rt3000

User name and password are stored in the *para.ini* file. Default settings are:
   [SERVICE_IF]
   USER=service
   PASSWORD=service

FTP program:
    IP number: **192.168.0.8**
    User name: **service**
    Password: **service**

Download from: **Remote PC:**

Make a CSD (Circuit Switched Data) connection - that means
normal dial-up connection - to the SAGEM RT3000.
Dial Up Network:
    Dial string: **Telephone number (Data)**
    User name: **service**
    Password: **service**
FTP program:
    IP number: **192.168.0.8**
    User name: **service**
    Password: **service**

2. Edit the file *para.ini* with a text editor (plain text!). See
   Parameters in the file para.ini: advanced configuration, page
   85.

3. Upload the *para.ini* file using the FTP program.
   Use the same connection as for downloading.

➲ For service connections from remote computers the telephone numbers of those
stations have to be set in the *para.ini* and the calls have to signal their own
telephone numbers (CLIR deactivated). So the SAGEM RT3000 can check if the
calling station is allowed to configure by comparing the signalled telephone number
with the numbers in the *para.ini*.
(see *Settings for the configuration access via SMS and FTP*, page 85)
Example:
[REMOTE_ACCESS]
SERVICE_CLIP_4=+4940553045830 ◄─────────   Telephone
                                            number

16 Parameters in the file para.ini: advanced configuration

The following parameters can be set

- by a SMS from a remote location [by SMS] or
- by editing the file *para.ini* that can be downloaded using an FTP program [by FTP] or
- by entering DTMF codes (using a telephone set) [by DTMF] or
- by entering AT commands (see *AT Command Interface*, page 69) [by AT commands]

So under the heading of the following chapters this is mentioned using the terms "by SMS", "by FTP", "by DTMF" or "by AT commands".

16.1 Settings for configuration access via DTMF

To configure the SAGEM RT3000 locally by sending DTMF codes from a connected telephone you need to enter an Access code. This Access code is stored in the parameter file and can be changed.

Section: DEVICE_ACCESS			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Access code for DTMF configuration	DTMF_PASSWORD	000000 to 999999	000000

16.2 Settings for the configuration access via SMS and FTP

The SAGEM RT3000 must know the remote stations that should be allowed to do remote service or configuration calls by FTP. For SMS remote configuration you can configure if the CLIP is checked or not. You can configure up to 5 stations for SMS and FTP access each. SMS access must also be allowed by setting the parameter SMS_CONFIG=YES.

Section: DEVICE_ACCESS			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Activate SMS config	SMS_CONFIG	YES, NO	YES
PWD for config SMS	DEVICE_PASSWORD	000000 to 999999	000000
Activate CLIP check	SMS_CLIP=YES	YES, NO	YES
CLIP for Remote SMS	SERVICE_CLIP_0	100 digits	
CLIP for Remote SMS	SERVICE_CLIP_1	100 digits	
CLIP for Remote SMS	SERVICE_CLIP_2	100 digits	
CLIP for Remote SMS	SERVICE_CLIP_3	100 digits	
CLIP for Remote SMS	SERVICE_CLIP_4	100 digits	

Section: REMOTE_ACCESS			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
CLIP for Remote CSD	SERVICE_CLIP_0	100 digits	
CLIP for Remote CSD	SERVICE_CLIP_1	100 digits	
CLIP for Remote CSD	SERVICE_CLIP_2	100 digits	
CLIP for Remote CSD	SERVICE_CLIP_3	100 digits	
CLIP for Remote CSD	SERVICE_CLIP_4	100 digits	

Section: SERVICE_IF			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
See 15.3	USER	100 chars	service
See 15.3	PASSWORD	100 chars	service

16.3   Power-missing SMS

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

If the mains power fails, the SAGEM RT3000 can send an SMS to a GSM telephone number, which has to be pre-configured in the parameter file.

The function is activated by

[DEVICE_ACCESS]

POWER_REPORT=YES

POWER_REPORT_NR=<SMS Phone Number for Power Report>

Section: DEVICE_ACCESS			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Activate power report	POWER_REPORT	YES, NO	NO
Telephone number for sending power report to	POWER_REPORT_NR	100 digits	

16.4   Select Port for Incoming SMS

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)
Can be configured by DTMF (see page 80)

You can select where an incoming SMS should be routed to.

Section: DEVICE_ACCESS	
SMS_PORT=A	to the Telephone port (Landline SMS capable telephone set required)
SMS_PORT=B	to the Telephone port (Landline SMS capable telephone set required)
SMS_PORT=C	to the PC interface (Default)

Section: DEVICE_ACCESS			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Switch incoming SMS to PC-SMS or to analogue SMS	SMS_PORT	A, B, C	C

16.5   Select Baudrate for Debug-RS232

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

The baudrate of the Debug-Interface can be configured. The Debug-Interface is not part of a standard product.

[SERVICE_IF]

BAUDRATE=57600

Section: SERVICE_IF			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Baudrate for debug RS232	BAUDRATE	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200	57600

16.6   Pre-Selection

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

Section: **PRESELECT_HUNGARY**			
This section contain the special parameter for the pre-selection mode.			
Activate Fixed NW pre-selection	PRESELECT	YES,NO	YES
	NAT_CARRIER	00 to 99	00
	INTERNAT_CARRIER	00 to 99	00
	KS_EX_0	00 to 99	-
	KS_EX_1	00 to 99	40
	KS_EX_2	00 to 99	41
	KS_EX_3	00 to 99	50
	KS_EX_4	00 to 99	51
	KS_EX_5	00 to 99	71
	KS_EX_6	00 to 99	80
	KS_EX_7	00 to 99	81
	KS_EX_8	00 to 99	90
	KS_EX_9	00 to 99	91
	KS_EX_10... KS_EX_24	00 to 99	undefined

16.7   Prefix for International calls

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

In GSM networks the "+" character is the common prefix for international calls. In landline networks it is usually the "00". Some countries are using different digits.

You can select with the parameter [INTERNATIONAL], which two digit prefix should be converted into the "+" prefix.

Section: CALL_MUX			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Conversion to +	INTERNATIONAL	00 to 99	00

16.8   Prefix for Analogue Data and Fax calls

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

If your Analogue modem or fax machine dials either the fax or data prefix before the telephone number, the RT3000 detects that it is an Analogue data or fax call and switches in the correct mode. You can change these prefixes. Please ensure that your chosen prefix differs from all DTMF configuration code.

Section: DIALING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Force Analogue data call	DATA_PREFIX	Dial string of 3...6 characters	***
Force Analogue fax call	FAX_PREFIX	Dial string of 3...6 characters	###

16.9   Local accepted emergency number

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

The GSM standard does only allow a few Emergency call numbers. You may specify up to 3 Emergency numbers, which will be translated into a GSM-valid Emergency number automatically, if it is entered at the **Phone** or **Fax/Modem/Phone** port.

Example:

> You have specified 111111 as the SAGEM RT3000 Emergency number. If this number is dialled, the SAGEM RT3000 will translate this number to 112 which is a official GSM-valid emergency number.

Section: CALL_MUX			
This section includes mainly the parameter for call routing			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Local accepted emergency number	EMERGENCY_1	40 digits	112
Local accepted emergency number	EMERGENCY_2	40 digits	-
Local accepted emergency number	EMERGENCY_3	40 digits	-

16.10 Port Allocation

You may specify to which port incoming calls will be routed to. Incoming calls will be routed depending on the bearer capability to distinguish between voice, data, fax and in accordance to your configuration.

Example:

Section: **CALL_MUX**	
VOICE_ALERT=AB	Voice calls will be routed to the **Telephone** Port and the **Fax/Modem/Phone** Port
DATA_ALERT=C	Data calls will be routed to the PC-Port
FAX_ALERT=B	Fax calls will be routed to the **Fax/Modem/Phone**

A = Phone port   B = Fax/Modem/Phone port   C = PC-Port

16.11 Analogue Fax Configuration

Section: **CALL_MUX**			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Fax only on Port B (no voice)	FAX_PORT_B	YES, NO	NO
Timeout for local fax in seconds	FAX_ACCEPT_TIMEOUT	5 to 99999	20
Maximum retries for local fax	FAX_RETRY_MAX	0 to 99999	3
Delay between reties in seconds	FAX_RETRY_DELAY	1 to 99999	30
Success fax after completed MOC	FAX_SUCCESS_REPORT	YES, NO	YES

Section: **FAX**			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Fax Identification (if remote identification is not available, yet)	IDENT	20 chars	RT3000
Disconnect on AC power fail	AC_DOWN_DISCONNECT	YES,NO	YES

Descriptions:

Fax only on Port B (no voice)

[Can be configured by DTMF, SMS, FTP] In case of any trouble with the recognition of outgoing fax sent from the fax machine connected to the SAGEM RT3000, you can configure that each call initiated on the **Fax/Modem/Phone** will be handled like a fax call. Therefore set this parameter:

FAX_PORT_B=YES.

Timeout for local fax in seconds

[Can be configured by SMS, FTP] You can configure in what time (in seconds) the fax machine connected to the SAGEM RT3000 must react to an incoming fax call to accept the call. If the timeout expires, the SAGEM RT3000 will not receive the incoming fax.

FAX_ACCEPT_TIMEOUT=20

Maximum retries for local fax

[Can be configured by SMS, FTP] If the SAGEM RT3000 has stored a part of a received fax because the connection to the local fax has been interrupted, the SAGEM RT3000 will try to resend the stored part of the fax document to the local fax machine automatically.

With the parameter FAX_RETRY_MAX=<> you can configure the number of retries.

With the parameter FAX_RETRY_DELAY=<> you can configure the delay between two retries.

Success fax after completed MOC

[Can be configured by DTMF, SMS, FTP] When you send a fax by your local fax machine via the SAGEM RT3000 the SAGEM RT3000 can return a report, whenever the transmission to the remote station is successful. Parameter:

FAX_SUCCESS_REPORT= YES

Disconnect on AC power fail

[Can be configured by SMS, FTP] If during a fax transmission the mains power gets a blackout and the battery is low, the fax transmission may fail because the SAGEM RT3000 shuts down immediately. In this case there is a small risk that both parties do not recognise that the transmission failed although they did not get an error report. To avoid this wrong behaviour, you can set that a transmission is immediately disconnected, if mains power fails. Parameter:

AC_DOWN_DISCONNECT=YES,

Fax Identification

[Can be configured by SMS, FTP] When you send a fax by your local fax machine via the SAGEM RT3000 to a remote station, your local fax machine will show the Fax Identification configured in this parameter. This is necessary because of the special mechanism required to transmit the fax via the GSM network. When receiving a fax with the local fax machine, the identification of the remote fax machine will be shown.

IDENT=<RT3000>

16.12 Billing Tone configuration

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

The SAGEM RT3000 can generate billing pulses on the **Telephone** port and on the **Fax/Modem/Phone** port.

Enable/Disable

This feature can be activated or deactivated for both ports separately [CHA_BIILING_ENABLED, CHB_BIILING_ENABLED].

Text Pulse Frequency

The RT3000 can generate billing pulses with a frequency of
12kHz [CHx_16KHZ_BURST=No], or
16kHz [CHx_16KHZ_BURST=Yes].

Tax-pulse cadence

The duration of the tax-pulse can be selected with this parameter:
CHx_PULSE_DURATION

CHx_PULSE_DELAY

tax-pulse level

The tax-pulse signal level can be adjusted with the following parameter:
CHA_PULSE_LEVEL
        e.g.: CHA_PULSE_LEVEL=2,5.

Section: BILLING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Enable Billing Port A	CHA_BILLING_ENABLED	YES, NO	YES
the tax-pulse duration in x*10ms	CHA_PULSE_DURATION	1 to 100	20
the tax-pulse delay in x*10ms	CHA_PULSE_DELAY	1 to 60000	100

the tax-pulse level in range from 0-2,5V	CHA_PULSE_LEVEL	0 to 2,5	1
the tax-pulse-frequency, yes to use 16khz, no for 12khz	CHA_16KHZ_BURST	YES,NO	YES
Enable Billing Port B	CHB_BILLING_ENABLED	YES,NO	YES
the tax-pulse duration in x*10ms	CHB_PULSE_DURATION	1 to 100	20
the tax-pulse delay in x*10ms	CHB_PULSE_DELAY	1 to 60000	100
the tax-pulse level in range from 0-2,5V	CHB_PULSE_LEVEL	0 to 2,5	1
the tax-pulse-frequency, yes to use 16khz, no for 12khz	CHB_16KHZ_BURST	YES,NO	YES

16.13 CLIP function configuration

> Can be configured by SMS (see page 82)
> Can be configured by FTP (see page 83)
> Can be configured by DTMF (see page 80)

When a call comes in and it is ringing the SAGEM RT3000 can transmit the telephone number of the calling party to the equipment connected to the **Telephone** port or the **Fax/Modem/Phone** port. This function is called CLIP - Calling Line Identification Presentation.

CHx_CLIP_ENABLED	= Yes	Enables the transmission of the CLIP on port x (x=A, B)
	= No	Disables the transmission of the CLIP on port x (x=A, B)

Section: CLIP			
This section includes the parameters for the CLIP function			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Display CLIP Port A	CHA_CLIP_ENABLED	YES, NO	YES
define the delay between end of first ring and start of CID (10ms)	CHA_RING_CLIP_DELAY	50 to 200	50
the amount of seizure bits	CHA_SEIZURE_BITS	96 to 300	300

the amount of mark bits	CHA_MARK_BITS	60 to 205	180
Display CLIP Port B	CHB_CLIP_ENABLED	YES, NO	YES
define the delay between end of first ring and start of CID (10ms)	CHB_RING_CLIP_DELAY	50 to 200	50
the amount of seizure bits	CHB_SEIZURE_BITS	96 to 300	300
the amount of mark bits	CHB_MARK_BITS	60 to 205	180

16.14 Configuration of the Flash signal

No Flash   Flash   No Flash

CHx_FLASH_MIN

CHx_FLASH_MAX
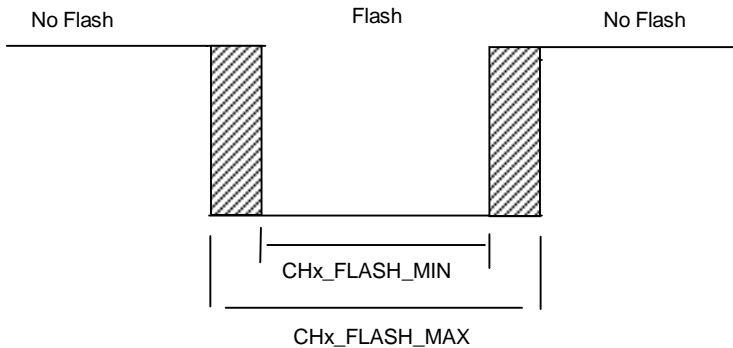
Section: FLASH			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
The minimum flash duration. Shorter pulses may be interpreted as parts of pulse-dial! (10ms)	CHA_FLASH_MIN	4 - 55	7
The maximum flash duration. Longer pulses may be interpreted an onhook/offhook! (10ms)	CHA_FLASH_MAX	12 - 65	50

The minimum flash duration. Shorter pulses may be interpreted as parts of pulse-dial! (10ms)	CHB_FLASH_MIN	4 - 55	7
The maximum flash duration. Longer pulses may be interpreted an onhook/offhook! (10ms)	CHB_FLASH_MAX	12 - 65	50

16.15 RING frequency

> Can be configured by SMS (see page 82)
> Can be configured by FTP (see page 83)

The frequency of the RING signal can be selected between 25Hz and 50Hz.

CHA_HIGH_RING_FREQ defines the RING frequency for the Telephone port.

CHB_HIGH_RING_FREQ defines the RING frequency for the Telephone port.

If the setting is NO, the RING frequency is 25Hz.

Section: RING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Ring 50Hz (else 25Hz)	CHA_HIGH_RING_FREQ	YES, NO	NO
Ring 50Hz (else 25Hz)	CHB_HIGH_RING_FREQ	YES, NO	NO

16.16 Dialling configuration

> Can be configured by SMS (see page 82)
> Can be configured by FTP (see page 83)

Fast Dialling

Normally you must enter the telephone number completely before the SAGEM RT3000 can start dialling. The SAGEM RT3000 starts dialling until you do not press any more key on the telephone and after the *dial timeout* is expired - the duration the SAGEM RT3000 waits for any new key stroke.

If the function *Fast Dialling* is enabled, the SAGEM RT3000 starts dialling immediately when you terminate the dial sequence by pressing the *Fast Dialling Key*: a $\#$.

For example: 00331234567#.

Section: DIALING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Fast Dialling Port A	CHA_FAST_DIAL	YES, NO	NO
Dial timeout in 10ms	CHA_DIAL_TIMEOUT		600
Fast Dialling Port B	CHB_FAST_DIAL	YES, NO	NO
Dial timeout in 10ms	CHB_DIAL_TIMEOUT		600

16.17 Call Wait Tone On/Off

Calls that come in during an active connection can be signalled by the Call Wait Signal. This function can be switched on or off for both ports separately.

When activated this function can only take effect when it is supported by the network and your subscription.

Section: DIALING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
CallWait tone generated on port A	CHA_LOCAL_CALL_WAIT	YES, NO	NO
CallWait tone generated on port B	CHB_LOCAL_CALL_WAIT	YES, NO	NO

16.18 Local Ringback tone on/off

The Ringback tone is the tone you can hear when making a call after you have dialled the telephone number and when the called remote station is ringing. By default this tone will be generated by the network. If you want that the Ringback tone is generated by the SAGEM RT3000 set the following parameter to YES:

CHx_LOCAL_CALL_CTRL=YES.

Section: DIALING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Local RingBack generated	CHA_LOCAL_CALL_CTRL	YES, NO	NO
Local RingBack generated	CHB_LOCAL_CALL_CTRL	YES, NO	NO

16.19 Voice signal volume on Telephone and Fax/Modem/Phone port

> Can be configured by SMS (see page 82)
> Can be configured by FTP (see page 83)
> Can be configured by DTMF (see page 80)

You can adjust the voice signal volume on the **Telephone** and **Fax/Modem/Phone** port by modifying the following parameters. If you set the parameter value to "0" you get the loudest signal.

CHx_TX_VOICE_LEVEL (Signal directed to the remote station)

CHx_RX_VOICE_LEVEL (Signal directed to your local equipment)

You can set the parameter for both ports separately.

Section: DIALING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Tx Level *(-1)[dB] on port A	CHA_TX_VOICE_LEVEL	0 down to –20	-7
Rx Level *(-1)[dB] on port A	CHA_RX_VOICE_LEVEL	0 down to –20	-7
Tx Level *(-1)[dB] on port B	CHB_TX_VOICE_LEVEL	0 down to –20	-7
Rx Level *(-1)[dB] on port B	CHB_RX_VOICE_LEVEL	0 down to –20	-7

16.20 Telephone and Fax/Modem/Phone port impedance

> Can be configured by SMS (see page 82)
> Can be configured by FTP (see page 83)

You can adjust the input impedance of the **Telephone** and **Fax/Modem/Phone** port separately. You can select 600R, 900R or a complex matching.

Section: DIALING			
Parameter	**Permitted Values**	**Factory Setting**	
Input Impedance Port A	CHA_INPUT_IMPEDANCE	REAL600, REAL900, COMPLEX	COMPLEX
Input Impedance Port B	CHB_INPUT_IMPEDANCE	REAL600, REAL900, COMPLEX	COMPLEX

16.21 GPRS Configuration

To set-up GPRS connections, the PDP_CONTEXT for this connection must be specified in the *para.ini* file. For each GPRS provider an own section has to be created in the parameter file. For some GPRS providers the configuration is already pre-configured:

```
[T-D1]
PDP_CONTEXT=1,"IP","internet.t-d1.de","0.0.0.0",0,0
[D2]
PDP_CONTEXT=1,"IP","volume.d2gprs.de","0.0.0.0",0,0
[EPLUS]
PDP_CONTEXT=1,"IP","internet.eplus.de","0.0.0.0",0,0
[VIAG]
PDP_CONTEXT=1,"IP","internet","0.0.0.0",0,0
```

You can add a new GPRS provider by creating an own section for it:

```
[NEW-PROVIDER]
PDP_CONTEXT=<values for the new-Provider>
```

It is possible to add several of new providers by adding a corresponding number to the new sections.

In the section [GPRS-CONFIG] you select the active provider:

```
[GPRS-CONFIG]
PROVIDER=NEW-PROVIDER
```

If you enter the APN by the AT command AT+CGDCONT=<APN>, this will overwrite temporarily the parameter value of PROVIDER.

Section: GPRS_CONFIG			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Provider section name (predefined and new)	PROVIDER	existing section name (e.g.: T-D1)	
Reserved	SPECIAL_CGATT=NO		

Section: <Provider>			
Meaning	**Provider name**	**Permitted Values**	**Factory Setting**
Predefined Provider	T-D1	PDP_CONTEXT	1,"IP","internet.t-d1.de","0.0.0.0",0,0
Predefined Provider	D2	PDP_CONTEXT	1,"IP","volume.d2gprs.de","0.0.0.0",0,0
Predefined Provider	EPLUS	PDP_CONTEXT	1,"IP","internet.eplus.de","0.0.0.0",0,0
Predefined Provider	VIAG	PDP_CONTEXT	1,"IP","internet","0.0.0.0",0,0
New Provider	i.e. myGPRS	PDP_CONTEXT	PDP context as given by the new provider.

16.22 CLIR on/off

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)
Can be configured by DTMF (see page 80)

When you make a call your telephone number will be presented to the remote party when this function is supported by the network. You can disable this function by setting the following parameter:

CLIR=NO.

Section: MOBILE_CONFIG			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Enable CLIR	CLIR	YES, NO	YES

16.23 PIN number

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)
Can be configured by DTMF (see page 80)

The PIN number is stored in the parameter SIMPIN=<Pinnumber>.

Section: MOBILE_CONFIG			
Meaning	**Parameter**	**Permitted Values**	**Factroy Setting**
SIM PIN	SIMPIN		empty

16.24 AT command parameter

The settings you enter by AT commands are stored in the configuration file *para.ini* in an own section.

This section is reserved.

16.25 Polarity reversal (Spain)

This function simulates the Polarity reversal feature provided on the Spanish fixed telephone network, but there are some differences, caused by the adaptation to the wireless environment.

Section: DIALLING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Polarity reversal on/off on port A	CHA_POLARITY_REV	YES,NO	NO
Polarity reversal on/off on port B	CHB_POLARITY_REV	YES,NO	NO

16.26 Hang-up delay

This function allows, in case of an incoming call to answer the call, to hang-up the call and to continue the call, if you pick-up the phone again within the selected delay, if the remote party has not yet terminate the call. This function is always active, if the Polarity reversal has been activated. If the Polarity reversal function is off you may activate the Hang-up delay by parameter.

Section: DIALLING			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Hang-up delay on/off port A	CHA_MTC_HOOK_DELAY	YES, NO	NO
Hang-up delay port A	CHA_MTC_HOOK_TIMEOUT	0....30000	6000 = 1min
Hang-up delay on/off port B	CHB_MTC_HOOK_DELAY	YES, NO	NO

Hang-up delay port B	CHB_MTC_HOOK_TIMEOUT	0....30000	6000 = 1min

16.27 MNP Flow Control

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

The Microcom Networking Protocol MNP is used for error correction and flow control on the link to the local connected Modem. If you want MNP active set the following parameter as follows: MNP=YES.

Section: MODEM

Meaning	Parameter	Permitted Values	Factory Setting
MNP setting	MNP	YES,NO	YES (NO in Spain)

16.28 Maximum local modem speed

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

This parameter sets the initial baudrate for the negotiation.

Section: MODEM

Meaning	Parameter	Permitted Values	Factory Setting
max. local speed	MAX_SPEED	300, 1200, 2400, 4800, 9600, 14400	9600

16.29 Minimum local modem speed

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

This parameter sets the lowest speed accepted during baudrate negotiation.

Section: MODEM

Meaning	Parameter	Permitted Values	Factory Setting
min. local speed	MIN_SPEED	300, 1200, 2400, 4800, 9600, 14400	300

16.30 GSM speed

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

This parameter sets the baudrate used on GSM to connect to remote modem.
(Depends on the network and your subscription.)

Section: MODEM			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
GSM and remote modem baudrate	GSM_SPEED	2400, 4800, 9600	automatic

16.31 Early connect of local Modem

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

If this parameter is set, the local modem starts to negotiate at the configured time, independent of a GSM connect.

Section: MODEM			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
Time between dialing and start of negotiation (local connection before GSM connection)	EARLY_START_LOCAL	0 to 60	0

16.32 Data numbers

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

These parameters force data calls for special numbers on outgoing calls (for modems without correct calling tone)

Section: MODEM			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
This number forces a data call	DATA_NUM_1 DATA_NUM_2 DATA_NUM_3	Number (max 30 digits)	090 (Spain)

16.33 GSM baudrate depending on dialled number (number)

This parameters defines the number which for the baudrate is set with SPEED_FOR_NUM.

If this number is dialled the selected GSM speed is set.

Section: SPECIAL_MODEM			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
This number forces the baudrate for GSM as set in SPEED_FOR_NUM_1	SPEED_NUM_1	Number (max 30 digits)	090 (Spain)
This number forces the baudrate for GSM as set in SPEED_FOR_NUM_2	SPEED_NUM_2	Number (max 30 digits)	-
This number forces the baudrate for GSM as set in SPEED_FOR_NUM_3	SPEED_NUM_3	Number (max 30 digits)	-

16.34 GSM baudrate depending on dialled number (baudrate)

This parameters set the GSM speed for a special number

Section: SPECIAL_MODEM			
Meaning	**Parameter**	**Permitted Values**	**Factory Setting**
This number forces a data call	SPEED_FOR_NUM_1	2400, 4800, 9600	automatic
This number forces a data call	SPEED_FOR_NUM_2	2400, 4800, 9600	automatic
This number forces a data call	SPEED_FOR_NUM_3	2400, 4800, 9600	automatic

16.35 Fixed Network SMS

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

Section: PSTN_SMS

Meaning	Parameter	Permitted values	Factory Setting
Telephone number of the PSTN-SMS-Center (Can be configured by DTMF (see page 80))	PSTN_SMS_CENTER	Number Max lenght 24 digits	0193010
delivery mode	DELIVERY_MODE	0 only reserved for future	0
timeout for waiting on offhook after ringing	RING_TIMEOUT	5 second to 10 minutes in 10 ms steps	600
Time between delivery tries	DELIVERY_DELAY	5 second to 10 minutes in 10 ms steps	3000
Ignore SMSC Header	SMSC_HEADER	YES,NO	NU_FALSE
Error report if sent SMS can not be delivered	ERROR_REPORT	YES,NO	YES
Protocol parameter	ACK_INFO	Reserved	Reserved
Protocol parameter	ACK_PAYLOAD	Reserved	Reserved
Protocol parameter	ALL_SG_AT_ONCE	Reserved	Reserved
Telephone number of the PSTN-SMS-Center for RX (Can be configured by DTMF (see page 80))	LOCAL_NUMBER	Phone number	

16.36 Frequency band selection GSM 900, DCS 1800, PCS 1900

Can be configured by SMS (see page 82)
Can be configured by FTP (see page 83)

Section: MOBILE_CONFIG			
Meaning	**Parameter**	**Permitted values**	**Factory Setting**
Selects the GSM frequency band	BAND	GSM DCS DUAL_EU DUAL_US ALL	ALL

Setting	Meaning
GSM	900 MHz only
DCS	1800 MHz only
DUAL_EU	Autoselect 900/1800 MHz
DUAL_US	Autoselect 900/1900 MHz
ALL	Autoselect 900/1800/1900 MHz

⚠️ **Do not change the factory setting in the para.ini!**

The RT3000 with 900/1800 MHz antenna should only be used in 900 MHz or 1800 MHz networks.

The RT3000 with 1900 MHz antenna should only be used in 1900 MHz networks.

If you do not know, if your GSM networks operates at 900/1800 MHz or at 1900 MHz contact your GSM network operator.

16.37 Identification

Section: GENERAL		
Meaning	**Parameter**	**Setting**
Reserved	PRODUCT_CODE	DNT8115
Reserved	VERSION_PARA_INI	1.026

16.38 Sample File

```
;RT-XNG Parameter File

[SERVICE_IF]
USER=service
PASSWORD=service
BAUDRATE=57600

[PRESELECT_HUNGARY]
PRESELECT=NO
NAT_CARRIER=00
INTERNAT_CARRIER=00
KS_EX_0=
KS_EX_1=40
KS_EX_2=41
KS_EX_3=50
KS_EX_4=51
KS_EX_5=71
KS_EX_6=80
KS_EX_7=81
KS_EX_8=90
KS_EX_9=91
; up to KS_EX_24

[REMOTE_ACCESS]
SERVICE_CLIP_0=-
SERVICE_CLIP_1=-
SERVICE_CLIP_2=-
SERVICE_CLIP_3=-
SERVICE_CLIP_4=-
; number of service centers: MAX_SRV_CALLERS in project_defs.h
; SMS / DTMF

[DEVICE_ACCESS]
DEVICE_PASSWORD=000000
DTMF_PASSWORD=000000
SERVICE_CLIP_0=
SERVICE_CLIP_1=
SERVICE_CLIP_2=
SERVICE_CLIP_3=
SERVICE_CLIP_4=
```

```
; POWER_REPORT: YES or NO, default is YES
POWER_REPORT=NO
POWER_REPORT_NR=
SMS_PORT=C
; SMS_CONFIG: YES or NO, default is YES
SMS_CONFIG=YES
; SMS_CLIP: YES or NO, default is NO
SMS_CLIP=YES
; TEST_SMS: only used to test configuration-sms
TEST_SMS=222

[CALL_MUX]
VOICE_ALERT=A
; can be A, B, AB or BA - default A
DATA_ALERT=B
; C = PC-PORT; can bee A, B, C, AB, etc
FAX_ALERT=B
; can be ABC, default is B
FAX_PORT_B=NO
; if YES,  Port B generates only fax calls
DATA_PORT_B=NO
; YES makes port B  Data only (FAX_PORT_B=YES overrides)
FAX_ACCEPT_TIMEOUT=20
; time in seconds, to wait for hookoff of local fax
FAX_RETRY_MAX=3
; count of retries to deliver local fax
FAX_RETRY_DELAY=30
; time in seconds, to wait for next retry
INTERNATIONAL=00
FAX_SUCCESS_REPORT=NO
EMERGENCY_1=112
EMERGENCY_2=112
EMERGENCY_3=112
; prefix to force data/fax call (do NOT use DTMF config sequences)
DATA_PREFIX=***
FAX_PREFIX=###

[FAX]
IDENT=RT3000
;FAXAPP_DEBUG=COM
;T30_DEBUG=COM
```

```
[PSTN_SMS]
SMS_PROTOCOL=1
PSTN_SMS_CENTER=0193010
RING_TIMEOUT=600
DELIVERY_DELAY=3000
ERROR_REPORT=YES
;*** special parameters for protocol 1
DELIVERY_MODE=0
SMSC_HEADER=NO
;pdu-protocol-identifier to default
;SET_DEFAULT_PI=YES
ACK_INFO=YES
;max 20 characters
;ACK_PAYLOAD=
;*** special parameters for protocol 2
;send more than one msg at the same session
ALL_MSG_AT_ONCE=NO
LOCAL_NUMBER=900716800

[BILLING]
;settings for channel a
CHA_BILLING_ENABLED=NO
CHA_PULSE_DURATION=20
CHA_PULSE_DELAY=100
CHA_PULSE_LEVEL=1
;12kHz and 16kHz. default: 16kHz
CHA_16KHZ_BURST=YES
;settings for channel b
CHB_BILLING_ENABLED=NO
CHB_PULSE_DURATION=20
CHB_PULSE_DELAY=100
CHB_PULSE_LEVEL=1
;12kHz and 16kHz. default: 16kHz
CHB_16KHZ_BURST=YES

[CLIP]
;settings for channel a
CHA_CLIP_ENABLED=YES
CHA_RING_CLIP_DELAY=50
CHA_SEIZURE_BITS=300
CHA_MARK_BITS=180
;settings for channel b
CHB_CLIP_ENABLED=YES
```

```
CHB_RING_CLIP_DELAY=50
CHB_SEIZURE_BITS=300
CHB_MARK_BITS=180

[FLASH]
;settings for channel a
CHA_FLASH_MIN=7
CHA_FLASH_MAX=50
;settings for channel b
CHB_FLASH_MIN=7
CHB_FLASH_MAX=50

[RING]
;settings for channel a, 25Hz and 50Hz available, default: 25Hz
CHA_HIGH_RING_FREQ=NO
;settings for channel b, 25Hz and 50Hz available, default: 25Hz
CHB_HIGH_RING_FREQ=NO

[DIALING]
;settings for channel a
;AUTO, REAL600, REAL900, COMPLEX
CHA_INPUT_IMPEDANCE=COMPLEX
CHA_POLARITY_REV=NO
CHA_MTC_HOOK_DELAY=NO
CHA_MTC_HOOK_TIMEOUT=6000
CHA_FAST_DIAL=NO
CHA_DIAL_TIMEOUT=600
CHA_LOCAL_CALL_WAIT=NO
CHA_LOCAL_CALL_CTRL=NO
CHA_TX_VOICE_LEVEL=-7
CHA_RX_VOICE_LEVEL=-7
;settings for channel b
CHB_INPUT_IMPEDANCE=COMPLEX
CHB_POLARITY_REV=NO
CHB_MTC_HOOK_DELAY=NO
CHB_MTC_HOOK_TIMEOUT=6000
CHB_FAST_DIAL=NO
CHB_DIAL_TIMEOUT=600
CHB_LOCAL_CALL_WAIT=NO
CHB_LOCAL_CALL_CTRL=NO
CHB_TX_VOICE_LEVEL=-7
CHB_RX_VOICE_LEVEL=-7
```

```
[GPRS_CONFIG]
PROVIDER=
SPECIAL_CGATT=NO

[T-D1]
PDP_CONTEXT=1,"IP","internet.t-d1.de","0.0.0.0",0,0

[D2]
PDP_CONTEXT=1,"IP","volume.d2gprs.de","0.0.0.0",0,0

[EPLUS]
PDP_CONTEXT=1,"IP","internet.eplus.de","0.0.0.0",0,0

[VIAG]
PDP_CONTEXT=1,"IP","internet","0.0.0.0",0,0

[AMENA]
PDP_CONTEXT=1,"IP","internet","0.0.0.0",0,0

[MOVISTAR-PLUS]
PDP_CONTEXT=1,"IP","movistar.es","0.0.0.0",0,0

[MOVISTAR-ACTIVA]
PDP_CONTEXT=1,"IP","p.movistar.es","0.0.0.0",0,0

[VODAFONE_SPAIN]
PDP_CONTEXT=1,"IP","airtelnet.es","0.0.0.0",0,0

[MOBILE_CONFIG]
CLIR=YES
BAND=ALL

BEARER_SERVICE=7
SIMPIN=
SIMSTATE=

[GENERAL]
PRODUCT_CODE=DNT8115
VERSION_PARA_INI=1.026
;MOB_DEBUG_TO_LOG=NO

[MODEM]
;; MNP: YES or NO; default YES
```

```
MNP=YES
;; max. local speed: 300, 1200, 2400, 4800, 9600, 14400; default 9600
;MAX_SPEED=14400
;; max. local speed: 300, 1200, 2400, 4800, 9600, 14400; default 0 (means
300)
;MIN_SPEED=4800
;; force GSM bearer service on outgoing call: 2400, 4800, 9600; default
automatic
;GSM_SPEED=4800
;; start local modem x seconds after dialing: 0..60; default after GSM
connect
;EARLY_START_LOCAL=0
;; routing of debug output: COM; default off
;DMOD_DEBUG=COM
;DGSM_DEBUG=COM
;MNP_DEBUG=COM
;DP_DEBUG=COM
;; special numbers
DATA_NUM_1=090
DATA_NUM_2=
DATA_NUM_3=

[SPECIAL_MODEM]
; if uncommented: for SPEED_NUM GSM-speed is set as defined in
SPEED_FOR_NUM
;SPEED_NUM=090
;SPEED_FOR_NUM=4800
;SPEED_NUM_2=
;SPEED_FOR_NUM_2=
;SPEED_NUM_3=
;SPEED_FOR_NUM_3=

[AT_PARSER]
ECHO=YES
VERBOSE=YES
QUIET=NO
FLOW_CONTROL=YES
DCD_CONTROL=YES
DTR_CONTROL=YES
ANSWER_RING=0
BAUDRATE=57600
PDP_CONTEXT=1,"IP","volume.d2gprs.de","0.0.0.0",0,0
CNMI_SETTING=0,0,0,0,0
SMS_TEXT_MODE=NO
```

17 Configuration of Tones

Tones generated by the RT3000 can be configured by editing the parameter file *tone.ini*. You can access this file in the same way as the parameter file *para.ini.* Refer to page 83.

TONES   In the section TONES The frequencies of all available slic generated tones can be defined. Entering invalid values will provoke the default settings. You can define the following tones:

	Telephone port	default [Hz]	Phone/Fax/Modem port	default [Hz]
Dial tone	CHA_DIAL_TONE	425	CHB_DIAL_TONE	425
Ring back tone	CHA_CALL_CTRL	440	CHB_CALL_CTRL	440
Busy tone	CHA_BUSY_TONE	425	CHB_BUSY_TONE	425
Call wait tone	CHA_CALL_WAIT	440	CHB_CALL_WAIT	440
Programming acceptance tone	CHA_ACPT_PROG	950	CHB_ACPT_PROG	950
Programming non-acceptance tone	CHA_NACPT_PROG	300	CHB_NACPT_PROG	300
PIN last try tone	CHA_PIN_LAST	600	CHA_PIN_LAST	600
SIM missing tone	CHA_SIM_MISS	950	CHB_SIM_MISS	950

Available frequencies are in the range from 300Hz up to 1500Hz in steps of 5Hz.

Example: CHA_DIAL_TONE=425 sets the frequency for the dial tone of channel A to 425 Hz

TONE_LEVEL   In the section TONE_LEVELS, the gain of the generated tones on the SLIC ports can be defined. Following parameters are available in this section for the tone gain on channel a and b.

	Telephone port	default [dB]	Phone/Fax/Modem port	default [dB]
Level	CHA_TONE_LEVEL	0	CHB_TONE_LEVEL	0

Available gains are in range from 0dB down to –30dB in steps of 1dB.

Example: CHA_TONE_LEVEL=0 sets the gain to 0dB for channel A

TIMINGS   In the section TIMINGS the user can define his own tone and ring timings. For the following tones on channel a and b the timings can be changed:

		Sequence definition (default; [ms])					
	Telephone port	**t1 on**	**t2 off**	**t3 on**	**t4 off**	**t5 on**	**Term**
RING signal	CHA_RING	100	400	-	-	-	-2
Dial tone	CHA_DIAL	100	0	-	-	-	-2
Ring back tone	CHA_CALL_CTRL	150	350	-	-	-	-2
Busy tone	CHA_BUSY_TONE	50	50	-	-	-	-2
Call wait tone	CHA_CALLWAIT	40	800	16	16	16	-4
Programming acceptance tone	CHA_ACPT_ PROG	10	10	-	-	-	-100
Programming non-acceptance tone	CHA_NACPT_ PROG	10	50	10	50	-	-100
PIN last try tone	CHA_LAST_PIN	50	50	10	50	-	-4
SIM missing tone	CHA_SIM_MISS	10	50	-	-	-	-2
		Sequence definition (default; [ms])					
	Fax/Modem/Phone port	**t1 on**	**t2 off**	**t3 on**	**t4 off**	**t5 on**	**Term**
RING signal	CHB_RING	100	400	-	-	-	-2
Dial tone	CHB_DIAL	100	0	-	-	-	-2
Ring back tone	CHB_CALL_CTRL	150	350	-	-	-	-2
Busy tone	CHB_BUSY_TONE	50	50	-	-	-	-2
Call wait tone	CHB_CALLWAIT	40	800	16	16	16	-4
Programming acceptance tone	CHB_ACPT_ PROG	10	10	-	-	-	-100
Programming non-acceptance tone	CHB_NACPT_ PROG	10	50	10	50	-	-100
PIN last try tone	CHB_LAST_PIN	50	50	10	50	-	-4
SIM missing tone	CHB_SIM_MISS	10	50	-	-	-	-2

17.1   How to program a new timing

The timing programming sequence consists of the name of the tone, followed by maximal ten on/off-timings and one programming terminator. Timings must be added in parts of 10ms. Valid timings are in range of 0 up to 2 Minutes.

The programming terminator must be added to the end of the timing sequence. Programming terminators always have negative values. The value ‚-100‘ is a fixed value to define the end of a non repeatable sequence. If there's a ‚-100‘ at the end of the timing sequence, it signalises, that it's the end of the sequence and no repeat is wanted. Other values define, how many steps in the sequence the tone generator has to go back. At this place in the timing sequence, the tone generator has to go.

For better understanding, how to program a new timing or how to modify an existing timing, have a look at the following examples:

* **Example 1: RING sequence on channel b**

CHB_RING=100,400,-2

> ➔   100 = ring on for 100*10ms = 1s
> ➔   400 = ring off for 400*10ms = 4s
> ➔   -2 = timing sequence terminator. Go 2 steps back in timing sequence -> next timing is a ring on with 100 *10ms again

* **Example 2: CALLWAIT on channel b**

CHB_CALLWAIT=40,800,16,16,16,-4

> ➔   40   = tone on for 40 * 10ms = 400ms
> ➔   800 = tone off for 800*10ms = 8s
> ➔   16   = tone on for 16*10ms = 160ms
> ➔   16   = tone off for 16*10ms = 160ms
> ➔   16   = tone on for 16*10ms = 160ms
> ➔   -4   = timing sequence terminator. Go 4 steps back in timing sequence -> next timimng is the tone off for 800*10ms

* **Example 3: NON_ACCEPT_PROGRAMMING on channel b**

CHB_NON_ACPT_PROG=10,50,10,50,-100

> ➔   10   = tone on for 10*10ms = 100ms
> ➔   50   = tone off for 50*10ms = 500ms
> ➔   10   = tone on for 10*10ms = 100ms
> ➔   50   = tone off for 50*10ms = 500ms
> ➔   -100= timing sequence terminator. This timing sequence ends here. Tone
>   generators stops with the actual (tone off) setting

All programmed timings, levels and frequencies were read from TONE.INI only once at
the startup of the device. After changes have been made, a reset of the device must
been done, to use them.

17.2   Example-File:

```
;RT-XNG Tone-Parameter File
[TONES]
;settings for channel a
CHA_DIAL_TONE=425
CHA_CALL_CTRL=440
CHA_BUSY_TONE=425
CHA_CALL_WAIT=440
CHA_ACPT_PROG=950
CHA_NACPT_PROG=300
CHA_PIN_LAST=600
CHA_SIM_MISS=950
;settings for channel b
CHB_DIAL_TONE=425
CHB_CALL_CTRL=440
CHB_BUSY_TONE=425
CHB_CALL_WAIT=440
CHB_ACPT_PROG=950
CHB_NACPT_PROG=300
CHB_PIN_LAST=600
CHB_SIM_MISS=950

[TONE_LEVEL]
```

```
;level range -> 0dB <-> -30 dB
CHA_TONE_LEVEL=0
CHB_TONE_LEVEL=0

[TIMINGS]
;#index0=on, index1=off, index2=on, index3=off...
;timing-sequence-terminators: -100 -> end of sequence; -2 -> 2 steps
back; -4 -> 4 steps back ...
;settings for channel a
CHA_RING=100,400,-2
CHA_DIAL=100,0,-2
CHA_CALL_CTRL=150,350,-2
CHA_BUSY=50,50,-2
CHA_CALLWAIT=40,800,16,16,16,-4
CHA_ACPT_PROG=10,10,-100
CHA_NON_ACPT_PROG=10,50,10,50,-100
CHA_LAST_PIN=50,50,10,50,-4
CHA_MISS_SIM=10,50,-2

;settings for channel b
CHB_RING=100,400,-2
CHB_DIAL=100,0,-2
CHB_CALL_CTRL=150,350,-2
CHB_BUSY=50,50,-2
CHB_CALLWAIT=40,800,16,16,16,-4
CHB_ACPT_PROG=10,10,-100
CHB_NON_ACPT_PROG=10,50,10,50,-100
CHB_LAST_PIN=50,50,10,50,-4
CHB_MISS_SIM=10,50,-2

[GENERAL]
VERSION_TONE_INI=1.018
```

18 Logfile

Relevant events of the RT3000 are reported in a Logfile. You can access this Logfile in the same way as the parameter file *para.ini.* Refer to page 83.

The name of the Logfile is:

    logfile.$rf

Close the FTP connection after the Logfile is copied to your PC. You can open the Logfile using a standard text editor.

A logfile entry has the following format:

                         4 0000006660 DTMFCNF: *81234

| warning level |
| time stmp |
| software module |
| log text |
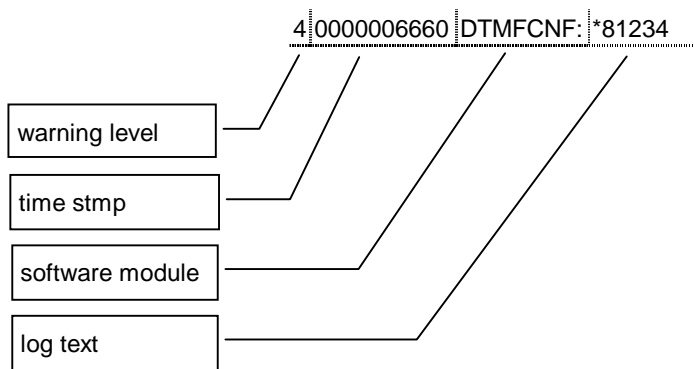
Meaning:

Warning level   Errors are on lower levels (e. g. level 1), information about normal
                     events are on a higher level (e. g. level 4).

Time stamp   The time this logfile entry is written

Software module   The software module that has generated this logfile entry

Log text   Description of the event.

19 Update the firmware

The firmware of the RT3000 can be updated using a local connected PC (connected to the USB or RS-232 port) or from remote.

The approach is just as if you want to configure the SAGEM RT3000 by uploading the edited configuration file *para.ini* by FTP - see *15.3 Configuration by FTP (Local and Remote)*, page 83.

 The configuration data call must be initiated from a station whose telephone number is configured in the REMOTE_ACCESS Section of the parameter file "para.ini" (see *Settings for the configuration access via SMS and FTP*, page 85)

The Firmware update is done via FTP (local or remote):

> Upload the file „rt3000.bin" to the SAGEM RT3000.
> Upload the file „!cmdfile" to the SAGEM RT3000.

The file *!cmdfile* is a text file (plain text) containing the following command:
STORE rt3000.bin

After uploading the files the SAGEM RT3000 will reboot.

This procedure may take several minutes.

You may check the completion of the download as follows:

> Via FTP you can download the file „!cmdlog". After successful completion of the firmware update it has the following contents:
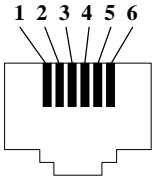
> > **>> STORE rt3000.bin**
> > **<< OK**

OR

> Enter the command ATI at the PC interface of your terminal program when you have a data connection to the SAGEM RT3000. The new version number should be displayed.
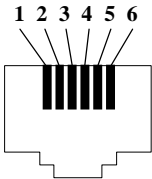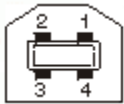
20 Connection sockets

RJ12 "PHONE" socket

Pin 3:   LA
Pin 4:   LB
The other pins are not used.

RJ12 "FAX/MODEM/PHONE" socket

Pin 3:   LA
Pin 4:   LB
The other pins are not used.

USB Interface

Pin	Signal
1	+5 V
2	USBP0- [USBP1-]
3	USBP0+ [USBP1+]
4	GND (ground)

Serial interface DB-9-F
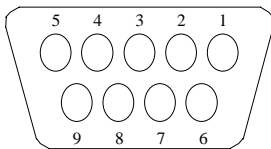
Pin	ITU-T	DIN	EIA	USA	Designation
1	109	M5	CF	DCD	Carrier Detect
2	104	D2	BB	RXD	Received Data
3	103	C1	BA	TXD	Transmitted Data
4	108.2	S1.2	CD	DTR	Device Ready
5	102	E2	AB	GND	Operating Ground
6	107	M1	CC	DSR	Modem Ready
7	105	S2	CA	RTS	Request To Send
8	106	M2	CB	CTS	Modem Ready to Send
9	125	M3	CE	RI	Incoming Call

The serial interface is operated at a data rate of 57600 bps.
The data format is 8-N-1 (8 data bits, no parity bit, 1 stop bit).

21 Technical data

Analogue interfaces	2 interfaces RJ11 (a/b-lead), one for analogue telephones, one for analogue telephones, fax machine, modem.
	max. 5 REN for all telecomms equipment connected to the RT3000
Digital interfaces	USB (Client); RS-232 (ITU V.24/V.28); Data rates: 300 – 115.200 bit/s; Communication: PC-Fax, PC-SMS, PC-Data (CSD und GPRS)
Supplementary Services	Call waiting, Call barring, Call forward, CLIP, CLIR, 3-Party-Call, depending on network
Dialling	DTMF and Pulse dialling
Port options	Polarity Reversal; Billing pulses (12kHz; 16kHz; for Voice calls)
Analogue fax	Support of Group 3 Fax machines, 9600 bit/s (V.29)
PC fax	AT command set TR29 Class 1
Analogue modem	Data rates 300,1.200,2.400,4.800,9.600 bit/s (V.21,V.22,V.22bis,V.32)
	MNP2 flow control
PC data	GPRS:Multislot class 10; class B terminal, coding schemes: CS-1,CS-2,CS-3,CS-4; PBCCH support
	CSD: 300,1.200,2.400,4.800,9.600 bit/s; AT command set ; 9.600 bit/s, RLP
PC SMS	AT command set; MO/MT/CB
Voice codecs	Fullrate,Enhanced Fullrate,Halfrate
Transmit power	EGSM 900 MHz (2 Watt), DCS 1800 MHz (1 Watt),
	PCS 1900 MHz (1 Watt)
Antenna interface	Impedance: 50 Ohm (nominal); Connector: TNC
Power supply	Mains: 230 VAC 50Hz or 110 .... 230 VAC 50/60Hz
	Input 12 - 24 VDC (Battery backup requires min. 17 VDC)
Battery backup	Regular Autonomy Version:
	Battery backup up to 2h operation time / 8h stand-by time
	rechargeable
	High Autonomy Version:
	Battery backup up to 4,5h operation time / 15h stand-by time
	rechargeable
Environment	Temperature range -10° bis +55° C
	Humidity 0-95%, not condensend
Compliance	CE (Residential, commercial and light-industrial-environment); R&TTE (GSM); GSM/GPRS-Modul mit GCF-Approval; Safety according to EN 60950
Dimensions	ca.195 x 151 x 38 mm (L x W x H)
	ca. 620g (incl. battery and antenna)