

# CMD-X2000

## SERVICE MANUAL

*AEP Model*  
*UK Model*



### SPECIFICATIONS

|                                   |                                                                                                                                                                                                                                                                                                              |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signalling format                 | GSM PHASE II                                                                                                                                                                                                                                                                                                 |
| Frequency range                   | Transmit: 890 ~ 915 MHz<br>Receive: 935 ~ 960 MHz                                                                                                                                                                                                                                                            |
| GSM power class                   | Class 4 (2 W)                                                                                                                                                                                                                                                                                                |
| SIM chip                          | Pluggable mini SIM card                                                                                                                                                                                                                                                                                      |
| Display                           | Two-row, resp. four-row full-graphic LCD display + ICON line<br>Resolution: 97 x 33 pixels = 3201 pixels                                                                                                                                                                                                     |
| Antenna gain                      | - 1.5 dBd (antenna extended)                                                                                                                                                                                                                                                                                 |
| Channel spacing                   | 200 kHz                                                                                                                                                                                                                                                                                                      |
| Number of channels                | 124                                                                                                                                                                                                                                                                                                          |
| Frequency stability               | Transmit frequency drift (synchronized)<br><math>\pm 0.1 \times 10^{-6}</math> kHz                                                                                                                                                                                                                           |
| RF output power                   | 2 W                                                                                                                                                                                                                                                                                                          |
| Power requirements                | 3.6 V (battery) 6.5 V (AC adaptor)                                                                                                                                                                                                                                                                           |
| Battery life                      | up to 100h standby time<br>up to 10h talk time                                                                                                                                                                                                                                                               |
| Operating temperature             | -25°C to +55°C                                                                                                                                                                                                                                                                                               |
| Storage temperature               | -40°C to +70°C                                                                                                                                                                                                                                                                                               |
| Battery pack charging temperature | +10°C to +40°C                                                                                                                                                                                                                                                                                               |
| Dimensions                        | 147.5 mm (H) x 45 mm (W) x 24.5 mm (D)                                                                                                                                                                                                                                                                       |
| Weight                            | 160 g                                                                                                                                                                                                                                                                                                        |
| Volume                            | 140 cm <sup>3</sup>                                                                                                                                                                                                                                                                                          |
| Accessories                       | QN-2000BP (battery pack), QN-2000DTC (desktop charger), QN-2000TC (travel charger), QN-2000LINK (PC link), QN-2000PCM (fax and data), QN-2000CC (car charger), QN-2000KIT (basic car kit), QN-2000HFK (hands-free car kit), QN-2000HEAD (headset), QN-2000CLIP (belt clip), QN-2000VAB (vibra alert battery) |

Design and specifications are subject to change without prior notice.  
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

**PORTABLE DIGITAL CELLULAR TELEPHONE  
WITH ACCESSORIES**

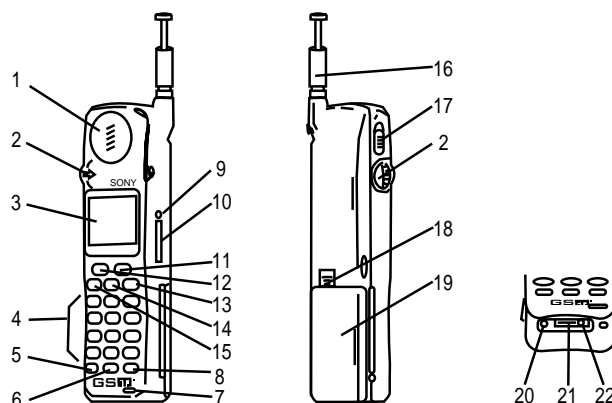
**SONY**

# SECTION 1

## OPERATING INSTRUCTIONS

### Quick Reference

- |                              |                                     |
|------------------------------|-------------------------------------|
| 1 Ear piece                  | 12 Service/Speed Dial Key           |
| 2 Jog Dial                   | 13 Exit Key                         |
| 3 Display                    | 14 Send Key                         |
| 4 Keypad (alphanumeric keys) | 15 Menu Key                         |
| 5 i Key                      | 16 Antenna                          |
| 6 Clear key                  | 17 Pop Up Switch                    |
| 7 Microphone                 | 18 Battery Release Switch           |
| 8 Power Key                  | 19 Battery Pack                     |
| 9 SIM Card Release           | 20 DC Jack (Charging)               |
| 10 SIM Card Holder           | 21 Battery Contacts (Charging)      |
| 11 Voice Mail Key            | 22 External Connector (Accessories) |



### Safety Precautions

- Do not use your phone in an aircraft, hospitals or petrol stations.
- Note that in some countries using a cellular phone without a hands-free kit while driving is not allowed.
- Do not pick up your phone by the antenna or exert excessive force on it.
- Do not expose your phone to extreme conditions such as high humidity/rain, high temperatures, direct sunlight, caustic/harsh chemicals or dust.
- Do not allow children to play with your phone.
- Take special care in the disposal of your battery, using a special facility where available. Do not puncture or burn.
- Limit the distance between the mains socket and the phone when charging for easy accessibility.
- Consult your physician or the manufacturer of personal medical devices (pacemakers, hearing aids, etc.) regarding any restrictions on the use of a mobile telephone.
- Use only Sony-approved batteries and accessories with your phone.

### Warning

Unauthorised batteries, chargers and accessories will invalidate any approvals and warranty given for your phone and may be dangerous.

### Welcome to the Sony CMD-X2000

Welcome to GSM (Global System for Mobile Communication). Your CMD-X2000 complies with this digital standard which is being implemented in more than 92 countries. The GSM networks are continuously being extended, so check with your Network Operator/Service Provider regarding current and planned network coverage (areas of service).

#### \* **What's included in your CMD-X2000 kit**

The kit should include following :

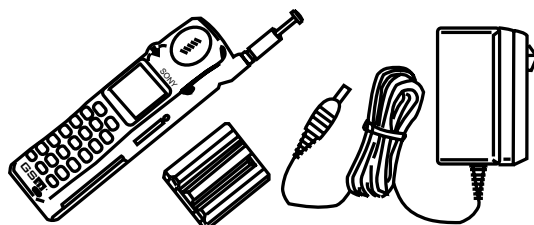
- This manual
- One CMD-X2000 mobile phone
- One lithium ion battery pack
- One charger




If one of these parts is missing, please contact your retail dealer immediately.

#### \* **The basic features of your CMD-X2000**

#### The jog dial (2)

The jog dial is important for quick and easy navigation and operation of the CMD-X2000. In idle mode (the network operator name appears on the display), press the jog dial once to activate the phone book. In menus and the standard phone book, rotate the jog dial up or down to scroll through the menu options or phone book and press the jog dial to make a selection. Press and hold the jog dial (for more than one second) to initiate a phone call.



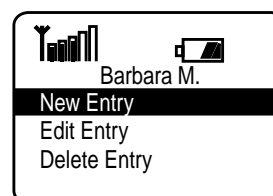
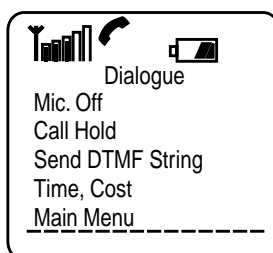
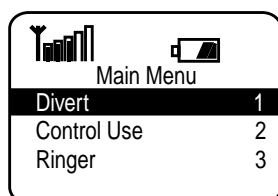
| Operation      |                                                                                   | Function                                                                                      |
|----------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Rotate         |  | Scrolls through menu options.                                                                 |
| Press (click)  |  | Selects (highlights) an option in the display.<br>Accepts an entry made by alphanumeric keys. |
| Press and hold |  | Dials the phone number selected.                                                              |

### Tip

The send key (14) performs the same function as pressing or pressing and holding the jog dial.

### The menu key (15)

The menu key is context-sensitive and leads you to a menu containing options appropriate for the current situation. In idle mode, press the menu key to activate the main menu. The main menu offers options to change your phone settings and set up different features which will be described in the following chapters. Press the menu key during a phone call to activate menu options which offer dedicated, call-related features (e.g. call hold). Press the menu key while in the phone book to activate a dedicated phone book menu for different phone book options (e.g. editing or deleting entries).



### The pop up switch (17)

Pop up the switch to unlock the keypad and to answer an incoming call. Slide the pop up switch down to lock the keypad and to terminate a call (see also “Basic operation”).

### The service number/speed dial key (12)

Press the service number key to select a dedicated phone book of service numbers provided by your network operator/service provider. If the service phone book is unavailable, you can otherwise store up to three speed dial numbers of your preference as a personal “mini” phone book and access these numbers via this dedicated key (see also “Using the phone book”).

### The voice mail key (11)

Press the voice mail key to automatically dial your voice mail number provided by your network operator/service provider (i.e. to listen to your messages, etc.) If this number was not programmed by your network operator/service provider, you can set it up yourself in the messaging menu by selecting the voice mail option (see also “Menu operations”).

### The i key (information) (5)

Press the i key to access additional information about the use of the current menu item or feature when the i icon appears in the display. Press the i key in the phone book to display information about the available memory of your phone book.

### The menu

Change the service and phone settings using the menu system of your CMD-X2000 (see also “Menu operations”). Simply press the menu key to select the main menu. Rotate the jog dial to scroll through the menu options. Press the jog dial to select the highlighted item.

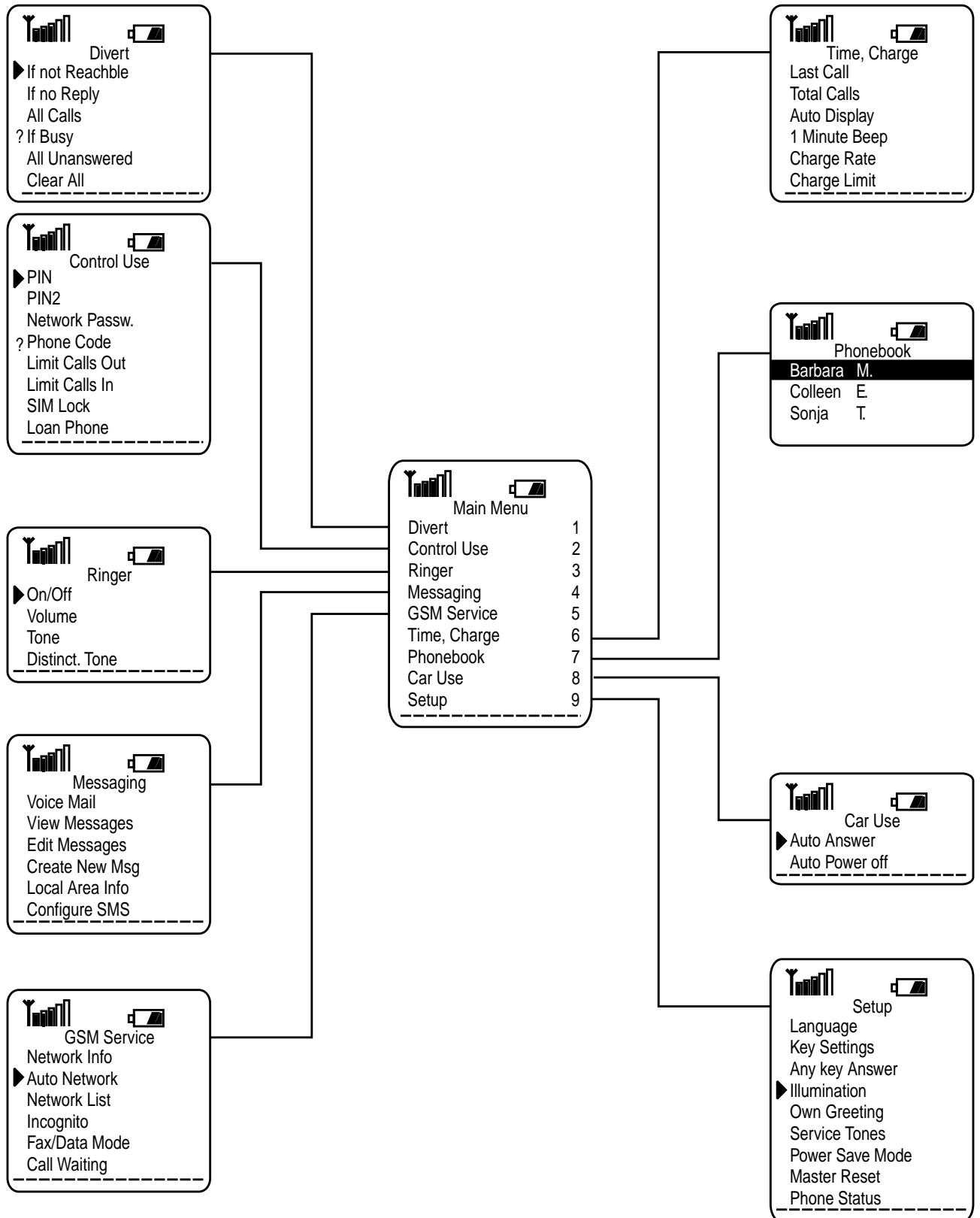
Press the number key corresponding to the menu option as a short cut to highlight and select that item. For example, press key number 4 in the main menu to directly access the time, charge menu.

Simply press the exit key (13) once to go one step back in a menu; press and hold the exit key to exit the menu and return to idle mode. After a lapse of 2 minutes, the CMD-X2000 automatically exits the menu and defaults to idle mode.

See the following menu tree for easy reference and navigation through the menu system.

**Note**

Some menu options may be network or subscription dependent. Please contact your network operator/ service provider for further details.



## SECTION 2 DISASSEMBLY



1. Remove Simcard holder , antenna (no tool needed), battery cover and battery.



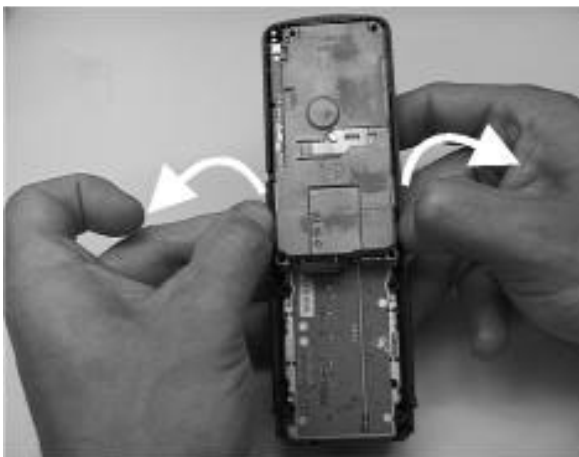
2. Remove 4 screws.



3. The back lower case assy and battery plate can now be separated from the upper case.



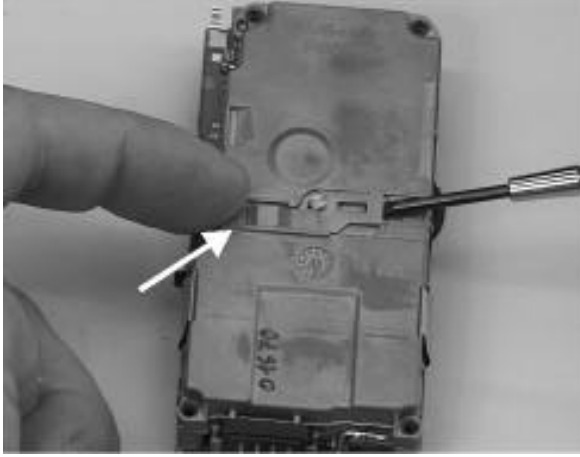
4. Remove 4 screws from the upper shielding.



5. The electrical part (= MMI board with RF/logic unit as a whole) is held onto the upper case by a claw on either side. Therefore , in order to release the upper case from the electrical part , squeeze both sides of the upper case gently to the outside and at the same time push the electrical part upward.



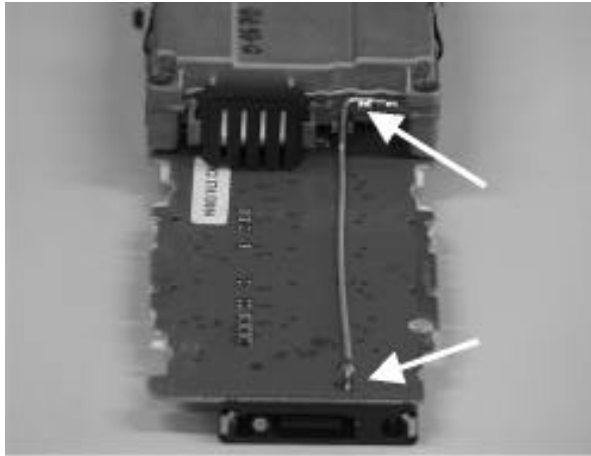
6. The upper case can now be taken away , speaker, earphone microphone and keyboard are now accessible.



7. To separate the RF/Logic block from the MMI board, lift the spring slightly using a small flat screwdriver while pushing it to the right with your finger.



8. When the spring is taken off, the RF/Logic unit can be lifted. The centre bolt (MMI support) can now also be taken away. Note that the centre bolt is not symmetric (comparing both ends). The shorter end fits into the MMI board.

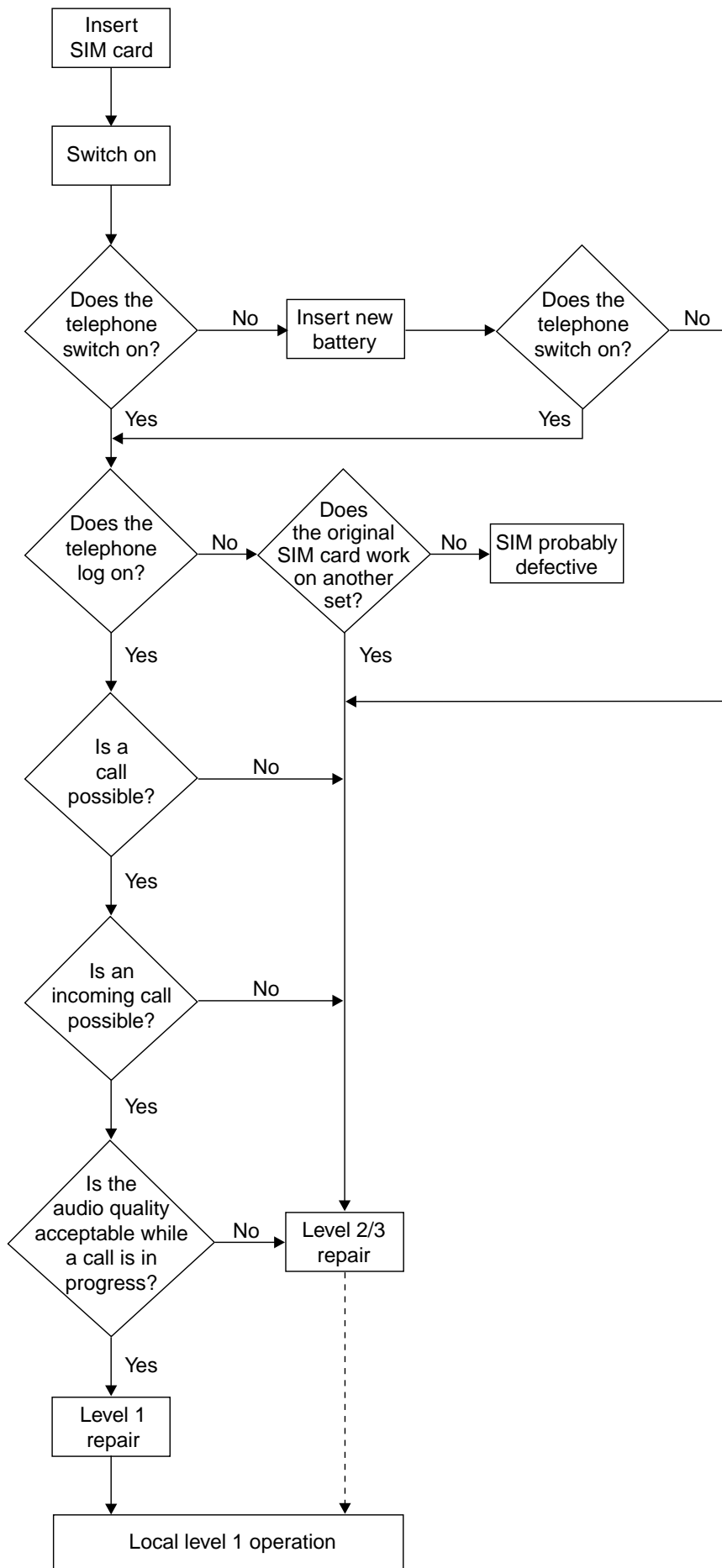


9. When unsoldering or resoldering the coax cable, be very precise and use the exact correct amount of soldering, not too much, not too little. The RF level towards the car connector can be affected drastically by bad solderings.



**10. The RF/Logic unit is 1 item, it should never be disassembled. Separate parts are not available. The IMEI number in the RF/Logic memory has to be equal to the IMEI number on the battery plate assy.**

## SECTION 3 LEVEL 1 TROUBLESHOOTING CHART



# SECTION 4

## PROGRAMMING INSTRUCTIONS

### 1 Hardware Setup

The software programming setup requires a PC (386 type or higher) and the bootadaptor kit. The boot adaptor kit consists of bootadaptor, cables and power supply.

- Connect RS232 cable from bootadaptor to com-port of PC (com 1 or com 2)
- Connect power supply (9V) to bootadaptor
- Connect bootadaptor to CMDX2000

### 2 Software setup

The software is distributed automatically after registration of the bootadaptor. Install the software into a dedicated directory on the PC. It is ADVISABLE to perform the software programming ONLY starting from DOS, not under Windows. If starting under windows, there is a slight chance that the windows program, still running on the background, causes interruptions which might prove to be fatal.

Following files are available :

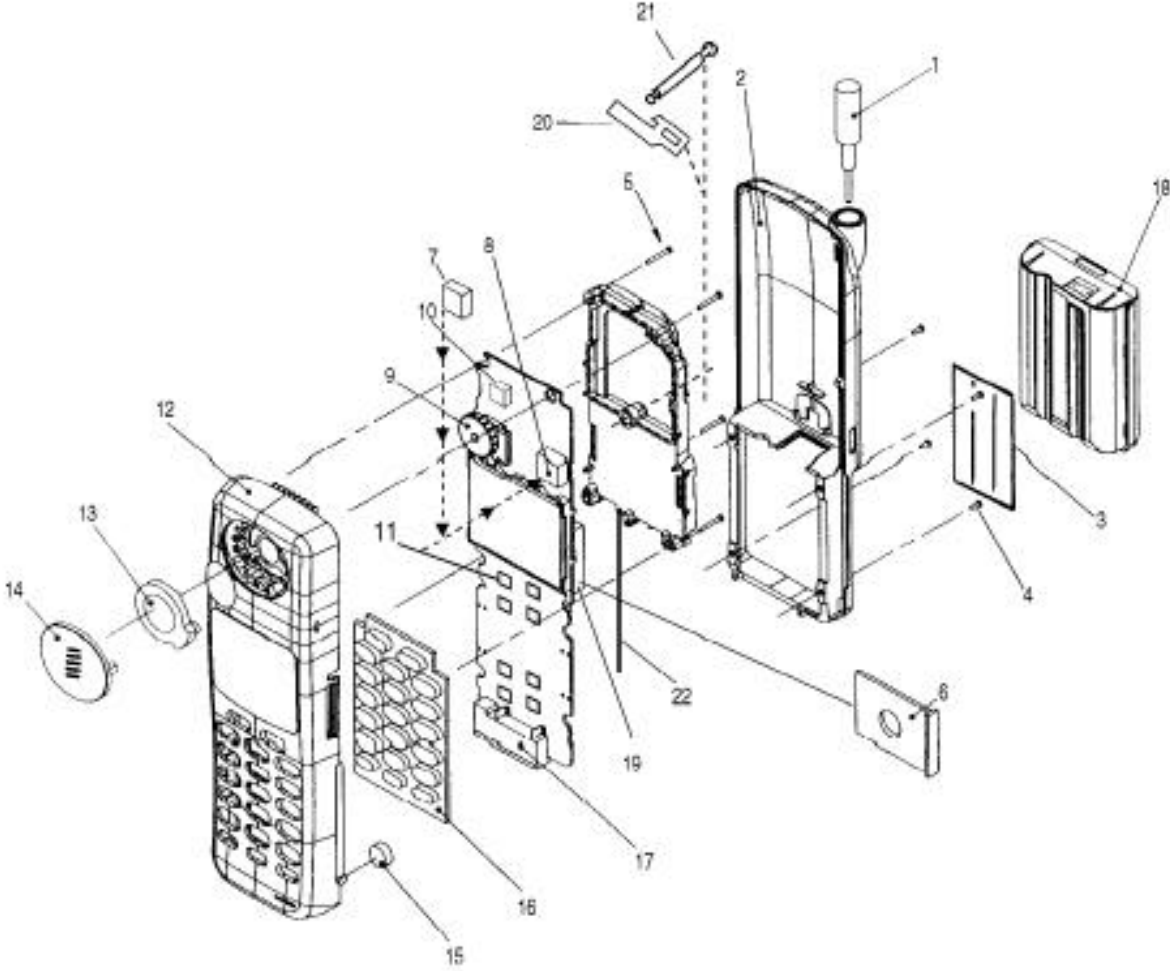
- swupinst.exe : this program enables you to choose language, to check com-port and to check connection to the CMDX2000
- swup.ini this file contains language setting and com-port setting (can be changed from swupinst.exe or by using editor program)
- langgrpX.xbi : each langgrpX.xbi file contains the full software package for a certain language group, when starting the programming the correct choice of language group has to be made by operator
- swup.exe : start program for software programming, following options are possible :
  - swup.exe /i : information on the software version is shown
  - swup.exe /h : a small helpfile is shown
  - swup.exe langgrpX.xbi : starts the software programming sequence for a language group.

### 3 Programming instructions :

- Make sure a battery is in the CMDX2000.
- Make sure the bootadaptor is powered.
- Connect CMDX2000 to bootadaptor and check proper connection from bootadaptor to PC.
- Start PC under DOS, or exit windows.
- Start software programming sequence with instruction: swup.exe langgrpX.xbi (X = number of language group, depending on available language group files).
- The software update will now be performed automatically, no further intervention is needed.



# SECTION 5 EXPLODED VIEW



## SECTION 6

### SPARE PARTS AND ACCESSORIES LIST

| Ref. No. | Part Number  | Description         |
|----------|--------------|---------------------|
| 1        | 1-501-941-11 | Antenna             |
| 2        | X-3374-024-1 | Case (lower)        |
| 3        | X-3374-025-1 | Plate, battery assy |
| 4        | 3-018-366-01 | Screw torx 2.0 x 6  |
| 5        | 3-015-723-01 | Screw torx 1.8 x 16 |
| 6        | 3-015-724-01 | Sim holder          |
| 7        | 3-015-725-01 | Cover ringer        |
| 8        | 1-759-436-21 | Ringer              |
| 9        | 1-475-287-21 | Jog dial            |
| 10       | 1-572-688-22 | Switch key lock     |
| 11       | 8-719-053-07 | Led (sml310mtt86)   |
| 12       | X-3374-026-1 | Case (upper)        |
| 13       | 1-505-702-11 | Speaker             |
| 14       | 3-015-741-01 | Ear piece           |
| 15       | 1-542-329-11 | Microphone          |
| 16       | 3-015-718-01 | Key main            |
| 17       | 1-779-749-21 | I/O connector       |
| 18       | 1-528-804-11 | Battery             |
| 19       | 1-779-751-21 | Connector, Sim      |
| 20       | 3-015-722-01 | Spring, fixed       |
| 21       | 3-015-719-01 | Support MMI         |
| 22       | 1-782-532-11 | cable, coaxial      |

#### Jigs & tools

|              |                               |
|--------------|-------------------------------|
| 9-948-005-89 | Bootadaptor (programming jig) |
| S-0953-004-0 | Torx T6 screwdriver           |

#### Accessories

|              |            |
|--------------|------------|
| 1-475-286-11 | AC adaptor |
|--------------|------------|



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