CMD-C1/C8

SERVICE MANUAL

CMD-C1 : AEP Model
UK Model
AUS Model
CMD-C8 : China Model

SPECIFICATIONS

Signalling format	GSM
Frequency range	Transmit: 890 ~ 915 MHz Receive: 935 ~ 960 MHz
GSM power class	Class 4 (2 W)
SIM chip	Pluggable mini SIM card
Display	High resolution full graphics display Resolution: 97 x 33 pixels 1 header line for icons 3 lines x 16 large characters
Channel spacing	200 kHz
Number of channels	124
Frequency stability	Transmit frequency drift (synchronized) < ± 0.1 p.p.m.
RF output power	2 W
Power requirements	3.5 V ~ 4.0 V (nominal)
Battery life	Standby : up to 115h Talk time : up to 5.5h

PORTABLE DIGITAL CELLULAR TELEPHONE WITH ACCESSORIES

SONY

Operating temperature	–10°C to +55°C
Accessories operating temperature	0°C to +45°C
Battery pack charging temperature	0°C to +40°C
Dimensions	98 mm x 60 mm x 26 mm
Weight	107 g
Volume	114 cm^3
Supplied accessories	Power adaptor QN-C11AC (AEP), QN-C12AC (UK), QN-C13AC (AUS), QN-C81AC (China)
Optional accessories	Handsfree kit QN-C1HFK Cigar lighter charger QN-C1CC

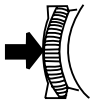
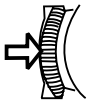
Design and specifications are subject to change without prior notice.
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

SECTION 1
OPERATING INSTRUCTIONS

The Basic Features of Your CMD-C1

The Jog Dial

The Jog Dial provides one-handed operation navigated by your left hand, freeing your right hand for other activity like taking notes, etc. Give the Jog Dial a quick turn in either direction in standby mode to spin through the main menu options. With one simple press of the Jog Dial in standby mode (the Network Operator name appears on the display), the Phonebook is at your fingertips. Press and hold the Jog Dial (for more than one second) to call a Phonebook selection or number on the display.

Operation		Function
Rotate		Scrolls through menu options.
Press (click)		Selects an option (highlighted) in the display. Accepts an entry made by alphanumeric keys.
Press and hold		Dials the phone number selected. Exits from one menu to the previous one.

The Menu Key

In standby mode, press the Menu key and then use the Jog Dial to spin through the Main Menu with options to change your phone settings and access different features. See also Menu Operation.

The Manner key

This is the key to good mobile phone manners. Press the Manner Key once to quickly turn the ringer to silent mode to avoid disturbance. Just press twice and the ringer is restricted to a descrete single beep. To turn the ringer on again, simply press the Manner Key again. During a call you can also press the Manner key once to mute the microphone; press again to turn on the microphone. For your reference, the options you activated using the Manner Key are indicated by an icon in the display.

The Voice Mail Key

To speed dial your Voice Mail, press and hold the 1 Key to automatically dial your “personal answering service” to listen to messages, etc. See also Phonebook, Voice Mail.

The keypad Lock

Your CMD-C1 can be locked to avoid involutary dialling or menu scrolling especially when carrying your mobile phone. Simply press followed by the # key to lock your CMD-C1 keypad and even the Jog Dial restricting any activity EXCEPT emergency calls (112). Simply repeat the key combination (then # key) in order to unlock your CMD-C1 again.

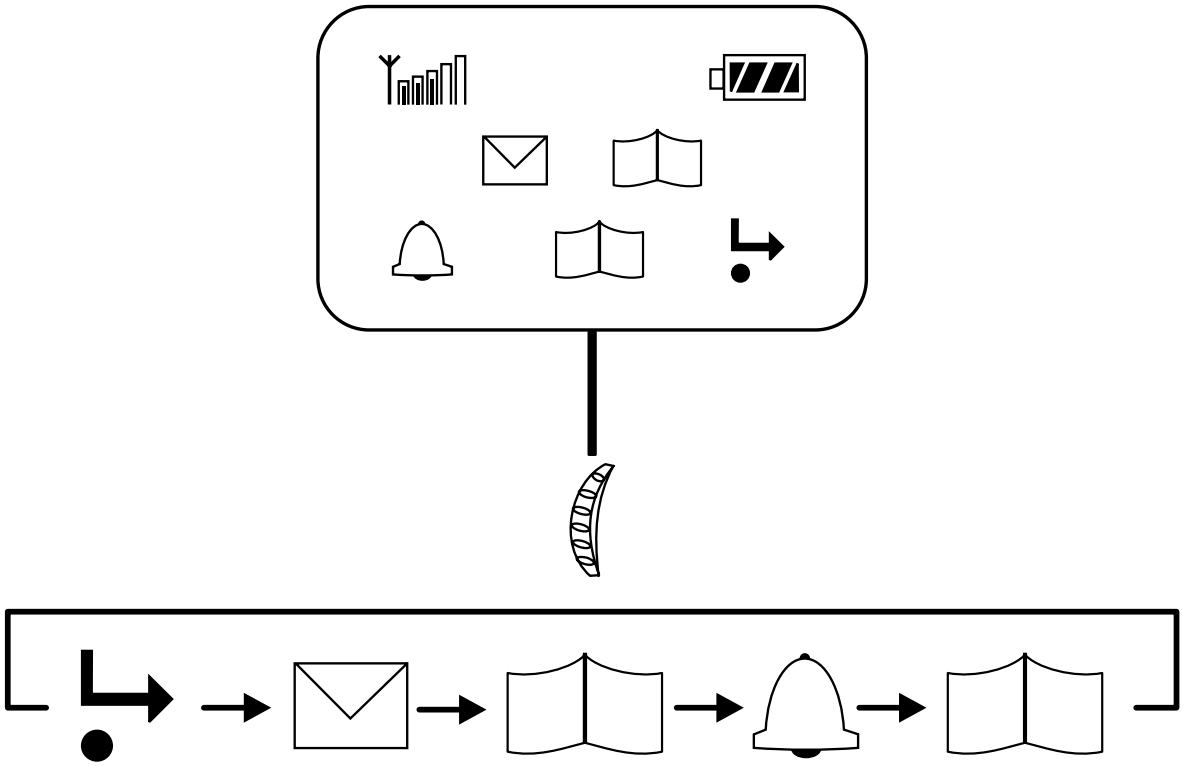
Icon Glossary

The Sony CMD-C1 lets you see at a glance if you have missed calls, have messages waiting, and the status of options you have selected (like if you have diverted your phone or turned the ringer off). Sony has developed the following icons to provide you with a quick overview of your mobile activity :

Icon	Explanation
	Keypad locked
	SMS Message waiting (flashing = SMS memory storage full)
	Voice Mail Notification
	Battery strength (flashing = battery level low)
	Network Signal strength
	Network not available (no calls possible)
	Incoming call
	Option activated
	Missed calles (Priority 1)
	Limit Calls In/Out activated (Priority 2)
	Limit Calls Out activated (Priority 2)
	Limit Calls In activated (Priority 2)
	Divert options activated (Priority 3)
	Ringer switched to Silent Mode (Priority 5)
	Ringer switched to Single Beep
	Ringer switched to volume 0
	Ringer Volume choices
	Speaker Volume
	Microphone Mute

Menu Overview

Rotate the Jog Dial or press the Menu key from standby mode to access the main menu :



DIVERT (page 24)

- If Not Reachable
- If No Reply
- If Busy
- All Calls
- Clear All

MESSAGING (page 26)

- Read
- Create
- Service Centre
- Settings
- Local Area Info

REDIAL LIST (page 32)

- Last Calls
- Received Calls
- Missed Calls

CONTROL (page 33)

- Security
- Network Services
- Call Cost

PREFERENCES (page 42)

- Caller ID
- Language
- Ringer Volume
- Ringer Tone
- Any Key Answer
- Key Click Sound
- DTMF Key Tones
- Illumination
- Auto Redial
- Auto Answer
- 1 Minute Beep
- Factory Settings

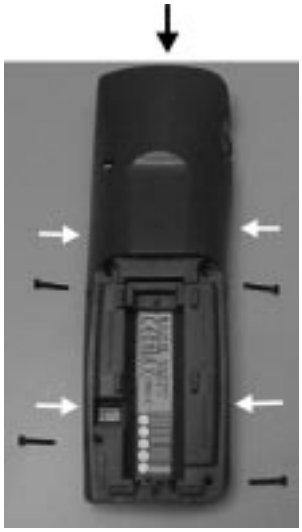
SECTION 2
DISASSEMBLY

Important notes :

1.The IMEI sticker mounted on the main board (visible from the battery compartment) should under no condition be removed. The IMEI number is the electronic identification of the hardware, it is also stored electronically and at no time is a discrepancy between number on the sticker and number within the set logic allowed.

2.The antenna unit can only be lifted off as a unit to allow access to parts underneath. The antenna itself needs to be handled with care. Damage, deformation or incorrect mounting of the patch antenna can lead to incorrect performance and even interference of the set.

1. Remove the battery cover and the battery. Note that the SIM card is also located in this area.



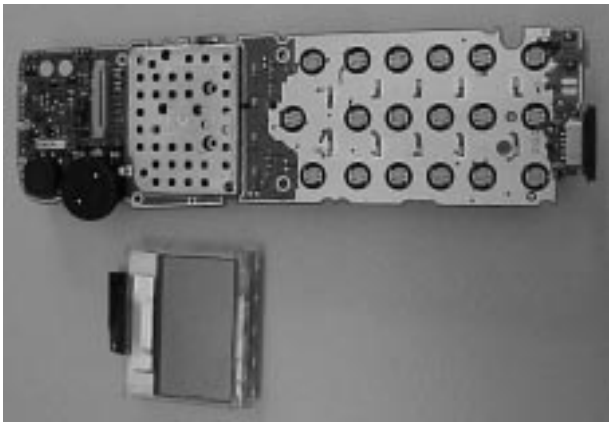
2. Remove 4 screws in the battery compartment. The upper and lower case are held by a number of claws, positions are indicated.

3. The lower claws can be released by gently pushing the upper case to left/right versus the lower case.

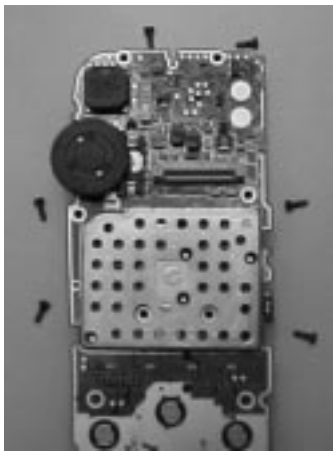
4. Insert the hook release jig (p/n 9-948-370-20) in the gap between upper and lower cosmetic, as indicated in the picture.

5. Push the hook release jig gently to the lower side, while holding the CMD-C1. In this way the hook release jig is used as a lever. More clamps between upper and lower case will now release and the parts can be taken out.

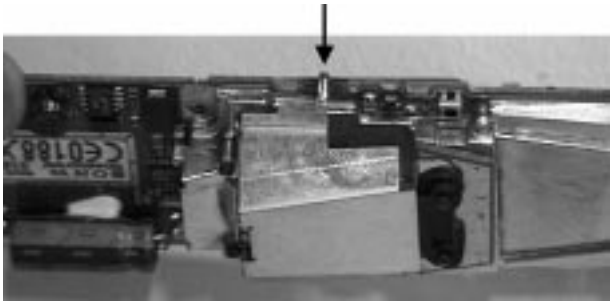
6. The front cosmetic and back cosmetic can now be separated, and the main board can be taken out.

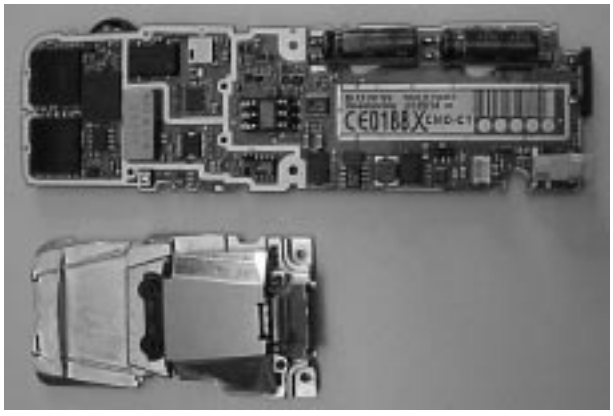


7. The display unit can be lifted out. The LCD is connected with a flex cable and the LCD support is clamped onto the main board (2 clamps left and right side).

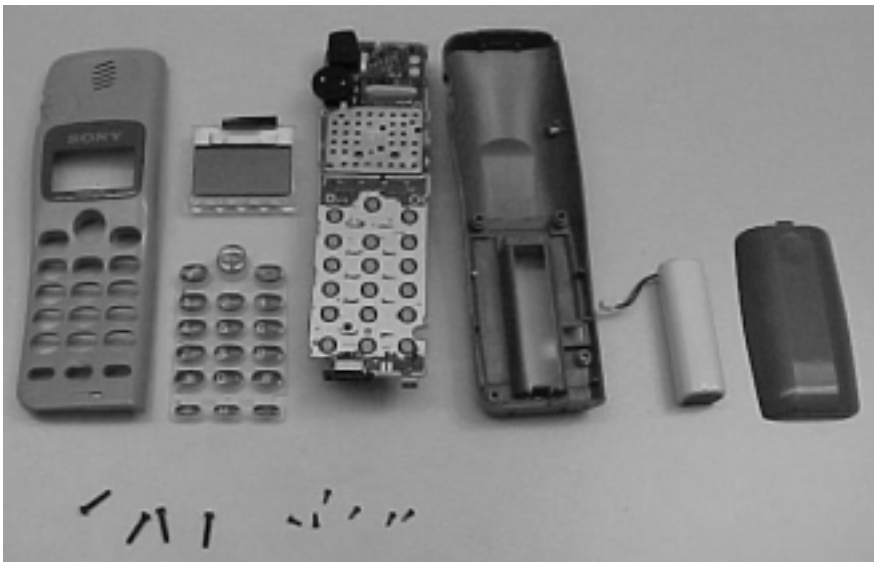


8. Remove 6 screws located on the display side to release the patch antenna.





9. Unsolder the antenna on the right side. The patch antenna assy can now be lifted off. fIt should be considered as one non-serviceable and sensitive item.



10. Parts on the main board specified in the parts list can now be reached.

For reassembly, apply the disassembly procedure in reverse order.

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PROGRAMMING INSTRUCTIONS

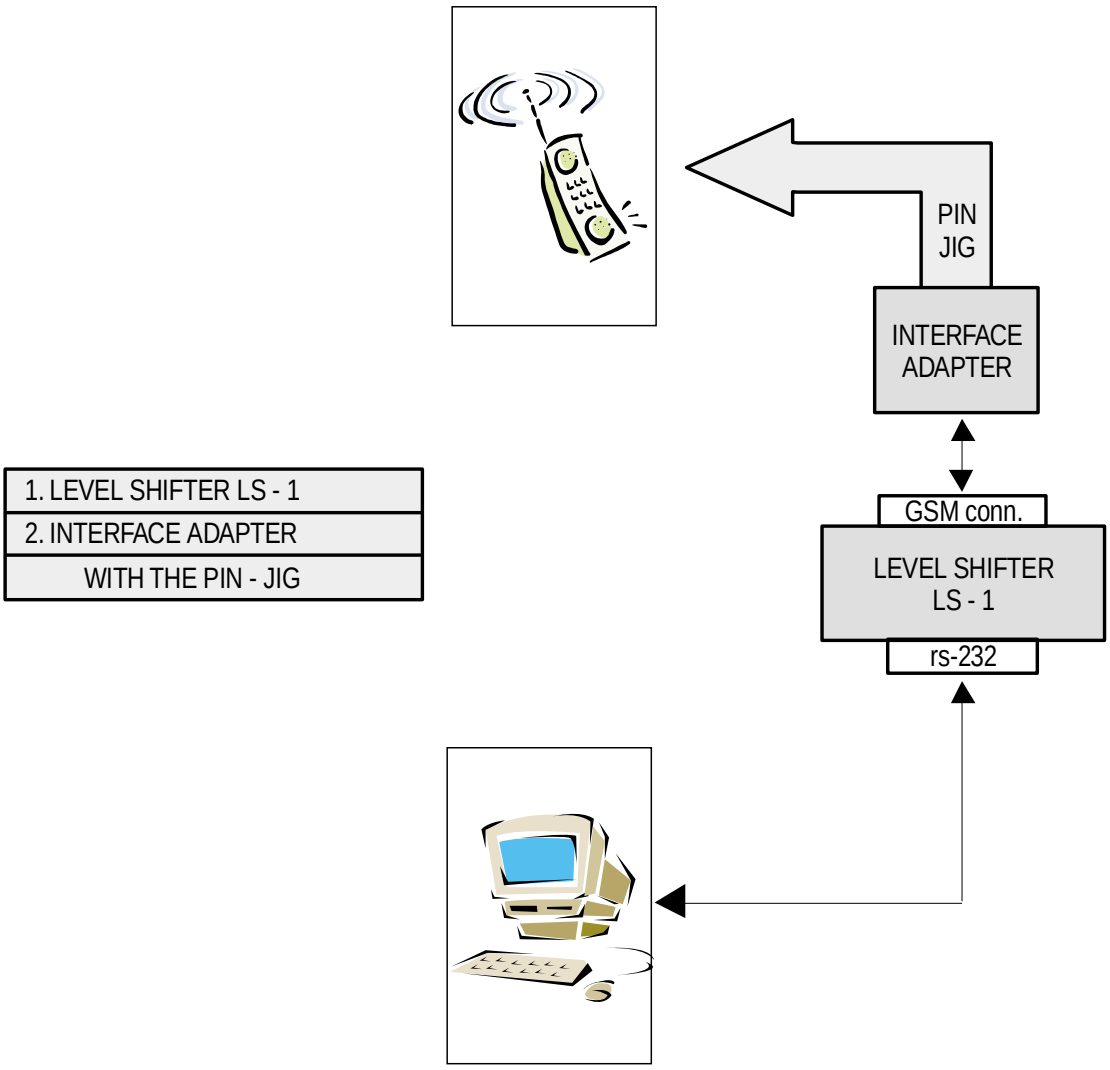
1. Setup

The software programming setup requires a PC (386 type or higher), the Level Shifter (LS-1), Connection Cable to the PC and the Level Shifter extension.

- Connect the RS 232 cable from the Level Shifter to the com-port of the PC (com 1 or com 2).
- Connect the Level Shifter extension between CMD-C1 and the Level Shifter.
- Connect the power supply to the Level Shifter.

No specific software installation is needed; only copy all the files to the PC.

PREPARATION FOR SOFTWARE UPDATE



2. Important notes

- Before connecting the CMD−C1 to the Level Shifter, take out the battery of the CMD−C1; the CMD−C1 must be powered from the Level Shifter with the GSM-switch. All other switches are always in the ON-position.
- The initial settings of the flash.exe program may not correspond with the normal correct settings. It is highly advisable to check the settings first (see below).

3. Software setup

* *Loading new software into the flash.*

- Start the program flash.exe by double-clicking on its icon in the explorer.

- Select “File”/“Settings...” and check if the settings for the “Com Port”, the “Baud Rate” and the “Erase Mode” are correct. Normally the “Load Options” do not have to be changed. The default values are :

Com Port:	COM 1
Baud Rate:	115200
Load Options:	Both
Erase Mode:	Program Area, Smart Erase (!disable melody area erase for normal software update)

After changing the settings, the new values are stored in the file “flash.ini” in the windows directory.

- Select “File”/“Open...” to select an S record file for downloading. The C1.SRE file contains the software for C1. Any other .SRE file is either only needed for the program itself, or can be a melody file (see below).

- Press the “LOAD” button of the program.

- Power-on the mobile.

- Now the program runs automatically.

NOTE

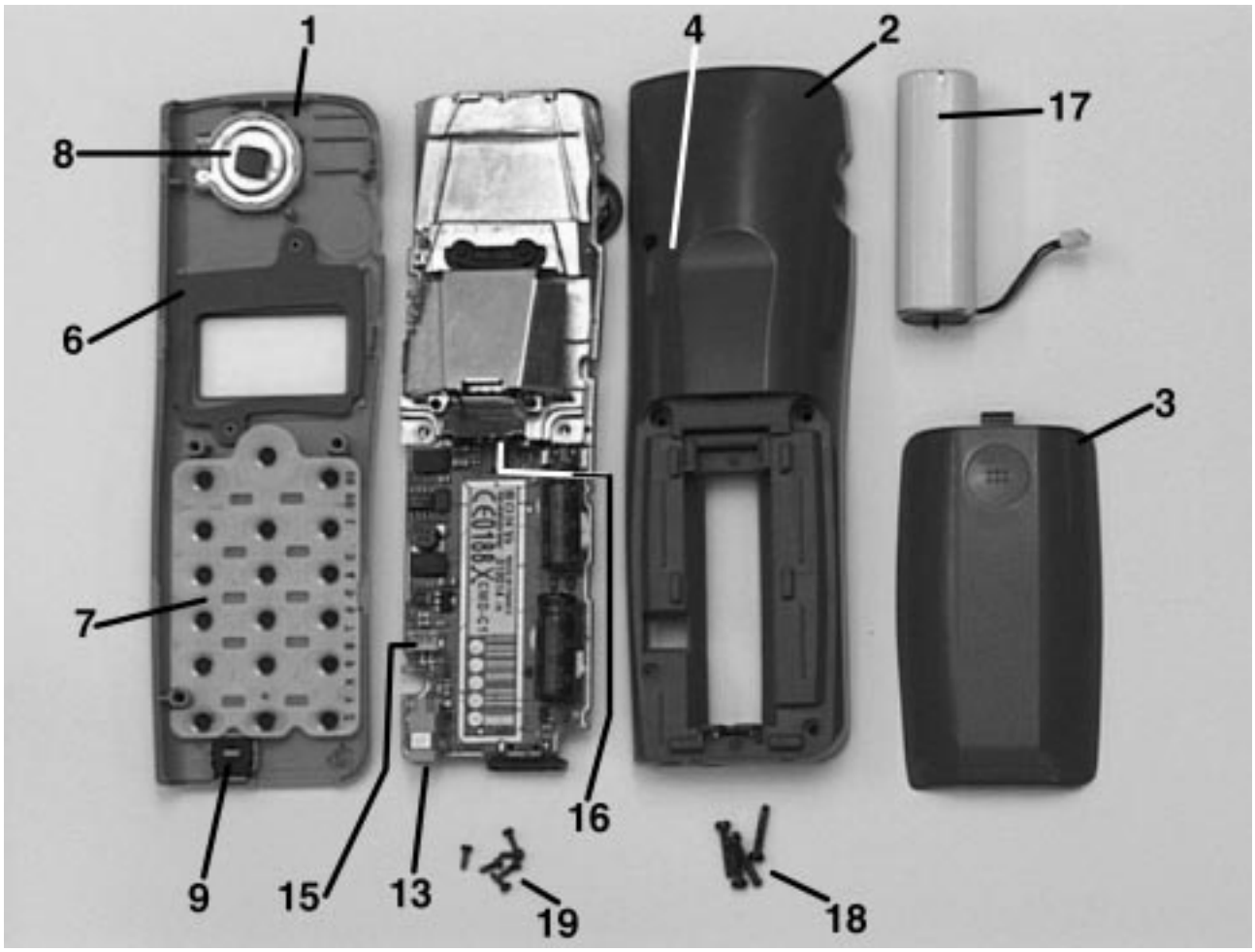
– Please note that the CMD-C1 makes it possible to load only the different ringer melodies without changing the rest of the software programs.

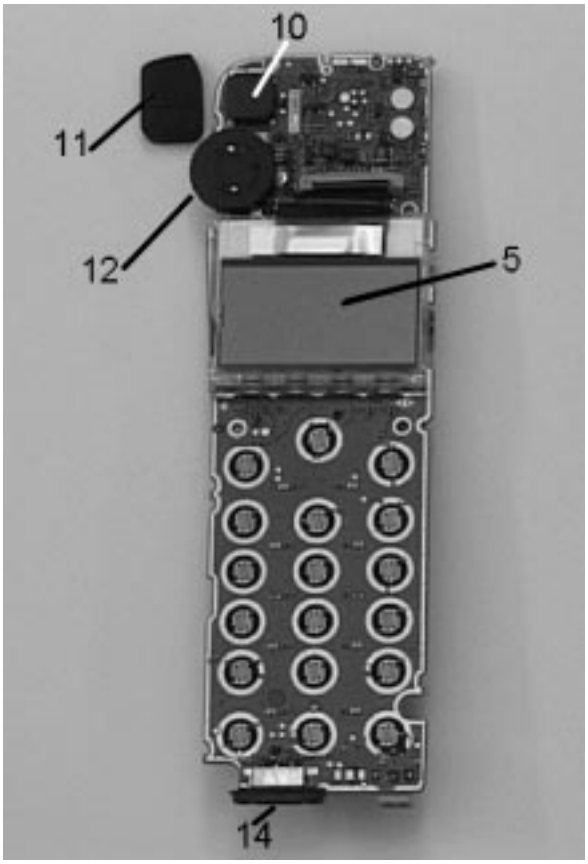
– For this procedure it is necessary to change the settings on the flash-loader for “EraseMode” to MELODY AREA instead of PROGRAM AREA, then load the new file c1melody.sre.

– Remember to change the flash-loader settings back to PROGRAM AREA.

– ! Whenever performing software update or melody software update, please remember that the erase settings (in the settings menu) should be correctly set.

SECTION 4
EXPLODED VIEW





SECTION 5
SPARE PARTS AND ACCESSORIES LIST

Ref. No.	Part Number	Description	Comment
1	X 3376 296 1	Upper Case	Orig. Grey *C1//F1*
	X 3377 190 1	Upper Case	Classic Silver *C1/SF1*
	X 3377 192 1	Upper Case	Pearl White *C1/WF1*
	X 3377 191 1	Upper Case	Metallic Blue *C1/LF1*
	X 3377 193 1	Upper Case	Metallic Red *C1/RF1*
2	3 031 795 01	Lower Case	
3	3031 807 01	Lid, Battery	
4	3 031 839 01	Cap, Antenna	
5	A 3647 481 A	LCD, Assy	
6	3 031 803 02	Cushion	LCD
7	3 031 804 01	Rubber Key	
8	1 529 191 11	Speaker	
9	1 542 381 11	Microphone	
10	1 759 436 21	Ringer	
11	3 031 801 01	Cushion, Ringer	
12	1 418 057 21	Jog-Dial	
13	1 785 460 31	DC Jack	
14	1 785 698 21	I/O Connector	
15	1 695 320 21	Battery Connector	
16	1 785 461 21	SIM Connector	
17	1 528 950 11	Battery Pack	
18	3 031 806 01	Screw 2,0x10	
19	3 032 991 01	Screw 1,4x4,5	
Instruction Manual			
	3 865 514 81	German	CMD-C1 // F1 (CE1)
	3 865 514 11	German / Italian	CMD-C1 // SF1 (CE1)
	3 865 514 41	Swedish/ Norwegian	
	3 865 514 61	Spanish / Portuguese	
	3 865 514 21	English	
	3 865 514 31	French / Dutch	CMD-C1 // SF1 (CE1)
	3 865 514 51	Danish / Finnish	
	3 865 514 71	Greek / Turkish	
	3 865 575 11	Czech / Polish	
	3 865 575 41	Chinese (Traditional)	
	3 865 575 61	Chinese (Simplified)	
	3 865 575 51	Arabic	
	3 865 575 91	French	
	3 865 575 21	Hungarian / Romanian	
AC Power Supply			
	1 418 229 11	QN-C11AC	Euro
	1 418 229 12	QN-C12AC	UK
	1 418 229 21	QN-C13AC	Australia
	1 418 382 11	QN-C81AC	Chinese
Jigs			
	9 948 320 40	Level Shifter	LS 1
	9 948 370 20	Hook Release	Jig
	9 948 320 60	Level Shifter extension	LS 1/C 1
	9 948 360 30	Service Connection cradle	

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European Technical Support

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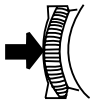
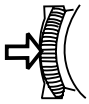
Press (click)		Selects an option (highlighted) in the display. Accepts an entry made by alphanumeric keys.
Press and hold		Dials the phone number selected. Exits from one menu to the previous one.

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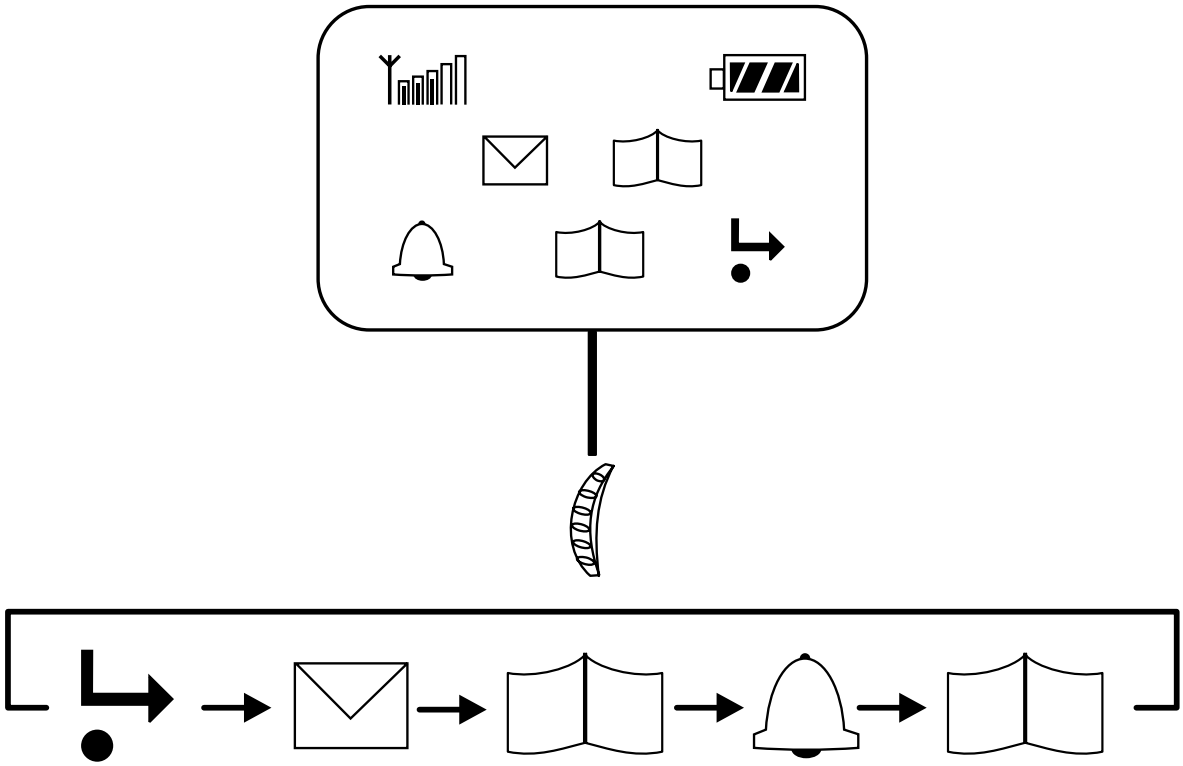

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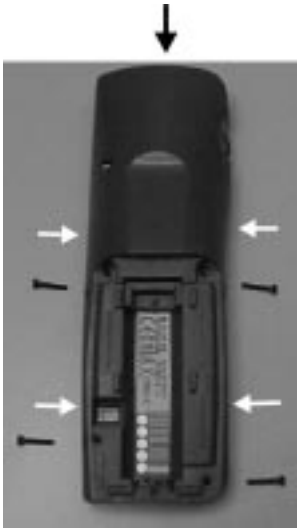

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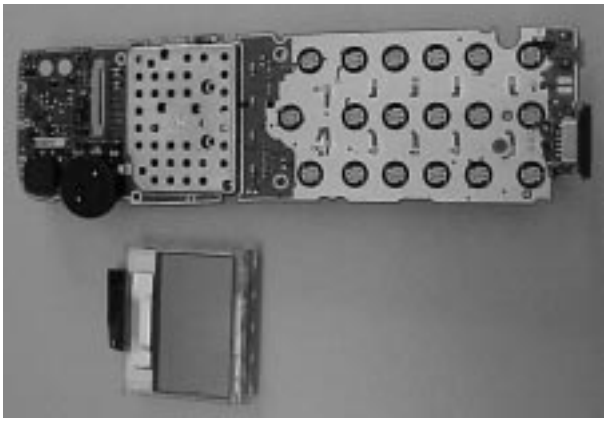

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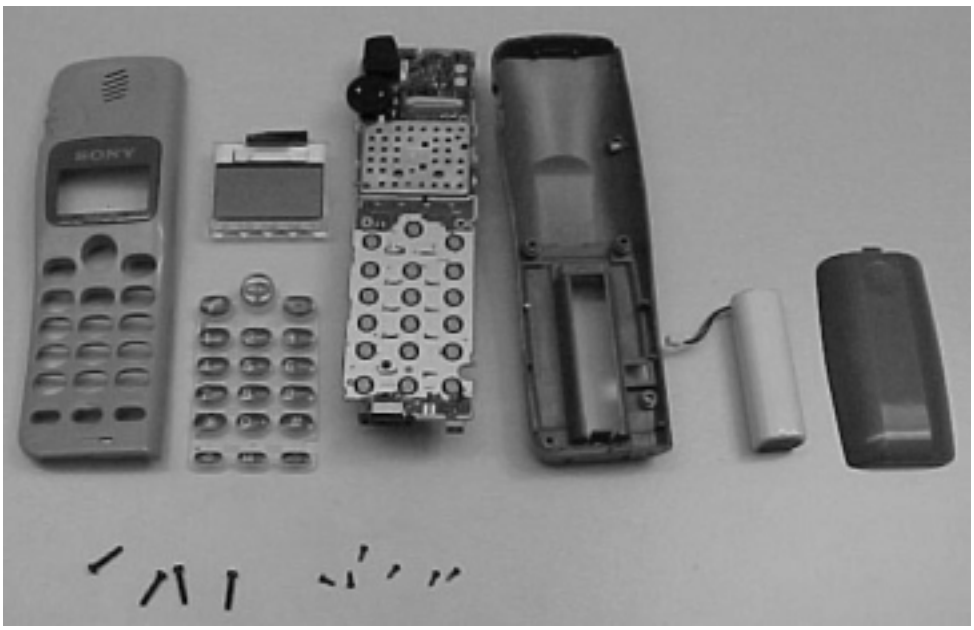

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The software programming setup requires a PC (386 type or higher), the Level Shifter (LS-1), Connection Cable to the PC and the Level Shifter extension.

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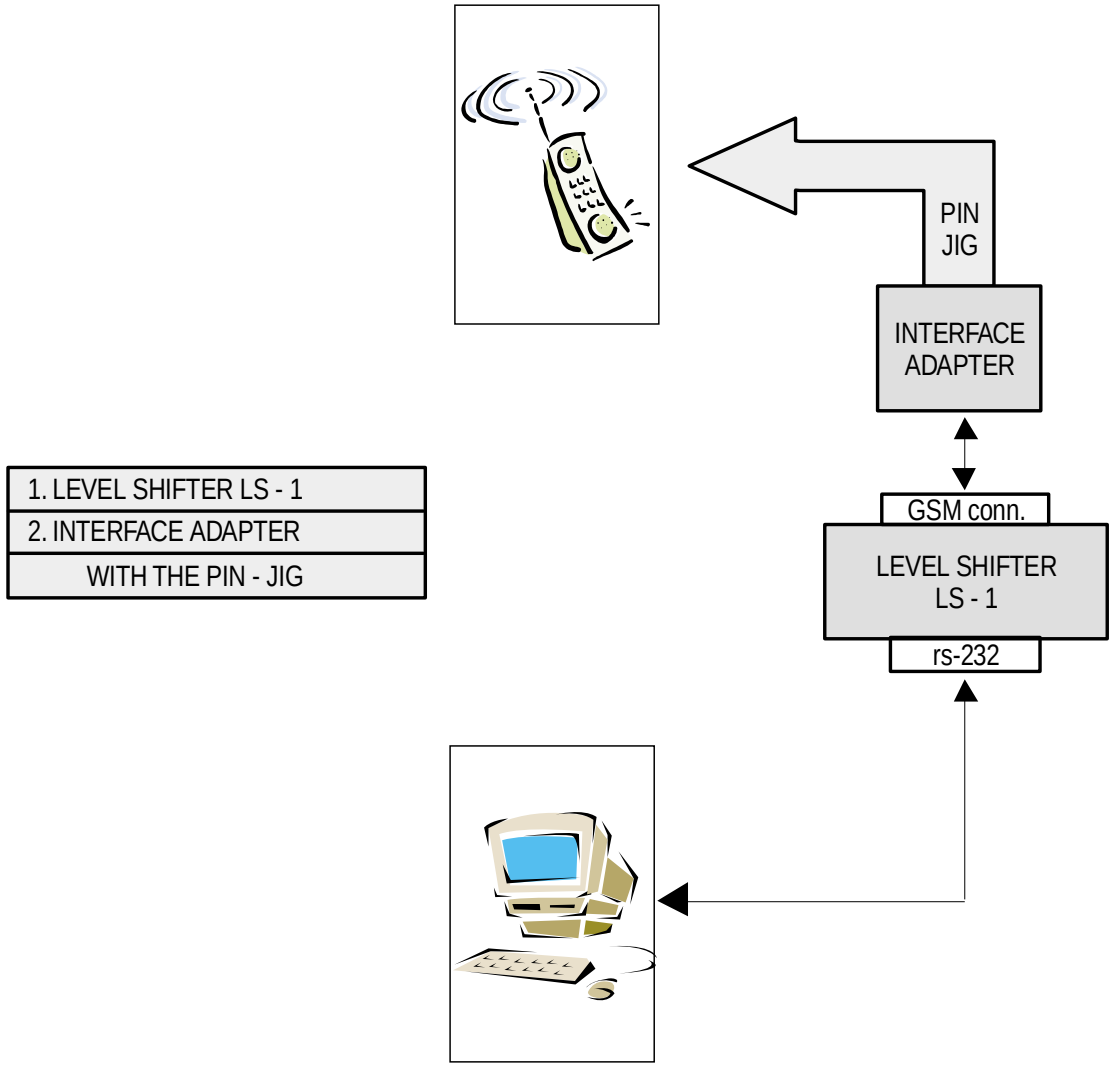

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* *Loading new software into the flash.*

- Start the program flash.exe by double-clicking on its icon in the explorer.

- Select “File”/“Settings...” and check if the settings for the “Com Port”, the “Baud Rate” and the “Erase Mode” are correct. Normally the “Load Options” do not have to be changed. The default values are :

Com Port:	COM 1
Baud Rate:	115200
Load Options:	Both
Erase Mode:	Program Area, Smart Erase (!disable melody area erase for normal software update)

After changing the settings, the new values are stored in the file “flash.ini” in the windows directory.

- Select “File”/“Open...” to select an S record file for downloading. The C1.SRE file contains the software for C1. Any other .SRE file is either only needed for the program itself, or can be a melody file (see below).

- Press the “LOAD” button of the program.

- Power-on the mobile.

- Now the program runs automatically.

NOTE

– Please note that the CMD-C1 makes it possible to load only the different ringer melodies without changing the rest of the software programs.

– For this procedure it is necessary to change the settings on the flash-loader for “EraseMode” to MELODY AREA instead of PROGRAM AREA, then load the new file c1melody.sre.

– Remember to change the flash-loader settings back to PROGRAM AREA.

– ! Whenever performing software update or melody software update, please remember that the erase settings (in the settings menu) should be correctly set.

4. Display contrast adjustment

1. The hardware set-up for this adjustment is the same as for the software update.

2. The level shifter power to the CMD-C1 should be off (GSM on/off toggle switch on LS1) while connecting the CMD-C1. Once the hardware connection is made, the power can be set to ON.

3. The display contrast adjustment software is DOS-based, the program name is LDCONT.EXE.

4. When activating this program (either from within Windows or from the DOS prompt), it will suppose automatically that you are using the COM1 port to connect from the PC to the level shifter. Any other COM port can be used when starting from the DOS prompt and using the following parameter: LDCONT.EXE –p<port>, where <port> is the number of the COM port you want to activate. For example: when using COM port 2, the correct command to activate the program is: LDCONT.EXE –p2.

5. When the program is correctly set and activated, the following sequence will appear on the PC:

    - Waiting for mobile (this message will appear for a few seconds only)
    - LCD contrast : x (x is a numeric value between 0 and 15)

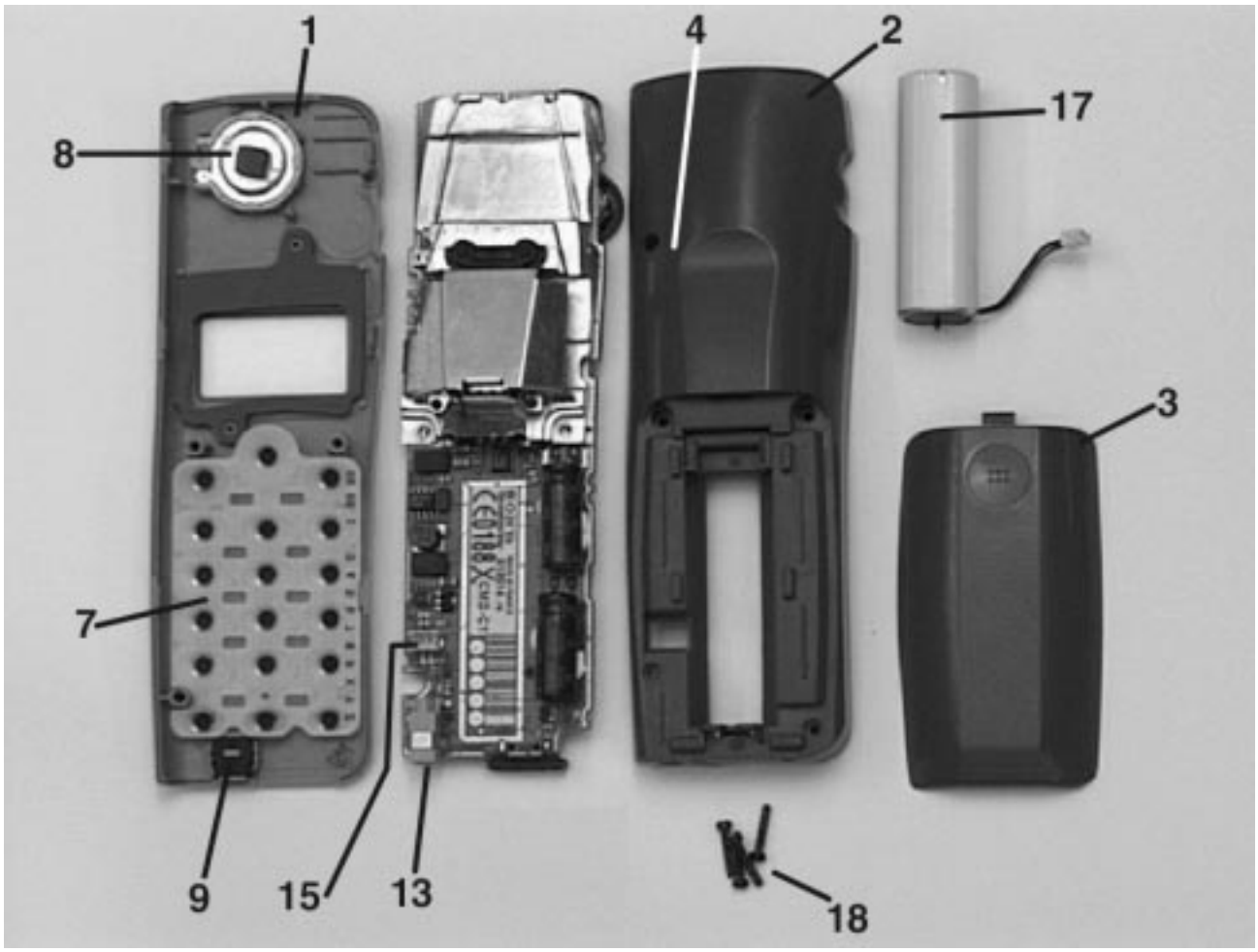
6. The LCD contrast can now be adjusted with the up (↑) and down (↓) arrows of the PC keyboard while observing the CMD-C1 display for the best setting. While changing the values from the PC, the contrast will change in the CMD-C1 display.

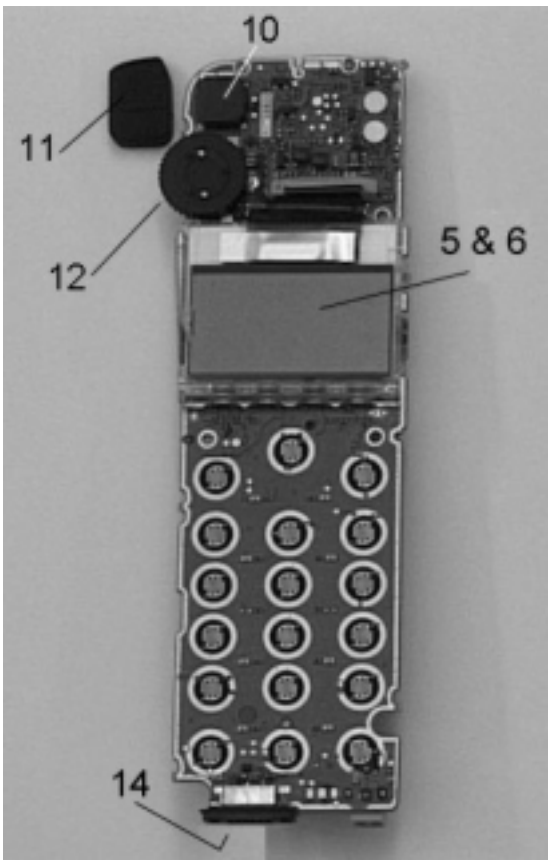
7. When the best setting is found, the correct value will automatically be written into the CMD-C1 memory upon exiting the program. It is therefore sufficient to leave the DOS prompt to write the value into the CMD-C1 memory.

NOTE

The distribution of GSM software is based upon the registration of the Level Shifter hardware.

SECTION 4
EXPLODED VIEW





SECTION 5
SPARE PARTS AND ACCESSORIES LIST

Ref. No.	Part Number	Description	Comment
1	X 3376 296 1	Upper Case	Orig. Grey *C1//F1*
	X 3377 190 1	Upper Case	Classic Silver *C1/SF1*
	X 3377 191 1	Upper Case	Metallic Blue *C1/LF1*
	X 3377 192 1	Upper Case	Pearl White *C1/WF1*
	X 3377 193 1	Upper Case	Metallic Red *C1/RF1*
	X 3377 297 1	Upper Case	Classic Silver *C8/SC1*
	X 3377 579 1	Upper Case	Pearl White *C8/WC1*
	X 3377 580 1	Upper Case	Metallic Blue *C8/LC1*
2	3 031 795 01	Lower Case	
3	3 031 807 01	Lid, Battery	
4	3 031 839 01	Cap, Antenna	
5	A 0602235 A	LCD Assy (Including cushion)	
	3 031 803 02	LCD cushion	
6	X 3376 297 1	Guide LCD, Assy	
7	3 031 804 01	Rubber Key	Dark version
	3 031 804 11	Rubber Key	Light version
	3 031 804 21	Rubber Key SFR-Key Pad	France, SIM LOCK C1/LF0 Dark version
	3 031 804 31	Rubber Key SFR-Key Pad	France, SIM LOCK C1/WF0 Light version
8	1 529 191 11	Speaker	
9	1 542 381 11	Microphone	
10	1 759 436 21	Ringer	
11	3 031 801 01	Cushion, Ringer	
12	1 418 057 22	Jog-Dial	
13	1 785 460 32	DC Jack	
14	1 793 148 22	I/O Connector	
15	1 695 320 21	Battery Connector	
17	1 528 950 11	Battery Pack QN-C1BP	
18	3 031 806 01	Screw 2,0x10	
Instruction Manual			
	3 865 514 81	German	CMD-C1 // F1 (CE1)
	3 865 514 11	German / Italian	CMD-C1 // SF1 (CE1)
	3 865 514 41	Swedish/ Norwegian	
	3 865 514 61	Spanish / Portuguese	
	3 865 514 21	English	
	3 865 514 31	French / Dutch	CMD-C1 // SF1 (CE1)
	3 865 514 51	Danish / Finnish	
	3 865 514 71	Greek / Turkish	
	3 865 575 11	Czech / Polish	
	3 865 575 41	Chinese (Traditional)	
	3 865 575 61	Chinese (Simplified)	
	3 865 575 51	Arabic	
	3 865 514 91	French (own manual from customer)	CMD-C1 // LFO (CE1) CMD-C1 // WFO (CE1)
	3 865 575 21	Hungarian / Romanian	
AC Power Supply			
	1 418 229 11	QN-C11AC	Euro
	1 418 229 12	QN-C12AC	UK
	1 418 229 21	QN-C13AC	Australia
	1 418 382 11	QN-C81AC	Chinese
Jigs			
	9 948 320 40	Level Shifter	LS1
	9 948 320 60	Pin-Jig with Interface	LS1/C1 Level Shifter extension
	9 948 360 30	Cradle	Service-Test Connector
	9 948 370 20	Hook Release	Jig
	9 948 436 10	Service Manual	AEP / UK Model

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Technical & Customer Services Europe

9-948-436-60

CMD-C1/C8

SERVICE MANUAL

CMD-C1 : AEP Model
UK Model
AUS Model
CMD-C8 : China Model

SUPPLEMENT-1

Please file this supplement with the CMD-C1/C8 Service Manual (9-948-436-10).

Subject : Adjustments

PORTABLE DIGITAL CELLULAR TELEPHONE WITH ACCESSORIES

SONY

Display contrast adjustment

1. The hardware set-up for this adjustment is the same as for the software update (see page 9 of the Service Manual).
2. The level shifter power to the CMD-C1 should be off (GSM on/off toggle switch on LS1) while connecting the CMD-C1. Once the hardware connection is made, the power can be set to ON.
3. The display contrast adjustment software is DOS-based, the program name is LDCONT.EXE.
4. When activating this program (either from within Windows or from the DOS prompt), it will suppose automatically that you are using the COM1 port to connect from the PC to the level shifter. Any other COM port can be used when starting from the DOS prompt and using the following parameter: LDCONT.EXE –p<port>, where <port> is the number of the COM port you want to activate. For example: when using COM port 2, the correct command to activate the program is: LDCONT.EXE –p2.
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NOTE

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