User guide

F251m terminal

Fixed Cellular Terminal for Small office Home office (SoHo) applications

Ericsson F251m

First edition, November 2001

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Important information: Some of the services described in this guide might not be supported by all networks. Please, contact your network operator for information on different network services operational in your GSM network.

1 <u>F251M</u>

The F251m is a flexible and cost-effective solution for connecting your SoHo telephone system to the digital wireless GSM network.

When there is no fixed infrastructure or if you need additional telephone lines:

- install the terminal

- run cabling from the F251m to any place within your Small office Home office (SoHo) and

- you will be ready to connect and use standard telephones, fax machines, computers (Internet) and PBXs

The terminal features the latest technology, which makes it perfect for everyday communication:

- Triple band GSM (E-GSM 900, GSM 1800, GSM 1900)

- Telephone line providing high quality speech (EFR), G3 fax and V.90 data transmission

- GPRS (General Packet Radio Service), which is designed to keep you always on line and facilitate rapid transmission of data (ideal for e-mail and Internet browsing)

- HSCSD (High Speed Circuit Switched Data) which further enhances data transmission

- Embedded modem available over the RS232 port

- Battery back-up

2 SUPPLIED PARTS

After unpacking check that the following parts are included:

- GSM FCT   - Battery cable   - AC power supply   - Cable

- Antenna   - Wall bracket   - 5m phone cable   - Screws

- User guide

- DA20 (optional) – Alkaline (AA) holder (optional)

3 EXTERNAL CONNECTORS AND LIGHT INDICATORS
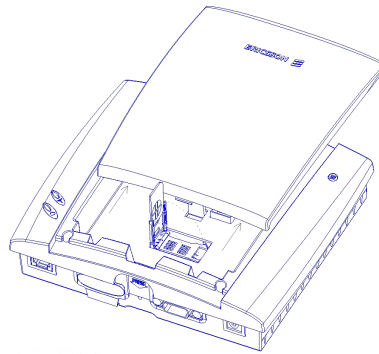
- GSM radio indicator (greed led)

- Power indicator (red led)

- Telephone interface

- Antenna connector

- Power connector

- RS232 port

- Maintenance connector

- SIM card holder

4 SIM CARD

Your network operator provides you with a SIM (Subscriber Identity Module) card. The SIM card contains information about your telephone number and the services included in your subscription, among other things.

Warning!: switch off the FCT before you insert or remove your SIM card.

5 CONNECTIONS

Warning!: please, before you start any connections refer to section "Safe and Efficient Use" on page 57 in this guide and contact your network operator if you have any question.

Warning!: to get a good FCT protection against electrical discharges and the best audio quality, a good grounding of the Power Supply is strongly recommended.

5.1 INSTALLING THE FCT AS A TELEPHONE LINE

The FCT is designed to provide a telephone line (RJ11 connector) to which up to 3 Fixed Line Devices can be connected in parallel. The FCT provides a single telephone line, which means that only one communication can take place simultaneously, in the same way as the ordinary fixed line (you cannot, for example, receive or originate a telephone call while sending or receiving a fax).

Note: you may be able to connect up to 5 telephone devices depending on their characteristics. See "Ring Back Test" on page 17
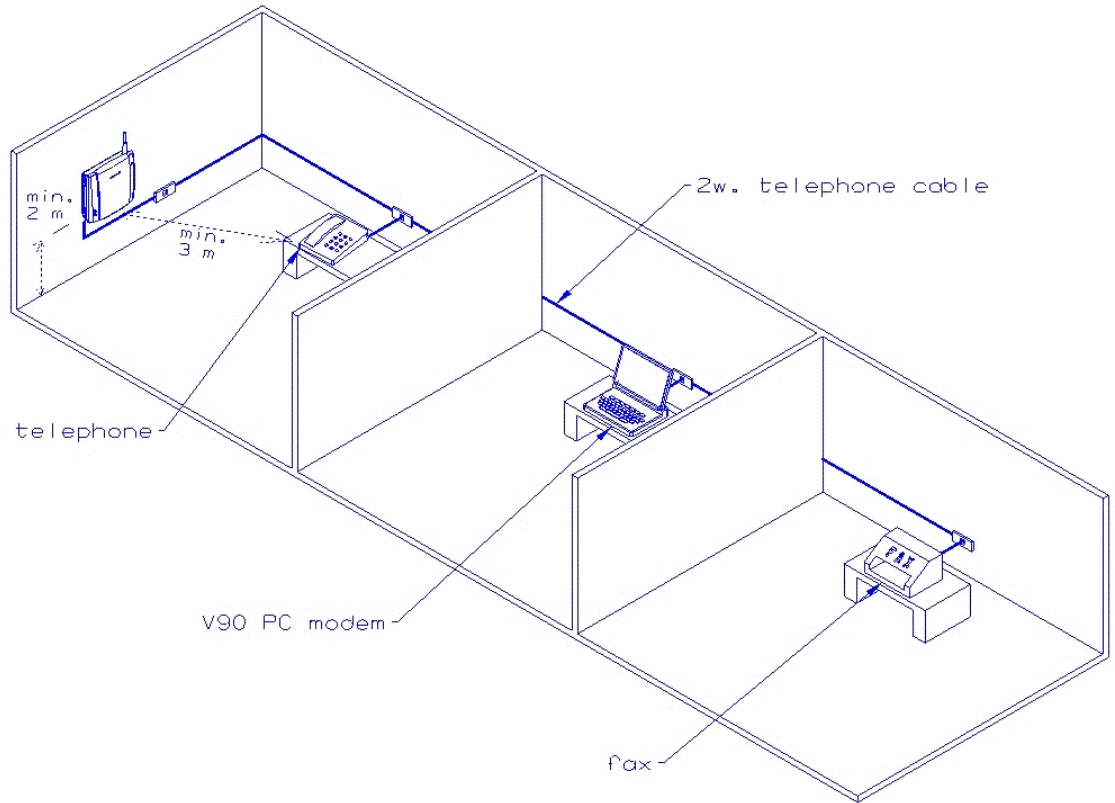
DWG1 (DWG) WORK

Warning!: In order to avoid GSM interferences (noises), place the FCT at least 3 meters (horizontal) away from electronic devices, including the telephone equipment connected to the FCT, or other household electronic devices such as televisions or radio receivers. The difference in height should be at least 2 meters (vertical). This is not necessary if you use telephone devices that fulfil the Immunity Characteristics settled by the IEC CISPR-24 standard. In this case, a minimum security distance of 20 cm is recommended.

The FCT is also equipped with an RS232 port that enables you to use it as a GSM modem for PC Fax, Data and SMS services. For this specific configuration, please refer to the **FCT Data Kit** (see "FCT accessories" on page 41).

5.2   INSTALLING AN FCT CONNECTED TO A PBX

The FCT is designed to provide a telephone line (RJ11 connector) that behaves in the same way as an Analog Trunk.

Generic requirements

The PBX should meet the following generic requirements for FCT connectivity:

- The PBX must offer the possibility of analog trunks. Otherwise, the ISDN FI12 adapter accessory will be necessary. (see "FCT accessories" on page 41).

- One position of the trunk must be assigned to each FCT terminal.

- The trunk card must support either Busy Tone Detection (BTD) or Polarity Reversal Detection on answer and release.

- The PBX can be programmed to utilize Least Cost Router (LCR), if available, to automatically choose the FCT trunk when suitable.

- If the PBX does not offer LCR, choose the FCT trunk manually with a special dialed prefix.

The F251m terminal is compatible with most analog PBXs on the market and with most of the available 2B+D ISDN digital output trunks, via its accessory ISDN FI12 adapter (see "FCT accessories" on page 41).

FCT connectivity to the ISDN 2B+D trunk of the PBX
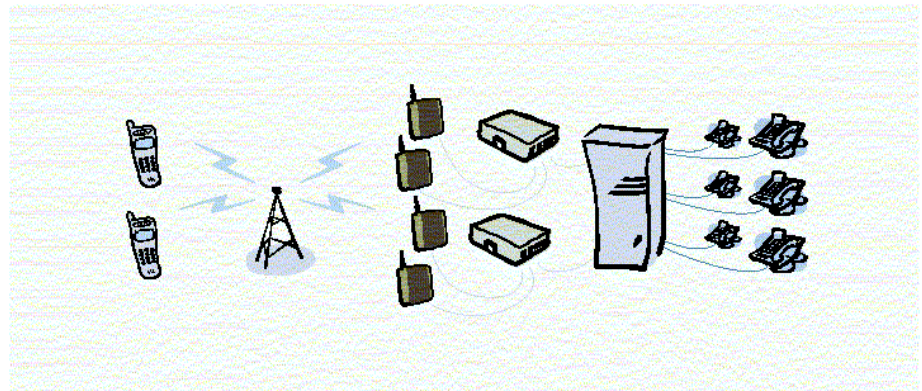
Follow the FCT installation instructions next ("Preparing your FCT" and "Installing the FCT on the wall") and then refer to "Using PBX" on page 24.

Note: it is recommended that there is a minimum distance of 3 meters between the FCT and the PBX. The maximum cable distance between the PBX and the FCT should not exceed 600 meters, and the connection cable must be at least 0,4 mm2.

Warning!: if you install more than one FCT to a PBX, their antennas have to be separated with a distance of 20 cm in height or 2 meters in horizontal.

5.3   PREPARING YOUR FCT

You need to follow the following procedure before you install the FCT on the wall and make all definitive connections.

Warning!: switch off the FCT before you insert or remove your SIM card or connect any device to the FCT.

5.3.1   <u>Assembly</u>

1. Connect the antenna

2. Remove the front-cover. Open the SIM card holder and place the SIM in the right position.

2 WORK IN MEMBER VIEW (EXPLODED)
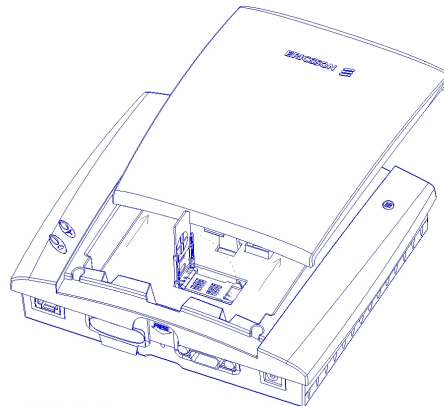
3. Close the SIM card holder and place the front cover back in previous position.

5.3.2   Connect a telephone to the FCT

Connect a fixed telephone to the FCT telephone line.

Note: You will use this telephone for dialing the PIN number.

4 WORK IN MEMBER VIEW (EXPLODED)
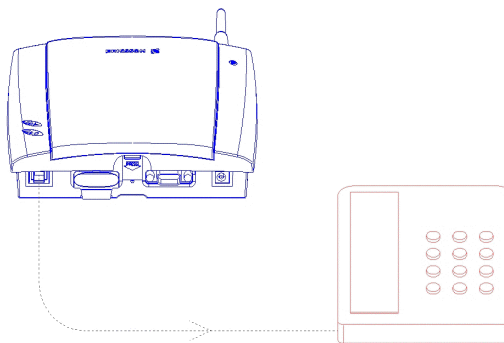
5.3.3   Switch on the FCT

Connect the Power Supply. The FCT switches on automatically and the Green and Red light indicators start flashing.

5.3.4   Enter PIN

Most SIM cards are protected with a PIN (Personal Identity Number), which you get from your network operator and which you need in order to access the network.

If the SIM card is not protected by the PIN code then you do not need to enter the PIN and the FCT starts automatically the Network Search.

If the SIM card is protected by the PIN code, then the Green and Red light indicators flash simultaneously.

Note: if you have the DA20 display adapter accessory (See "FCT accessories" on page 41), an "Enter PIN" message will show on your display.

Follow the following procedure to enter the PIN:

- Pick up the telephone and dial the PIN code. Press the # key on your telephone or wait until you hear a beep tone.

- If you make a mistake while entering your PIN, hang up immediately the telephone down and try again.

If the PIN is correct, you will hear a beep over the telephone (affirmative indication tone). If it is incorrect, a loud and low tone will sound (error indication tone).

If your PIN is entered incorrectly three times, the SIM card will be blocked. If this happens, you can unblock it by using your PUK (Personal Unblocking Key), which you also get from your network operator. See "SIM Card Security" on page 32

Note: once you have entered the PIN code for the first time you will not have to enter it again unless you change your SIM card. The FCT performs this operation automatically in case of power failure.

5.3.5   Network search

After you have switched on your FCT and entered your PIN, the FCT automatically searches for a network.

Note: if the Red Light is off, there is a problem with the power supply. See "Troubleshooting and FCT indicators" on page 34

When a network is found, the Green Light Indicator switches on or flashes depending on the GSM signal strength. (See Light Indicators on page 6).

Note: if the Green Light is off you do not have access to the GSM network at your present location.

Now you have prepared the FCT for wall installation. Please, follow the instructions below for complete wall installation.

5.4   INSTALLING THE FCT ON THE WALL

5.4.1   FCT Location

The GSM signal strength present at the FCT location affects the performance of the unit. The stronger the GSM signal is the better for the FCT performance.

Tip: test several potential locations by moving the FCT while looking at the Green Light indicator. Select the location where the Green Light is steady, or the location with the highest amount of flashes.

Note: moving the FCT as little as 20 cm can affect the GSM reception quality.

Installation Location Testing	
Number of Green Light flashes	**Location status**
0	Unacceptable
1 - - -	Acceptable
2 - - - - - -	Good
3 - - - - - - - - -	Very good
Steady ----------------------	Excellent

Please consider the following recommendations:

- Select always an **Indoor** location, preferably close to a window and the roof. Generally, you will experience better GSM signal strength in these places.

- Do not install the FCT in a bathroom, wet or damp basement or in an outdoor location.

- Do not install the FCT on walls or rooms that contain large amounts of metal, steel or wiring.

- Do not expose the FCT to extreme temperatures (near radiators, cooling vents, etc).

If you experience poor reception quality, an outdoor antenna may result in improvement. See "FCT accessories" on page 41

5.4.2   Wall mounting

Please proceed as indicated in the following picture.

1) Fix the wall mounting bracket on the wall
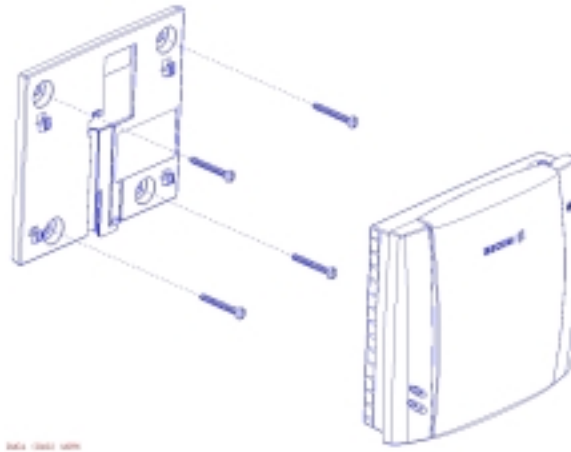
2) Insert the FCT in the wall mounting bracket
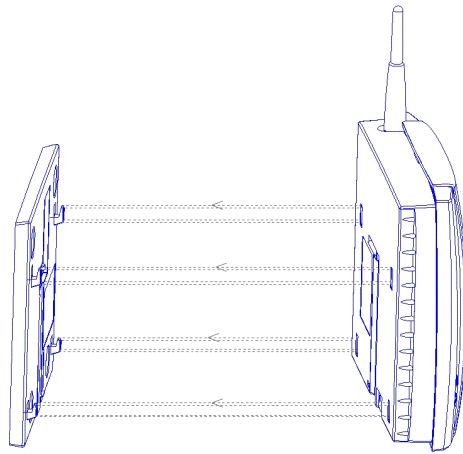
2 WORK IN MEMBER VIEW (EXPLODED)

3) Press the FCT down
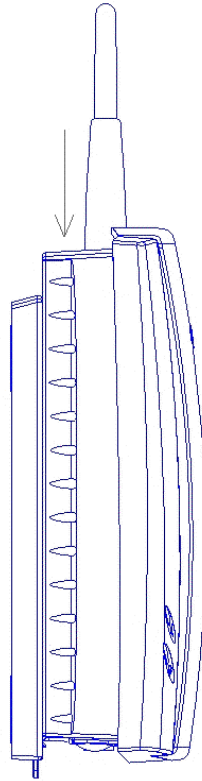
LEFT WORK IN MEMBER VIEW

Warning!: once you have fixed the FCT to the wall and switch it on, check the final status of the Red and Green lights. If the Red and/or Green Lights are off, there is a problem with the power supply or the GSM signal. See "Troubleshooting and FCT indicators" on page 34

Now the FCT is ready for connecting devices and make calls.

Note: if you want to remove the FCT from the wall bracket then you have to press the flap (step 1) as indicated in the following picture. And then push the FCT upwards (step 2).
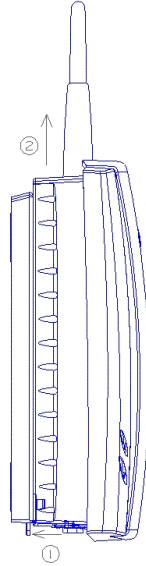
LEFT WORK IN MEMBER VIEW (OUT-C

5.5 CONNECTING FIXED LINE DEVICES

Connect the fixed line devices to the FCT (Telephone Line connector) with telephone wire in the same way as with an analog telephone line.

Fixed line devices are connected in parallel to the telephone cable. You can connect the devices directly to the FCT Telephone line connector (RJ11) or make an internal telephone wiring, use RJ11 splitters or similar connectors.

Telephone

Display

Fax

PC modem

Note: remember that you do not have to worry about the two wire Telephone cable polarity when making connections; if the two wires are reversed the FCT and the fixed line devices are not affected at all.

Tip: if your house or company is already wired with telephone cable, you only need to connect the cable to the FCT RJ11 connector and your telephone line will be up and running in all rooms.

Note: it is strongly recommended that the telephone wire is installed indoors in order to avoid lightning damage.

Note: the telephone wire should not exceed 600 meters. Larger distances can be achieved by using high quality telephone wire.

5.5.1 Checking connections

Once the fixed line devices (1 up to 3) have been connected, make the "Ring Back Test" as follows in order to check the connections:

- Lift one telephone and dial ****#10#**. You will hear a beep tone (the FCT Red and Green light indicators will start flashing -three flashes synchronized).

- Hung the telephone up and check if all the connected telephones are ringing.

- Lift any of the telephones connected and then pick it up again. The ringing will stop (the red and green lights will go to normal operation mode).

Tip: If any of the telephones has not been ringing, check your telephone cable layout and connections to make sure that all devices are properly connected.

5.5.2 Checking the calls quality:

Use any of the telephones connected to the FCT and make a call. Check the speech quality and ask the receiver to call you back to confirm that you can also receive calls.

If you have problems*, see "Troubleshooting and FCT indicators" on page 34*

6   USING TELEPHONES

Fixed telephones connected to the FCT telephone line work in the same way as if they were connected to a Fixed Network.

Note: you can also benefit from some FCT functionality that you do not usually have on your fixed network. See "Advanced features" on page 25

You can find more detailed information about the tones that the FCT sends on "Audible Tones" page 37

7   USING CLI DISPLAYS

Devices for displaying incoming numbers (telephones with display, external displays, etc.) can be directly connected to the FCT line interface in the same way as an ordinary telephone. If your subscription includes the Calling Line identification (CLI) service and the caller´s network sends the number, the FCT sends the caller´s number towards your CLI Display.

In general, your FCT will be programmed (according to your country specifications) to send the CLI information with the right standard so that your CLI device works properly.

Refer to your CLI Telephone or Display User Guide for understanding your CLI indications.

Tip: if you run the "Ring Back Test" on page 17 (lift the telephone, dial ****#10#** and hung up), you can check if the following number "1234567890" appears on your CLI display. If not, the FCT is not using the right standard.

If you experience that your CLI device is not showing the calling numbers, you may need to change the FCT settings.

If you know the CLI standard used by your CLI device (check the user guide from this device), you can dial directly the specific sequence for this standard (see table below) from a DTMF (Pulses) telephone connected to the FCT.

Otherwise, you can alternatively dial each of the following sequences and check each time if the numbers appear on your CLI display by conducting the "Ring Back Test" after a specific sequence is dialed. You should find that one of the three sequences allows you to visualize the number "1234567890" on your display when the "Ring Back Test" is conducted.

CLI standard	Dialing sequence
ETSI DTMF	**000*1#
ETSI V.23	**000*2#
Bellcore	**000*3#

In order to disable the CLI Display functionality (not to see CLI information anymore), dial **000*0# from a DTMF (Pulses) telephone connected to the FCT.

Tip: if you do not want your telephone number to appear at the caller's location, you can dial the **#31#** before the phone number you are going to call (B-number) (#31#B-Number)

To find out about the DA20 Display accessory, please check "FCT accessories" on page 41.

8   USING FAX MACHINES

The FCT terminal allows the connection of Group 3 analog faxes to the FCT telephone interface, in the same way as a telephone.

Warning!: the fax communication service has to be registered with your network operator, as the network will not otherwise accept faxes to be sent/received.

8.1   SENDING A FAX:

The FCT terminal is programmed to automatically detect outgoing calls made by an analog fax, meaning that the user simply has to use the fax in the same way as a conventional telephone line.

Warning!: if your fax is an old model and is not able to send the fax identification CNG tone, you should include *01* previous to the called number (B-number) in order to indicate the FCT that the call to be made is a fax call (Example: *01*B-number). This is not usually necessary, as most faxes automatically send the CNG tone so that the fax call is made automatically by the FCT.

8.2   RECEIVING A FAX

Incoming faxes are received in the same way as using the fixed line.

Note: if you have a SIM card that does not support separate voice and fax numbers, the FCT does not recognize the type of incoming call. This means that the calling party will have to warn you each time a fax is about to be sent. In this case, dial *9901# to prepare your FCT to receive a fax call.

9   USING PCs

Analog modems connected to the FCT telephone line work in the same way as if they were connected to the Fixed Network. In this way, you can use your PC standard modem to make

data calls (Internet browsing, e-mail, etc.) through the FCT line.

To be able to send and receive data calls, you need:

- a PC equipped with an analog modem and the appropriate computer program (Web Browser, E-mail, etc). This is a standard configuration for most PCs in the market.

- a SIM card that supports data transmission over the GSM network.

*Note: if you do not have a modem in your PC, the FCT can be configured to act as a modem itself. This requires the installation of the FCT modem drivers on your PC. For this specific configuration, please refer to the **FCT Data Kit** (see "FCT accessories" on page 41).*

The FCT should be pre-configured with the settings from your network operator. For detailed information on FCT data configured settings, please consult your distributor or network operator.

You can choose between two data access types (connection methods):

- **GPRS** (General Packet Radio Service) **data**: GPRS allows fast and efficient access where you can be always online (although you are only charged for the amount of information that you exchange). You need a SIM card that supports GPRS. Please contact your network operator for charging subscription details.

- **GSM data**: normally, you pay for all the time you are connected. You need a SIM card that supports GSM data.

For fast and efficient access, try the GPRS access type.

9.1 GPRS DATA ACCESS TYPE

GPRS data access type allows you to make outgoing calls only, usually to connect to the Internet.

Your GSM network operator provides you with an Internet connection as part of the GPRS service.

Warning!: the GPRS data communication service has to be registered with your network operator, as the network will not otherwise accept GPRS calls.

If your SIM card supports GPRS, your network operator must supply you with a **user name** and **password** in order to access the GPRS network, and optionally, to improve the Internet connection, a **DNS address** and a **Proxy address**.

You need to configure the Dial-up Networking program in your PC in order to establish a GPRS connection.

Note: this procedure is similar to the way you configure an Internet connection from a specific ISP (Internet Service Provider).

If your network operator has provided you with an installation guide, please follow the instructions included in the guide.

Otherwise, the present manual indicates the installation process. As the Dial-up Networking is different for Windows 98 and Windows NT, two separate descriptions are provided. See "ANNEX: PC Data Configurations" on page 44

If you encounter problems during installation, please contact your distributor or network operator.

9.2   GSM DATA ACCESS TYPE

GSM data access type allows you to make both incoming and outgoing data calls in the same way as with a fixed line. Therefore, you can connect to the Internet using the same ISP (Internet Service Provider) that you would use with a fixed line.

The SIM card must support GSM data.

The network operator does not need to supply you with any specific information, and it is your ISP the one that provides you with the user name, password and installation information in order to establish an Internet connection.

Please contact your ISP for installation instructions.

Note: your PC should be configured in exactly the same way as if using the fixed line.

Tip: if you already have an Internet connection configured for the fixed line, you do not need to make any changes, just connect your PC to the FCT line instead of the fixed line.

Warning!: if your modem is an old model and is not able to send the CNG tone, you should include *02* previous to the called number(B-number) in order to indicate the FCT that the call to be made is a data call (Example: *02*B-number). This is not usually necessary, as most modems automatically send the CNG tone so that the data call is made automatically by the FCT.

Incoming data calls are received in the same way as using the fixed line.

*Note: if you have a SIM card that does not support separate voice and data numbers, the FCT does not recognize the type of incoming call. This means that the calling party will have to warn you each time a data call is about to be made. In this case, dial ***9902#** to prepare your FCT to receive a data call.*

10   <u>USING PBX</u>

For a PBX connection, first, you should:

- Check that the PBX fulfills the requirements for FCT connectivity (see "Installing an FCT connected to a PBX" on page 8)

- Follow all FCT installation steps specified in "Preparing your FCT" and "Installing the FCT on the wall" on pages 10 and 13

Warning!: the PBX may require specific programming; both this and the FCT installation should be done by specialized service personnel.

If you are using an analog PBX - Disconnect the telephone you have used for testing purposes and connect the cable from the chosen analog trunk of the PBX to the FCT telephone line.

If you are using a 2B+D ISDN digital PBX - Disconnect the telephone you have used for testing purposes and follow the instructions in the FI12 installation guide. *(See "FCT accessories" on page 41)*

If you are using a Least Cost Routing (LCR) programmed PBX, check your PBX programming guide to see how to program your PBX to make certain calls through the FCT trunk. Once LCR is programmed, make a call to a mobile telephone number. See if the call is established through the FCT and also check the speech quality. Ask the person who answers to call you back to confirm that the installed FCT can receive calls properly.

If the PBX does not offer the LCR option, choose the FCT trunk manually with a specific prefix. Check the installation in the same way as before.

If you encounter problems, please contact your Distributor or network operator.

11 ADVANCED FEATURES

If a DTMF telephone is connected to the FCT, the following features can be accessed

11.1 CHANGING VOLUME

During a call, you can increase or decrease the received volume level.

- Increase volume: dial R####

- Decrease volume: dial R****

11.2 DIVERTING CALLS (CALL FORWARD)

You can divert incoming calls to another phone number when you are unable to answer.

The following table shows the divert alternatives as well as the way to proceed to manage this function

Warning!: these dialing sequences may vary depending on your network operator. If these do not work, please consult your network operator or check the user guide provided with your subscription.

To manage diversion of calls …	With Function …	Dial …	You will hear…
Always	Activate	**21*Phone_number#	1 beep
	Deactivate	##21#	3 beeps
	Check status	*#21#	1 beep if activated 3 beeps if deactivated
When busy	Activate	**67*Phone_number#	1 beep
	Deactivate	##67#	3 beeps
	Check status	*#67#	1 beep if activated 3 beeps if deactivated
When no answer	Activate	**61*Phone_number#	1 beep
	Deactivate	##61#	3 beeps
	Check status	*#61#	1 beep if activated 3 beeps if deactivated
When out of reach	Activate	**62*Phone_number#	1 beep
	Deactivate	##62#	3 beeps
	Check status	*#62#	1 beep if activated 3 beeps if deactivated
All	Deactivate	##002#	3 beeps

Note: if instead of hearing beeps you hear a loud and low tone, this means that there has been an error in the activation or deactivation

11.3   RESTRICTING CALLS (CALL BARRING)

You can restrict certain types of calls that can be made or received. You need a **password** to turn a call restriction on or off. Initially, this password will be **0000**.

We recommend you to change it by dialing:

03OLD_PASSWORD*NEW_PASSWORD*NEW_PASSWORD#

The following table shows the restriction alternatives as well as the way to proceed to manage this function

Warning!: these dialing sequences may vary depending on your network operator. If these do not work, please consult your network operator or check the user guide provided with your subscription.

To manage restriction of calls …	With Function …	Dial …	You will hear…
All **outgoing** calls	Activate	*33*Password#	1 beep
	Deactivate	#33*Password#	3 beeps
	Check status	*#33#	1 beep if activated 3 beeps if deactivated
All **outgoing** international calls	Activate	*331*Password#	1 beep
	Deactivate	#331*Password#	3 beeps
	Check status	*#331#	1 beep if activated 3 beeps if deactivated
All **outgoing** international calls except your home country	Activate	*332*Password#	1 beep
	Deactivate	#332*Password#	3 beeps
	Check status	*#332#	1 beep if activated 3 beeps if deactivated
All **incoming** calls	Activate	*35*Password#	1 beep
	Deactivate	#35*Password#	3 beeps
	Check status	*#35#	1 beep if activated 3 beeps if deactivated
All **incoming** calls when your are abroad	Activate	*351*Password#	1 beep
	Deactivate	#351*Password#	3 beeps
	Check status	*#351#	1 beep if activated 3 beeps if deactivated
All	Deactivate	#330*Password#	3 beeps

Note: if instead of hearing beeps you hear a loud and low tone, this means that there has been an error in the activation or deactivation

11.4   MORE THAN ONE CALL (CALL WAIT, CALL HOLD, CALL TRANSFER, MULTIPARTY CALL)

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You can handle more than one call simultaneously. For example, you can put an ongoing call on hold, while you make or answer a second call, and then switch between the two calls.

You can also set up a Conference call to have a joint conversation with up to four people.

11.4.1 Call waiting service

If you wish to be able to receive a second call while another call is in progress, you must turn on the Call waiting service.

Note: if you are engaged in a fax or a data call, any other incoming calls are rejected.

Warning!: these dialing sequences may vary depending on your network operator. If these do not work, please consult your network operator or check the user guide provided with your subscription.

To manage Call waiting Function …	Dial …	You will hear…
Activate	*43#	1 beep
Deactivate	#43#	3 beeps
Check status	*#43#	1 beep if activated 3 beeps if deactivated

Note: if instead of hearing beeps you hear a loud and low tone, this means that there has been an error in the activation or deactivation

11.4.2 Making a second call

You can only put one call on hold while you make a second call.

- To hold the active call: press the **R** key on your telephone and proceed to make the second call

11.4.3 Receiving a second call

If the call waiting service is on, you hear a tone in the telephone when you receive a second call.

- To continue the ongoing call and reject the waiting call: press **R 0**

- To put the ongoing call on hold and answer the waiting call: press **R 1**

- To end the ongoing call and answer the waiting call: press **R 2**

Note: if divert when busy is on, the waiting call is diverted to the number you have specified

11.4.4 Conference calls

In a conference call, you can have a joint conversation with up to four other people.

To create a conference call, you must have one active call and one call on hold.

- To join the two call into a conference call: press **R 3**

You can put the conference group on hold (press **R**) in order to:

- make a new call

- add the new call to the conference group: press **R 3**

To release a specific call from the conference group: press **R 1 X** (where X is the number of order of the call)

11.4.5 Connecting active and held calls

You can connect the active and held calls, but abandon the conversation. To do this, press **R 4**

11.5 PHONEBOOK (ABBREVIATED DIALING)

You can store telephone numbers in either the SIM card memory of the FCT memory. Up to 99 telephone numbers can be stored in each of them.

The following table shows how to manage the phonebook with the 99 memory positions (Pos)

Warning!: Pos has to have two digits always. For example, memory position number 1 has Pos=01

To manage the phonebook in …	With Function …	Dial …	You will hear…
SIM card memory	Store	**51*Pos*Phone_number#	1 beep
	Delete	#51*Pos#	3 beeps
	Check position	*#51*Pos*Phone_number#	1 beep if memorized 3 beeps if not memorized
	Dial	Pos#	Dialing …
FCT memory	Store	**51*Pos*Phone_number*1#	1 beep
	Delete	#51*Pos*1#	3 beeps
	Check position	*#51*Pos*Phone_number*1#	1 beep if memorized 3 beeps if not memorized
	Dial	Pos*	Dialing …

Note: if instead of hearing beeps you hear a loud and low tone, this means that there has been an error in the activation or deactivation

11.6   VOICE MAIL

The answering service of your network allows callers to leave a voice message when you cannot answer your calls.

If you have voice mail, you will hear 3 beeps before the dial tone, as soon as you pick up the receiver to make a call.

Note: if you have the DA20 display adapter accessory (See "FCT accessories" on page 41), a 👓 *icon will show when you have voice mail.*

Call your voice mail number in order to receive the voice mail message.

11.7   SENDING TONE SIGNALS

During a call, you can press keys 0-9, * and # to perform banking by phone or other interactive services, or control an answering machine.

11.8   CONTROLLING CALL TIME (MINUTE MINDER)

If the minute minder is activated, you hear a beep once every minute during a call as a reminder of the duration of the ongoing call.

To manage Minute minder Function …	Dial …	You will hear…
Activate	**42#	1 beep
Deactivate	#42#	3 beeps
Check status	*#42#	1 beep if activated 3 beeps if deactivated

Note: if instead of hearing beeps you hear a loud and low tone, this means that there has been an error in the activation or deactivation

11.9   EMERGENCY NUMBER (HOT LINE)

With the hot line service, you can program the FCT to automatically dial a number (emergency or another one) within a few seconds (timer) after the telephone receiver is lifted.

To manage the hot line …		Dial …	You will hear…
Activate		**53*Phone_number**timer#	1 beep
Deactivate		#53#	3 beeps
Check status for…	service	*#53#	1 beep if activated 3 beeps if deactivated
	service and phone number	*#53*Phone_number#	1 beep if activated 3 beeps if deactivated
	service, phone number and timer	*#53*Phone_number**timer#	1 beep if activated 3 beeps if deactivated

Note: if instead of hearing beeps you hear a loud and low tone, this means that there has been an error in the activation or deactivation

11.10 TWO VOICE LINES (ALTERNATE LINE SERVICE)

If your SIM card supports the **Alternate line service**, your FCT has two voice lines with different phone numbers, separate bills and perhaps different subscription services.

With this functionality, you can have one only FCT & POT for both your personal and work phone, for instance. If necessary, you may switch from one line to the other.

You will receive all the incoming calls addressed to any of your numbers independently of the selected line, but your outgoing calls will be charged to the line you have selected (1 or 2).

Warning!: these dialing sequences may vary depending on your network operator. If these do not work, please consult your network operator or check the user guide provided with your subscription.

To manage Alternate Line service Function …	Dial …	You will hear…
Activate Line 1	**591#	1 beep
Activate Line 2	**592#	1 beep
Check status Line 1	*#591#	1 beep if activated 3 beeps if deactivated
Check status Line 2	*#592#	1 beep if activated 3 beeps if deactivated

Note: if instead of hearing beeps you hear a loud and low tone, this means that there has been an error in the activation or deactivation

11.11 SIM CARD SECURITY

11.11.1 <u>To manage your SIM card</u>

Most SIM cards are locked at the time of purchase. If the SIM card lock is on, you have to enter your PIN (Personal Identity Number) the first time you use your FCT. see "Enter PIN" on page 11.

Note: once you have entered the PIN code for the first time you will not have to enter it again unless you change your SIM card. The FCT performs this operation automatically in case of power failure.

If you enter your PIN incorrectly three times in a row, the SIM card is blocked.

Note: if you have the DA20 display adapter accessory (See "FCT accessories" on page 41), and "Enter PUK" message will show on your display indicating that your SIM card is blocked.

11.11.2   To unblock your SIM card

To unblock your SIM card, you need to enter your PUK (Personal Unblocking Key), which is supplied by your network operator.

The procedure to enter the PUK is exactly the same as for entering the PIN.

Note: if you enter the wrong PUK ten times in a row, your card is permanently blocked. If this happens, you should contact your network operator.

11.11.3   To change your PIN

Your can change the PIN in the SIM card by dialing from the fixed line telephone connected to the FCT the following sequence:

⋆⋆04⋆OLD_PIN⋆NEW_PIN⋆NEW_PIN#

11.11.4   To unblock your SIM card while changing your PIN

In order to unblock your SIM card and change the PIN at the same time, please dial the following sequence:

⋆⋆05⋆PUK⋆NEW_PIN⋆NEW_PIN#

12   TROUBLESHOOTING AND FCT INDICATORS

This chapter describes the procedures to identify and, if possible, correct problems that might occur with the FCT or its installation. Some problems require that you call your network operator, but most problems you encounter you can easily correct yourself.

12.1   LIGHT INDICATORS

The FCT has two Light Indicators: red and green.

The **green light** indicates the network signal strength, according to the following table:

Number of Green Light flashes	Network signal strength
0	Unacceptable (no networks)
1 - - -	Acceptable
2 - - - - - -	Good
3 - - - - - - - - -	Very good
Steady ----------------------	Excellent

Note: if you have the DA20 display adapter accessory (See "FCT accessories" on page 41), a "No networks" message will show on your display when no network is available. If another network to which your SIM card is locked is available, the message "Emergency only" will appear instead, indicating that you will be able to make emergency calls only.

The **red light** indicates the FCT power supply situation:

Red Light	Power supply situation
ON -----------------	FCT power supply is on
Flashing - - - - -	FCT is powered from battery back-up
OFF	FCT power is off (FCT switched off)

Note: if you have the DA20 display adapter accessory (See "FCT accessories" on page 41), a "Power failure" message will show on your display when the FCT is powered from the battery backup.

When both red and green light indicators are **flashing simultaneously**, it means that the FCT is under **Alarm conditions**. In this situation, ONLY EMERGENCY CALLS can be made.

Depending on the number of flashes, the table shows the type of alarms that may be happening.

Note: if you have the DA20 display adapter accessory (See "FCT accessories" on page 41), the specific alarm status message will show on your display.

Simultaneous flashing	Alarm status	Do this …
1 flash synchronized Red - - - - - - - - Green - - - - - - - -	Enter PIN	Insert the correct PIN. See "Enter PIN" on page 11
	Enter PUK	Insert the correct PUK. See "Enter PIN" on page 11
	Insert SIM	Insert the SIM card in the FCT.
	SIM error	The SIM is failing. Check the SIM or contact your network operator.
	Wrong network Wrong subnetwork	The FCT is SIM-locked to a specific network and the inserted SIM card does not correspond to this network. Check the SIM or contact your network operator.
	Wrong SIM	The FCT is PIN-locked and can only be used with one SIM card. Introduce the original SIM or contact your network operator.
2 flashes synchronized Red - - - - - - - - Green - - - - - - - -	FCT locked	The FCT lock function is enabled. Contact your distributor or network operator.
	Wrong <u>XXX</u>CK (where <u>XXX</u> is the name of the specific password)	The FCT is blocked due to wrong security password introduction. Contact your distributor or network operator.
3 flashes synchronized Red - - - - - - - - - - - - Green - - - - - - - - - - - -	FCT failure	Check connections of the FCT or contact your distributor or network operator.
	Ring-back test ongoing	Pick up your telephone in order to end the ring-back test

The following table summarizes the different operating status of your FCT depending on the light indicators, and what to do if a problem is encountered.

If the problem persists, please contact your distributor or network operator.

Light indicators status		
If you see…	**It means…**	**Do this…**
Red light ON Green light ON or flashing	• AC Power is ON • The FCT is connected to cellular network and available for use. **Normal operation mode**	• Start using your FCT. • If Green light is flashing, see "FCT location" on page 13 • If you are unable to make a call, check the telephone cable connection or the PBX connections and program
Both lights OFF	• AC Power is OFF	• Verify that the AC power plug is securely connected to the Ac power outlet. • Check that the DC power cord is connected to the FCT. • Check the circuit breaker or fuse for the AC electrical circuit that supplies power to the ac outlet being used by the FCT.
Red light ON Green light OFF	• AC Power is ON. • The FCT is not connected to the cellular network and is not available for use	• Verify that the antenna is properly installed. • Verify you have installed the FCT in the best location (see "FCT location" on page 13)
Red light Flashing Green light ON or flashing (not simultaneously)	• AC power is OFF. The FCT is operating using the battery back-up power. • **The FCT is connected to the cellular network and available for use.**	• Verify that the AC power cords is securely connected to the AC power outlet. • Check that the DC power cords is connected to the FCT. • Check the circuit breaker or fuse for the AC electrical circuit that supplies power to the AC outlet being used by the FCT. • If Green light is flashing, see "FCT location" on page 13
Red light Flashing Green light Flashing (simultaneously)	• Alarm status • The FCT is blocked or it has an internal fault.	• Check the Alarm status table above • Contact your distributor or network operator for assistance.

12.2   AUDIBLE TONES

The FCT generates audible tones in your telephone set, thus providing the same service characteristics as the one given by the traditional fixed network.

The following table describes the nature of the main tones you will get when using the unit. Other standard call progress tones, such as busy tone, number obtainable or ring back tone, are provided directly by the network.

Note: some tones can vary depending on your network operator

Tone	Name	Nature	IT MEANS...
1	Dial	Regular tone when picking up the phone	The phone is in service and you can start your call
2	Special dial	Intermittent long-cadenced tone when picking up the phone	The phone is in service and you can start your call, but you have some subscriber service (call forward, barring or hot line) activated
3	No service	Intermittent short-cadenced tone when picking up the phone	No service available. Check "Light indicators" on page 6
4	Howler	Loud and acute tone	You have left the handset lifted for too long without any call in progress
5	Minute minder	One beep every minute while in conversation	It informs you about how long the call is being in progress
6	Voice Mail alert	When picking up the phone, three beeps and then regular dial tone	You have a voice mail in your voice mailbox. You need to call your mailbox to retrieve it. See "Voice mail" on page 30
7	Affirmative	One beep	Subscriber service successfully activate or positive indication when interrogation
8	Negative	Three beeps	Negative indication when interrogation
9	Error	One loud and low tone	Subscriber service not activated or programming procedure not successfully performed

13   <u>FCT TECHNICAL DATA</u>

GSM AIR INTERFACE

Frequency Bands: Triple-Band E-GSM 900, GSM 1800 and GSM 1900

E-GSM 900

Frequencies: TX 880-915 MHz, RX 925-960 MHz

RF power: Maximum 2 W (33 dBm), Power class 4

GSM1800

Frequencies: TX 1710-1785 MHz, RX 1805-1880 MHz

RF power: Maximum 1 W (30 dBm), Power class 1

GSM1900

Frequencies: TX 1850-1910 MHz , RX 1930-1990 MHz

RF power: Maximum 1 W (30 dBm), Power class 1

Data capabilities: multislot GPRS Class B and HSCSD (Data rates depend on GSM operator services)

Speech codecs: Full Rate, Enhanced Full Rate and Half Rate

FCT INTERFACES

- Telephones: RJ11 (a/b 2-wire line); POTS interface
- RS232 port: DB-9 Serial COM interface
- GSM antenna: SMA plug- female (50 W)
- SIM card: Small plug-in card, 3V or 5V type
- Input Vdc: 7.5 Vdc; 0.8 A (connector: EIAJ RC-5320A class 4, male)

TELEPHONE INTERFACES (POTS)

- Telephones: Speech
- Analog Fax: Group 3 Fax transmission

- Analog Data: V.90, V.34, V.32bis, V.32, V.22bis, V.22, V.23, V.21, Bell 212A & 103
- CLI: ETSI DTMF and V.23; Bellcore FSK
- Line Impedance: 600 ohm (default)
- Loop Current: 25 mA (off-hook)
- Open loop voltage: 48 V (on-hook)
- Loop resistance: < 900 ohm (off-hook)
- Ringing voltage: 45 Vrms
- Ring Load: 3 REN; up to 3 telephone devices
- Call Control signaling: polarity reversal and loop-break

RS232 INTERFACE

- Data services: all applicable GSM 7.07 AT commands
- SMS: all applicable GSM 7.05 AT commands

ANTENNA (included)

- Frequency Bands: Triple-Band E-GSM 900, GSM 1800 and GSM 1900
- Characteristics: omnidirectional

POWER SUPPLY (included)

- AC Input: 100 - 240 Vac; 47 - 63 Hz 3 pole AC inlet connector (IEC 320 power inlet)
- Available plugs: EU, UK, USA, and AU

ENVIRONMENTAL

- Operating Temperature: -10ºC to +55ºC
- Operating Humidity: 20 – 75 %
- Storage Temperature: -40ºC to +85ºC
- Storage Humidity: 5 - 95%

PRODUCT PRESENTATION

Basic Kit: F251m Business, Power Supply, Mains cable, Wall mount bracket, Internal antenna, User guide

FCT Size: Height 148 mm, Width 165 mm, Depth 45 mm

FCT Weight: 300 grams

14   <u>FCT ACCESSORIES</u>

The F200 series terminals benefit from a wide range of accessories, which ensure the best and easiest way to install, serve and maintain the terminals, enhancing their functionalities.

Only these approved-by-Ericsson accessories will guarantee the quality and performance of the terminals.

14.1   ISDN ADAPTER FI12

The FI12 Adapter has been specifically designed to provide a direct interface between the analog port of the FCT (F250m, F251m, F2412m and F271m) and a PBX with basic access (BA), 2B+D ISDN trunk lines.

The FI12 Adapter behaves in the same way as an ISDN Network Termination in a point-to-point configuration and provides two analog speech channels, each of which is linked to an FCT via the analog trunk.

FI12 Specifications:

- Protocol layers: ISDN-BA S/T Europe DSS1 interface via RJ45 socket according to protocol layers 1, 2 and 3.

- S/T interface: only works in point-to-point configuration (FI12-PBX)

- S/T interface feeding voltage: not provided by the adapter

- Speech calls: 2 simultaneous speech calls availability

- FI12 interfaces: 2 analog ports for FCT connection // 1RJ45 connector for PBX connection // 1RS232 port for configuration and maintenance purposes // 7.5 VDC, EIAJ Standard rc-5320 CLASS 4 power connector

- Reset button

- One red LED indicating AC power

- Two green LEDs indicating calls in progress and the channel in use

- Environmental range: -10ºC to +55ºC; RH 85% at +50ºC

FI12 features:

- CLIP (Call Line Identification Protocol)

FI12 Size: Height 132mm, width 99mm, depth 34 mm

FI12 Weight: 208 grams

14.2 DISPLAY ADAPTER DA20

The FCT display -DA20- is easy to install: simply plug it in into the telephone line in the most suitable place and you will benefit from the following features:

- FCT phone line direct feeding
- FCT real-time status indication: operator's name, radio signal…
- Manual time-setting
- Calling Line Identification (CLI)
- Storage of incoming calls
- SMS received display and storage (Very useful functionality for pre-paid subscribers)

14.3 ANTENNAS

In areas where coverage is poor, the following accessory antenna can be used to enhance the FCT performance:

- **External triple omnidirectional antenna**. For installation or in places where indoor coverage is unstable. Band: dual 900/1800/1900 MHz. Gain: 2bBi. Cable: 3m. Connector: SMA male.

- **Outdoor directional antenna**. The directional antenna is intended to be wall mounted by means of a bracket. It provides with the maximum gain among the whole range of antennas for the FCT. Band: 900 MHz. Gain: 10bBi. Cable: 7.5 m. Connector: SMA male.

14.4 POWER SUPPLY

The FCT offers different optional alternatives for back up systems:

- **Rechargeable lead-acid batteries**: 6V, 1.2-1.3Ah with 2.5 hours-continuous conversation, 10 hours stand-by.

- **Alkaline AA batteries**. In order to adjust 6 alkaline batteries sized AA inside the terminal, an accessory **AA batteries holder** (size: 99.01mm X 51.69mm) is provided.

- **DC/DC power adapter**: it is provided in order to use the DC voltage (car battery, solar cell, etc.) to feed the FCT. DC input: 12-24 VDC.

Due to the standard nature of these batteries, they are not supplied by Ericsson.

No NiMH or NiCd rechargeable batteries are allowed.

Warning!: Ericsson recommends precaution when handling lead-acid batteries and also special attention over storage and power loss issues. See Safe and Efficient Use on page 57

15   ANNEX: PC DATA CONFIGURATIONS

15.1   WINDOWS 98 GPRS SET-UP

Warning!: your PC must have the Dial-up Networking and the TCP/IP protocol installed within the network components. You can check this in 'Start->Settings->Control Panel' and double clicking on 'Network'. If not, these components have to be previously added from your Windows installation disk.

To configure your GPRS connection under Windows 98 in your PC, follow steps 1 to 9:

1) Go to 'My Computer' and double-click 'Dial-Up Networking'.

2) Double-click on 'Make New Connection' so that the wizard starts. Type a name for the connection and select the installed analog modem from your computer, then click on 'Next'.
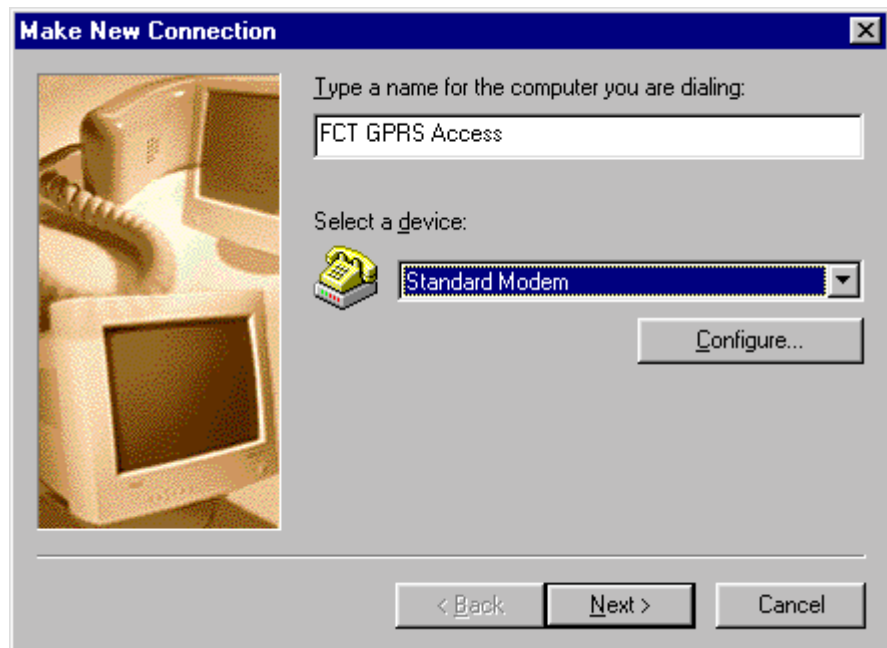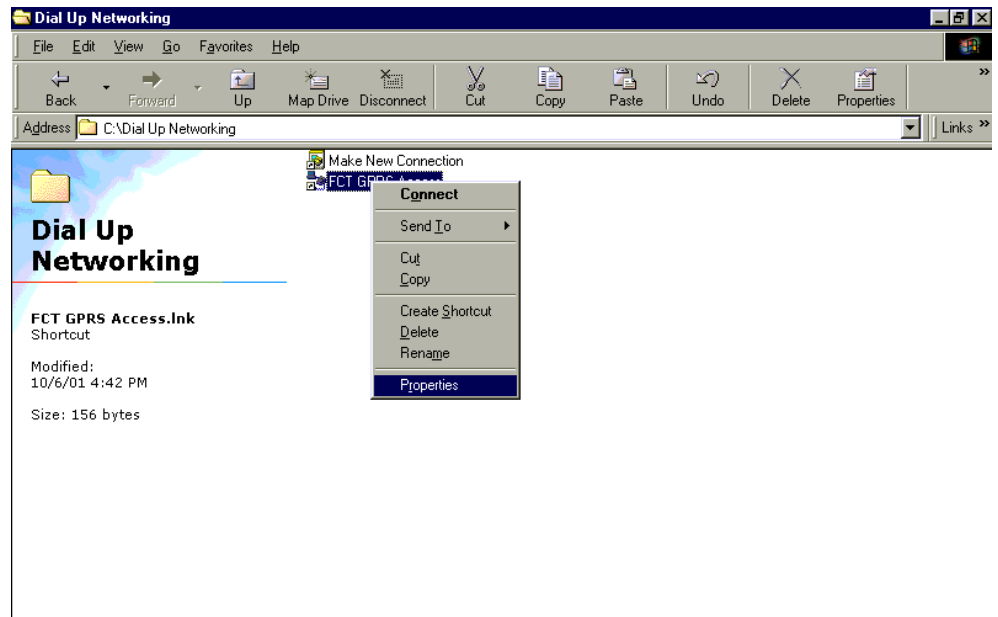

3) In the 'Telephone number:' field enter: ***98#**, then click 'Next'.
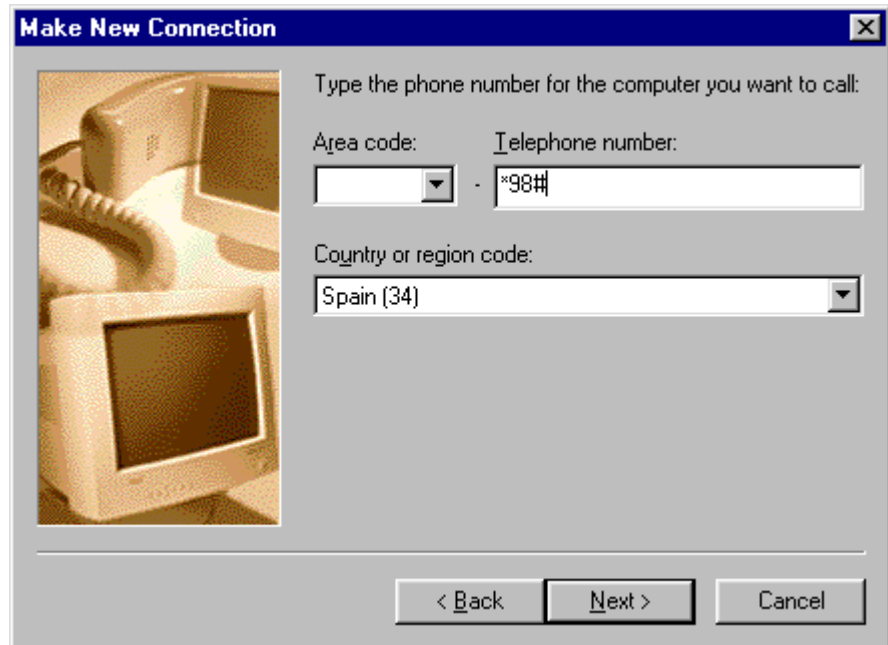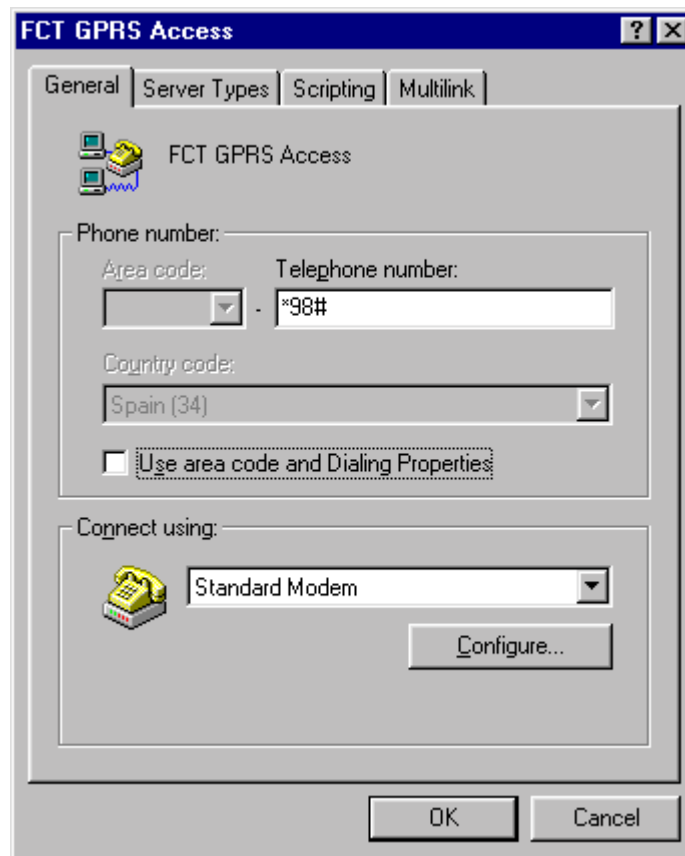
4) Click on 'Finish'.
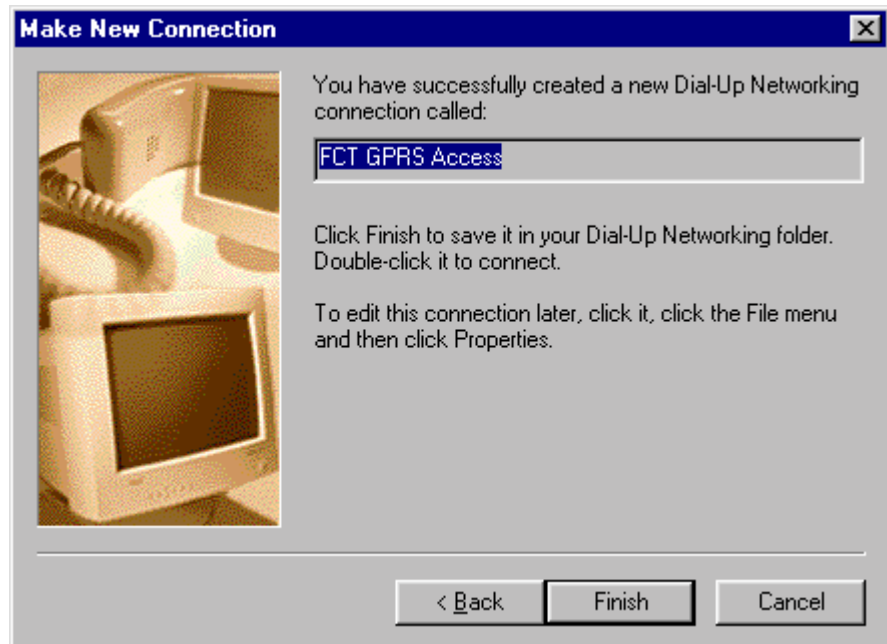
5) In the 'Dial-Up Networking' folder, right-click on the created connection and select 'Properties'.

6) In the 'General' tab, **turn off** 'Use area code and Dialing Properties'.

7) In the 'Server Types' tab:

– 'Type of Dial-Up Server': select 'PPP: Internet, Windows NT, Windows 98' from the list.

– Check that 'Advanced options' and 'Allowed network protocols' are filled in as shown below:
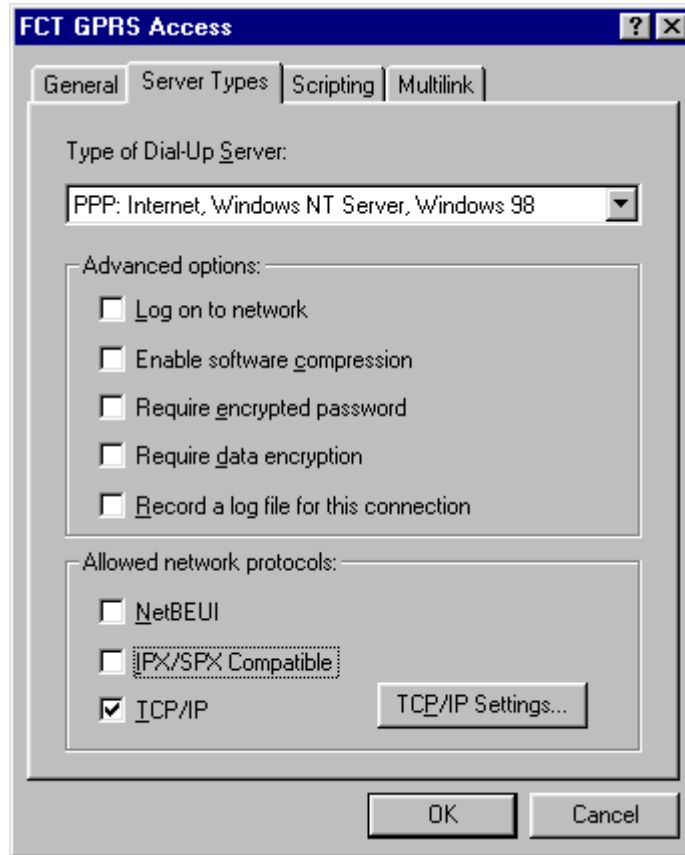
8) Push the 'TCP/IP Settings…' button.

– 'Server assigned IP address' must be **checked**.

– 'Server assigned name server addresses' must be set if the network operator requires it. If the network operator provides **DNS addresses**, then these must be added once 'Specify name server addresses' is marked. (Example shown in figure below with primary and secondary DNS addresses provided by operator being 111.111.111.111 and 222.222.222.222)

– 'Use IP header compression' optional.

– 'Use default gateway on remote network' **turned on**.
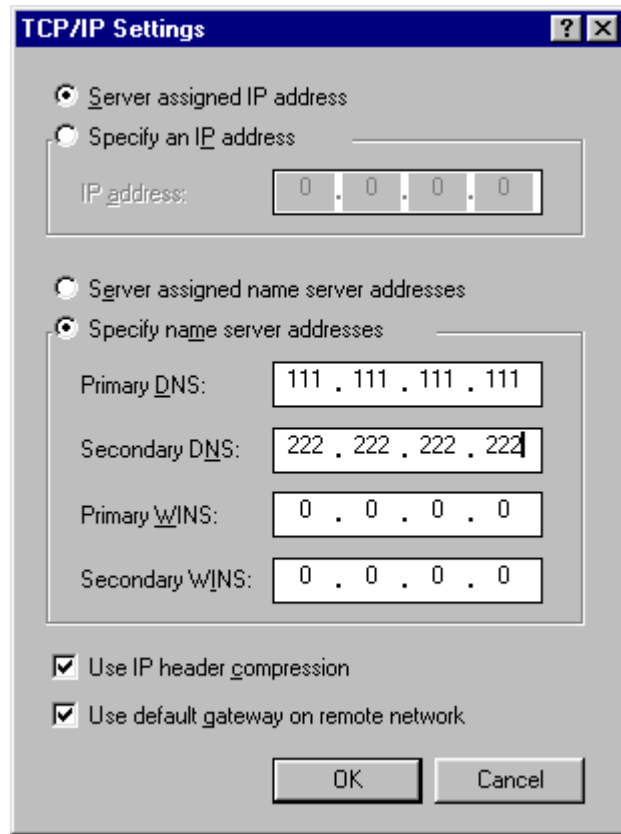

9) Click 'OK' all the way to update the configuration.

You have now installed the GPRS connection. To connect to the GPRS network, follow steps 1 to 3:

1) Go to 'My Computer'-> Dial-Up Networking' and open the previously configured connection.

2) Type the **user name** and **password** provided by your network operator and verify that the telephone number is ***98#.** Then press 'Connect'.

3) Once you are connected, you may use your connection as an ordinary Internet connection.
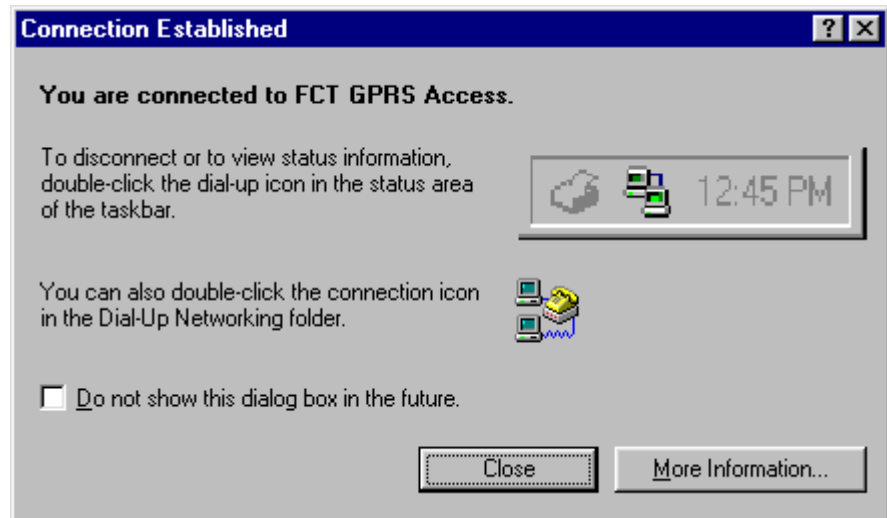
Note: if your network operator has provided you with a Proxy Address, you should configure your Web browser (Internet Explorer, Netscape, etc.) accordingly.

15.2   WINDOWS NT GPRS SET-UP

Warning!: your PC must have the Remote Access Service and the TCP/IP protocol installed within the network components.   You can check this in 'Start->Settings-

>Control Panel' and double clicking on 'Network'. If not, these components have to be previously added from your Windows installation disk.

To configure your GPRS connection under a Windows NT PC, follow steps 1 to 8:

1) Go to 'My Computer' and double-click 'Dial-Up Networking'.

2) If there are no previously configured connections, the following wizard will be showed up. Type a name for the connection and tick 'I know all about phonebook entries and would rather edit the properties directly'. Then click on 'Finish'; edit properties of this new connection and go to step 4) to continue with the configuration.

3) Instead of the wizard window, the following window might come up. In this case, push 'New…' button.
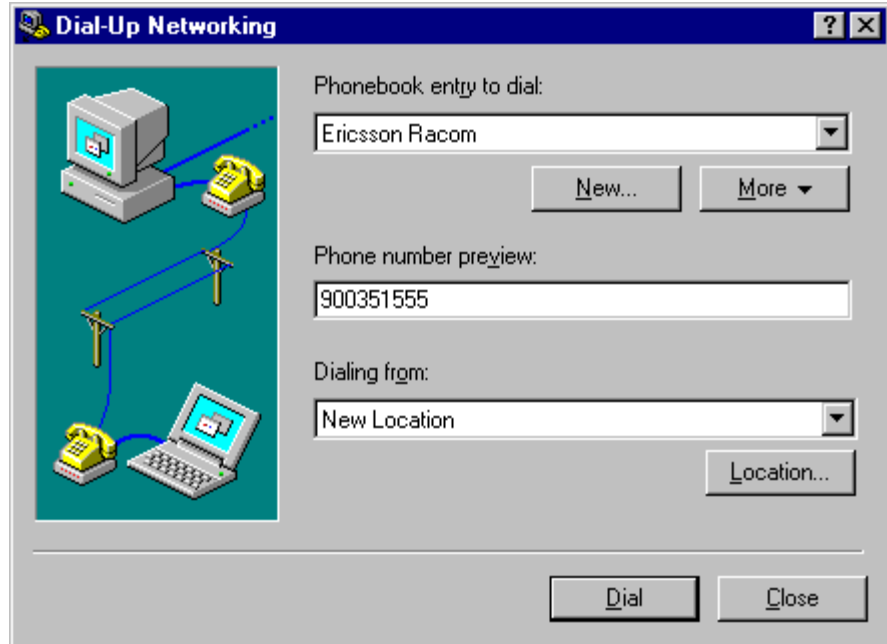
4) Within the 'Basic' tab, type a name for the connection in the 'Entry name' field. In the 'Dial using' field select the analog modem already installed on your PC.
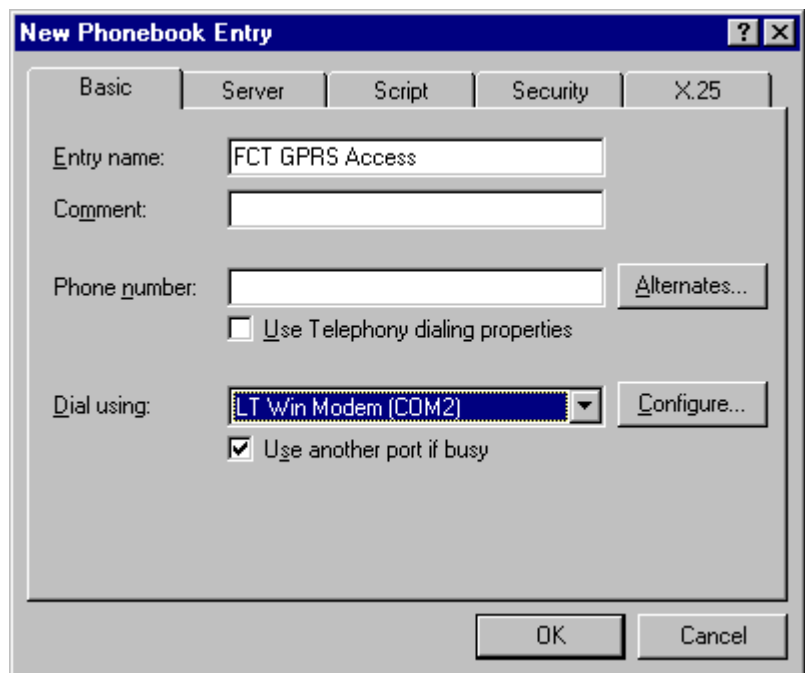
5) In the 'Server' tab select 'PPP: Windows NT, Windows 95 Plus, Internet' from the 'Dial-up server type' list. Assure 'TCP/IP' is the only ticked protocol within the 'Network protocols' box.
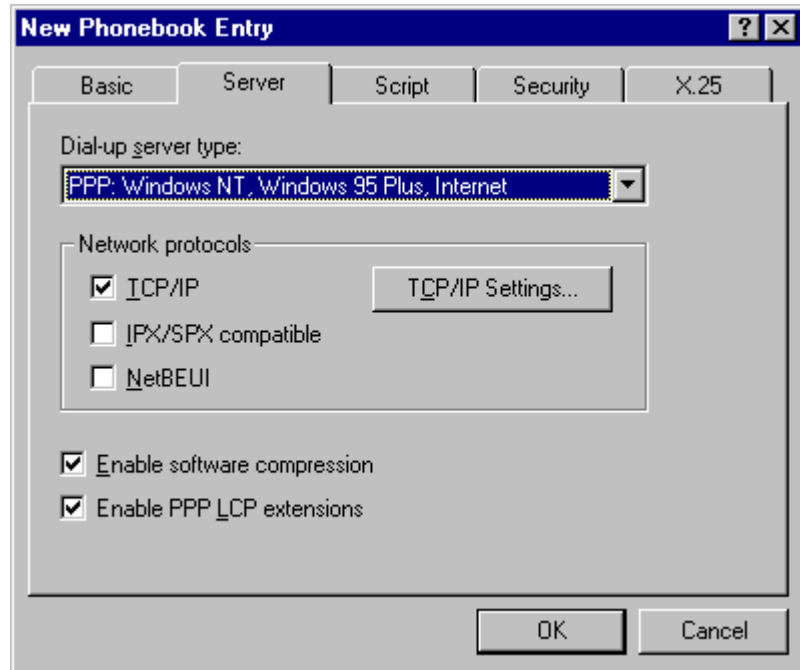
6) Push the 'TCP/IP Settings…' button.

– 'Server assigned IP address' must be **checked**.

– 'Server assigned name server addresses' must be set if network operator requires it. If the network operator provides **DNS addresses**, then these must be added once 'Specify name server addresses' is marked.(Example shown in figure below with primary and secondary DNS addresses provided by operator being 111.111.111.111 and 222.222.222.222)

– 'Use IP header compression' optional.

– 'Use default gateway on remote network' **turned on**.
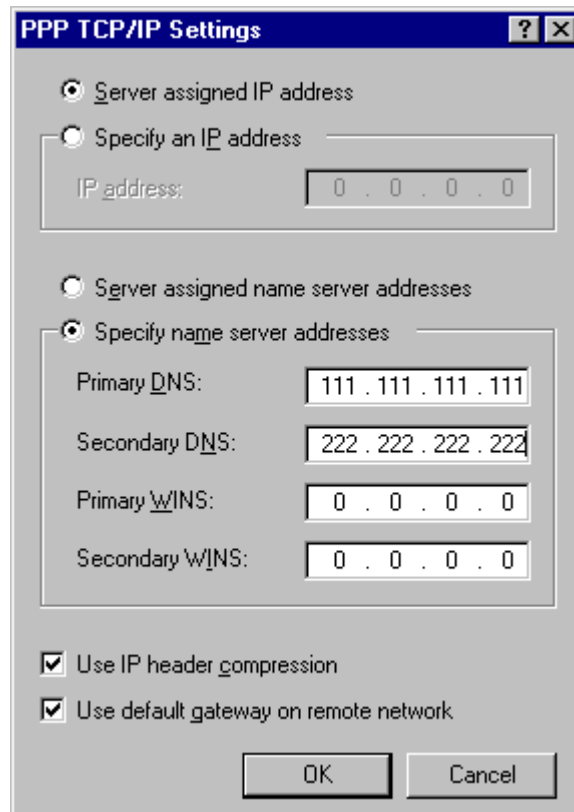
7) Press 'OK' and go to the 'Security' tab. Select 'Accept any authentication including clear text'.
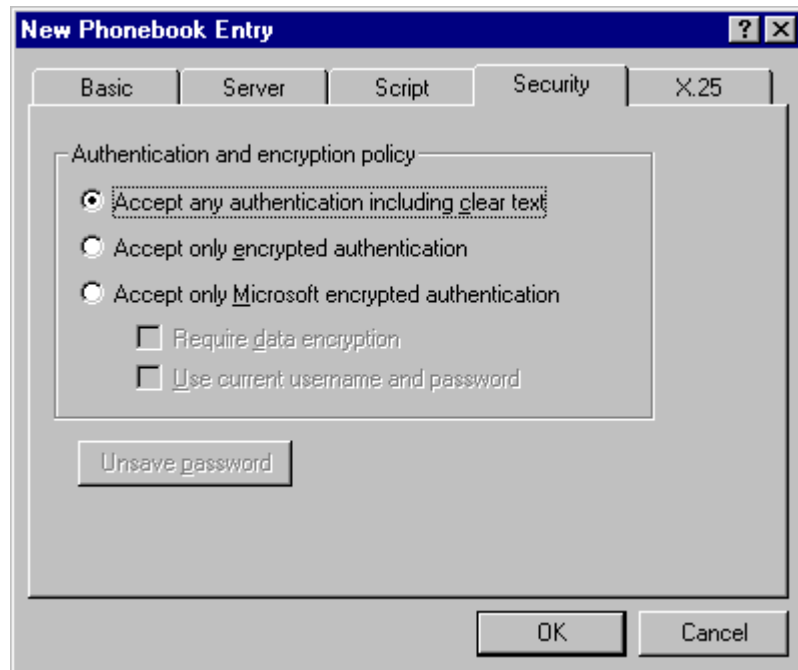
8) Click 'OK' all the way to update the configuration.

You have now installed the GPRS connection. To connect to the GPRS network, follow steps 1 to 3:

1) Go to 'My Computer -> Dial-Up Networking' and select the Dial-Up Networking connection previously configured. Verify that the telephone number is ***98#.** Then press 'Dial'.
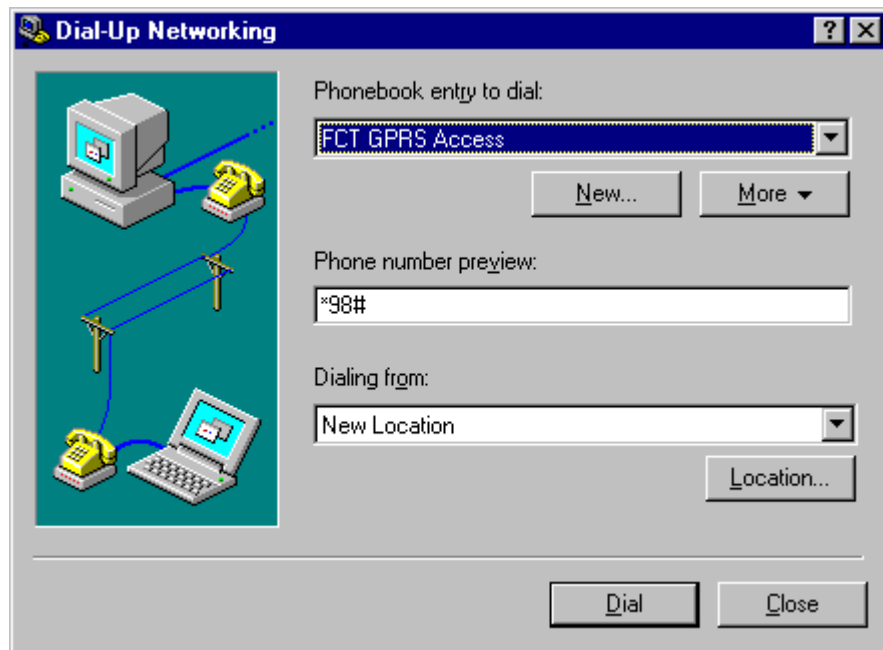
2) Type the **user name** and **password** provided by your network operator. If a 'Domain' field is present, then leave it blank.

Connect to FCT GPRS Access

Enter a user name and password with access to the remote network domain.

User name: myusername

Password: *******

Domain:

☐ Save password

OK   Cancel

3) Once you are connected, you may use your connection as an ordinary Internet connection.

Connection Complete

You have successfully connected to the remote server. You may now use the usual Windows NT programs and utilities as if you were directly connected to the network.

Right-click the Dial-Up Networking Monitor on the task bar to hang up or check the status of your connection.

The 'Close on dial' option hides the phonebook while dialing and closes it as soon as you connect.

☐ Close on dial

☐ Do not display this message again

OK

Note: if your network operator has provided you with a Proxy Address, you should configure your Web browser (Internet Explorer, Netscape, etc.) accordingly.

16   SAFE AND EFFICIENT USE

Note: please read this information before using your FCT.

Save this user guide since it contains important safety information and operating instructions.

16.1   PRODUCT CARE

- **Do not** expose your FCT to liquid or moisture.

- **Do not** expose your FCT to extreme high or low temperatures.

- **Do not** expose your FCT to lit candles, cigarettes, or cigars, or to open flames etc.

- **Do not** attempt to disassemble your FCT, a broken warranty seal will void the warranty. The product does not contain consumer serviceable components. Only Ericsson Service Points or Certified Service Centres should perform service.

- **Do not** use any accessories other than Ericsson originals with the exception of products approved by Bluetooth Qualification Review Board. Use of non-Ericsson original accessories may result in loss of performance, damage to the product, fire, electric shock or injury. The warranty does not cover product failures that have been caused by use of non-Ericsson original accessories.

- **Treat your product with care, keep it in a clean and dust-free place.**

16.2   ANTENNA CARE

- Use only an antenna that has been specifically designed for your FCT. Use of unauthorized antennas, modifications, or attachments could damage the FCT and may violate the appropriate regulations, causing loss of performance and radio frequency (RF) energy above the recommended limits.

- Do not hold or touch the antenna when the FCT is in use. Holding or touching the antenna affects call quality.

- Do not use the FCT if the antenna or antenna cable is damaged or missing.

- Do not place the telephone cord or the power supply cord on or near the FCT antenna or antenna cable.

- Do not cover or place an obstruction on or around the antenna.

16.3   RADIO FREQUENCY ENERGY

Your FCT is a radio transmitter and receiver. When the FCT is turned on, it receives and transmits radio frequency (RF) energy. The system that handles your call when you are using your FCT controls the power level at which your FCT transmits.

All Ericsson terminals are designed to not exceed the limits for exposure to RF energy set by national authorities and international health agencies.

SAR (Specific Absorption Rate) measurements are usually performed for products that are normally used at the ear. As the FCT is not to be used close to the human body, as it is at least 20 cm apart from the telephone device (See installation instructions), SAR measurements are not applicable to the FCT.

16.4   ELECTRONIC DEVICES

Most modern electronic equipment, for example equipment in hospitals and cars, is shielded from RF energy. However, certain electronic equipment is not, and so Radio Frequency (RF) energy from the FCT terminal may affect some electronic equipment, therefore:

- Do not use your FCT near medical equipment without requesting permission.

- Do no use your FCT in aircrafts.

- Pacemaker patients should be aware that the use of an FCT very close to a pacemaker might cause the device to malfunction.

- Some hearing aids might be disturbed if placed very near the FCT.

Multiple electrical devices connected to the AC power outlet that is used by the FCT terminal may generate excessive interference to the FCT terminal.

16.5   POTENTIALLY EXPLOSIVE ATMOSPHERES

Do not use the FCT near a gas leak. Use a telephone away from the area of the suspected gas leak to immediately report it.

Turn off the FCT in areas with a potentially explosive atmosphere, for example: gas stations, below deck on boats, fuels or chemical transfer or storage facilities, and areas where the air contains chemical or particles, such as grain, dust or metal powders. It is rare, but your FCT or its accessories could generate sparks.

Do not transport or store flammable gas, liquid or explosives in the areas where the FCT is installed.

16.6   POWER SUPPLY

- Ensure that your AC power outlet is adequately grounded.

- Connect the power supply cord only to the AC power outlet that meet the specifications marked on the FCT power supply.

- Never alter the AC power cord or plug. If necessary have the correct outlet installed by a qualified electrician or call your service provider for assistance.

- To reduce risk of damage to the electric cord, remove it from the outlet by holding onto the AC adapter rather than the cord.

- Make sure the cord is positioned so that it will not be stepped on, tripped over or otherwise subjected to damage or stress.

16.7   CHILDREN

DO NOT ALLOW CHILDREN TO PLAY WITH YOUR FCT SINCE IT CONTAINS SMALL PARTS THAT COULD BECOME DETACHED AND CREATE A CHOKING HAZARD.

16.8   DISPOSING OF THE PRODUCT

The product should never be placed in municipal waste. Please check local regulations for disposal of electronic products.

16.9   BATTERY INFORMATION

If you use the battery back-up function of the FCT, please take into account the following information:

Lead Battery

- Before installing the battery in its compartment, be sure to connect the battery cable properly: do not connect the positive terminal of the battery cable to the negative terminal on the battery.

- Make sure to connect the FCT power supply first, before you connect the battery to the FCT.

- The FCT will automatically recharge the lead battery

- The first time the battery is used, it is recommended that you charge it for 3 hours if you intend to power the FCT from the battery only.

A rechargeable battery has a long service life if treated properly.

Warning!: when a battery is not installed or is connected to an FCT that is switched off, it should be recharged during 24 hours every 6 months.

- Do not expose the battery to extreme temperatures, never above +60°C. For maximum battery capacity, use the battery in room temperature.

- Do not let the metal contacts on the battery touch another metal object. This could short-circuit and damage the battery.

- Do not expose the battery to open flames. This could cause the battery to explode.

- Do not expose the battery to liquid.

- Do not allow the battery to be put into the mouth. Battery electrolytes may be toxic if swallowed.

- Do not puncture or burn the battery. The battery contains corrosive liquids and materials.

- If the battery leaks and the liquid inside spills on the skin or clothing, immediately wash it off with plenty of clean water. If the liquid splashes into eyes, immediately flush the eyes with plenty of clean water and consult a doctor.

AA batteries

- Use only AA-1.5V alkaline batteries with the FCT battery holder accessory. See "FCT accessories" on page 41

- If you use rechargeable AA batteries, these will need to be recharged using an external charger, never in the FCT.

16.10   DISPOSING OF THE BATTERY

The battery should never be placed in municipal waste. Please check local regulations for disposal of batteries.

16.11   MOVING OR STORING THE FCT

Turn off the FCT by disconnecting the power supply as well as the battery (if it is installed).

If you are transporting the FCT on an aircraft, you will be asked to remove the battery from the unit. For updated information about the transportation and use of wireless communication equipment, contact the appropriate local and national regulatory agency or your service provider.

16.12   ACCESSING THE BATTERY COMPARTMENT

This label appears under the battery compartment indicating that the FCT should always be **switched off** before attempting to access the battery compartment

17   LIMITED WARRANTY

17.1   LIMITED WARRANTY CONDITIONS

Thank you for purchasing this Ericsson Product. To get the maximum use out of your new product, we recommend that you follow a few simple steps:

- Read the Guidelines for safe and efficient use.

- Read all of the terms and conditions of the Ericsson Warranty listed below.

- Save your original receipt, which is necessary for warranty repair claims. Should your Ericsson Product need warranty service, you should return it to the dealer from whom it was purchased or contact your local Ericsson helpdesk for further information.

17.2   ERICSSON WARRANTY

Ericsson warrants this Product to be free from defects in material and workmanship at the time of its original purchase by a customer, and for a subsequent period of one (1) year.

All accessories for the Product are covered by a warranty period of one (1) year from the date of original purchase by a customer.

17.3   WHAT ERICSSON WILL DO

If, during the warranty period, this Product fails to operate under normal use and service, due to improper materials or workmanship, Ericsson subsidiaries, authorized distributors, or authorized service partners will, at their own option, either repair or replace the Product in accordance with the terms and conditions stipulated herein.

For efficiency purposes, Customers are reminded that should their Ericsson Product need warranty service, they return it to the dealer from which it was purchased or call their local Ericsson helpdesk for further information on warranty claims.

17.4   CONDITIONS

1. The warranty given herein is only valid if the original receipt issued by the dealer to the original purchaser, specifying the date of purchase and serial number, is presented along with the Product to be repaired or replaced.   Warranty service may be refused if this information is not available or has been removed or changed after the original purchaser of the Product from the dealer.

2. Any repair or replaced Product will be warranted for the remainder of the original warranty period. Repair or replacement may be via functionally equivalent reconditioned units. Replaced faulty parts or components will become the property of Ericsson.

3. This warranty does not cover any failure of the Product due to normal wear and tear, misuse, including but not limited to use in other than a normal and customary manner, in accordance with Ericsson's instructions for use and maintenance of the Product, accident, modification or adjustment, acts of God, improper ventilation, or damage resulting from liquid.

4. This warranty does not cover product failures due to repair installations, modifications or improper service performed by a non-Ericsson authorized service workshop, opening of the Product by a non-Ericsson authorized person or use of non-Ericsson original accessories.

5. Batteries are not covered by this warranty.

6. Tampering with any of the seals on the Product will void this warranty.

7. THERE ARE NO OTHER EXPRESS WARRANTIES, WHETHER WRITTEN OR ORAL, OTHER THAN THIS PRINTED LIMITED WARRANTY.   ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. IN NO EVENT WILL ERICSSON BE LIABLE FOR LOSS OF PROFITS, COMMERCIAL LOSS, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, TO THE FULL

EXTENT THOSE DAMAGES CAN BE DISCLAIMED BY LAW.

Some countries do not allow for the exclusion or limitation of loss of profits, commercial loss, incidental or consequential damages, or limitation of the duration of implied warranties, so the preceding limitations or exclusions may not be applicable in certain cases. This warranty gives specific legal rights, and depending on the country, other rights may be available as well.

18   REGULATORY INFORMATION

Declaration of Conformity

We, **Ericsson Radio Systems AB** of
Kistagången 26, Kista
S-16480 Stockholm, Sweden

declare under our sole responsibility that our product

Ericsson type 0130101-BV

and in combination with our accessories, to which this declaration relates is in conformity with the appropriate standards 3GPP TS 51.010-1, EN 301 489-7 and EN 60950, following the provisions of, Radio Equipment and Telecommunication Equipment directive **99/5/EC** with requirements covering EMC directive **89/336/EEC**, and Low voltage directive **73/23/EEC**.

Kista November 15, 2001
Place & date of issue

Birger Kjellander, General Manager FCT

CE 0682

We fulfil the requirements of the R&TTE Directive (**99/5/EC**).

FCC Statement

Before a phone is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure.

Nevertheless, for mobile devices where the radiating structure is located more than 20 cm away from the user and the EIRP (radiating power) is lower than 3 Watts for transmitting frequencies higher than 1.5 GHz, SAR (Specific Absorption Rate) measurements are not required.

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.

19   DEFINITIONS

The following definitions are supplied in order to better understand certain concepts included in this manual:

Switch-on: power up the FCT by connecting the AC power supply or a charged battery.

Switch-off: power down the FCT by disconnecting the AC power supply or removing the battery.

Fixed Line Devices: any analog devices that can be connected to the analog fixed line :

- Fixed Telephones- ordinary telephones for the fixed line

- G3 Faxes- ordinary fax machines available on the market

- CLI devices- ordinary displays or telephones equipped with displays that show the caller number for incoming calls.

- V.90 modems- standard modems for PCs used to make data connections (Internet) over the ordinary fixed line.

Telephone Line: this is the line provided by the FCT (RJ11 connector) that behaves in the same way as the ordinary fixed line.

Telephone Line Wiring: this is the cable layout that has to be available in order to distribute telephone lines within a house or office.

GPRS: General Packed Radio Service. This is a technology for data communications that is ideal for e-mail or Internet access as it provides a high speed "always online" connection. This means that, although you are always attached to the network, you only pay for the amount of data that you really transmit.

PBX: Public Branch eXchange. It is a telephone system within an enterprise that switches calls between enterprise users on local lines while allowing all users to share a certain number of external phone lines.

SIM card: this is the card provided by your network operator that you need to insert in your GSM terminal in order to make

and receive calls. It contains all the information from your subscription characteristics.

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http://www.ericsson.com/wireless/products/fixed

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