

# User Guide

## GSM/GPRS Network Termination

# SAGEM RT3000



**Sagem Communication**  
Groupe SAFRAN

## 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.

**Caution! The distance from all persons to the RT3000 antenna must be at least 20 cm.**

**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 ..... 3**
- 2 The LEDs on the device ..... 4**
  - 2.1 GSM Signal Quality Indication ..... 4
- 3 Putting the device into operation ..... 5**
  - 3.1 Survey ..... 5
  - 3.2 Inserting the SIM Card ..... 5
  - 3.3 Connecting the telecomms equipment ..... 6
  - 3.4 Enter the PIN number ..... 7
  - 3.5 Autopin option ..... 8
  - 3.6 Enter the PUK number ..... 8
  - 3.7 Wall-mounting ..... 9
- 4 Operation: Making and answering telephone calls ..... 9**
  - 4.1 Call a remote party ..... 10
  - 4.2 Emergency call ..... 10
  - 4.3 Hotline service ..... 10
  - 4.4 To answer an incoming phone call ..... 12
  - 4.5 Option: Having two calls at the same time ..... 12
- 5 Operation: Send and receive fax with a facsimile device ..... 14**
  - 5.1 To receive a Test Fax ..... 15
  - 5.2 In case of a FAX Warning ..... 15
- 6 Operation: Analogue Modem connections ..... 16**
- 7 Operation: Send and receive fixed network SMS ..... 17**
  - 7.1 In case of error ..... 17
- 8 Configuration ..... 19**
  - 8.1 Access code for DTMF configuration ..... 19
    - 8.1.1 Changing the DTMF access code ..... 19
  - 8.2 Ports for incoming calls; volume of voice signal ..... 20
    - 8.2.1 To select ports for incoming telephone calls ..... 20
    - 8.2.2 Volume of voice signals in telephone calls ..... 20
  - 8.3 Configuration of network services ..... 22
    - 8.3.1 Call forwarding unconditional (CFU) ..... 22
    - 8.3.2 Call forwarding if busy (CFB) ..... 23
    - 8.3.3 Call forwarding if no answer (CFNRy) ..... 24
    - 8.3.4 Call forwarding if not accessible (CFNA) ..... 25
    - 8.3.5 Call barring all of outgoing (To block all outgoing calls) ..... 26
    - 8.3.6 Call barring incoming (To reject all incoming calls) ..... 26
    - 8.3.7 Call Barring international outgoing (To block all outgoing international calls): ..... 27
    - 8.3.8 Change Password for Call Barring ..... 28
    - 8.3.9 Call waiting ..... 28
    - 8.3.10 Check status for call forwarding, call barring and call waiting ..... 28
  - 8.4 FAX-Configuration ..... 29

8.4.1	Fax Report on success.....	29
8.4.2	Select Port for Fax Calls.....	29
8.4.3	Disable Modem/Phone on Fax/Modem/Phone port.....	30
8.5	Data Call Configuration.....	30
8.5.1	Select Port for Data Calls.....	30
8.6	SMS Configuration.....	31
8.6.1	Select port to receive SMS.....	31
8.6.2	Configuration for fixed network SMS protocol 1.....	31
8.6.3	Configuration for fixed network SMS protocol 2.....	32
8.6.4	Enable/Disable error report.....	33
8.7	Delete undelivered SMS.....	33
8.8	Additional Configuration.....	34
8.8.1	Enable/Disable CLIR (Calling Line Identification Restriction).....	34
8.8.2	Enable/Disable CLIP (Calling Line Identification Presentation).....	35
8.8.3	Dialling Timeout.....	35
8.8.4	Flash signal detection (used to manage two calls simultaneously).....	36
<b>9</b>	<b>Technical data.....</b>	<b>37</b>
<b>10</b>	<b>For your notes.....</b>	<b>38</b>

# 1 Introduction

## Purpose of the device

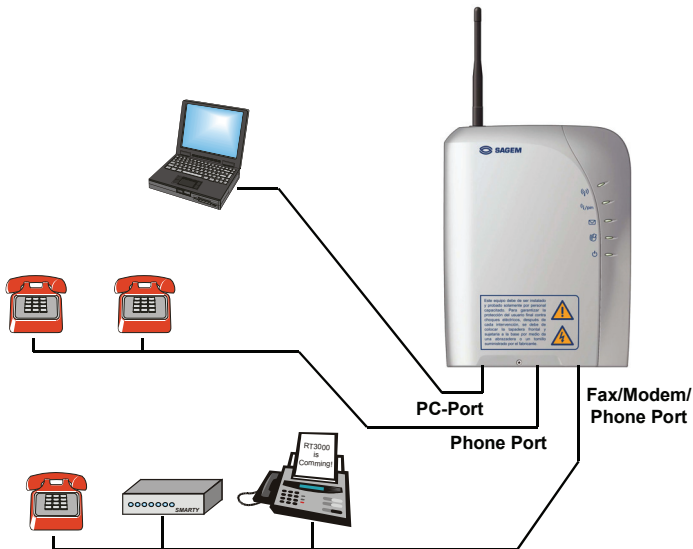
The SAGEM RT3000 is a GSM/GPRS Network Termination, a kind of wireless telephone socket. The following devices can be connected to the SAGEM RT3000:

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 based functions



All functions related to a PC (GPRS, PC-Modem, PC-FAX, SMS) are described in a user manual, stored on the CD-ROM delivered with your SAGEM RT3000.

## 2 The LEDs on the device

The LEDs inform you about the operation status.

	SLOW Flash	Search Net
	ON	High Signal Quality
	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
	RAPID Flash	FAX Warning, please check the fax machine connected to the SAGEM RT3000
	SLOW Flash	SMS Received
	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
	Off	No Power
	Red on	Powered from internal battery
	Green on	Powered from mains

### 2.1 GSM Signal Quality Indication

		
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:

	<b>page</b>
1. Insert the SIM card	5
2. Connect the power supply and at least one telephone. You may connect your other devices, too.	5
3. Enter the PIN number so that the device can communicate via the GSM network.	7
4. Option: If you have connected a Personal Computer to the SAGEM RT3000, install the corresponding driver on the computer.	15

Now the SAGEM RT3000 is ready to be used.

4. Configure the device according to your needs	19
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### 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.

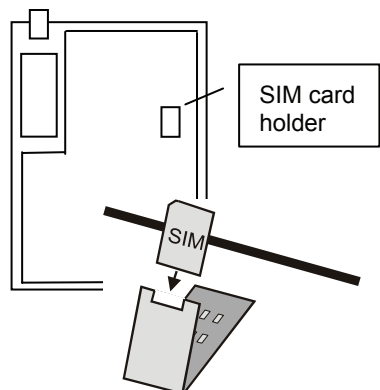


- **Please do not touch the electronic components inside the SAGEM RT3000.**

#### The steps...

Perform the following steps:

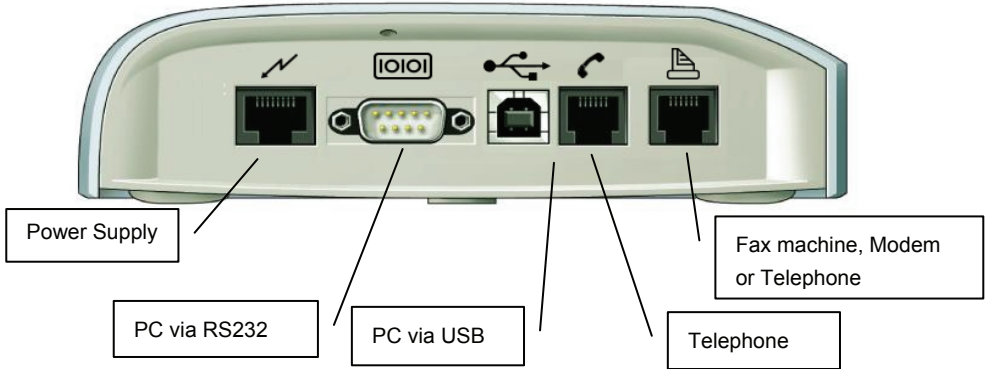
1. Remove the antenna.
2. Remove the lock screw and the bottom part of the housing cover.
3. Open the SIM card holder.
4. Insert the SIM card.
5. Close the SIM card holder.
6. Close and lock the housing with the screw.








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.



<p><b>Power Supply</b></p> 	<p>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.</p>								
<p><b>RS232 (optional)</b></p> 	<p>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.</p> <p><u>Default settings:</u></p> <table data-bbox="319 964 828 1081"> <tr> <td>Transmission speed</td> <td>57,600 bps</td> </tr> <tr> <td>Data bits</td> <td>8</td> </tr> <tr> <td>Parity</td> <td>N (none)</td> </tr> <tr> <td>Stop bits</td> <td>1</td> </tr> </table>	Transmission speed	57,600 bps	Data bits	8	Parity	N (none)	Stop bits	1
Transmission speed	57,600 bps								
Data bits	8								
Parity	N (none)								
Stop bits	1								
<p><b>USB (optional)</b></p> 	<p>If you want to connect your computer via its USB interface instead of its COM port to the SAGEM RT3000, please <u>first</u> install the drivers and then plug in the USB cable.</p>								
<p><b>Telephone</b></p> 	<p>You can connect here analogue telephones.</p>								
<p><b>Fax/Modem/Phone</b></p> 	<p>You can connect here analogue telecomm equipment, e.g. analogue fax machine (or a combi fax), analogue modem or analogue telephones</p>								

- 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 bip tone, that prompts for the PIN. Enter the PIN as shown below, then hang up (place the handset on hook).

#### To enter the PIN:



It means:

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



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

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


## Putting the device into operation

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means lift up the handset

means hook on the handset

If you have entered a wrong PIN, the  LED will flash rapidly. You have one last try to enter the right PIN. This last try is indicated by a special bip 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).

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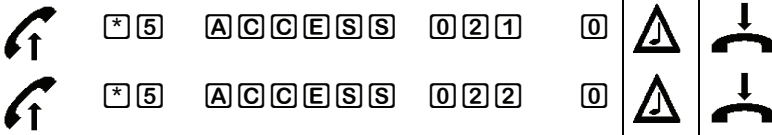
### 3.5 Autopin option

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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 5 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 correct PIN!** After the SAGEM RT3000 turned into normal operation status use these sequences for clearing the original PIN code from registers.




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.

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### 3.6 Enter the PUK number

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If you have entered the three times in sequence a wrong PIN, the  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:



It means:

**P U K**

Please enter your PUK here.

**N P I N**

Please enter a new PIN here.

Allowed PIN numbers are 0000 to 99999.

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### 3.7 Wall-mounting

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

The RT3000 is intended to be mounted on the wall. This will ensure best transmission quality. You can fix it to the wall with screws.

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

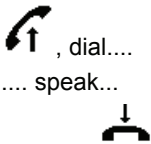
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### To make a call...

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).
- 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.

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## 4.2 Emergency call

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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.

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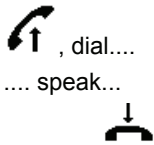
## 4.3 Hotline service

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The SAGEM RT3000 features a hotline service to dial automatically a registered telephone number just by lifting the telephone handset. This function is very comfortable if you like to call often the same phone number.

**To make a hotline call...**

Lift up the telephone handset. The SAGEM RT3000 dials automatically the registered phone number. You will hear:















, dial...  
.... speak...

- 🔊 the dialling tone (before the SAGEM RT3000 starts to dial).  
While the dialling tone is active, you can dial any other number,
- 🔊 silence for a short moment until the hotline number is dialled,
- 🔊 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).

**To terminate the call...**

Hang-up the handset.

To call another telephone number than the registered one, the SAGEM RT3000 waits a certain time ("Time before dialling") before it starts to dial the hotline number. During this time, you can dial any number. Entering any digit, the hotline service is deactivated until you hang-up again.

	Description:
 * 5 3 * <Hotline number> * <Time before dialling> #  	Registers the hotline phone number and activates the hotline service. Time before dialling : 5...60 (5 = 5 sec, 60 = 60 sec)
 * 5 3 #  	Activates the hotline service (only if a hotline number is registered)
 # 5 3 #  	Deactivates the hotline service
 * # 5 3 #  	Check the status for hotline service

When you check the status for the hotline service, the status will be indicated by signal tones from the telephone handset:

	Description:
___ Bip___ Bip	Status on / DTMF code correct
___ Beep_ Beep___ Bip	Status off / DTMF code correct
___ Beep_ Beep	DTMF code not correct

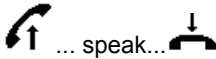
## 4.4 To answer an incoming phone call

---

**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.



- By default you cannot have two calls at the same time. So if a call comes in during an active connection (GSM data (CSD), 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 another device.
- During a GPRS-connection an incoming call will not be signalled to you if data is exchanged. The calling party will get a busy signal. In case of no data traffic, e.g. you are surfing in the Internet and the download of the requested page has been completed, the incoming call will be signalled to you.
- 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.)

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## 4.5 Option: Having two calls at the same time

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- 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 28).

**By default this function is not activated.**

**To establish a second call...**

To put the call already established in Call Hold state press the following keys in sequence:



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 19.

## 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 SAGEM RT3000 is equipped with very advanced fax technologies, ensuring best results in fax transmission via GSM. Nevertheless, due to the nature of GSM fax, correct fax communications cannot be guaranteed at all places and at all the time.




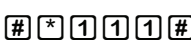


The “wireless telephone line” provided by the SAGEM RT3000 has special characteristics you should know:


- 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.
- Please check that no call forwarding is activated for the fax service (see chapter 8.3). Otherwise a fax, which is sent to the SAGEM RT3000 will not be received by the SAGEM RT3000 but by a fax mail box.
- 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 4). 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 15).



## 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:


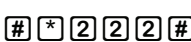


  # \* 1 1 1 #   A test fax of 1 page will be transmitted from the SAGEM RT3000 to your facsimile device.


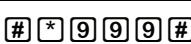


 means: wait for the confirmation tone (up to 3 sec):  
 a high pitched bip signals: OK  
 a low frequency beep-beep signals: Wrong entry.


## 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:

  # \* 2 2 2 #   After you have entered the code, the SAGEM RT3000 will start to send the saved fax part to your facsimile device.

  # \* 9 9 9 #   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 bip signals: OK  
 a low frequency beep-beep signals: Wrong entry.

 You can configure the fax function according your needs. See page 29.

## 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 in the User Manual on CD).
- You can configure the function according your needs. See *Data Call Configuration*, page 30.

## 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:

- |   | <b>page</b> |
|---|-------------|
| 1. Select the port of the RT3000 to which incoming SMS should be sent.  | 31          |
| 2. The RT3000 supports fixed network SMS in accordance to ETSI standard ES 201 912 Protocol 1, Deliver mode 0 and Protocol 2.<br>Check if your fixed network SMS telephone supports Fixed network SMS in accordance protocol 1 or protocol 2.<br>You should find the information in the user guide of the telephone.<br>May be that you have to ask your provider for these number. |             |
| 3. Choose the right protocol in accordance to your telecomms equipment.<br>Configure the SMS centre number for protocol 1 or SMS centre number and Local number for protocol 2.   | 31          |

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 33).

**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 31), 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.

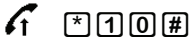
If the SAGEM RT3000 is still not successful to transfer the SMS after these retrials, the user can invoke a retransmission when his device is ready.

To do this enter the following sequence:

---

**Description:**

---



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 bip 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 bip 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.

**A C C E S S** means: access code; by default it is **0 0 0 0 0 0**

### 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 **0 0 0 0 0 0**.

\* **5 0 L D A C C 0 2 3 N E W A C C #**

It means:

**0 L D A C C** : old access code










**N E W A C C** : 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 A C C E S S 0 0 9 1 #  	Only on <b>Telephone</b> port
 * 5 A C C E S S 0 0 9 2 #  	Only on <b>Fax/Modem/Phone</b> port
 * 5 A C C E S S 0 0 9 4 #  	<b>Telephone</b> port and <b>Fax/Modem/Phone</b> 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 A C C E S S 0 0 1 V V #  	Volume sent to remote party
 * 5 A C C E S S 0 0 2 V V #  	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 A C C E S S 0 0 3 V V #  	Volume sent to remote party
 * 5 A C C E S S 0 0 4 V V #  	Volume of voice signals received from remote party




**Meaning:**

  = 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 0 0 0 0 0 0 0 0 0 2 0 3 #
- 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 bip 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.

**A C C E S S** means: access code; by default it is **0 0 0 0 0 0**

#### 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:
* * 2 1 * <Telnumber> #	Activates for all call types
* * 2 1 * <Telnumber> * <call_type> #	Activates for selected call types (see below)
# # 2 1 #	Deactivates call forwarding unconditional
* # 2 1 #	Status Checking (see p. 28)

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:
 * * 6 7 * <Telnumber> #	  Activates for all call types
 * * 6 7 * <Telnumber> * <call_type> #	  Activates for selected call types (see below)
 # # 6 7 #	  Deactivates call forwarding if busy
 * # 6 7 #	  Status Checking (see p. 28)

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.

### 8.3.3 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:
 * * 6 1 * <Telnumber> #  	Activates for all call types
 * * 6 1 * <Telnumber> * * <delay_time> #  	Setting the delay after which the call is forwarded for all call types
 * * 6 1 * <Telnumber> * <call_type> #  	Activates for the selected call types (see below)
 * * 6 1 * <Telnumber> * <call_type> * <delay_time> #  	Specifies the target number, the call type and the delay.
 # # 6 1 #  	Deactivates call forwarding if no answer
 * # 6 1 #  	Status Checking (see p. 28)

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> = 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.

### 8.3.4 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:
 * * 6 2 * <Telnumber> #	  Activates for all call types
 * * 6 2 * <Telnumber> * <call_type> #	  Activates for selected call types (see below)
 # # 6 2 #	  Deactivates call forwarding if not accessible
 * # 6 2 #	  Status Checking (see p. 28)

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.

### 8.3.5 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. 28)
 * # 3 3 * * <call_type> #	 	Checks the status (see p. 28)

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.





You may also use the code 3 4 instead of 3 3 to configure this service.

### 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. 28)
 * 3 5 * * <call_type> #	 	Checks the status (see p. 28)



















Meaning:

- <password> = the password to protects 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.

### 8.3.7 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:
 * 3 3 1 * <password> #	 	Activates for all call types
 * 3 3 1 * <password> * <call_type> #	 	Activates for selected call types
 # 3 3 1 * <password> #	 	Deactivates this function for all call types
 # 3 3 1 * <password> * <call_type> #	 	Deactivates for selected call types
 * # 3 3 1 #	 	Checks the status (see p. 28)
 * # 3 3 1 * * <call_type> #	 	Checks the status (see p. 28)

Meaning:

- <password> = the password to protects 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.

### 8.3.8 Change Password for Call Barring

	<b>Description:</b>
 * * 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 barring: 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:

	<b>Description:</b>
 * 4 3 #  	Function activated
 # 4 3 #  	Function deactivated (Default)
 * # 4 3 #  	Check the status (see p. 28)

### 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:


	<b>Description:</b>
___ bip ___ Beep	Status on / DTMF code correct
___ bip _ 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 A C C E S S 0 1 3 0 #  	Only error reports are transmitted to your facsimile device (Default)
 * 5 A C C E S S 0 1 3 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 A C C E S S 0 1 1 0 2 #  	Receive Fax on <b>Fax/Modem/Phone</b> port (Default)
 * 5 A C C E S S 0 1 1 0 3 #  	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:
 <input type="checkbox"/> * <input type="checkbox"/> 5 <input type="checkbox"/> A <input type="checkbox"/> C <input type="checkbox"/> C <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> S <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> #  	The Fax/Modem/Phone port will allow outgoing fax, modem and voice calls (Default)
 <input type="checkbox"/> * <input type="checkbox"/> 5 <input type="checkbox"/> A <input type="checkbox"/> C <input type="checkbox"/> C <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> S <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> #  	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:
 <input type="checkbox"/> * <input type="checkbox"/> 5 <input type="checkbox"/> A <input type="checkbox"/> C <input type="checkbox"/> C <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> S <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> 2 <input type="checkbox"/> #  	Receive data call on the Fax/Modem/Phone port (Default)
 <input type="checkbox"/> * <input type="checkbox"/> 5 <input type="checkbox"/> A <input type="checkbox"/> C <input type="checkbox"/> C <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> S <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 0 <input type="checkbox"/> 0 <input type="checkbox"/> 3 <input type="checkbox"/> #  	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 ACCCESS 019 01 #  	Receive SMS on the <b>Phone</b> port (fixed network SMS)
 *5 ACCCESS 019 02 #  	Receive SMS on the <b>Fax/Modem/Phone</b> port (fixed network SMS)
 *5 ACCCESS 019 03 #  	Receive SMS on the <b>PC</b> -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 ACCCESS 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 ACCCESS 024 <SMS_Centre> #  	Enter the number of the SMS centre for fixed network SMS (Send / Receive)
--	---

Meaning:

<SMS\_Centre> = 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 ACCCESS 0240193010 #  
--

## Configuration

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Your fixed network SMS equipment may expect different telephone numbers for SMS send and SMS receive. In this case enter at your fixed network SMS equipment the value for <SMS-Centre> for SMS centre (send) and the value <SMS-Centre> followed by a 0 for SMS centre (receive).



### **Example:**

You have entered the SMS-Service-Centre number **0193010** in your SAGEM RT3000. Then enter in your fixed network SMS equipment:



**0193010** for SMS centre send (TX)  
**01930100** for SMS centre receive (RX)

### **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 A C C E S S 0 2 7 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 A C C E S S 0 2 4 <SMS_Centre> #  	Enter the number of the SMS centre to send fixed network SMS
---	--

Meaning:

<SMS\_Centre> = 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 A C C E S S 0 2 6 <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:

 \* 5 A C C E S S 0 2 4 9 0 0 7 1 6 8 0 0 #  







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::

 \* 5 A C C E S S 0 2 6 9 0 0 7 1 6 8 0 #  


**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 telecomm equipment you have used to send the SMS. You can activate or deactivate this function.

Default access code: 000000

 * 5 A C C E S S 0 2 5 0 #  	Deactivate error report
 * 5 A C C E S S 0 2 5 1 #  	Activate the error report

**8.7 Delete undelivered SMS**

If the SAGEM RT3000 has received a SMS which cannot be delivered to the locally connected device, the LED  will blink slowly until the SMS is delivered or deleted. You can delete undelivered SMS by the following command:







 * # 1 2 #  	Deletes all received but undelivered SMS, stops blinking of the LED  .
--	---

## 8.8 Additional Configuration

### 8.8.1 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 permanent setting enter the following sequence:

Default access code: 000000		Description:
 <span style="border: 1px solid black; padding: 2px;">*</span> <span style="border: 1px solid black; padding: 2px;">5</span> <span style="border: 1px solid black; padding: 2px;">A</span> <span style="border: 1px solid black; padding: 2px;">C</span> <span style="border: 1px solid black; padding: 2px;">C</span> <span style="border: 1px solid black; padding: 2px;">E</span> <span style="border: 1px solid black; padding: 2px;">S</span> <span style="border: 1px solid black; padding: 2px;">S</span> <span style="border: 1px solid black; padding: 2px;">0</span> <span style="border: 1px solid black; padding: 2px;">0</span> <span style="border: 1px solid black; padding: 2px;">7</span> <span style="border: 1px solid black; padding: 2px;">0</span> <span style="border: 1px solid black; padding: 2px;">#</span>  		Phone number <b><u>will not</u></b> be displayed to called party
 <span style="border: 1px solid black; padding: 2px;">*</span> <span style="border: 1px solid black; padding: 2px;">5</span> <span style="border: 1px solid black; padding: 2px;">A</span> <span style="border: 1px solid black; padding: 2px;">C</span> <span style="border: 1px solid black; padding: 2px;">C</span> <span style="border: 1px solid black; padding: 2px;">E</span> <span style="border: 1px solid black; padding: 2px;">S</span> <span style="border: 1px solid black; padding: 2px;">S</span> <span style="border: 1px solid black; padding: 2px;">0</span> <span style="border: 1px solid black; padding: 2px;">0</span> <span style="border: 1px solid black; padding: 2px;">7</span> <span style="border: 1px solid black; padding: 2px;">1</span> <span style="border: 1px solid black; padding: 2px;">#</span>  		Phone number <b><u>will be</u></b> displayed to called party







Independent from the permanent setting, you can allow or restrict the transmission of your telephone number also just for the next call. When the call is finished, the permanent setting will be active again.

Enter the code \*31# or #31# just in front of the telephone number you like to dial.

		Description:
 <span style="border: 1px solid black; padding: 2px;">*</span> <span style="border: 1px solid black; padding: 2px;">3</span> <span style="border: 1px solid black; padding: 2px;">1</span> <span style="border: 1px solid black; padding: 2px;">#</span>	<Telnumber> ... make the call ...	  Phone number <b><u>will be</u></b> displayed to called party during this single call.
 <span style="border: 1px solid black; padding: 2px;">#</span> <span style="border: 1px solid black; padding: 2px;">3</span> <span style="border: 1px solid black; padding: 2px;">1</span> <span style="border: 1px solid black; padding: 2px;">#</span>	<Telnumber> ... make the call ...	  Phone number <b><u>will not</u></b> be displayed to called party during this single call.

### 8.8.2 Enable/Disable CLIP (Calling Line Identification Presentation)

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 and the **Fax/Modem/Phone** port. This function is called CLIP - Calling Line Identification Presentation.

		Description:
 * 3 0 #	 	CLIP function activated, calling number <b>will be</b> transmitted.
 # 3 0 #	 	CLIP function deactivated, calling number <b>will not</b> be transmitted.




The SAGEM RT3000 supports CLIP transmission according to ETSI ETS 300659-1 using V.23.

### 8.8.3 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 A C C E S S 0 0 5 T T T T #  		Dial Timeout

#### For the Fax/Modem/Phone port:

Default access code: 000000		Description:
 * 5 A C C E S S 0 0 6 T T T T #  		Dial Timeout

Meaning:

**T T T T** = the duration of the time out :

Min value = **4 0 0** : 400 \* 10 ms = 4 s

Max value = **1 2 0 0** : 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)

### 8.8.4 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:
	Minimum duration
	Maximum duration

**For the Fax/Modem/Phone port:**

Default access code: 000000	Description:
	Minimum duration
	Maximum duration

Meaning:

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

With **MIN** = **7** ... **55** : that means 70 ms ... 550 ms

With **MAX** = **12** ... **65** : that means 120 ms ... 650 ms

## 9 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), GSM 850 MHz (2 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)

**10 For your notes**





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