TELULAR®

PHONECELL® SX4e GSM

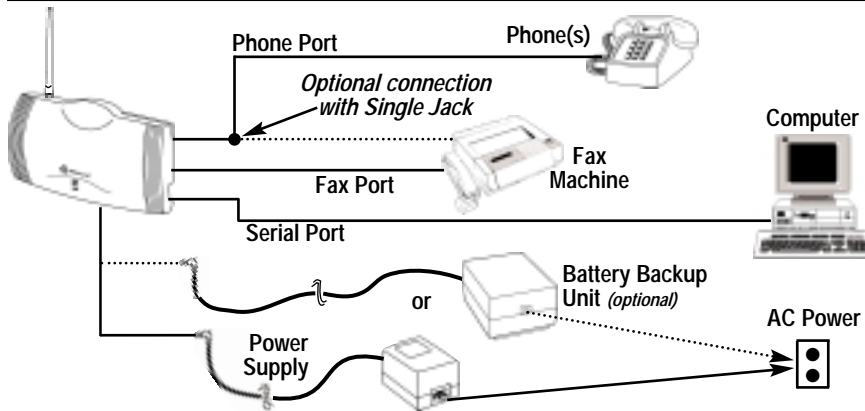## 1900 MHz Voice/Fax/PC Model

USER MANUAL

Digital call clarity and privacy at your fingertips

PHONECELL® SX4e GSM

1900 MHz VOICE/FAX/PC MODEL

USER MANUAL

Introduction

Thank you for choosing the **Phonecell® SX4e** Fixed Wireless Terminal (FWT) from Telular. This innovative product lets you connect up to five pieces of standard telephone equipment into a cellular network for total communications flexibility.

Please follow this guide to unpack, set up and operate your new Phonecell SX4e FWT safely and properly.

Telular is proud to welcome you as a valued customer.

Your satisfaction is our most important concern.

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> **PLEASE SEE PAGES 7 and 8 FOR IMPORTANT RESTRICTIONS ON USE, AS WELL AS, WARRANTY AND INDEMNIFICATION**

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Safety Information

Your **Phonecell SX4e** FWT *(Fixed Wireless Terminal)* functions as both a radio transmitter and receiver. When it is ON, the FWT receives and sends out radio frequency *(RF)* energy. The **SX4e GSM 1900** operates between 1850 MHz and 1990 MHz. It employs the commonly used phase/frequency modulation techniques. When you use your **Phonecell SX4e**, the cellular system handling your call controls the power level at which your unit transmits. Nominal power for the GSM 1900 unit is **1 watt**.

Exposure to RF *(Radio Frequency)* Energy

In 1991, the Institute of Electrical and Electronics Engineers *(IEEE)*, and in 1992, the American National Standards Institute *(ANSI)*, updated the 1982 ANSI Standard for safety levels with respect to human exposure to RF energy. After reviewing the available body of research, more than 120 scientists, engineers and physicians from universities, government health agencies and industry developed this updated Standard. In March, 1993, the U.S. Federal Communications Commission *(FCC)* proposed the adoption of this updated Standard.

The design of your Telular **Phonecell SX4e** FWT *(Fixed Wireless Terminal)* complies with the requirements of EN 55022, 47 CFR Part 15, Class B, and ICES-003 for conducted and radiated emissions. Of course, if you want to limit RF exposure even further than the updated ANSI Standard, you may choose to control the duration of your calls and operate your phone in the most power-efficient manner.

Safe Operation Requirement

Do not operate your Phonecell when any person is within 1 inch *(2,5 cm)* of the antenna.

Protective Earth (Safety Ground) Terminal

A protective earth (safety ground) terminal (screw) marked with the protective earth symbol is provided on the back of the SX4 Phonecell unit. This terminal must have a permanent connection to a good earth ground (i.e. a cold water pipe) by means of an 18 gauge or heavier insulated wire. The wire insulation should be green with a yellow stripe to indicate that this is a protective earth (safety ground) connection.

WARNING: The protective earth is to be installed by a qualified electrician.

Temperature Environment

Operating Temperature: From -10°C (14°F) to +50°C (122°F);
Up to 95% relative humidity (non-condensing)

Storage Temperature: From -20°C (-4°F) to +60°C (140°F);
Up to 95% relative humidity (non-condensing)

Safety Information - continued

Antenna Care and Replacement

Do not use the FWT with a damaged antenna. If a damaged antenna comes into contact with the skin, a minor burn may result. Have your antenna replaced by a qualified technician immediately. Use only a manufacturer-approved antenna. Unauthorized antennas, modifications, or attachments could damage the FWT *(Fixed Wireless Terminal)* and will void the Grant of Type Acceptance.

Driving

Check the laws and regulations on the use of cellular products in the areas where you drive. Some jurisdictions prohibit your using a cellular device while driving a vehicle. Even if your jurisdiction does not have such a law, we strongly suggest that, for safety reasons, the driver use extreme caution when operating the cellular device while the vehicle is in motion. Always obey the law.

Electronic Devices

Most modern electronic equipment is shielded from RF energy. However, RF energy from cellular devices may affect inadequately shielded electronic equipment.

RF energy may affect improperly installed or inadequately shielded electronic operating and entertainment systems in motor vehicles. Check with the manufacturer or its representative to determine if these systems are adequately shielded from external RF energy. You should also check with the manufacturer of any equipment that has been added to your vehicle.

Consult the manufacturer of any personal medical devices *(such as pacemakers, hearing aids, etc.)* to determine if they are adequately shielded from external RF energy.

Turn your Phonecell FWT OFF in health care facilities when any regulations posted in the areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Aircraft

Turn OFF your Phonecell before boarding any aircraft.
● Use it on the ground only with crew permission.
● Do not use it in the air.

To prevent possible interference with aircraft systems, U.S. Federal Aviation Administration *(FAA)* regulations require you to have permission from a crew member to use your cellular phone *(or any other cellular product)* while the plane is on the ground. To prevent interference with aircraft systems, FCC regulations prohibit using your cellular FWT while the plane is in the air.

Children

Do not allow children to play with your Phonecell to prevent damage to the unit.

Blasting Areas

Construction crews often use remote control RF devices to set off explosives. Therefore, to avoid interfering with blasting operations, turn your Phonecell OFF when in a "blasting area" or in areas posted: "Turn off two-way radio."

Safety Information - continued

Potentially Explosive Atmospheres

Turn your Phonecell OFF when in any area with a potentially explosive atmosphere. It is rare, but your Phonecell or its accessories could generate sparks. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

Areas with a potentially explosive atmosphere are often, but not always, clearly marked. They include fueling areas such as gas stations; below deck on boats; fuel or chemical transfer or storage facilities; areas where the air contains chemicals or particles, such as grain, dust, or metal powders; and any other area where you would normally be advised to turn off your vehicle engine.

Do not transport or store flammable gas, liquid or explosives in the area of your Phonecell or accessories.

Vehicles using liquefied petroleum gas (such as propane or butane) must comply with the National Fire Protection Standard (FPA-58). For a copy of this standard, contact the National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269, Attn: Publications Sales Division.

FCC Part 15 Class B Compliance

This **Phonecell SX4e** model has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the antenna.
- Increase the separation between the equipment and the terminal.
- Connect the equipment into an outlet on a circuit different from that to which the terminal is connected.
- Consult your Authorized Telular Distributor or an experienced radio/TV technician for help.

GSM Type Acceptance

The **Phonecell SX4e GSM 1900** model utilizes a Telular-designed mobile terminal integrated onto the main board. The **Phonecell SX4e GSM 1900** model complies with the TIA/EIA J-STD-007 PCS 1900 Air Interface Standard.

Important Notices

TERMS AND CONDITIONS FOR USE OF PHONECELL® PRODUCTS ("Product")

These Terms and Conditions are a legal contract between you and Telular Corporation for the title to and use of the Product. BY RETAINING AND USING THE PRODUCT AFTER RECEIPT OF IT, YOU AGREE TO THE TERMS AND CONDITIONS INCLUDING WARRANTY DISCLAIMERS, LIMITATIONS OF LIABILITY AND INDEMNIFICATION PROVISIONS BELOW. IF YOU DO NOT AGREE TO THE TERMS AND CONDITIONS, DO NOT USE THE PRODUCT AND IMMEDIATELY RETURN THE UNUSED PRODUCT FOR A COMPLETE REFUND. You agree to accept sole responsibility for any misuse of the Product by you; and, in addition, any negligent or illegal act or omission of your or your agents, contractors, servants, employees, or other users of the Product so long as the Product was obtained from you, in the use and operation of the Product.

INDEMNIFICATION OF TELULAR CORPORATION ("TELULAR")

YOU SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS TELULAR FOR ANY OF THE COST, INCLUDING REASONABLE ATTORNEYS' FEES, AND FROM CLAIMS ARISING OUT OF YOU, YOUR CLIENTS' OR OTHER THIRD PARTIES' USE OR OPERATION OF THE PRODUCT: (i) FOR MISUSE OR IN A MANNER NOT CONTEMPLATED BY YOU AND TELULAR OR INCONSISTENT WITH THE PROVISIONS OF THIS MANUAL; (ii) IN AN ILLEGAL MANNER OR AGAINST PUBLIC POLICY; (iii) IN A MANNER SPECIFICALLY UNAUTHORIZED IN THIS MANUAL; (iv) IN A MANNER HARMFUL OR DANGEROUS TO THIRD PARTIES; (v) FROM CLAIMS BY ANYONE RESPECTING PROBLEMS, ERRORS OR MISTAKES OF THE PRODUCT; OR (vi) COMBINATION OF THE PRODUCT WITH MATERIAL, MODIFICATION OF THE PRODUCT OR USE OF THE PRODUCT IN AN ENVIRONMENT NOT PROVIDED, OR PERMITTED, BY TELULAR IN WRITING. THE PARTIES SHALL GIVE EACH OTHER PROMPT NOTICE OF ANY SUCH COST OR CLAIMS AND COOPERATE, EACH WITH THE OTHER, TO EFFECTUATE THIS INDEMNIFICATION, DEFENSE AND HOLD HARMLESS.

WARRANTY

I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:

TELULAR CORPORATION ("Telular") warrants to a distributor Buyer, or to a customer only if the customer is a Buyer directly from Telular, that the Products (including accessories) shall comply with the applicable Specifications and shall be free from defects in material and workmanship under normal use and service for a period of fifteen (15) months from date of shipment from Telular. Telular, at its option, shall at no charge either repair, replace or refund the purchase price of the Product during the warranty period, provided it is returned by Buyer in accordance with the terms of this warranty to the Telular designated repair center. Repair or replacement, at Telular's option, may include the replacement of parts, boards or Products with functionally equivalent reconditioned items. Repaired and replacement items are warranted for the balance of the original warranty period. All replaced items shall become the property of Telular. **SUCH ACTION ON THE PART OF TELULAR SHALL BE THE FULL EXTENT OF TELULAR'S LIABILITY HEREUNDER, AND BUYERS EXCLUSIVE REMEDY**. Buyer shall be responsible for all costs and expenses incurred by Buyer including without limitation any handling, labor or transportation charges. **OTHER THAN AFORESAID, THIS EXPRESS WARRANTY IS EXTENDED BY TELULAR TO BUYER ONLY AND NOT TO BUYER'S CUSTOMERS OR USERS OF BUYER'S PRODUCTS**.

II. HOW TO OBTAIN WARRANTY SERVICE

Product covered under this warranty shall only be accepted from and returned to Buyer's designated repair center. Buyer's dealers, distributors, agents, and end users cannot submit items to Telular under this warranty. To receive warranty service an RMA number must first be obtained from Telular Technical Support. The defective or non-compliant Product should be sent by Buyer freight pre-paid to: Telular Corporation, 647 North Lakeview Parkway, Vernon Hills, IL 60061, USA or other designated location. The product must be packaged in the original carton and packing material or an equivalent package and must have the assigned RMA number clearly marked on the carton. Returned Product received without an RMA number will be returned to the sender.

III. WARRANTY CONDITIONS:

This is the complete warranty for the Products manufactured by Telular and sold to Buyer. Telular assumes no obligation or liability for additions or modifications to this warranty unless made in writing and signed by an officer of Telular. Unless made in separate written agreement between Telular and Buyer, Telular does not warrant the installation, field maintenance or service of the Products or parts.

Important Notices - continued

TELULAR CANNOT BE RESPONSIBLE IN ANY WAY FOR ANY ANCILLARY EQUIPMENT NOT FURNISHED BY TELULAR WHICH IS ATTACHED TO OR USED IN CONNECTION WITH THE PRODUCTS OR FOR OPERATION OF THE PRODUCTS WITH ANY ANCILLARY EQUIPMENT AND ALL SUCH EQUIPMENT IS EXPRESSLY EXCLUDED FROM THIS WARRANTY. FURTHERMORE, TELULAR CANNOT BE RESPONSIBLE FOR ANY DAMAGE TO THE PRODUCTS RESULTING FROM THE USE OF ANCILLARY EQUIPMENT NOT FURNISHED BY TELULAR FOR USE WITH THE PRODUCTS.

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IV. WHAT THIS WARRANTY DOES NOT COVER:
(a) Subsequent upgrades and enhancements to the Product. (b) Defects, non-compliance or damage resulting from use of the Product in other than its normal and customary manner or environment. (c) Defects, noncompliance or damage from misuse, lightening, accident or neglect. (d) Defects, noncompliance or damage from improper testing, operation, maintenance, installation, adjustment, or any alteration or modification of any kind. (e) Product disassembled or repaired in such a manner as to adversely affect performance or prevent adequate inspection and testing to verify any warranty claim. (f) Product which has had the serial number removed or made illegible. (g) Defects, non-compliance or damage due to spills of food or liquid. (h) All plastic surfaces and all other externally exposed parts that are scratched or damaged due to customer normal use. (i) Costs and expenses, including without limitation handling, labor and transportation, incurred in returning Product for warranty service to Telular's Repair Center. (j) Repair, programming or servicing by someone other than Telular.

V. GENERAL PROVISIONS:
THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESS OR STATUTORY WARRANTIES. IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, INFRINGEMENT, DELIVERY, NEGLIGENCE AND PERSONAL INJURY, ARE DISCLAIMED. FURTHER, AS THE CELLULAR CARRIER IS NOT CONTROLLED BY TELULAR, NO WARRANTY IS MADE AS TO COVERAGE, AVAILABILITY OR GRADE OF SERVICE PROVIDED BY THE CELLULAR CARRIER. IN NO EVENT SHALL TELULAR BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, FOR ANY LOSS OF USE, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, LOST PROFITS OR SAVINGS OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE SUCH PRODUCT TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS.

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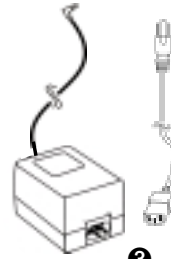
Getting Started...

Unpacking Your Phonecell SX4e

❶   ❷   ❸
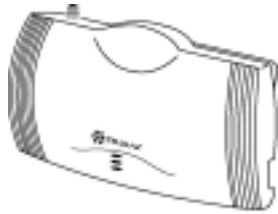
The **Phonecell SX4e** comes with the following:

❶ Phonecell SX4e Fixed Wireless Terminal *(FWT)*

❷ Dipole antenna

❸ 3-Wire, Linear Power Supply with 6 kV Lightning and Surge Protection, and AC Line Cord

Carefully remove the unit from the shipping carton and check for evidence of shipping damage. **If damage is found, contact your Authorized Telular Distributor or shipping agent immediately.**

Pre-Installation Checklist

Before attempting **Phonecell SX4e** installation, make sure you have the following components, tools and materials.

Additional Components Needed

Qty.	Description	Supplied	Not Supplied
1	Mini-SIM *(Subscriber ID Module)* Card*		✔
1	RJ-11 Modular Phone Cord		✔
1	Data Cable - for Digital Fax/Data Transmission**		✔

 * *Supplied by your Network Service Provider*
** *See "Step 3: Optional PC Data Connection" section of this manual.*

Tools & Materials Needed – for Wall-Mount Installation Only

Qty.	Description	Supplied	Not Supplied
1	Drill & Drill Bit		✔
1	Screwdriver		✔
2	1$\frac{1}{2}$-inch *(3.75 cm)* Mounting Screws		✔

Optional Components

Qty.	Description	Supplied	Not Supplied
	Phone Line Splitter – if you plan to connect more than one telephone to the FWT		✔

Installation Summary

There are five steps to installing the **Phonecell SX4e** FWT properly. These steps are summarized below and explained in detail in the remainder of this manual.

Step 1. Choose an Antenna Location *(pages 11 - 13)*

- Choose an antenna location.
- Connect the antenna.

| ⚠️	WARNING!
	DO NOT power unit antenna is connected, as it may burn out the radio transmitter.

- Connect the FWT to a good earth ground.
- Connect power to the FWT. Allow time for the unit to find service and stabilize.
- Then, check the cellular signal strength and move the antenna until you achieve the best signal possible.

Step 2. Plug In Your Telephone *(pages 14 - 15)*

- Once the antenna is connected, hook up a phone.
- Then, make a test call to verify proper operation. Adjust the antenna location accordingly.
  NOTE: If your **Phonecell SX4e** did not come with a pre-installed mini-SIM *(Subscriber Identity Module)* card, you need to perform the SIM Card Installation and Setup procedure in Step 4. Then, return to this step (2).
- Choose Single or Dual jack option (Dual jack allows you to connect a separate fax line)- see the *Connect Your Telephone* section of this manual.
- You may plug in additional phones via a Line Splitter *(not supplied)* if desired.
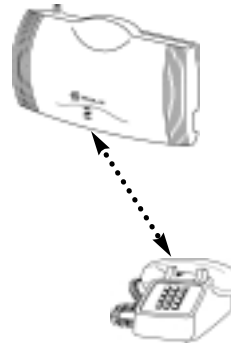
Step 3. Optional PC Data Connection *(pages 16 - 19)*

- Now that the Phonecell is functioning properly, plug in your computer for computer digital fax/data transmission, using a DB-9 cable *(not supplied)*.

Step 4. SIM Card Installation & Setup *(pages 20 - 23)*

- If your Phonecell did not come with a pre-installed mini-SIM card, you need to perform the SIM Card Installation and SIM PIN Setup.
- *Otherwise, continue to Step 5.*

Step 5. Wall-Mount Installation *(pages 24)*

- After you've selected a location and made all the necessary connections and adjustments, your **Phonecell SX4e** is ready for wall-mounting.
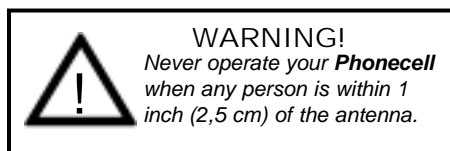
Step 1. Antenna Location and Setup

The **Phonecell SX4e** comes with a dipole antenna.

Antenna Setup:

1) Connect the antenna to the TNC antenna connector on top of the FWT *- see Figure 1.*

2) Connect power to the FWT *- see the Connect the Power section of this manual.* Wait for the unit to acquire service.

3) Check the LED cellular status indicator *(middle LED)* on the front of your Phonecell:

- RED Continuous = *No Service*
- RED Flashing = *SIM Problem*
- GREEN Continuous = *Good signal.*
- GREEN Flashing = *Poor signal.*

4) Move the antenna from one location to another until you achieve the best signal strength possible (GREEN).

5) When you're getting a strong *(GREEN)* signal, you're ready for the next step - connecting a phone and making a call.

NOTE: If you're still receiving a Continuous RED "no-service" signal, *contact your service provider to make sure cellular service is activated.*

If the LED is flashing RED, there's a SIM card problem *- see Step 5.*

```
┌─────────────────────────────┐
│      WARNING!               │
│ /!\  Never operate your     │
│      Phonecell              │
│      when any person is     │
│      within 1              │
│      inch (2,5 cm) of the   │
│      antenna.              │
└─────────────────────────────┘
```

Standard
Dipole
Antenna

Female TNC
Antenna
Connector

Figure 1

LED Cellular
Status Indicator
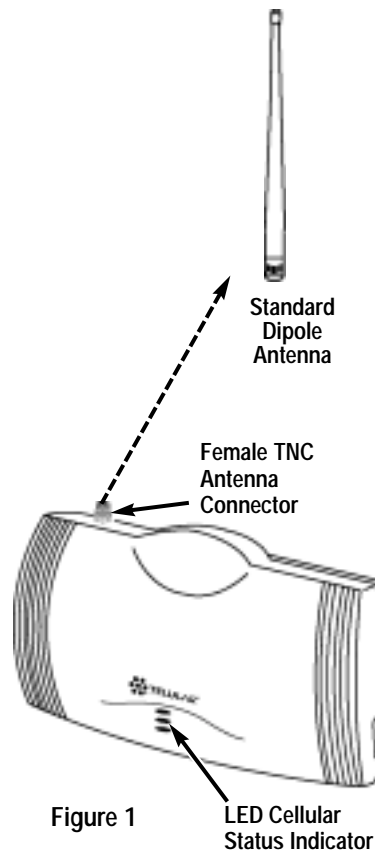
Antenna Location & Setup - continued

Your Phonecell receives operating commands from the cellular network and relies upon signal strength for proper operation. Therefore, finding an antenna location with good signal strength is critical for optimal call clarity. After you choose a good location, connect the antenna, test the signal strength and adjust the location accordingly.

ANTENNA LOCATION TIPS

- Locate the antenna above ground and as close to windows *(or exterior walls)* as possible **- see Figure 2** and **Figure 3.**
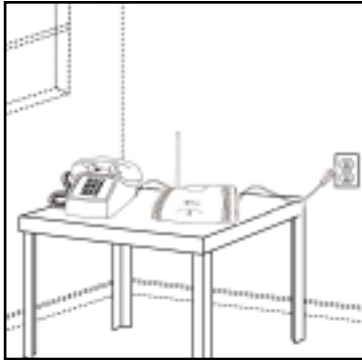

Figure 3 – Table-mount with antenna pointed upward and located near a window for optimum signal strength.

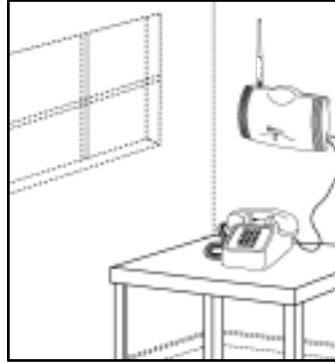**Figure 2** – Wall-mount with antenna pointed upward and located near a window for optimum signal strength.

```
                WARNING!
  /!\   DO NOT install antenna close to
        telephones, as the RF emissions will
        cause interference.
```

Antenna Location & Setup - continued

Connect the Power

1) A protective earth (safety ground) terminal (screw) marked with this protective earth symbol is provided on the back of the SX4e Phonecell unit *- see Figure 4.*

2) Connect this terminal to a good earth ground (i.e. a cold water pipe) by means of an 18 gauge or heavier insulated wire. The wire insulation should be green with a yellow stripe to indicate that this is a protective earth (safety ground) connection.

   WARNING: The protective earth is to be installed by a qualified electrician.

3) Connect the Line Cord from the AC power source to the Power Supply.

   > **WARNING!**
   > *The mounting bracket and protective earth/ground wire must be installed on the Phonecell before power is applied.*

4) Connect the barrel plug on the Power Supply to the Power Input port on the side of the Phonecell.

5) The LED Power Status indicator (located on the front of the FWT) will turn green immediately upon connecting to power **- see Figure 6**.

Protective earth (safety ground) terminal screw

Figure 4

Serial Port

Fax Port

Phone Port

Power Input Port

Power Supply

Line Cord

AC Power

Figure 5

LED Power Indicator

Figure 6

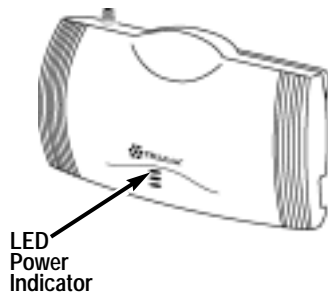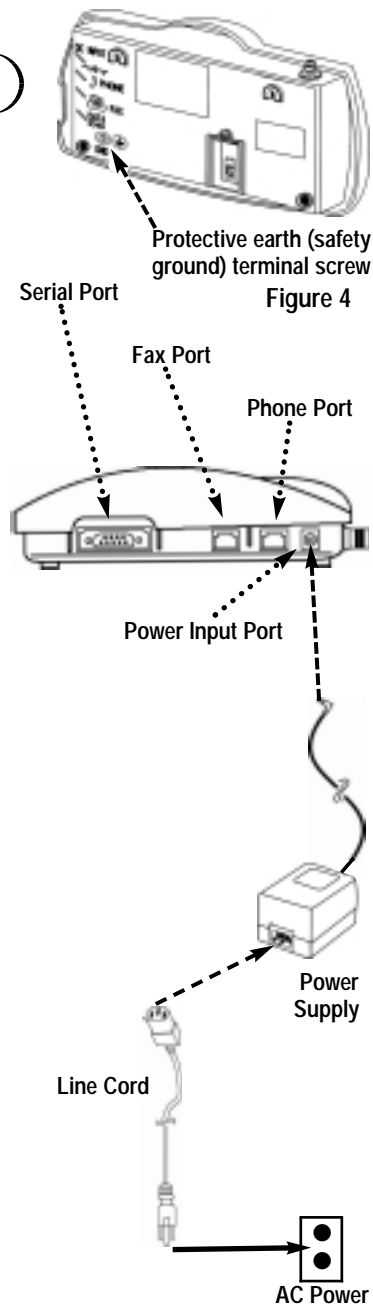# Step 2. Plug In Your Telephone

The **Phonecell SX4e** lets you connect up to a 5 REN telephone load into a cellular network. Follow the steps below for quick installation.

Connect Your Telephone

Dual-Jack Operation

The Phonecell SX4e may be operated in either dual-jack or single-jack mode. The factory default is the **dual- jack** mode. In dual-jack operation, for outgoing calls, the first jack to seize the line (go off-hook) will disconnect the other jack. The other jack will remain disconnected until the first jack goes back on-hook. For incoming calls, voice calls will be routed to the Phone voice jack and fax calls will be routed to the Fax jack. *See How to Set A Single Jack Option,* to change programming to single jack operation.

1) Locate the modular line port on your phone and plug in one end of a standard phone cord.

2) Connect the other end of the cord to the telephone port *(marked **PHONE**)* on the side of your Phonecell SX4e **- see Figure 7**.

   NOTE: An RJ-11 connector will fit into the Phone port.

   NOTE: The Phonecell SX4e does not support direct computer modem (data) operation through the Phone port or Fax port. It also does not support the phone through the fax port.

3) Locate the modular line port on your fax machine and plug in one end of a standard phone cord.

4) Connect the other end of the cord to the **fax port** *(To the Left of the Phone port)* on the side of your Phonecell SX4e.

Single-Jack Operation

The analog **fax** jack can be disabled leaving only the **telephone** jack operational (single-jack operation). In single-jack operation, voice calls can be placed and received normally if a telephone is connected. If a fax is connected, incoming analog fax calls can be received normally, but to place outbound fax calls using the voice jack, a bypass sequence must be used as a prefix in the dialed telephone number.
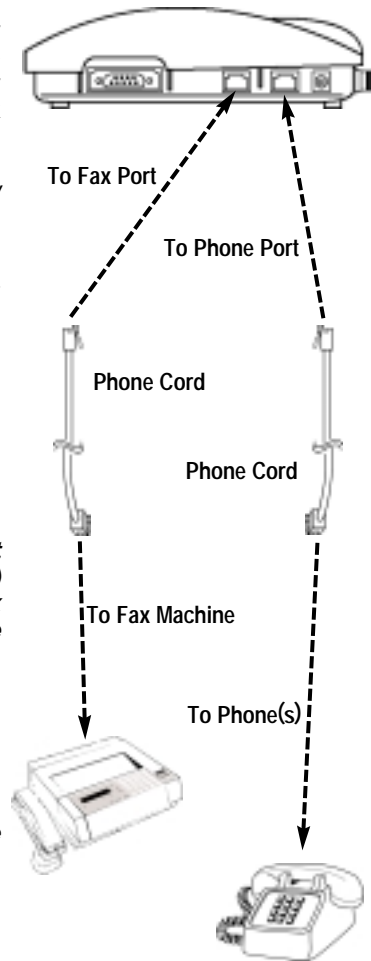

To Fax Port

To Phone Port

Phone Cord

Phone Cord

To Fax Machine

To Phone(s)

Figure 7: Dual Port

Plug In Your Telephone - continued

1) Locate the modular line port on your fax machine or phone and plug in one end of a standard phone cord.

2) Connect the other end of the cord to the phone port *(marked **PHONE)** on the side of your Phonecell SX4e **- see Figure 8.**

NOTE: An RJ-11 connector will fit into the Phone port.

NOTE: To place outbound fax calls using the voice jack, see the *How to Set up an Analog Fax Bypass String* section of this manual. For single jack programming, see the *How to Set A Single Jack Option* section of this manual.

Place a Call - Adjust Your FWT

1) Pick up the phone receiver and listen for dial tone.

2) If you hear dial tone, make a call.

3) While you're talking with the other party, listen for buzz and echo. If you hear either, move the antenna and/or POTS phone until you find the location where voice conversation is strong, and buzz and echo are minimized.

> **NOTE: If you are unsuccessful in dialing out, verify the following:**

- The antenna location needs to be adjusted **- see Figure 2.**

- The SIM card needs to be installed and/or set up **- see Step 4.**

- Your cellular phone number has not been activated **- contact your cellular service provider.**

Adding More Phones

Plug in a line splitter *(not supplied)* to connect additional phones to your FWT**- see Figure 9.**

NOTE: The FWT will only let you make one phone call at a time.

PBX/KSU Systems - *NOTE:* *PABX installation should only be performed by experienced telephone technicians.*
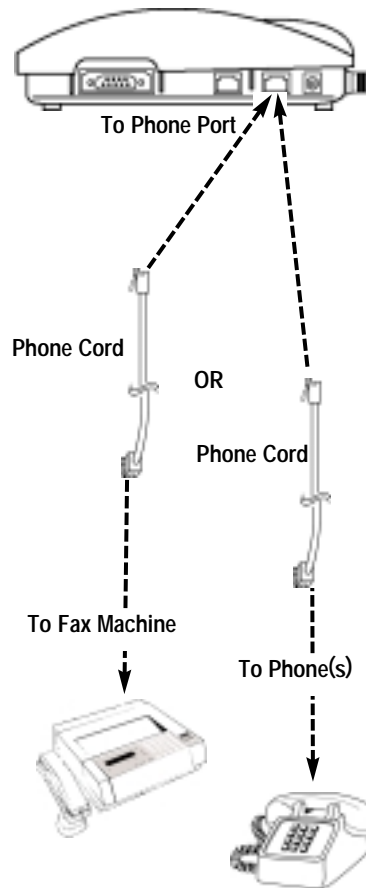
To Phone Port

Phone Cord

OR

Phone Cord

To Fax Machine

To Phone(s)

Figure 8: Single Port
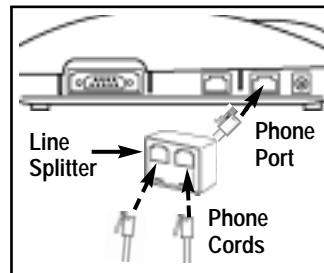
Line Splitter

Phone Port

Phone Cords

Figure 9 – An optional Line Splitter lets you connect additional phones to your **Phonecell SX4e**.

Step 3. Optional PC Data Connection

The **Phonecell SX4e** features a DB-9 Digital Computer Fax/Data Port for connection to a Personal Computer (PC) – *not supplied (**see - Figure 10**)*. When connected to a PC, the Phonecell's PC interface is capable of digital fax/data transmission at speeds up to 9600 baud.

NOTE: A data cable (DB-9 to DB-9 or DB-25 to DB-9) is required for data transmission – *not included*. To determine the necessary cable, count the number of PIN connections in the serial port of your PC (*see below*). If there are 9 PIN connections in the PC serial port, a DB-9 (female) to DB-9 (male) cable is required. If there are 25 PIN connections in the PC serial port, a DB-25 (female) to DB-9 (male) cable is required.
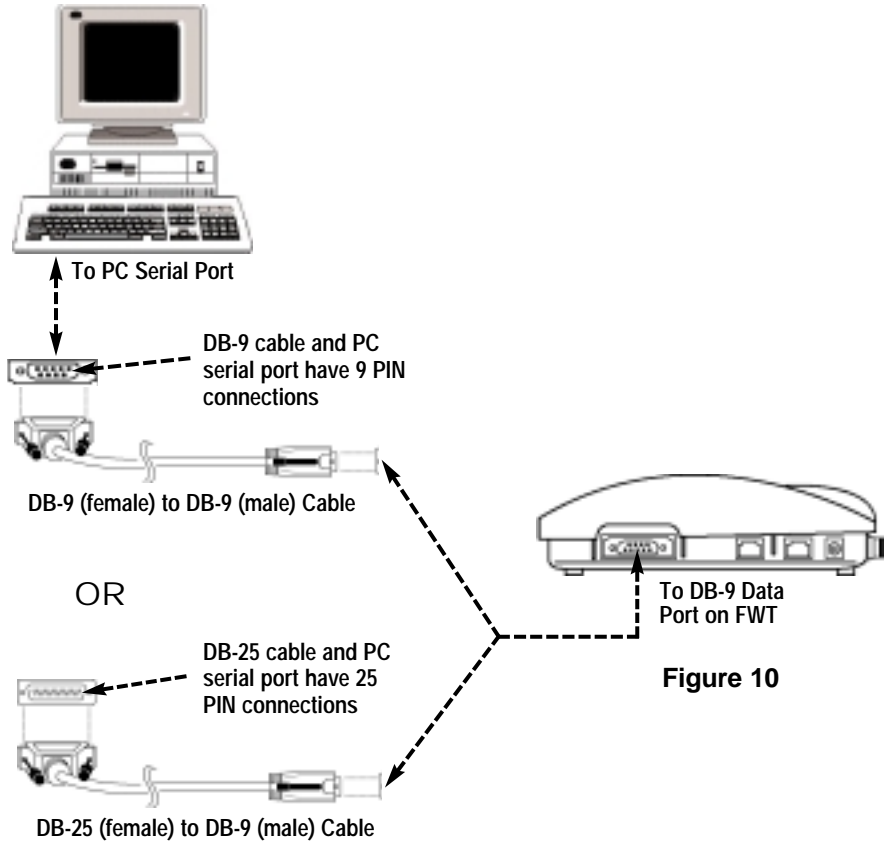
To PC Serial Port

DB-9 cable and PC serial port have 9 PIN connections

DB-9 (female) to DB-9 (male) Cable

OR

DB-25 cable and PC serial port have 25 PIN connections

DB-25 (female) to DB-9 (male) Cable

To DB-9 Data Port on FWT

Figure 10

NOTE: The Phonecell SX4e does not support direct computer modem (data) operation through the telephone or fax ports.

The Phonecell's PC interface supports the ETSI GSM 07.05 and 07.07 AT Command Set.

For specific digital fax/data setup procedures, see Appendix A - How to Setup Your PC Serial Ports for Phonecell Digital Fax/Data.

Optional PC Data Connection - continued

Serial Port Protocol

The DB-9 port operates at a fixed baud rate of 19,200. Note that this rate only applies to the serial interface; the over-the-air data rate is independent. The format is one start bit, 8 data bits, one stop bit, and no parity. The interface supports the necessary V.24 (RS-232) signals.

AT Command Set

The following is a list of the commands from the AT Command Set defined in GSM 07.07 Digital Cellular Communications System (Phase 2); AT Command Set for GSM Mobile Equipment (ME).

Supported AT Commands from GSM 07.07	Description
ATS3	Command Line Termination Character
" S4	Response Formatting Character
" S5	Command Line Editing Character
" S6	Pause Before Blind Dialing
" S7	Connection Completion Timeout
" S8	Comma Dial Modifier Time
" S10	Automatic Disconnect Delay
ATA	Answer
ATD	Dial
ATDP	Dial-Select Pulse Dialing
ATDT	Dial-Select Tone Dialing
ATDL	Dial-Monitor Speaker Loudness
ATDI	Dial-Request Identification Information
ATE	Command Echo
ATH	Hook Control
ATI	Request Identification Information
ATO	Return to On-line Data State
ATQ	Result Code Suppression
ATV	DCE Response Format
ATX	Result Code Selection and Call Progress Monitoring Control
ATZ	Reset To Default Configuration
AT & F	Set to Factory-Defined Configuration
AT & V	Display Current Profile
AT & W	Write Current Profile to Stored Profile
AT + CBST	Select bearer service type
AT + CEER	Extended Error Report
AT + CGMI	Request Manufacturer Identification
AT + CGMM	Request Model Identification

Supported AT Commands from GSM 07.07	Description
AT + CGMR	Request Revision Identification
AT + CGSN	Request Product Serial Number Identification
AT + GSN	Request Product Serial Number Identification
AT + CGOI	Returns Null Global Object ID
AT + GOI	Request Global Object Identification
AT + CPIN	Enter PIN
AT + CR	Service reporting control
AT + CRC	Cellular Result Codes
AT + CREG (h = 0, 1, 2) (no #2 options incall)	Network Registration
AT + CRLP	Radio Link Protocol
AT + DR	Data Compression Reporting
AT + DS	Data Compression
AT + FCLASS	Select Mode
AT + FMI	Request DCE Manufacturer Identification
AT + FMM	Request DCE Model
AT + FMR	Request DCE Version
AT + GCAP	Request Complete Capabilities List
AT + GMI	Request Manufacturer Identification
AT + GMM	Request Model Identification
AT + GMR	Request Revision Identification
AT + ICF	DTE-DCE Character Framing
AT + IFC	DTE-DCE Local Flow Control
AT + ILRR	DTE-DCE Local Rate Reporting
AT + IPR	Fixed DTE Rate

NOTE: For AT command syntax, parameters and details please refer to European Technical Standard (ETS) documents: ETS 300 642 / GSM - 07.07, Mar. '99 and ETS 300 585 / GSM - 07.05, Apr. '97 for Digital Cellular Communications System (Phase 2); AT Command Set for GSM Mobile Equipment (ME).

Optional PC Data Connection - continued

AT Command Set
The following is a list of supported commands from the AT Command Set defined in ESTI GSM 07.05, Digital Cellular Telecommunications System (Phase 2+); Use of Data Terminal Equipment (DTE -DCE) Interface for Short Message Service (SMS) and Cell Broadcast Service (CBS).

Supported AT Commands from GSM 07.05	Description
AT+ CSCA	Service Center Address
AT + CSCS	Select TE character Set
AT + CSTA	Select Type of Address
AT + CMGF	Message Format
AT + CMGD	Delete Message
AT + CMGL	List Message
AT + CSMS	Select Message Service
AT + CMPS	Preferred Message Storage
AT + CSCB	Select Cell Broadcast Message Types
AT + CMGR	Read Message
AT + CMGS	Select Message
AT + CMGW	Write Message to Memory
AT + CMSS	Send Message from Storage
AT + CNMI	New Message Indications to TE

Bearer Services
The following bearer services are supported:

Class	Bearer Service	Modulation Scheme	Baud Rate (bps)
Facsimile	TS62	V.27*ter*	2400, 4800
(Class 1)	TS62	V.29	9600
Data	BS21	V.21	300
(Asynchronous	BS22	V.22	1200
Circuit Switched)	BS23	V.23	1200/75
	BS24	V.22bis	2400
	BS24	V.26ter	2400
	BS25	V.32	4800
	BS26	V.32	9600

Step 4. SIM Card Installation & Setup

IMPORTANT!

If your Phonecell did NOT come with a pre-installed mini-SIM *(Subscriber Identity Module)* card, <u>OR</u> if you're experiencing SIM card-related problems, follow the steps below. **Otherwise, continue with STEP 5.**

How to Install the Mini-SIM Card

The GSM module within the Phonecell requires a Subscriber Identification Module *(SIM)* for normal operation. The service provider supplies a SIM card, which carries the account information needed to operate the Phonecell. The mini-SIM compartment is on the back of the Phonecell **- see Figure 11.**

NOTE: If your mini-SIM card is already installed, skip to the SIM PIN Programming section of this manual. *If you don't have a mini-SIM card, contact your network service provider.*

Figure 11   Mini-SIM Compartment

1) Disconnect DC power.
2) Remove the SIM compartment cover by removing the screw.
3) Open the SIM card holder.
4) Line up the mini-SIM card with the arrow on the SIM card holder.
5) Gently insert the mini-SIM card in the slot of the SIM card holder **- See Figure 12.**
6) Close the SIM card holder. <u>**NOTE: If you insert the SIM card improperly, the holder will not close. Do not force it shut.**</u> Make sure the SIM card is aligned properly with the directional arrow on the holder.
7) Reattach the SIM compartment cover with the screw.
8) Reconnect DC power.
9) Proceed with SIM PIN Programming.

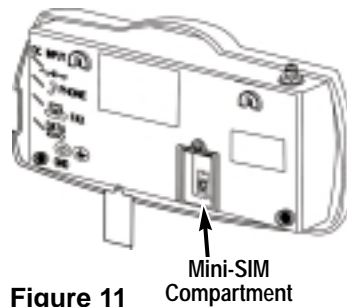SIM Compartment Cover

Mini-SIM Card Holder
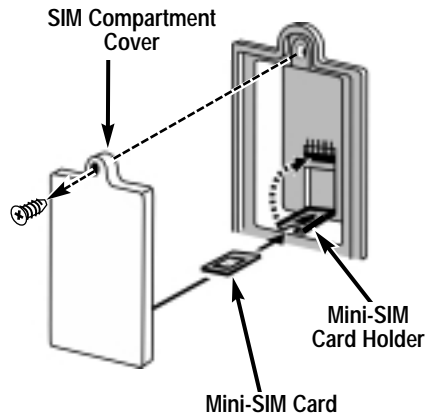
Mini-SIM Card

Figure 12 - Mini-SIM Card Installation

SIM PIN Programming

The mini-SIM may require entry of a Personal Identification Number *(PIN)*. The PIN is a four- to eight-digit number provided with the SIM card. If the service provider has set the SIM to require PIN entry, the Phonecell will request the PIN each time it is powered ON or the SIM is removed and replaced. The PIN can be stored within the Phonecell for automatic entry when required. To use the automatic PIN entry feature, the PIN must be correctly programmed and automatic PIN entry must be enabled.

If PIN entry is requested while automatic PIN entry is disabled, the Phonecell emits a SIM Inactive tone. The SIM PIN can be manually entered at that time by dialing the PIN and pressing #. If entry is successful, the SIM Inactive tone will be replaced by service dial tone.

IMPORTANT!

Automatic PIN entry must be disabled before the SIM is changed (including initial entry) so that the PIN for the new SIM card can be entered correctly before the GSM module requests the PIN.

How to Enable/Disable the Automatic PIN Entry Feature

1) Using a POTS *(Plain Old Telephone Set)* phone connected to the telephone port, lift up the handset *(take off-hook)*.

NOTE: You must have tone-dial (DTMF) capability to enable/disable the Automatic PIN Entry Feature.

2) Enter the Programming mode:

> ☞ Press: **# * 0 * 1 2 3 4 5 6 7 8 #**

The dial tone will cease upon entry of the first digit. If you enter the access code correctly, the dial tone should change to a different, steady Programming tone and the bottom LED indicator on the front of the Phonecell will blink alternately RED and GREEN to indicate that you're in the programming mode.

3). Once in Programming mode:

> ☞ Press: **# * 65 * < auto_PIN> * <PIN> #**

• To disable automatic PIN entry, set the "auto PIN" value to **0**.
• To enable automatic PIN entry, set the "auto PIN" value to **1**.

You must enter either **0** or **1**, otherwise, the FWT will not update or store this value and the existing stored parameter will remain. The factory default value is **0** *(disabled)*. The factory default PIN setting within the FWT's non-volatile memory is "**1234.**"

4) Correct entry will be confirmed by the return of the programming tone, which signifies that the unit is ready to accept the next entry. Incorrect entry will result in a short, three tone sequence of rising frequencies, followed by the return of the programming tone, which again signifies that the unit is ready to accept the corrected entry.

5) Hang up the telephone handset (place on-hook).

*For Example: To enable automatic PIN entry for PIN "1234,"
dial: # * 65 * 1 * 1234 #*

Continued...

SIM PIN Programming - continued

> **IMPORTANT!**
>
> You must enter the PIN correctly. After three attempts to load an incorrect PIN, the SIM will be blocked and the SIM card will have to be unblocked. If you do not have the unblocking key, the SIM will have to be returned to the service provider for reactivation. **See _How to Unblock a SIM PIN_ to unblock a SIM card.**

How to Change the PIN Value Entered by the Automatic PIN Entry Feature

REMINDER: Automatic PIN entry must be disabled - _before and while the automatic PIN entry value is changed_ - until programming of the new PIN and Auto PIN Entry completed.

1) Using a tone-dial (DTMF) POTS telephone connected to the Phone port, lift up the handset _(take off-hook)_.

2) Enter the Programming mode:

Press: **# ∗ 0 ∗ 1 2 3 4 5 6 7 8 #**

The dial tone will cease upon entry of the first digit. If you enter the access code correctly, the dial tone should change to a different, steady "Programming" tone and the bottom LED indicator on the front of the Phonecell will blink alternately RED and GREEN to indicate that you're in the programming mode.

3) Press: **#   ∗ 64 ∗ < old_PIN> ∗ <new PIN> ∗ <new PIN> #**

The new SIM PIN will be supplied by the service provider with a new SIM. If the SIM card is changed, the PIN must be reprogrammed using the above command with the correct new PIN for the new SIM.

NOTE: The factory default PIN setting within the FWT's non-volatile memory is "**1234.**"

4) Correct entry will be confirmed by the return of the programming tone, which signifies that the unit is ready to accept the next entry. Incorrect entry will result in a short, three tone sequence of rising frequencies, followed by the return of the programming tone, which again signifies that the unit is ready to accept the corrected entry.

5) Hang up the telephone handset _(place on-hook)_.

For Example: To set up a new SIM with PIN "5678,"
dial: # ∗ 64 ∗ 1 2 3 4 ∗ 5 6 7 8 ∗ 5 6 7 8 #

NOTE: This procedure will not change the PIN encoded on the SIM. It will only change the PIN stored in the FWT for automatic entry of the PIN when requested by the GSM module.

If the SIM card in use has SIM PIN Entry enabled, it is strongly recommended that Automatic PIN Entry be selected.

How to Set a New PIN in the SIM

REMINDER: Automatic PIN entry must be disabled - *before and while the SIM PIN is changed* - until programming of the new PIN and Auto PIN Entry (see previous page) is completed.

1) Using a tone-dial (DTMF) POTS telephone connected to the Phone port, lift up the handset *(take off-hook)*.

2) Press: *** * 04 * < old_PIN> * <new_PIN> * <new_PIN> #**

NOTE: You must know the old PIN to change it and the new PIN must be 4 to 8 digits (0 – 9) in length.

3) Incorrect entry of the old PIN will be indicated by a short, three tone sequence of rising frequencies. Hang up the telephone handset and start over at step 1 with the correct old PIN.

Incorrect length (less than 4 or more than 8 digits) of the new PIN or not entering the same value in both new PIN entries will result in silence. Hang up the telephone handset and start over at step1.

Correct entry will be confirmed by a short beep. Hang up the telephone handset.

For Example: To set up a new SIM with PIN "5678," where the old PIN is "1234," dial: * * 04 * 1 2 3 4 * 5 6 7 8 * 5 6 7 8 #

NOTE: In case of PIN2, substitute the following step 2:

2) Press: *** * 042 * <old_PIN2> * <new_PIN2> * <new_PIN2> #**

NOTE: You must know the old PIN2 to change it and the new PIN2 must be 4 to 8 digits (0 – 9) in length.

For Example: To set up a new SIM with PIN2 "5678," where the old PIN2 is "1234," dial: * * 042 * 1 2 3 4 * 5 6 7 8 * 5 6 7 8 #

NOTE: This procedure will change the PIN encoded on the SIM. It will not change the PIN stored in the FWT for automatic entry of the PIN when requested by the GSM module. (See previous page for instructions on how to enter the auto-entry PIN value).

How to Unblock a SIM PIN

Use the following key sequence to unblock a SIM card:

1) ☞ Press: *** * 05 * <PIN_unblocking key> * <new_PIN * <new PIN> #**

2) ☞ Press: *** * 052 * <PIN2_unblocking key> * <new_PIN2 * <new PIN> #**

NOTE: This procedure will change the PIN encoded on the SIM. It will not change the PIN stored in the FWT for automatic entry of the PIN when requested by the GSM module. (See previous page for instructions on how to enter the auto-entry PIN value).

Step 5. Wall-Mount Installation

After you've selected a location and made all the necessary connections, your **Phonecell SX4e** is ready for wall-mounting.

166 mm (6-17/32 inches)

PRE-INSTALLATION TIPS:

• *Make sure the location is dry, away from overhead water pipes, and protected from weather conditions.*

• *The area should be free of airborne contaminants.*

• *The Phonecell SX4e power supply should be located within 2 meters (6 feet) of an AC power outlet.*
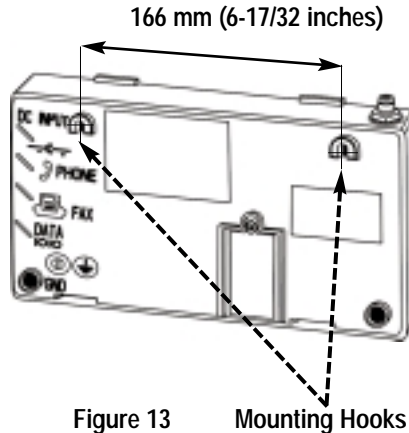
Figure 13   Mounting Hooks

Wall-Mount Instructions:

1) To mount the FWT on a wall, mark two hole locations 166 mm (6-17/32 inch) apart. These hole locations match the mounting hooks on the back of unit **- see Figure 13**.

2) Install the screws (not supplied), leaving a gap (approximately 3mm (1/8 inches)) between screw head and wall **- see Figures 14 and 15**.

3) Mount the FWT onto the screws **- see Figure 16**.

Figure 14

Figure 15

Figure 16
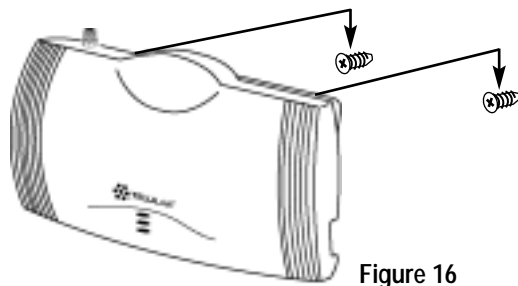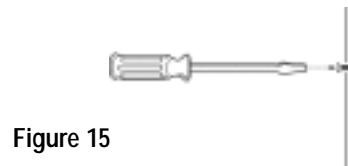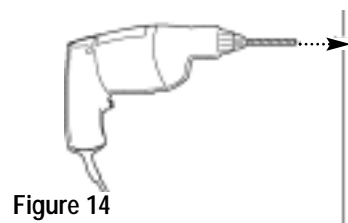
Phonecell SX4e Operation

Once your **Phonecell SX4e** is installed and tested, it's ready for operation.

How to Use the LED Status Indicators

1) Plug in the power supply.

2) Wait approximately 10 seconds for the unit to initialize.

3) The three LED indicators on the front of your Phonecell will turn ON. The Tables below describe the modes and operation of the three indicators *- see Figure 17*.
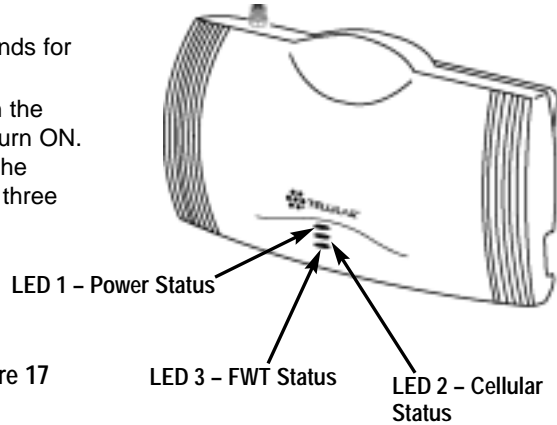
LED 1 – Power Status

Figure 17   LED 3 – FWT Status   LED 2 – Cellular Status

LED 1 – Power Status Indicator

LED Color	LED Activity	Description
GREEN	Continuous	FWT Power ON
YELLOW	Continuous	Low-Voltage Detection
NONE (Dark)	None	No FWT Power

LED 2 – Cellular Status Indicator

LED Color	LED Activity	Description
GREEN	Continuous	Good Cellular Signal Strength
GREEN	Flashing	Poor Cellular Signal Strength
RED	Continuous	No cellular service*
RED	Flashing	SIM Card Problem

Contact your service provider to verify that cellular service is activated.

LED 3 – FWT Status Indicator

LED Color	LED Activity	Description
GREEN	Continuous	Normal Operation
GREEN/RED	Alternating	Programming Mode
RED	Continuous	FWT Failure**
RED	Flashing	Phone or Fax Interface Failure, Check external wiring to telephone

***Contact your Authorized Telular Service Representative*

Phonecell Operation - continued

How to Place a Call

1) Pick up your telephone handset *(your phone is now "off-hook")*.

2) Listen for dial tone *(If service is not available, a No-Service tone is produced. Hang-up the phone and try again. If the No-Service tone continues, contact your service provider to make sure cellular service is activated.)*.

3) Dial the phone number.

How to Receive a Call

● When your telephone rings, pick up the handset and begin talking.

How to End a Call

● Hang-up the phone *(place the handset back onto the telephone cradle)*.

The Hookflash Function

When you initiate the Hookflash function, it automatically lets you:
- Speed up the connection after you dial a phone number.
- Answer an incoming call that occurs when you're dialing a phone number.
- Use special *(supplementary)* cellular services which may be available in your cellular service area *(see the Using Standard Supplementary Services section of this manual)*.

How to Use the Hookflash Function

Depending upon your phone, there are two ways to initiate the Hookflash function:
- Press the dedicated "HOOKFLASH" or "FLASH" key on your telephone.
- Press the hang-up or switch-hook mechanism on your phone once quickly *(approximately ½-second)*.

Important Tones and Alerts

No-Service Tone – When cellular service is not available, the receiver emits a No-Service *(fast-beeping)* tone instead of the normal *(steady)* dial tone.

ROH (Receiver Off-Hook) Tone – If the telephone equipment remains off-hook *(off its cradle)* with no dialing activity for 45 seconds, the receiver emits an ROH tone for 60 seconds.

Incoming Call Alert – If you're dialing a number and an incoming call occurs, the receiver will emit an audible ring. To answer the incoming call:
- Press the "HOOKFLASH" button once. This will connect the incoming call.
- OR hang-up immediately. This will cause the phone to start ringing.

Supplementary Service Dial Tone – When supplementary services are enabled and active, the receiver may emit a special dial tone to indicate that one or more services are active.

Roam Dial Tone – When cellular service is available, but the Phonecell is in a Roam area, the receiver may emit a different dial tone to indicate the roaming condition. However, unless the FWT is re-programmed in the field, the factory default tone is set the same as normal service dial tone.

Non-Registered Service Tone – When the SIM Card is inactive, missing from the Phonecell, or installed but requires PIN entry, the receiver emits a non-registered service tone instead of the normal *(steady)* dial tone.

How to Use Call-Dependent Supplementary Services

Call-dependent supplementary services are those services handled within an active call. These features are network-dependent. Check with your cellular provider to determine available features.

Use the following commands to activate the call-dependent supplementary services:

NOTE: <send> is provided by the hookflash function (See the *Hookflash Function* section of this manual).

<u>**To Release All Held Calls or Set *User Determined User Busy* For a Waiting Call:**</u>

☞ Press: **0 <send>.**

<u>**To Release All Active Calls and Accept the Held/Waiting Call:**</u>

☞ Press: **1 <send>.**

<u>**To Release a Specific Active Call *x*:**</u>

☞ Press: **1 *x* <send>** (*x* represents the call ID 1-7).

<u>**To Place All Active Calls on Hold and Accept the Held/Waiting Call:**</u>

☞ Press: **2 <send>.**

<u>**To Place All Active Calls on Hold Except Call *x*:**</u>

☞ Press: **2 *x* <send>** (*x* represents the call ID 1-7).

<u>**To Add a Held Call to the Conversation:**</u>

☞ Press: **3 <send>.**

<u>**To Place All Active Calls on Hold and Make the Call to the Specified Phone Number:**</u>

☞ Press: **PhoneNo <send>.**

NOTE: When both a held and a waiting call exist in a conflicting situation, the above procedures apply to the waiting call.

<u>**Call Waiting:**</u>
Permits a subscriber to be notified of an incoming call while the subscriber is engaged in an active or held call. The subscriber can either accept, reject, or ignore the incoming call.

Activate:	**∗ 43 #**
Deactivate:	**# 43 #**
Interrogate:	**∗ # 43 #**

<u>**Call Hold:**</u>
Allows a served subscriber, who is provisioned with this supplementary service, to interrupt communication on an existing active call and then subsequently, if desired, re-establish communication. The traffic channel remains assigned to the subscriber after the communication is interrupted to allow origination or possible termination of other calls.

Phonecell Operation - continued

How to Adjust the Volume Level

If the volume level on your phone is too high or too low, you can adjust the levels using the keypad on your telephone. **Note: your telephone must be in Tone-Dial** *(DTMF)* **mode to adjust the levels.**

To Increase Audio Level **-** Increase the audio level in steps by pressing:

☞ **# ∗ 8**   *(also known as **# ∗ _Up_**)*

Continue to press **# ∗ 8** until the desired level is reached.

To Decrease Audio Level **-** Decrease the audio level in steps by pressing:

☞ **# ∗ 3**   *(also known as **# ∗ _D_own)***

Continue to press **# ∗ 3** until the desired level is reached.

NOTE: The default setting lets you adjust the audio up to three (3) steps from the default volume in either direction *(Up or Down)*. The volume setting remains in effect for future calls until changed manually, even if the telephone is on-hooked. If the Phonecell power is cycled (turned OFF/ON), the default mid-range volume setting will be restored.

Variable Dial Time *(Auto SEND Delay)* Option

When you place a call, your **Phonecell SX4e** automatically sends the phone number over the cellular network after you dial the last digit – just like a landline phone. However, to make sure you have enough time to dial the last digit, a 3-second *Auto SEND Delay* is programmed into the unit at the factory. *To change the Auto SEND Delay setting,* see the *How To Set the Auto SEND Delay* section of this manual.

Data After SEND *(In-Call DTMF Signaling)* Option

Depending upon your cellular provider, the Data After SEND option may need to be *Enabled* or *Disabled* to use special cellular features such as call waiting, three-way conference calls, voice mail, etc. *Please consult your service provider for the required Data After Send/In-Call DTMF Signaling configuration.*

The factory default setting is 0 (In-Band Signaling only). *To change the Data After SEND setting,* see the *How To Set Data After SEND (In-Call DTMF Signaling)* section of this manual.

Zero Dial Delay for Frequently Called Numbers

A new patented feature enables the Phonecell to recognize your frequently called phone numbers and send them immediately–without the 3-second Auto SEND Delay. The Phonecell stores a list of up to 50 numbers in its memory. This list contains any number that you've called at least twice successfully.

NOTE: Cycling *(turning OFF/ON)* the power will erase the current list. A new list will be started when power is re-applied. To enable or disable this feature*,* see the *Enable/Disable Zero Dial Delay for Frequently Called Numbers* section of this manual.

Phonecell Operation - continued

Caller ID Format

The Phonecell **SX4e GSM 1900 FWT** will support Caller ID device operation. The FWT factory default format is designed to work for most Caller ID devices. If the Caller ID device does not respond, then change the FWT Caller ID format using the programming command below. The Phonecell can be programmed with an ordinary touch-tone telephone.

> **NOTE:** The User Programming mode is not accessible during a call. Refer to the *Phonecell SX4e Programming* section of this manual to enter the Programming Mode.

Enter Caller ID Format

The following key sequence is used to select the Caller ID format:

Press **# * 84 *** <**CID format**> **#**

The Caller ID Format factory default value will work for most Caller ID devices. If the Caller ID device does not respond, program a value of **1** in the "**CID Format**" field. If the Caller ID device still does not respond, then program a value of **2**. If the value is not in the range 0 to 2, it is considered invalid and the FWT will not update or store this value; the currently stored value will remain. The factory default value is **0**.

When the FWT is programmed to Format 0, date and time information is not provided by the FWT. When the FWT is programmed to Format 1 or Format 2, the FWT provides "January 1, Midnight" as generic time and date information. The actual display of this generic date and time ("January 1, Midnight") will vary as it is determined by the Caller ID device.

For Caller ID Devices with Date and Time Display

When the Caller ID device is first powered, the date and time information will begin from "January 1, Midnight." The user cannot change the date and time through the FWT.

When the Caller ID format is set to factory default 0, date and time will continue to advance. Each incoming call will not affect the date and time.

When the Caller ID format is set to either 1 or 2, the date and time will be reset to "January 1, Midnight" for each incoming call.

Mobile Equipment Personalization

The terminal will support all five lock type features of GSM 02.02 Personalization features check information stored in the terminal which limits the SIMs with which the terminal will operate.Factory default is all lock types set to be deactivated. Please contact Telular Corporation if you need more information on this feature.

Using Standard Supplementary Services

Your **Phonecell SX4e** is compatible with a variety of special services, including:
- Call Forwarding
- Call Barring
- Call Waiting
- Three-Way Calling
- Caller ID
- Voice Mail

and more...

Depending upon your cellular provider, these services may be available on a subscription basis. However, certain dialing sequences must be entered. ***Please consult your service provider for the dialing instructions for your system.***

Standard supplementary services are defined as those supplementary services handled while not in a call. Depending on the supplementary service, several commands may be available. The command list is defined below:

Registration - The programming by the user of information to enable subsequent operation of a service. This action involves input of specific supplementary information. For example, when call-forwarding registration is initiated by the user, a forwarding number must be supplied.

Erasure - The deletion of information stored against a particular service by a previous registration.

Activation - An action taken by the FWT user to enable a previously registered process to run.

Deactivation - An action taken by the FWT user to terminate the process started at activation.

Depending on the supplementary service, additional parameters may be required to successfully complete an operation, such as phone number or password. Some supplementary services have optional parameters, such as Teleservice and/or Delay settings. Delay is the amount of time to wait before completing performance of a service that has a condition controlling its activity; for example, call forward on no answer waits an amount of time equal to the "delay" for the phone to be answered before declaring no answer and forwarding the call.

Teleservice: **10** = All Teleservices, **11** = Speech, **12** = Data, **13** = Fax, **16** = SMS, **19** = All Teleservices except SMS.
Delay: 5-30 seconds
PhoneNo: Up to 20 digits (0-9)

NOTE: <send> is provided by the hookflash function (See the *Hookflash Function* section of this manual).

Phonecell Operation - continued

Call Forwarding Unconditional:
Allows a called subscriber to have the network send immediately all incoming calls, or just those associated with a specific teleservice, addressed to the called subscriber's directory number to another directory number.

> Register: **∗ ∗ 21 ∗ Ph No ∗ Teleservice # <Send>**
>
> or
>
> **∗ 21 ∗ Ph No ∗ Teleservice # <Send>**
> Erase: **# # 21 ∗ Teleservice # <Send>**
> Activate: **∗ 21 ∗ Teleservice # <Send>**
> Deactivate: **# 21 ∗ Teleservice # <Send>**

Call Forwarding on Mobile Subscriber Busy:
Allows a called subscriber to have the network send immediately all incoming calls, or just those associated with a specific basic service group, addressed to the called subscriber's directory number and which meet "subscriber busy" to another directory number.

> Register: **∗ ∗ 67 ∗ Ph No ∗ Teleservice # <Send>**
> or
> **∗ 67 ∗ Ph No ∗ Teleservice # <Send>**
> Erase: **# # 67 ∗ Teleservice # <Send>**
> Activate: **∗ 67 ∗ Teleservice # <Send>**
> Deactivate: **# 67 ∗ Teleservice # <Send>**

Call Forwarding on No Reply:
Allows a called subscriber to have the network send all incoming calls, or just those associated with a specific basic service group, addressed to the called subscriber's directory number and which meet "no reply" for a specific amount of time to another directory number.

> Register: **∗ ∗ 61 ∗ Ph No ∗ Teleservice ∗ Delay # <Send>**
> Erase: **# # 61 ∗ Teleservice # <Send>**
> Activate: **∗ 61 ∗ Teleservice # <Send>**
> Deactivate: **# 61 ∗ Teleservice # <Send>**

Call Forwarding on Mobile Subscriber Not Reachable:
Allows a called subscriber to have the network send all incoming calls, or just those associated with a specific Teleservice group, addressed to the called mobile subscriber's directory number, but which is determined to be "not reachable", to another directory number.

> Register: **∗ ∗ 62 ∗ Ph No ∗ Teleservice # <Send>**
> Erase: **# # 62 ∗ Teleservice # <Send>**
> Activate: **∗ 62 ∗ Teleservice # <Send>**
> Deactivate: **# 62 ∗ Teleservice # <Send>**

Call Forwarding All Call Forwarding:
Allows a called subscriber to have the network send-after the stated delay-all incoming calls, or just those associated with a specific teleservice, addressed to the called subscriber's directory number to another directory number.

> Register: **∗ ∗ 002 ∗ Ph No ∗ Teleservice ∗ Delay # <Send>**
> Erase: **# # 002 ∗ Teleservice # <Send>**
> Activate**:**   **∗ 002 ∗ Teleservice # <Send>**
> Deactivate: **# 002 ∗ Teleservice # <Send>**

Phonecell Operation - continued

Call Forwarding Conditional Call Forwarding:

> Register: **∗ ∗ 004 ∗ Ph No ∗ Teleservice ∗ Delay #**
> **<Send>**
> Erase: **# # 004 ∗ Teleservice # <Send>**
> Activate: **∗ 004 ∗ Teleservice # <Send>**
> Deactivate: **# 004 ∗ Teleservice # <Send>**

Calling Line Identification Restriction:
If subscribed to in temporary mode, enable the calling party to countermand the subscribed-to presentation of its line identity to the called party for a specific call (i.e., the next call) only. (If subscribed to in permanent mode, the network will prevent presentation of the calling party's line identity to the calling party for every outgoing call.)

If subscribed to in temporary mode with default value "**presentation restricted,**" the user may suppress CLIR, for the specific call only:

> Register: **∗ 31 # Call Phone Number <Send>**

If subscribed to in temporary mode with default value "**presentation not restricted,**" the user may invoke CLIR, for the specific call only:

> Register: **# 31 # Call Phone Number <Send>**

Barring of All Outgoing Calls:
Allows a subscriber to have barring of certain categories of outgoing calls according to a barring program which is selected from a set of one or more barring programs chosen at provision time and is valid for all outgoing calls, or just those associated with a specific Teleservice.

> Activate: **∗ 33 ∗ Password ∗ TeleService # <Send>**
> Deactivate: **# 33 ∗ Password ∗ TeleService # <Send>**

Barring of Outgoing International Calls:
Outgoing call setup possibilities exist only to subscribers of the PLMN(s) and the fixed network(s) of the country where the mobile subscriber is presently located.

> Activate: **∗ 331 ∗ Password ∗ TeleService # <Send>**
> Deactivate: **# 331 ∗ Password ∗ TeleService # <Send>**

Barring of Outgoing International Calls Except Those Directed to the Home PLMN Country:
Outgoing call setup possibilities exist only to subscribers of the PLMN(s) and the fixed network(s) of the country where the subscriber is presently located or to subscribers of the home PLMN country of the served subscriber and to subscribers of the fixed network(s) in the home PLMN country.

> Activate: **∗ 332 ∗ Password ∗ TeleService # <Send>**
> Deactivate: **# 332 ∗ Password ∗ TeleService # <Send>**

Phonecell Operation - continued

Barring of All Incoming Calls:
Allows a subscriber to have barring of certain categories of incoming calls according to a barring program which is selected from a set of one or more barring programs chosen at provision time and is valid for all incoming calls, or just those associated with a specific basic service group.

> Activate**:** ∗ **35** ∗ **Password** ∗ **TeleService** **#** **<Send>**
> Deactivate: **#** **35** ∗ **Password** ∗ **TeleService** **#** **<Send>**

Barring of Incoming Calls when Roaming Outside the Home PLMN Country:
Calls which are terminated for the served subscriber is barred if the subscriber is roaming outside the home PLMN country.

> Activate: ∗ **351** ∗ **Password** ∗ **TeleService** **#** **<Send>**
> Deactivate: **#** **351** ∗ **Password** ∗ **TeleService** **#** **<Send>**

All Call Barring:
On activation all calls is barred; on deactivation all call barring is disabled.

> Activate: ∗ **330** ∗ **Password** ∗ **TeleService** **#** **<Send>**
> Deactivate: **#** **330** ∗ **Password** ∗ **TeleService** **#** **<Send>**

All Outgoing Call Barring:
On activation all outgoing calls is barred; on deactivation all outgoing call barring is disabled.

> Activate: ∗ **333** ∗ **Password** ∗ **TeleService** **#** **<Send>**
> Deactivate: **#** **333** ∗ **Password** ∗ **TeleService** **#** **<Send>**

All Incoming Call Barring:
On activation all incoming calls is barred; on deactivation all incoming call barring is disabled.

> Activate: ∗ **353** ∗ **Password** ∗ **TeleService** **#** **<Send>**
> Deactivate: **#** **353** ∗ **Password** ∗ **TeleService** **#** **<Send>**

Enter Caller ID Format Selection:
The following key sequence is used to enter the Caller ID format selection.

> **#** ∗ **84** ∗ **<CID format>** **#**

The CID format value is set to **0** to select a CID Multiple Data Message Format (MDMF) with no date of time information; set to **1** to select a CID MDMF with date and time information fixed at midnight, January 1; set **2** to select a CID Single Data Message Format (SDMF) with the date and time information at midnight, January 1. If the CID format is greater than **2**, it is considered invalid. The factory default is **0**.

Unstructured Supplementary Services:
Allows a user and a PLMN operator-defined application to communicate in a way which is transparent to the terminal and to intermediate network entities.

> **"any characters, from GSM 3.08 default alphabet"** **#** **<Send>**
> or
> **"1 or 2 characters, from GSM 3.08 default alphabet"** **<Send>**

How to Make an Analog Fax Call

How To Make Analog Fax Calls

Analog (i.e. normal fax from fax machine) fax calls (CCITT Group 3, Bearer Service TS 62) can be made from **phone** and **fax** jacks, depending on the option set.

How to Send Fax Calls

Step by Step Fax Instructions

1. Set up your fax machine just as you would for a wired telephone.

2. Outgoing fax calls at the fax jack are processed directly. Outgoing fax calls at the phone jack always require the analog fax bypass string, since the default for this jack is voice calls. See the *User Programming Commands* section of this manual for analog fax setup.

NOTE: Make sure the fax machine is properly connected as shown in *Figure 7*.

How to Receive Fax Calls

By factory default, you do not have to do anything to receive a fax, provided you have set-up your fax machine as shown in *Figure 7*. However, the user can have options to receive a fax through the phone port. Refer to the User Programming section of this addendum for instructions on programming of the single jack option and in-bound fax port option.

How to Set Up Analog Fax Bypass String

NOTE: The analog fax bypass string can only be used in single jack operation.

This feature allows the phone jack to process the next outgoing call as an analog fax call. After this call, the phone jack automatically returns to the default voice protocol. The user enters this string prior to dialing the telephone number. The terminal interprets the string and properly sets up the call. Refer to the following examples.

To Send a Fax on a Fax Machine Connected to the Phone Jack:

1. Lift up the handset (take off-hook).

2. Dial **# ∗ 19 ∗ 1 #**, followed by the fax number to be called.

3. Press **START** on the fax machine.

NOTE: If the fax machine does not have a handset, enter **# ∗ 19 ∗ 1 #**, followed by the remote fax number to be called. Press **START**.

If the fax machine has the capability to store telephone numbers for speed dialing, the **# ∗ 19 ∗ 1 #** command string may be programmed into the machine as a prefix to the telephone number. With some machines, it may also be possible to store the command string as a speed dial number and dial the remote fax machine telephone number manually.

Dual/Single Jack Operation

Dual-Jack Operation

The Phonecell SX4e may be operated in either dual-jack or single-jack mode. The factory default is dual-jack mode. In dual-jack operation, for outgoing calls, the first jack to seize the line (go off-hook) will disconnect the other jack. The other jack will remain disconnected until the first jack goes back on-hook. For incoming calls, voice calls will be routed to the phone voice jack and fax calls will be routed to the fax jack.

Single-Jack Operation

The analog fax jack can be disabled leaving only the voice phone jack operational (single-jack operation). In single-jack operation, voice calls can be placed and received normally if a telephone is connected. If a fax is connected, incoming analog fax calls can be received normally, but to place outbound fax calls using the voice jack, a bypass sequence must be used as a prefix in the dialed telephone number. The analog fax jack will not generate dial tone nor ring signal if it is disabled.

How to Set A Single - Jack Option

The following key sequence is used to enable or disable fax jack operation in favor of single jack operation (all telephone calls through phone jack):

<div align="center">

 # * 63 * <single jack> #

</div>

The single jack value is set to **0** for single fax jack operation; **1** for both voice and fax jacks. If the single jack value is neither **0** nor **1**, it is considered invalid. The factory default is **1**.

How to Set In-Bound Fax Port Option

The following key sequence is used to enter the inbound fax port option:

<div align="center">

 # * 67 * <fax_port> #

</div>

The fax port value is set to **1** incoming fax calls to the fax port (dual port operation), or phone port (single port operation), and **3** to send incoming fax calls to the DB - 9 PC port. If the fax port value is neither **1** nor **3**, it is considered invalid. The factory default is **1.**

NOTE: If the single jack option above is set to single, all incoming analog calls will always go to the phone port.

Phonecell SX4e Troubleshooting

Telephone Service is Not Working

If the telephone service is not working, first check the operation of the telephone equipment and wiring connected to your Phonecell. Test the equipment on a different service or piece of equipment to ensure proper operation, or connect a known good telephone device to the phone port on the Phonecell unit. This will verify the condition of the telephone equipment and the internal wiring of the telephone service to ensure that it's working properly. If the telephone system or wiring is not working properly, replace or repair the equipment as required. Otherwise, contact your cellular provider or your authorized Telular distributor.

Unable to Receive Incoming Calls

If more than one telephone or telephone device is connected to your Phonecell, make sure that all devices are "on-hook" *(hung up)*. If one extension is "off-hook" *(off its cradle)*, none of the extensions on your phone line will ring when an incoming call occurs.

Moisture or Ventilation Problems

Visually inspect your Phonecell's unit enclosure. Moisture can damage the equipment. Ventilation is also very important. If there are moisture or ventilation problems, move your Phonecell to correct as necessary, see the *Temperature Environment* section of this manual.

No Power

The top LED lamp on the front of your **Phonecell SX4e** indicates the unit's power condition. If the LED is YELLOW or GREEN, your Phonecell is receiving power. If the power cord is connected and the LED lamp is not lit, the Phonecell is not receiving power. Verify that the AC power source and its corresponding circuit breaker are functioning properly.

Battery Backup Failure

If you're using the optional Inline Battery Backup Unit, the unit must be connected to AC power for at least 24 hours to fully charge the batteries before they'll provide back-up power to your Phonecell. Verify that the batteries have been charged for at least 24 hours and that the power source and its corresponding circuit breaker are functioning properly. Then, examine the batteries for physical damage and corrosion. Replace the batteries if necessary.

> ### WARNING!
> *Only Authorized Service Personnel should remove the cover of your Phonecell. For further assistance, contact your Authorized Telular Representative. Please have your units model and serial number ready.*

Phonecell SX4e Programming

Phonecell SX4e User-Programming Commands

The Phonecell can be programmed on location with an ordinary telephone, which is sometimes referred to as a POTS *(Plain Old Telephone Set)* phone. **NOTE: the User Programming mode is not accessible while you're in a call.**

In the following sections, an **<entered value>** is comprised of the digits **0** through **9**. The digits '**∗**' and '**#**' are considered invalid when used inside an **<entered value>**, and will cause that command/value to be rejected.

When you enter the programming mode, a timer is started. If there are no key entries within any 2-minute period, the FWT will revert to its normal mode. Going on-hook *(hanging up the phone)* **will exit the programming mode.**

Correct entry of the commands below will be confirmed by the return of the programming tone, which signifies that the unit is ready to accept the next entry. Incorrect entry will result in a short, three tone sequence of rising frequencies, followed by the return of the programming tone, which again signifies that the unit is ready to accept the corrected entry.

How to Enter the User Programming Mode

Use the following access code to enter the User Programming mode:

Press: ☞　**# ∗ 0 ∗ 1 2 3 4 5 6 7 8 #**

The access code is **8** digits. If the access code is not 8 digits or does not match the access code, the Programming mode cannot be entered. This code is pre-programmed during production and cannot be changed in the field.

If you enter the access code correctly, the dial tone should change to a different, steady "Programming" tone and the bottom LED indicator on the front of the Phonecell will blink alternately RED and GREEN to indicate that you're in the programming mode.

User Programming Commands

How To Set Data After SEND (In-Call DTMF Signaling)

Use the following key sequence to select the type of in-call DTMF signaling:

Press: ☞　**# ∗ 10　∗ <in-call DTMF signaling> #**

The **< >** brackets represents the **1-digit** in-call DTMF signaling option:

    enter　☞　**0** for In-Band Signaling;
    enter　☞　**1** for Out-of-Band Signaling;
    enter　☞　**2** for both In-Band and Out-of-Band signaling;
    enter　☞　**3** for neither.

The in-call DTMF signaling value is set to **0** for in-band signaling; **1** for out-of-band signaling, **2** for both in-band and out-of-band, and **3** for neither. If the in-call DTMF signaling value is greater than **3**, it is considered invalid. The factory default is **1** (In-band signaling).

User Programming Commands - continued

How To Set the Auto SEND Delay
Use the following key sequence to set the Auto SEND Delay:

Press: **# * 11 * <delay> #**

The **< >** brackets represent the Auto SEND Delay. You must enter a value between **2** and **20** seconds, otherwise the FWT will not update or store this value; the existing stored parameter will remain. *(For instance, to enter a 5-second delay, press: # * 11 * 5.)* The factory default setting is **3** seconds.

How to Set the Pulse Dial Option
Use the following key sequence to set the Pulse Dial option:

Press: **# * 12 * <pulse-dial> #**

The **< >** brackets represent the **1-digit** Pulse Dial option:
      enter: **0** to disable pulse dialing capability
      enter: **1** to enable pulse dialing capability.
You must enter either **0** or **1**, otherwise the FWT will not update or store this value; the existing stored parameter will remain. The factory default setting is **1**.

Enable/Disable Zero Dial Delay for Frequently Called Numbers
Use the following key sequence to set the Zero Dial Delay option:

Press: **# * 21 * <zero-delay dial> #**

The **< >** brackets represent the **1-digit** Zero Dial Delay option:
      enter: **0** to disable Zero Dial Delay option
      enter: **1** to enable Zero Dial Delay option
You must enter either **0** or **1**, otherwise the FWT will not update or store this value; the existing stored parameter will remain. The factory default setting is **1**.

Output Level Option
Use the following key sequence to program the nominal audio output level:

Press: **# * 69 * <output level> #**

The output level value is set to **0** for low (-20dBm), **1** for normal (-14dBm) and **2** for high (-8dBm). If the output level value is greater than 2, it will be considered invalid. The factory default is **1**.

Phonecell SX4e Programming - continued

	IMPORTANT!
⚠	*The following commands may be used by a trained service technician to change the configuration of the Phonecell SX4e. WARNING: These commands are intended for use by trained service technicians only. Untrained users could damage the Phonecell SX4e, violate local regulations and breach the service agreement with the cellular provider. For further assistance, please contact your Authorized Telular Representative.*

Phonecell SX4e Technician-Programming Commands

The following commands are to used by trained field technicians to set up the Phonecell SX4e for operation in the network. Since these commands can directly affect the proper operation of the unit, there is an additional level of security to prevent casual access.

How to Enter Technician-Programming Mode

Use the following access code to enter the Technician-Programming mode:

Press: **# ∗ 0 ∗ 1 2 3 4 4 3 2 1 #**

The access code is 8 digits. If the access code is not 8 digits or does not match the access code, the Programming mode cannot be entered. This code is pre-programmed during production and cannot be changed in the field.

If you enter the access code correctly, the dial tone should change to a different, steady "Programming" tone and the bottom LED indicator on the front of the Phonecell will blink alternately RED and GREEN to indicate that you are in the Programming mode.

Technician Programming Commands

Enter Dial Tone After Remote On-Hook Option

Use the following key sequence to enter the dial tone after remote on-hook option:

Press: **# ∗ 8 ∗ <dial tone option> #**

The dial tone value is set to **0** for no tone after a remote on-hook; **1** to enable dial tone after remote on hook. If the value is neither 0 nor 1, it is considered invalid. The factory default is **0**.

Enter Post Receiver Off-Hook Option

Use the following key sequence to enter the post receiver off-hook option:

Press: **# ∗ 9 ∗ <post ROH option> #**

The post ROH value is set to **0** for continuous ROH tone; **1** to disable ROH tone and periodically check for an on-hook condition. If the post ROH value is neither 0 nor 1, it is considered invalid. The factory default is **1**.

Enter Call-Answered Supervision Pulse Option

Use the following key sequence to enable or disable the call-answered supervision pulse, select its frequency, and program its duration:

Press: **# * 18 * <cas_pls_enable> * <cas_pls_freq> * <cas_pls_duration> * <cas_pls_level> #**

The cas_pls_enable value is set to **0** to disable the pulse, **1** to enable the pulse. If the value is neither 0 nor 1, it will be considered invalid. The cas_pls_frequency value is set to **0** for 12 kHz, **1** for 16 kHz. If the value is neither 0 nor 1, it will be considered invalid. The cas_pls_ duration value is programmed in 1 ms increments from **10** to **65535** (10 - 65,535 ms). If the value is not between 10 and 65535, inclusive, it will be considered invalid. The cas_pls_level can be programmed to any of the values shown in the table below. If the cas_pls_level is not between 0 and 6, inclusive, it will be considered invalid. The factory default is **0**, **0**, **100**, **3**.

<cas_pls_level>	Power (dBm)
0	0 ± 3
1	3 ± 3
2	-6 ± 3
3	-9 ± 3
4	-12 ± 3
5	-15 ± 3
6	-18 ± 3

Enter Line-Reversal Outgoing Option

Use the following key sequence to enable or disable line (tip/ring) reversal for outgoing calls:

Press: **# * 22 * <line_reversal_outgoing> #**

The line-reversal outgoing value is set to **0** to disable line reversal, **1** to enable line reversal. If the value is neither 0 nor 1, it is considered invalid. The factory default is **0**.

Enter Line-Reversal Incoming Option

Use the following key sequence to enable or disable line (tip/ring) reversal for incoming calls:

Press: **# * 23 * <line_reversal_incoming> #**

The line-reversal outgoing value is set to **0** to disable line reversal, **1** to enable line reversal. If the value is neither 0 nor 1, it is considered invalid. The factory default is **0**.

Phonecell SX4e Programming - continued

Enter On-Hook Call Alert Cadence Option
Use the following key sequence to program the on-hook call alert ring cadence:

Press: **# ∗ 30 ∗ <on-time> ∗ <off-time> #**

Both the on-time and off-time durations are programmed in 100 ms increments from **1** to **255** (0.1 - 25.5 seconds). If the value is not between 1 and 255, inclusive, it will be considered invalid. The factory default is **20** and **40**, respectively.

Enter On-Hook Call Alert Frequency Option
Use the following key sequence to program the on-hook call alert ring frequency:

Press: **# ∗ 32 ∗ <frequency> #**

The frequency value is set to **0** for 20 Hz, **1** for 25 Hz, and **2** for 50 Hz. If the frequency value is greater than 2, it will be considered invalid. The factory default is **0**.

Enter Audio Input Impedance Option
Use the following key sequence to select the audio input impedance:

Press: **# ∗ 68 ∗ <audio Z> #**

The audio Z value is set to **0** for 600 ohms, **1** for 900 ohms. If the value is neither 0 nor 1, it is considered invalid. The factory default is **0**.

Enter Ring Back Request
Use the following key sequence to request immediate ring back:

Press: **# ∗ 13 ∗ #**

There is no ring back value to be set; the command activates when the phone is placed back on-hook.

Enter Restore Factory Defaults Request
Use the following key sequence to request restoration of all factory set default values (including the SIM PIN auto entry value):

Press: **# ∗ 15 ∗ #**

There is no restore defaults value to be entered; the command activates immediately. If a value is entered, it is considered invalid and the Phonecell will not restore the factory defaults.

Enter Periodic Self Test Option
Use the following key sequence to program periodic self test:

Press: **# ∗ 76 ∗ <self-test interval> #**

The self-test interval is programmed in 1 minute increments from **1** to **65**,**535**. A value of **0** disables periodic self test. If the value is not between **0** and **65**,**535**, inclusive, it will be considered invalid. The factory default is **180**.

Enter Disconnect Pulse Option

Use the following key sequence to enter the disconnect pulse option:

Press: **# * 79 * <disconnect pulse> #**

The disconnect pulse value is programmed in 1 millisecond increments from **10** to **65**,**535**. A value of **0** disables the disconnect pulse. If the value is not 0 or between 10 and 65,535, inclusive, it will be considered invalid and the FWT will not update or store this value; the currently stored value will remain. The factory default is **0**.

Enter Dial Tone Frequency Selection Option

Use the following key sequence to select the dial tone frequency option:

Press: **# * 80 * <dial tone frequency> #**

The dial tone frequency value is set to **0** to select the North American dial tone frequency pair (350 + 440 Hz) ; set to **1** to select European dial tone frequency (425 Hz). If the dial tone frequency selection option value is neither 0 nor 1, it is considered invalid and the FWT will not update or store this value; the currently stored value will remain. The factory default is **0**.

E*nter Mobile Equipment Personalization Option*

Use the following key sequence to enter the Mobile Equipment Personalization (MEP) options:

Press: **# * 37 * <MEP lock type> * <MEP Operation>**
                * <MEP Password> #

The MEP lock type value is set to 0 for SIM personalization; **1** for Network personalization; **2** for Network subset personalization, **3** for Service Provider personalization, **4** for Corporate personalization. If the MEP lock type value is not in the range 0 to 4, it is considered invalid. The MEP operation value is set to 0 to activate personalization; **1** to deactivate personalization; **2** to disable personalization; **3** is reserved for future use. If the MEP operation value is not in the range 0 to 3, it is considered invalid. The MEP password is a special value available only to authorized personnel. Factory default is all lock types set to deactivated.

Operation and Maintenance Center Terminate Number

Use the following key sequence to program the operations and mainte-nance center telephone number that the FWT receives calls from:

Press: **# * 83 * < number> #**

If the number length is greater than 16 numeric digits, it will be considered invalid. If no number is entered, the stored value is null. The factory default is null.

Appendix A: How to Setup PC Serial Ports for Phonecell Digital Fax/Data

Requirements

- **GSM account with your network service provider including a Data/Fax facility.**
- **PC/Laptop/ Notebook with Com Port.**
- **Windows 95**

*NOTE: When all of the above have been satisfied, you may proceed.*

Modem Setup

1) Power on your PC/laptop and start Windows 95.

2) Using the PC pointing device, press the "START" button, select "SETTINGS" and then "CONTROL PANEL". Once the Control Panel window appears double click the MODEMS icon button. The modem properties window will appear.
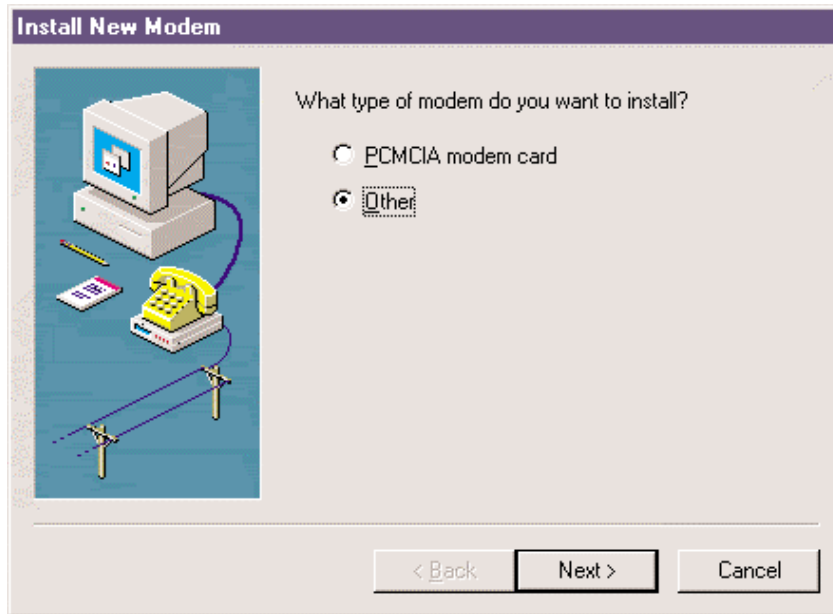
   NOTE: A data card modem device may appear in the list of installed modems.

3) Click the ADD button to install a new modem device for the phonecell.
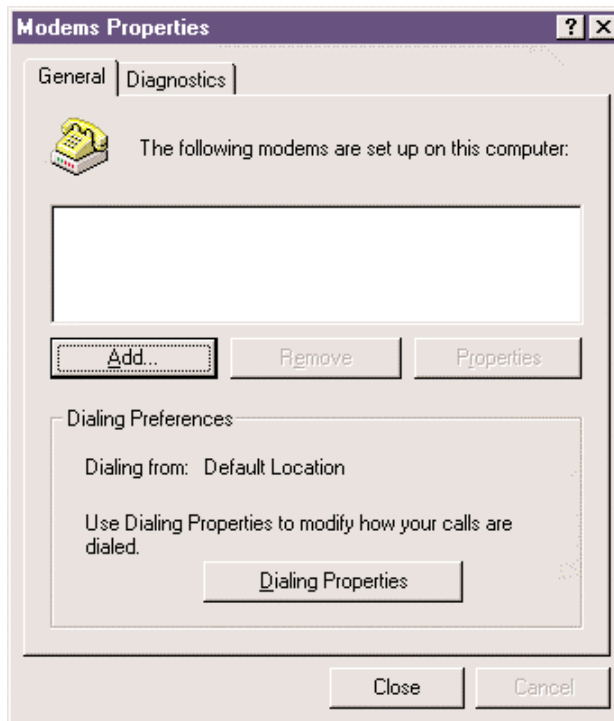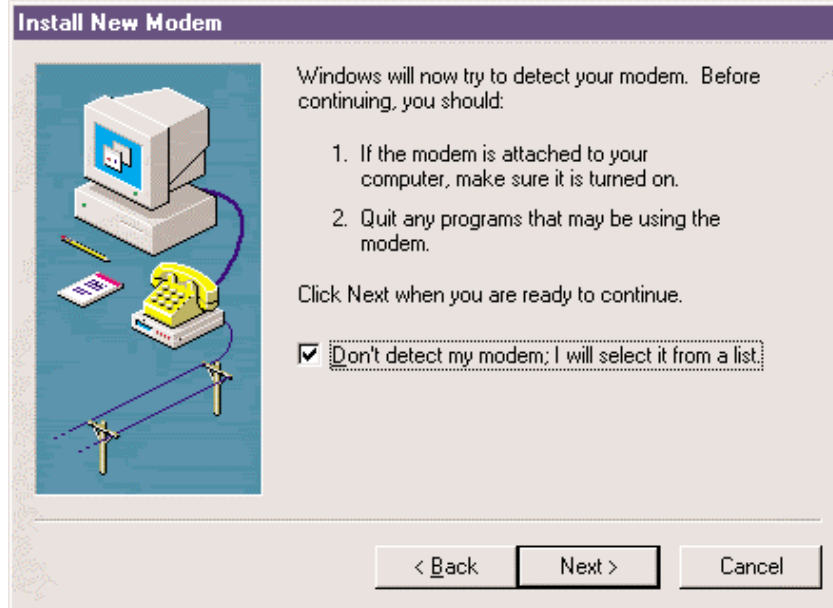
Appendix A: Phonecell Digital Fax/Data - continued

4) The install new modem window may appear asking for the type of modem to install. Click on "Other" followed by clicking the NEXT button. If this window does not appear, go to Step 5.
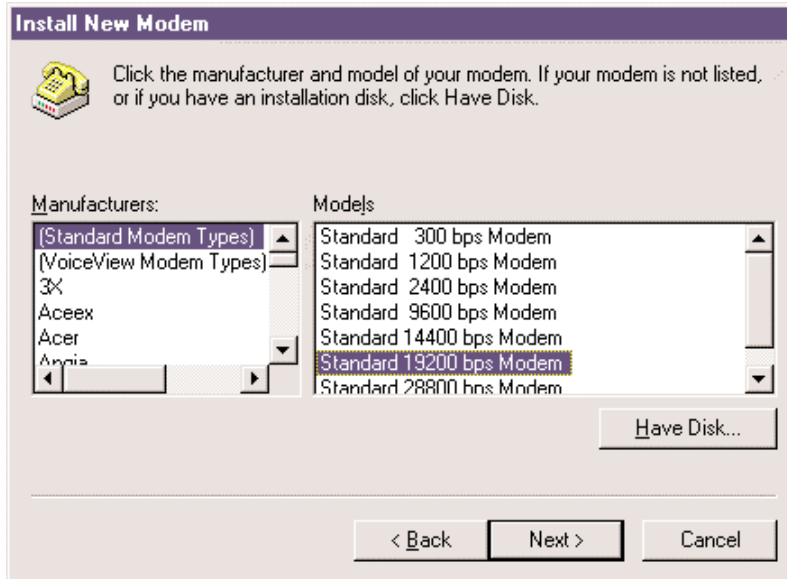

5) The install new modem window will appear. Then, click on the "Don't detect my modem option" followed by clicking the NEXT button.
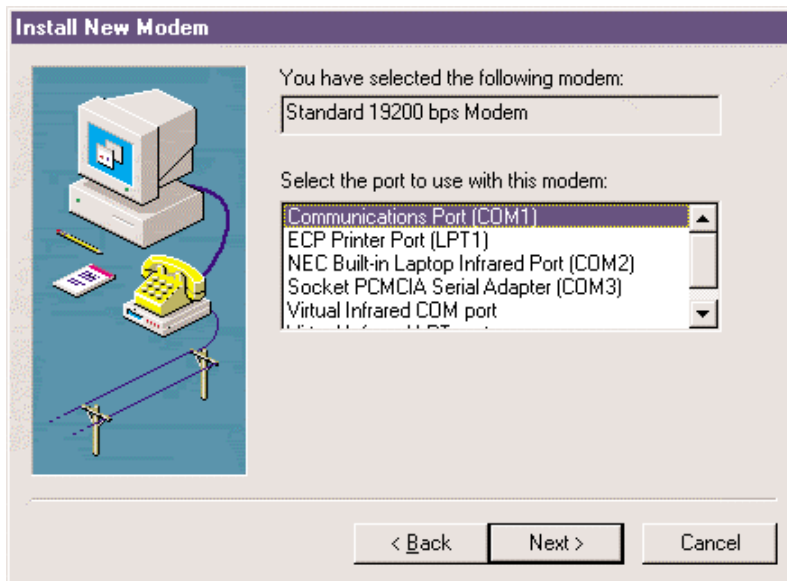
6) The install new modem will update again to select the manufacturer and modem model. Click on "Standard Modem Types" from the manufactures list followed by "Standard 19200 bps Modem" from the model list. Then click on the NEXT button.

Install New Modem

Click the manufacturer and model of your modem. If your modem is not listed, or if you have an installation disk, click Have Disk.

Manufacturers:

- (Standard Modem Types)
- (VoiceView Modem Types)
- 3X
- Aceex
- Acer
- Angia

Models

- Standard   300 bps Modem
- Standard 1200 bps Modem
- Standard 2400 bps Modem
- Standard 9600 bps Modem
- Standard 14400 bps Modem
- Standard 19200 bps Modem
- Standard 28800 bps Modem

Have Disk...

< Back   Next >   Cancel

7) The install new modem will update to select the com port. Click on the available serial port and then click on the "Next" button. Windows 95 will create a modem configuration file for the phonecell. This may take several minutes.

Install New Modem

You have selected the following modem:

Standard 19200 bps Modem

Select the port to use with this modem:

- Communications Port (COM1)
- ECP Printer Port (LPT1)
- NEC Built-in Laptop Infrared Port (COM2)
- Socket PCMCIA Serial Adapter (COM3)
- Virtual Infrared COM port

< Back   Next >   Cancel

Appendix A: Phonecell Digital Fax/Data - continued

8) The Install New Modem window will update again. Click on Finish to proceed.

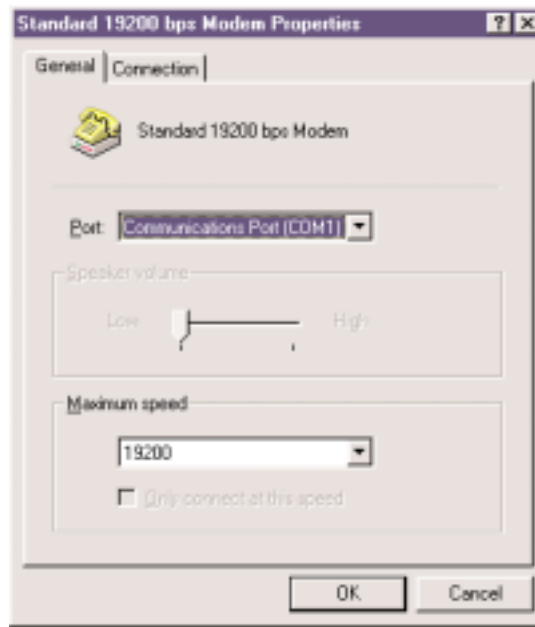**9)** The Modems Properties window should appear. Click on the Properties button.
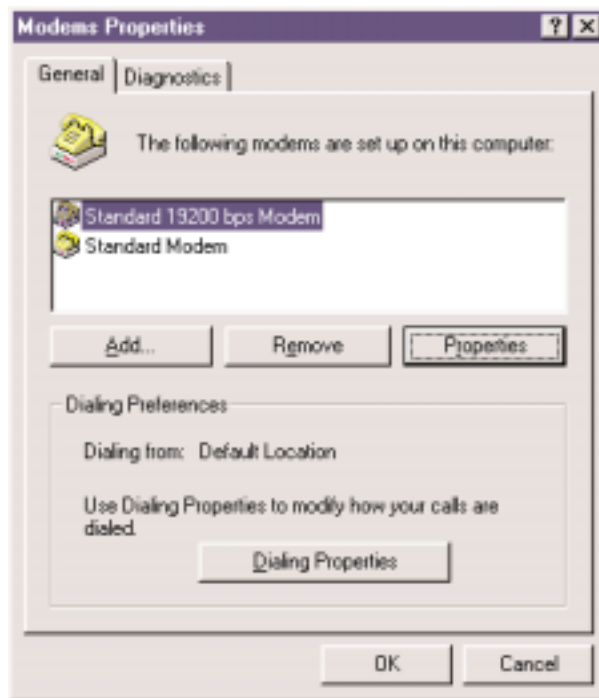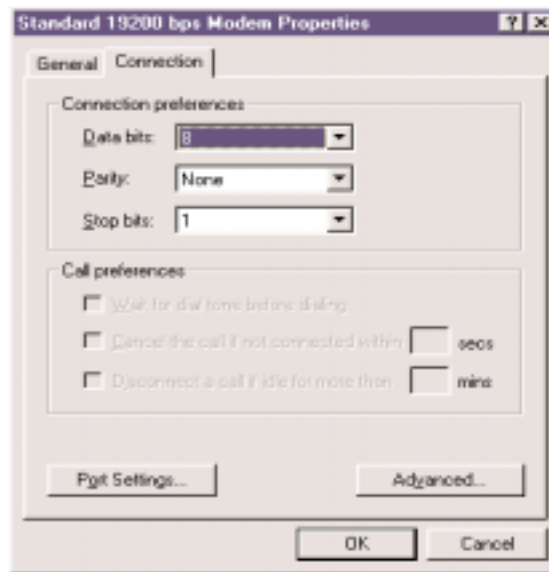
10) The Standard 19200 bps Modem Properties window will open in the General tab. Set as shown with the com port you have selected.

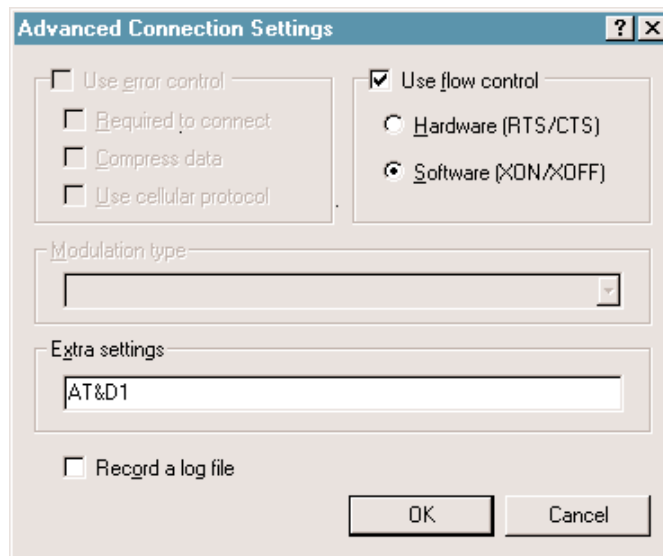**11)** Then click on the Connection tab. Set as shown below.

12) Click on the Advanced button. Set as shown.

13) Click on OK and Close to back out of each window. Your modem is now set up.