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SERVICE MANUAL

Repair for Cellular Telephone

PHILIPS 330 – CT3308

LEVEL 1 / LEVEL 2

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SERVICE MANUAL

Last updates:

DATE	MODIFICATION	PAGE
11/06/03	CREATION	43
23/07/03	Earpiece and buzzer confusion + Ref. "specific screw driver"	43

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1.0   PURPOSE

This document establishes the functional test and inspection procedures for the second level service repair of the PHILIPS 330 transceiver.

2.0   SCOPE

The test plan is applicable to all levels of service repair of the PHILIPS 330 transceiver.

3.0   REFERENCE

None.

4.0   GLOSSARY / ACRONYM LIST

Window or Bezzel	Protective plastic over the LCD display
SW	Software
PN	Hardware Configuration of the Mobile
CN	Matrix for Types of SW used on the different hardware
HW	Hardware
ASC	Authorized Service Center
NSC	National Service Center
Test SIM Card	Used for functionality of PHILIPS Mobile Phones
Test SIM Card « SP »	SIM Card used to simulate the user interface and enable radio tests

5.0   TEST EQUIPMENT AND TOOLS

Equipment / Tools
- Test SIM Card « Production »   - Part No. : 4311 255 00781
- Test SIM Card « SP »   - Part No. : 4311 255 00782
- Data Connect Cable   - Part No. : 4311 258 10392
- Digital Multimeter   - Recommended Model : Fluke   (Specification with current reading in mA).
- Specific Screw Driver   - Part No. : 4311 255 30131

- Paper Cut tool
- Digital Radiocommunication Tester.
- Coupling system with shielded chamber or - RF Pliers   - Part No.: 4311 255 30041

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6.0   TEST AND INSPECTION PLAN

The test plan is derived from the Product Test Reference of PHILIPS 330.

6.1   User Interface Test

Use the Test SIM Card to test the transceivers as follows :

- On/Off button
- LCD Backlight
- Keyboard Test
- Side Keys
- Buzzer Test
- Vibrator Test
- Audio Test
- Antenna Test (to measure the radiated power level. Not necessary when using an antenna coupler)
- LCD
- IMEI
- Tester Status/Eeprom Status

With a fast Charger connected with the PRODUCT's bottom connector, check the full scrolling from one mode to the next when charging IGN (Ignition) – Battery.

6.2   RF Test

The purpose of the radio test is to prove that the tested phone is compliant to the Standard.

The radio test must be performed with a Digital Radio Test Set. The mobile has to be set on the antenna coupler inside the shielded chamber.

Use the Test SIM Card « SP »to test the GSM 900 / DCS 1800 band

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7.0   BEFORE STARTING

7.1   Description Of The Transceiver
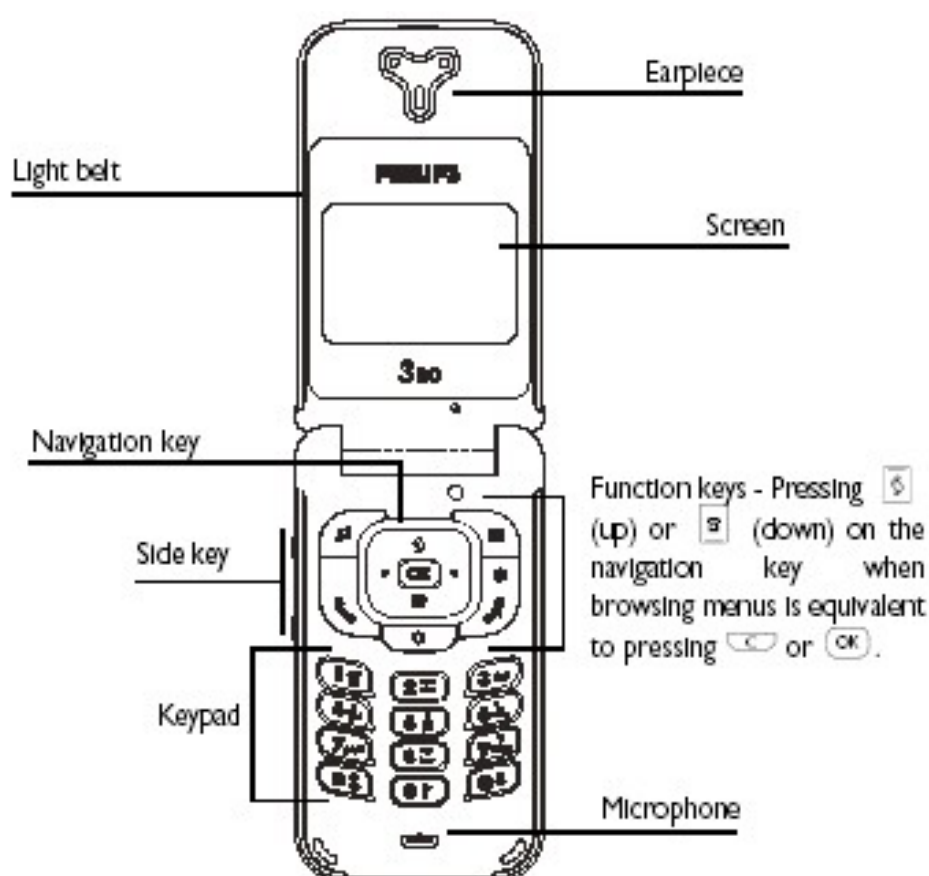
Short press on function keys:

📞 Pick up key	📞 Hang up key	⏻ On/Off key
ᴼᴷ OK key	✆ Direct access to Call list	C Clear key
☎ Direct access to phonebook	✉ Direct access to Read messages menu	♫ Direct access to Ringers list
🔊	Side key is used for volume control during conversation. Short press on incoming call activates silence mode.	

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7.2   Description Of The Display

Idle screen

[Operator]
09:11
20 Jun 2002

After switching your phone on and entering the PIN code (see page 8), your phone displays the idle screen which means that it is ready to be used. In idle mode, several symbols can be displayed simultaneously.

If the Y *symbol isn't displayed, the network is not currently available. You may be in a bad reception area: move to a different location. The phone automatically returns to idle screen over 2 mn of inactivity.*

Symbols

Silent - Your phone will not ring when receiving a call.

Vibra - Your phone will vibrate when receiving a call.

Alarm clock activated.

SMS full - Memory for messages is full. Delete old messages to receive new ones.

Call Forward Unconditional to number - All your incoming voice calls are being forwarded to a number other than voice mail.

Call Forward Unconditional to voice mailbox - All your incoming calls are being forwarded to voice mail.

SMS message - You have received a new message.

Voice mail - You have received a new voice mail.

Battery - The bars indicate the battery level (4 bars = full, 1 bar = low).

Home zone - A zone designated by your network operator. Subscription dependent, contact your service provider for details.

Y **GSM Network :** your phone is connected to a GSM network
.ıl *Reception quality :* the more bars are shown the better the reception is.

Roaming - Displayed when your phone is registered to a network other than your own (especially when you're abroad).

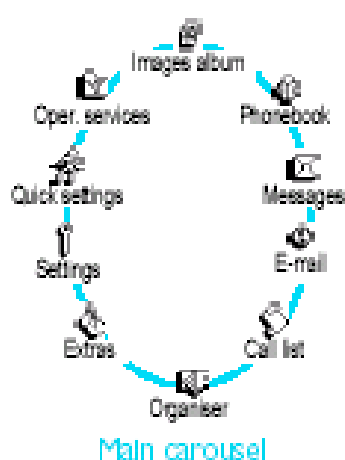| PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-P330 Page : 8 of 43 Langue : EN Date : 11/06/03

7.3   Using The Carousel

Main carousel

A carousel is a circular loop of icons displayed on the screen, in which each icon represents a feature or option used to operate your phone.

All icons don't fit within the screen; the hidden ones appear when pressing left or right.

The first carousel available when you turn on your mobile phone is called the "main" carousel. You access it by pressing OK when in idle mode, and it features the icons shown opposite. A small icon in the upper left corner of the screen shows your actual position within the carousel. To access a feature or option, press left (anti clockwise) or right (clockwise) and press OK when the feature or option of your choice is selected. Another sub-carousel or list will then appear.

Pressing left or right will alternate between two options, such as Activate/ Deactivate, On/Off, Increase/Decrease a value, etc.

Repeat the operation described above and browse carousels and lists until you reach the desired feature or option. When navigating in a list, a scroll bar located on the right handside of the screen shows your actual position in the list. With the navigation key, you can then select or adjust all the functions of your phone as described in the relevant chapter of this user guide.

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7.4   Removing the Battery

| Press on the battery clip and slide the battery cover downwards.

⚠ *Make sure the phone is switched off before removing the battery.*

2   Remove the battery by pressing the inner clips one after the other, then pulling the battery from the left handside.
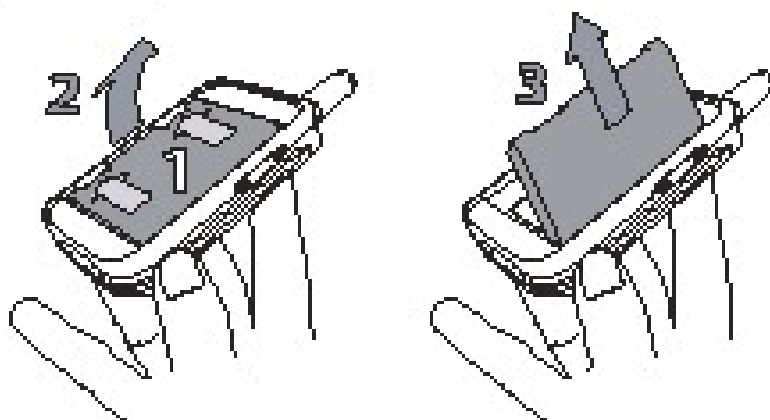
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7.5   Inserting The Sim Card

Remove the SIM card from its holder and place it on its slot. (be careful that the clipped corner of the card is in the appropriate corner).Then push the metal clip holder, until it stops and maintains the SIM card.
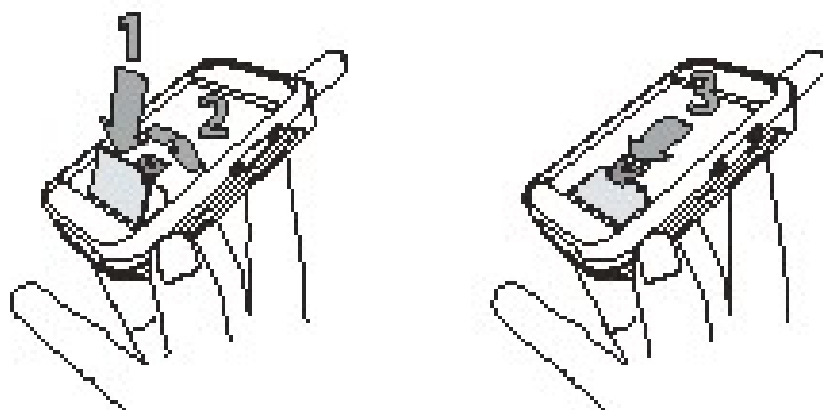
7.6   Inserting the Battery

Replace the battery in its slot as shown below: first place its right side against the right edge of the phone and press until it clips.
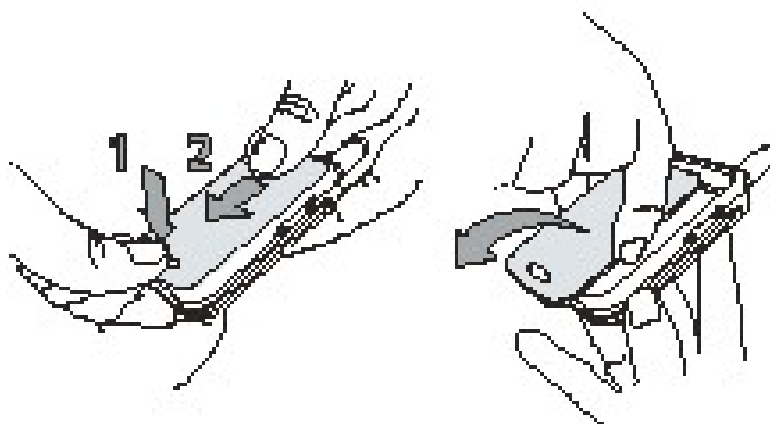
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Slide the battery door into its slots, metallic connectors downwards, until it stops.

7.7   Charging The Battery

Once the battery is clipped on the phone, plug the charger into the right hand socket at the base of the phone as shown on the drawing.

Then plug the transformer unit into a main AC power socket with easy access.

The ▯ symbol indicates the state of charge :

If the battery is completely flat, the battery icon will only reappear after 2 or 3 minutes of charging.

During charging the 4 charge indicators change; each bar represents around 25% of charge and it takes around 2.15 hours to fully recharge your mobile phone.

Bars moving ➔ Battery is charging
Bars steady ➔ Battery is fully charged
Battery outline flashing (see troubleshooting chapter)
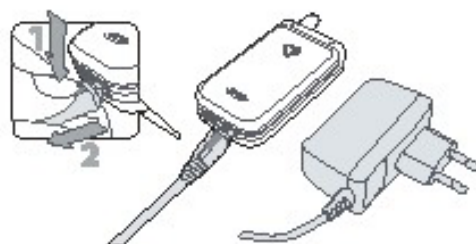
you can disconnect the charger. Remove the connector by pressing the release button on top of the connector.

you can disconnect the charger. Remove the connector by pressing the release button on top of the connector.

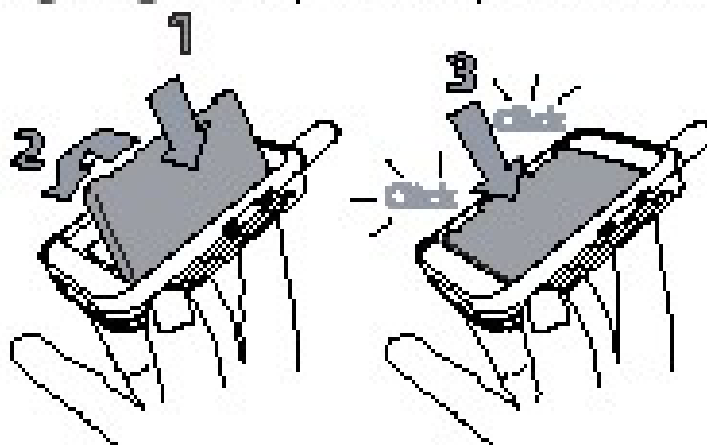| PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-P330 Page : 12 of 43 Langue : EN Date : 11/06/03

8.0   TEST PROCEDURES

8.1   Initial Functional check for PHILIPS 330

8.1.1   Insert the Test Production Card into the SIM reader at the back of the mobile phone and clip a charged battery on the phone.

8.1.2   Press the "ON" button for 2 seconds at least and the LCD will show a message, which contains information of FA (Final Adjustment) status and 12NC.

8.1.3   Follow the instructions as mentioned below:

Step	Procedure	Observation

1	Press Key 1
	
	Press Key 1 again.
		MANUAL TEST
		   GOOD
		Left corner displays 1 MANUAL
		    00 AUTOTEST
		    00 KBD RAM

2	Press key 2
	
	Press key 2 again
		BUZZER
		   TEST
		Left corner displays 2 MANUAL
		    01 AUTOTEST
		    00 KBD RAM

3	Press key 3
	(Audio loop local effect)
	
	Press key 3 again
		"LocalEffect"
		" xx xx xx xx "
		" xx xx "
		 Left corner displays 3 MANUAL
		    02 AUTOTEST
		    00 KBD RAM

4	Press key 4
	
	Press key 4 again
		"KEY WITHOUT TEST"
		
		Left corner displays 4 MANUAL
		    03 AUTOTEST
		    00 KBD RAM

5	Press Key 5
	(Checkerboard test) &
	Backlight activation
	
	Press Key 5 again
		Checkerboard 1, 2 & 3 pixel on
		
		Left corner displays 5 MANUAL
		    04 AUTOTEST
		    00 KBD RAM

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6	Press Key 6
	
	Press Key 6 again
		"MAT CLAMSHELL"
		→ Check the Green/Red Led after close it
		Left corner displays 6 MANUAL
		                                        05 AUTOTEST
		                                        00 KBD RAM

7	Press Key 7
	
	Press key 7 again
		"KEY WITHOUT TEST"
		
		Left corner displays 7 MANUAL
		                                        06 AUTOTEST
		                                        00 KBD RAM

8	Press key 8 (Eeprom Status)
	
	Press Key 8 again
		"EEPROM STAT"
		H-0000-30-00
		H-0000-00-00
		SimLk XXXXX (Sim lock Status)
		
		Left corner displays 8 MANUAL
		                                        07 AUTOTEST
		                                        00 KBD RAM

9	Press Key 9 Product information
	Compare information with label printed on back case
	
	Press key 9 again
		"PROD INFO"
		"XXXXXXXX" (PN Number)
		"XXXXXXX"
		"XXXXXXX"
		VY made in Le Mans
		SA made in Singapore
		EO made in Shenzhen
		
		Left corner displays 9 MANUAL
		                                        08 AUTOTEST
		                                        00 KBD RAM

10	Press key 0
	
	Press key 0 again
		" MELODY TEST "
		User Melody should be heard and vibrations felt
		
		Left corner displays 0 MANUAL
		                                        09 AUTOTEST
		                                        00 KBD RAM

11	Press * (IMEI Test)
	Compare IMEI with label printed on back case
	
	Press * again
		"MANUAL TEST BAD"
		
		Left corner displays * MANUAL
		                                        12 AUTOTEST
		                                        00 KBD RAM

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12	Press Key C Accessory test Press Key C again	"KEY WITHOUT TEST" Left corner displays	C MANUAL 1C AUTOTEST 00 KBD RAM
13	Press Hang up key Press Key again	"KEY WITHOUT TEST" Left corner displays	END MANUAL 10 AUTOTEST 00 KBD RAM
14	Press Pick up key Press Key again	"KEY WITHOUT TEST" Left corner displays	SEN MANUAL OF AUTOTEST 00 KBD RAM
15	Press Key Press Key again	"KEY WITHOUT TEST" Left corner displays	? MANUAL 1A AUTOTEST 00 KBD RAM
16	Press Key Press Key again	"KEY WITHOUT TEST" Left corner displays	? MANUAL 19 AUTOTEST 00 KBD RAM
17	Press Key "OK " Press Key "OK" again	"KEY WITHOUT TEST" Left corner displays	OK MANUAL OE AUTOTEST 00 KBD RAM
18	Press Key Press Key again	"KEY WITHOUT TEST" Left corner displays	UP MANUAL OA AUTOTEST 00 KBD RAM
19	Press Key Press Key again	"KEY WITHOUT TEST" Left corner displays	DOW MANUAL OB AUTOTEST 00 KBD RAM
20	Press Left "•" Key Press Left "•" Key again	"KEY WITHOUT TEST" Left corner displays	< MANUAL OC AUTOTEST 00 KBD RAM

Advanced autotests (used generally for troubleshooting)

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21	Press right "•" Key
	
	Press right "•" Key again
		"KEY WITHOUT TEST"
		
		Left corner displays > MANUAL
		       OD AUTOTEST
		       00 KBD RAM

22	Press Key " # "
	
	Press Key " # " again
		" PAGE "
		" SELECTION"
		" 00 "
		Left corner displays # MANUAL
		       13 AUTOTEST
		       00 KBD RAM

Press " # " key to display "PAGE SELECTION."

PRESS Key "1" to change test page to "01", then press OK.
(default test page is 00)

Key	Functional test	Observation

1	Press Key 1
	Accessory test
	
	Press Key C again
		"AUDIO EEP"
		"XX XX XX XX"
		"XX XX XXXX"
		Left corner displays 1 MANUAL
		       00 AUTOTEST
		       01 KBD RAM

2	Press Key 2
	Accessory test
	
	Press Key C again
		"HandsFree"
		"XX XX XX XX"
		"XX XX"
		
		Left corner displays 2 MANUAL
		       01 AUTOTEST
		       01 KBD RAM

7	ANTENNA TEST	" ANTENNA TST" " Tx Level 10" (use keys 2 & 8 to change level) " CHANNEL 0055" (use keys 4 & 6 for channel selection) To switch DCS / GMS/ EGSM, press "C" key to toggle
9	Rx Power Level	Use to detect Receiving Channel and its power level

8.1.4   If any of these steps failed functional, please refer to Chapter 10.

8.1.5   Perform visual check on battery connectors, car kit connectors and casing. If corrosion or deform send to NSC for repair.

8.1.6   If the product is good, it is considered as a NFF (No Fault Found) product.

   All the NFF products must be directly returned to the customer.

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8.2   RF Test

8.2.1   The Test SIM Card "SP" must be inserted in the phone before starting the tests.

8.2.2   Set the equipment as shown on the picture in chapter 6.2

8.2.3   Set RF losses as following (tested with antenna coupler):

8.2.4   The following operations must be done:

- Synchronization/Registration
- Call set up from the mobile
- Voice loopback (to check the sound quality)
- Call release
- Call set up from tester
- Call release from tester

- GPRS attach   those two operations have to be added when the radio tester
- GPRS detach   allows it

8.2.5   The following parameters must be checked in TCH loop mode :

Emission parameters :

- Power level
- RMS phase error
- Peak phase error
- Frequency error
- Power ramping
- Timing Advance

Reception parameters :

- Rx level
- Rx quality
- BER (Byte Error Rate)
- FER (Frame Error Rate)
- BLER (Block Error Rate)   (can be replaced by a BER test at -104dBm)

Generally the test sequences built inside the testers will be used to check the mobile. You must assess that the test sequences limits comply with the standard specifications and defined test plan.

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8.2.6   Radio test plan

Find below all the measurements that have to be done by test sequences.

Synchronization/Registration	To be checked
Call set up from the mobile	To be checked
Voice loopback (to check the sound quality)	To be checked
Call release	To be checked
Call set up from tester	To be checked
Call release from tester	To be checked
Dualband handover	To be checked
GPRS attach	To be checked
GPRS detach	To be checked

	Power level	Measurements	GSM Channels			DCS Channels		
			Low	Mid	High	Low	Mid	High
TX measurements	High level	Power level	X		X	X		X
		RMS phase error	X		X	X		X
		Peak phase error	X		X	X		X
		Frequency error	X		X	X		X
		Power ramping	X		X	X		X
		Timing advance			X			X
	Mid level	Power level	X		X	X		X
		RMS phase error						
		Peak phase error						
		Frequency error						
		Power ramping						
		Timing advance						
	Low Level	Power level	X		X	X		X
		RMS phase error						
		Peak phase error						
		Frequency error						
		Power ramping	X		X	X		X
		Timing advance						

	RF Level	Measurements	GSM Channels			DCS Channels		
			Low	Mid	High	Low	Mid	High
RX measurements	-85.0 dBm	Rx level	X		X	X		X
		Rx qual						
		BER (Byte Error Rate)	X		X	X		X
		FER (Frame Error Rate)						
	-102.0 dBm	Rx level	X		X	X		X
		Rx qual	X		X	X		X
		BER (Byte Error Rate)	X		X	X		X
		FER (Frame Error Rate)	X		X	X		X
	-104.0 dBm	BLER*(Bloc Error Rate)		X			X	

BER Measurements on 104 frames = 8200 bits minimum
* BLER tests on 200 blocs only
 In case the Radio tester is not GPRS capable replace this test by a BER test at -104.0dBm

💣   When using a wired test solution (via RF cable), don't forget that it is mandatory to measure the power level radiated by the antenna (powermeter recommended). It is the only way to ensure good contact between antenna and main board.

This warning doesn't apply when using an antenna coupler.

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8.2.7   GSM Specification (900 Mhz)

| Test parameter	Channel	Level	Standard specifications
EMISSION			
Phase Error RMS	1, 62, 124	5, 10, 15	0 to 5 degrees
Phase Error Peak	1, 62, 124	5, 10, 15	-20 to +20 degrees
Frequency Error	1, 62, 124	5, 10, 15	-90 Hz to +90 Hz
Power Ramping	1, 62, 124	5, 10, 15	Mask
Modulation	1, 62, 124	5, 10, 15	Mask
Switching Transients	1, 62, 124	5, 10, 15	Mask
Timing Advance	1, 62, 124	5, 10, 15	+/- 1.00 bit
Power Reading			
Output Power Average	1, 62, 124	Level 19	5 +/- 5 dBm
	1, 62, 124	Level 15	13 +/- 3 dBm
	1, 62, 124	Level 10	23 +/- 2 dBm
	1, 62, 124	Level 5	33 +/- 2 dBm
RECEPTION			
Rx Level	1, 62, 124	-102 dBm	4 to 12
Rx Qual			0 to 1
Rx Level	1, 62, 124	-85 dBm	21 to 29
Rx Qual			0
Rx Level	1, 62, 124	-60 dBm	46 to 54
Rx Qual			0 to 0
TCH LOOP			
SENSITIVITY			
BER	1, 62, 124	-85 dBm	0%
FER	1, 62, 124	-85 dBm	0%
BER	1, 62, 124	-102 dBm	< 2.44%
FER	1, 62, 124	-102 dBm	0%

If a phone is out of the specifications, it must be sent to the Repair Centre.

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8.2.8   PCN Specification (1800 Mhz)

Test parameter	Channel	Level	Standard specifications
ÉMISSION			
Phase error RMS	512, 700, 885	0,5,10	0 to 5 degree
Phase error Peak		0,5,10	-20 to +20 degree
Frequency Error		0,5,10	-180 Hz to + 180 Hz
Power Ramping		0,5,10	Mask
Modulation		0,5,10	Mask
Switching Transients		0,5,10	Mask
Timing Advance		0,5,10	+/- 1.00 bit
Power reading			
Output Power		Level 0	30 +/- 2 dBm
		Level 10	10 +/- 4.0 dBm
		Level 15	0 +/- 5.0 dBm
RECEPTION			
Rx Level	512, 700, 885	-102dbm	4 to 12
Rx Qual		-102dbm	0 to 1
Rx Level	512, 700, 885	-85dbm	21 to 29
Rx Qual		-85dbm	0
Rx Level	512, 700, 885	-60dbm	46 to 54
Rx Qual		-60dbm	0
TCH LOOP			
SENSITIVITY			
BER	512, 700, 885	-85dbm	0%
FER	512, 700, 885	-85dbm	0%
BER	512, 700, 885	-102dbm	2.44%
FER	512, 700, 885	-102dbm	0%

If a phone is out of the specifications, it must be sent to the Repair Centre.

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8.3   Battery Charging (IGN : Ignition) / Current consumption

8.3.1   Charger detection / Battery charging

- Plug the transformer unit into an easily accessible AC power socket.
- Insert the Test production Card in the mobile, plug a dummy Battery with a multimeter added (see picture) for current measurement.

BAT -   BAT +
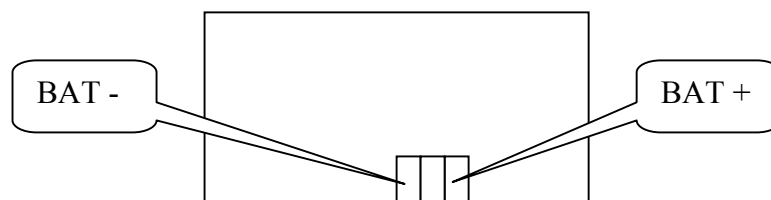
- Plug the connector of the charger (+4.2VDC 300mA max.) into the right socket at the base of the transceiver. The battery symbol should indicate the state of charge :

- Bars moving   - means the battery is being charged.
- Steady   - means the battery is fully charged.

If the battery is totally discharged, the battery icon will start scrolling 2 to 3 minutes only after being connected to charger.

Just after charger plugging a pre-charge current **30 < I (mA) < 70** can be observed during 2 or 3 seconds
After few seconds a charge current of **300 mA** approx. has to be observed

- Unplug the charger

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8.3.2   Current consumption

a) Check current_OFF :

When the mobile is OFF the current measured must be : $0.00 < I (mA) < 0.23$

b) Check Current_ON

- Turn the mobile on.

    When the mobile is ON (backlight activated) the current measured must be :
    $220 < I (mA) < 260$

    This measurement has to be operated during first seconds after switch on.

c) Check Current_maximum

- Press on # to activate Page selection. Press the Key 1 and then OK to select Page 1
- Press on Key 7 to select Antenna test. Press on the Key 8 as much times as necessary to reach level 5. (The mobile is now set at his maximum emission level)

When the mobile is emitting (backlight OFF) the current measured must be : $150 < I (mA) < 200$
                                                         (Typ. 175mA)

- Remove the battery.

- Gently slide the card out away from the Product

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8.4   W@P Test Procedure

With regard to the mobile phones only four things can prevent the W@P applications to operate properly :

- The Mobile Phone is not W@P able
- Registration problem (W@P & data/fax options should be needed depending on the operator)
- A bad configuration (wrong W@P parameters)
- The mobile has a deficient Radio part.

So that's why to solve W@P problems the following process must be observed.

➢ Ensure about the W@P capability of the mobile phone.
➢ Interrogate the customer regarding his operator registration.
➢ Check with the customer that all the needed parameters are stored in the phone memory
                              (a quick test has to be performed to check memory reliability)
➢ Perform a functional and a radio test of the mobile phone.

The W@P Test procedure as to be performed only if the customer complains about W@P applications.

8.4.1   Functional and radio test

Before starting the W@P procedure it must be assumed that the functional test and the radio test have been done successfully.

(Refer to chapters 8.1 & 8.2)

8.4.2   W@P parameters settings (to be checked using the Operator Simcard)

Press OK to access the menu	Press the Compass key left or right to find Access settings and press OK	Several W@P configurations can be stored. Select	Press the Compass key left or right to find Change and press OK

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Phone number parameter:

      This parameter is the phone number required to perform a data transmission to the Internet Service Provider (ISP) and given by the operator. ISP use either analogue or numeric interfaces to connect to the subscriber. If the operator uses a digital interface but the phone number is set in the analogue area of the phone, data connection will fail (and vice versa).

The phone number is set as follows:

Press OK to set the phone number	Turn the Compass key left or right to select ISDN or Analogue and press OK	Enter the phone number and press OK

Login parameter:

      This parameter is provided by the operator and is set as follows:

Press OK to set the login	Enter the login and press OK

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Password parameter:

This parameter is provided by the operator and is set as follows:

Press OK to set the password

Enter the password
(when a password has been recorded once, only some keys- appears when going back again in this menu)

Gateway parameter (IP):
An IP address is used to recognize computers connected to a network. It is made up of 4 * 3 digits (8 bits) and separated by points. Each computer has its own IP address. For W@P application, IP address is used to access the gateway. This parameter is provided by the operator and is set as follows:

Press the OK to set the gateway (IP parameter)

Select IP Address and press OK

Enter the IP parameter

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Home page parameter (URL):

       This parameter is a string of characters (ASCII) used to identify the protocol (eg: HTTP), the location of the server (eg: WAP.Philips.com), the port number (optional if = 80) and the access path (eg:/glossair/glossair.htm).The end user can use the operator's home page or set up another one in the mobile phone. The URL can be set as follows:

Press OK to set the home page

Enter the home address and press OK

8.4.3   W@P Application launch

The phone is now ready to access to the W@P Gateway. Please launch the W@P application to ensure it works properly.

8.4.4   Memory reliability

After recording the W@P parameters :

➢ Turn off the mobile
➢ Remove the battery
➢ Wait 5 seconds
➢ Clip the battery again
➢ Turn on the mobile
➢ Check that the parameters still present.

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8.4.5   W@P Error messages

Error messages may be displayed on the mobile phone screen. Some of these are listed next:

Network not responding:
                        This error message is displayed for various problems, such as:
                Network cannot be reached (not enough reception bars).
        Login and/or password are wrong.
                        Subscription does not allow W@P access

Server not responding:
                Could be due to:
                        Bad IP address (gateway parameter).

Internet server is not enabled:
                Could be due to:
                        Bad IP address (gateway parameter).

Not acceptable:
                Could be due to:
                        Bad home page address (URL)

An internal gateway error prevents the gateway from fulfilling your request:
                Could be due to:
                        Bad home page address (URL)

PROCEED http://phone.com
                Could be due to:
                        Bad home page address (URL)

Error content exit size XXXX bytes:
                Could be due to:
                        Too much data are coming to the phone.
                                Operator dependent.

Try later:
                Could be due to:
                        Network cannot be reached (not enough
                                reception bars).
                        Busy network.

Bitmap error:
                Could be due to:
                         The content is not W@P; the image can not
                        be displayed.

Note: The phone can not be switched off with ON/OFF key when W@P application is used. **It has not to be considered as a bug.**

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8.4.6   W@P Exchange criteria

Exchanges for W@P problems should be **extremely rare** because the chances of having a defective mobile phone is small compared to the misuse of the customers. W@P is a software application and must be considered as such. From a hardware point of view, the Flash memory may have to be changed if W@P parameters cannot be saved but the probability of encountering this problem is near to zero.

The mobile phone has to be considered as a defective one only if the memory test or the functional & radio tests are wrong.

The points which have to be checked carefully with the customers are listed next:

* W@P parameters (phone not W@P locked) ➜ These parameters are very critical. If a letter, a sign or a number is wrong, W@P connection will fail.

* Covered area ➜ The end user should access W@P services with only 1 reception bar. In practice, it is assumed that more than 2 bars are required. For testing purpose, the help desk/ASC/NSC operator will have to ask the end user to test the phone in a well covered area (minimum of 3 bars).

* WAP phone ➜ A WAP phone is mandatory in order to access W@P services. However, the subscription is operator dependent.

* Call barring ➜ Call barring has to be cancelled (menu: outgoing/data calls)

* Hourglass icon ➜ If the end user can see the transmitting icon (after the hourglass icon) on the mobile   phone, it means Internet access was successful. Hence, the mobile phone is working correctly.

* Roaming ➜ If the end user is in a foreign country, he may not be able to use the W@P feature or may have to change the W@P parameters (for example, use the analogue number instead of the ISDN one). The customer has to contact his/her operator for further information.

* Number of attempts ➜ W@P services may be accessed after several attempts depending on the covered area or the network status (busy). Obviously, this is not a case for exchange and the help desk/ASC/NSC operator will have to make sure that the end user has tried several times before diagnosing the problem.

* Impossible to display W@P pages ➜A W@P page may be displayed on the mobile phone screen of a competitor and not by the Philips transceiver. The help desk /ASC/NSC operator will have to explain that the W@P navigators are different. Sometimes, contents of particular pages can be decoded by a navigator and not by another (idem for Netscape and Internet Explorer).

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8.5   E-MAIL Test Procedure

With regard to the mobile phones only two things can prevent the W@P applications to operate properly :

- A bad configuration (wrong E-mail parameters)
- The mobile has a deficient Radio part.

So that's why to solve E-mails problems the following process must be observed.

➢   Interrogate the customer regarding his Internet subscription and his Internet Service Provider.
➢   Check with the customer that all the needed parameters are stored in the phone memory
                                                (a quick test has to be performed to check memory reliability)
➢   Perform a functional and a radio test of the mobile phone.

The E-mail Test procedure as to be performed only if the customer complains about E-mail applications.

8.5.1   Functional and radio test

Before starting the E-mail procedure it must be assumed that the functional test and the radio test have been done successfully.

(Refer to chapters 8.1 & 8.2)

8.5.2   E-mail parameters settings (to be checked using the Operator Simcard)

First Press OK key and select the E-mail icon   🌐 and press OK.
                                                      E-mail

Then proceed as explain in the User Guide (Chapter 9 – page 58)

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8.5.3   E-mail sending/receiving verification

Once all the parameters mentioned in the previous chapter have been checked. The mobile phone is ready to send/receive E-mails.

Check this by sending an E-mail from the mobile phone and checking the destination mailbox from a computer.

Or send an E-mail from a computer and check your mailbox from the mobile phone.

8.5.4   Memory reliability

After recording the E-mail parameters :

➢   Turn off the mobile
➢   Remove the battery
➢   Wait 5 seconds
➢   Clip the battery again
➢   Turn on the mobile
➢   Check that the parameters still present.

8.5.5   E-mail Error messages

Error messages may be displayed on the mobile phone screen. Some of these are listed in Chapter 8.4.5 W@P Error Message

8.5.6   E-mail Exchange criteria

Exchanges for E-mail problems should be extremely rare because the chances of having a defective mobile phone is small compared to the misuse of the customers.

Error messages during connections are mainly due to incorrect parameters: you should contact your GSM operator and your Internet Service Provider before first use, in order to have the appropriate GSM/GPRS parameters and mailbox parameters.

The mobile phone has to be considered as a defective one only if the memory test or the functional & radio tests are wrong

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9.0   ASSEMBLY / DISMANTLEMENT PROCEDURES

During dismantlement and assembly operations, an antistatic bracelet must be used.

9.1   Dismantlement
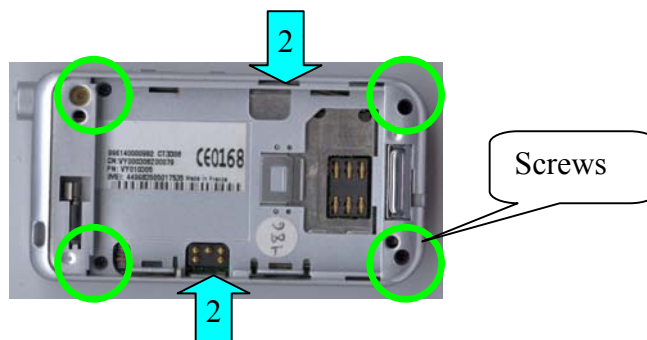
9.1.1   Removing the battery door and Battery

Please refer to chapter 7.4
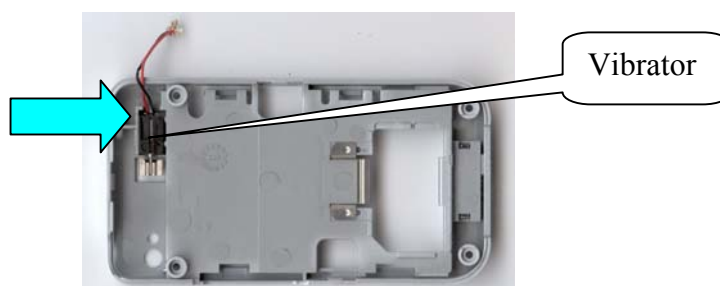
9.1.2   Removing the Antenna

The Antenna is screwed, you just have to unscrew it.

9.1.3   Removing the "Rear Housing"

1 - With specific screw driver, turn off the 4 screws at the back of the product.
2 - With "paper cut tool", press on the two clicks.
3 - Disconnect the vibrator.

Screws

9.1.4   Disconnect/Removing the vibrator

1 – Pull up the vibrator to extract it.

Vibrator

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9.1.5   Disconnect the LCD connector & removing lateral keypad

> 1 - Disconnect the LCD connector.
> 2 - Remove the lateral keypad.

Lateral keypad
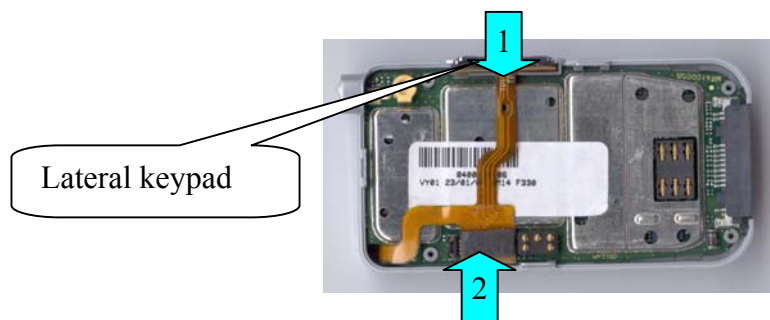
9.1.6   Extracting the "Board"

> 1 - With "paper cut tool", press on the two clicks.
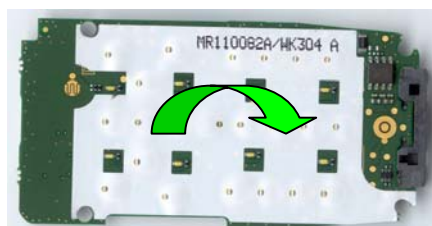> 2 - Extract the board from the front cabinet.

Board
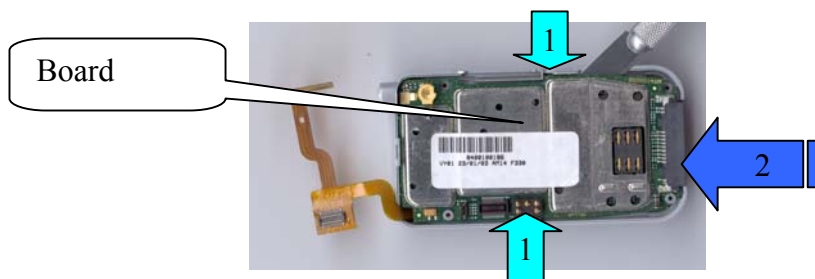
9.1.7   Removing the mylar

> With a "paper cut tool", remove the white mylar.
>
> Be careful !
> If you remove the mylar, you just can't use it anymore. You will have to get a new one.

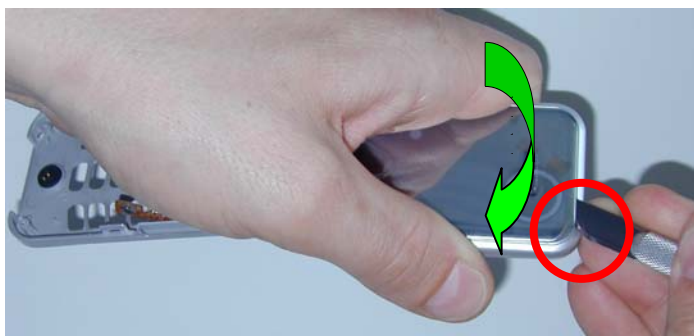| PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-P330 Page : 32 of 43 Langue : EN Date : 11/06/03

9.1.8   Removing keypad + microphone

    1 - Extract the keypad from its place.
    2 - Push on the microphone to extract it.

9.1.9   Removing the colour flip insert

    1 - Make a pressure on the flip with your hand
   2 - In the same time, insert the "Paper cut tool" between the flip and flip insert
    3 - Pull the flip insert up.

- You can't remove the flip insert without destroying it. So for each removing, you will have to change it and add a new "double side adhesive".

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9.1.10   Removing the flip door from the clamshell

- Open the clamshell.
- With a little screw driver, make a pressure on the red spring situated between the two parts of the clamshell.
- In the same time, you have to pull on the front housing.
- Separate the two parts of the clamshell.
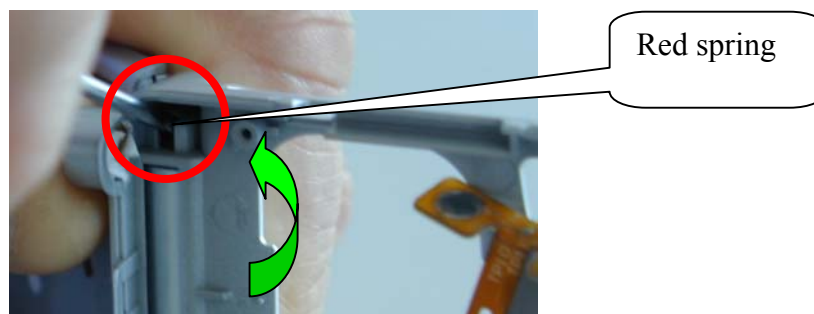
Red spring

- It's possible to have a specific tool to remove the flip door from the clamshell.

9.1.11   Extracting the Red Spring

Extract the red Spring with pliers

Red spring
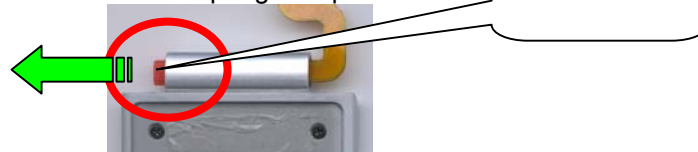
9.1.12   Removing rear flip housing

1 - Turn off the 4 screws on the front of the flip.
2 - Remove the two clips situated on your right.
3 - Push the front flip to your left.

Screw

2

3

2

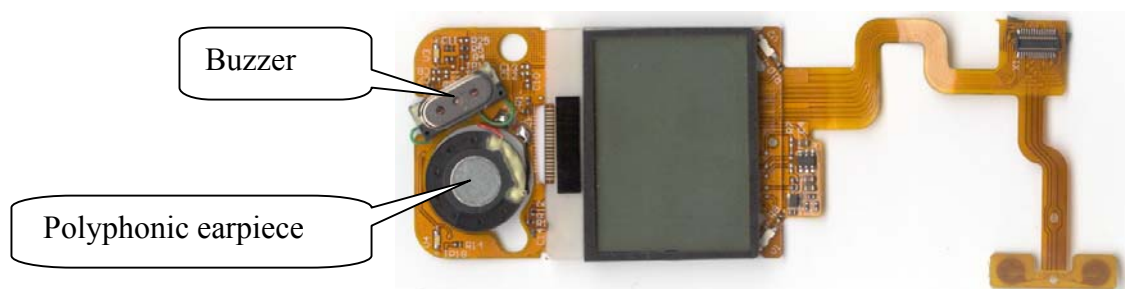| **PHILIPS Consumer Communications** **Centre du Mans**	**Service Repair Support**	**VY-V-640-P330** **Page : 34 of 43** **Langue : EN** **Date : 11/06/03**

9.1.13   Removing LCD Module

    1 - Remove the flex from the rear flip.
    2 - Extract the LCD module that contains the polyphonic buzzer.
    3 - Remove the Earpiece from the adhesive part.

Flex

Adhesive part
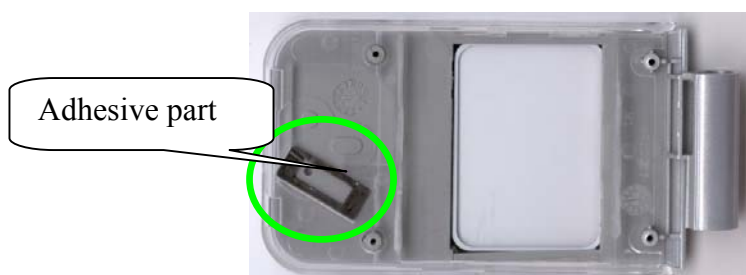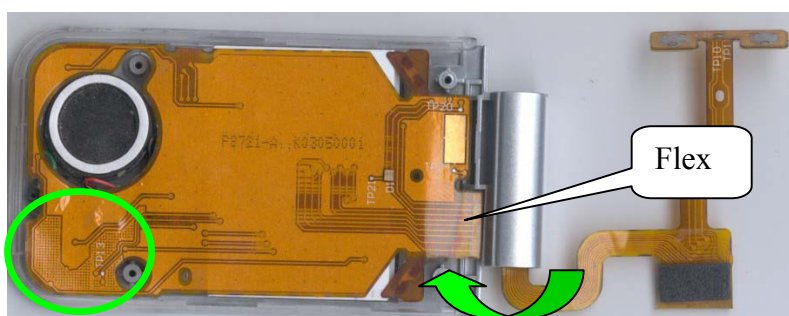
9.1.14   Unsoldering polyphonic buzzer and earpiece

    1   - Unsolder the polyphonic earpiece from the flex, with soldering machine (Max 250°C)
    2   - Disconnect red & black wires.

Buzzer

Polyphonic earpiece

    3   - Unsolder the buzzer from the flex, with soldering machine (Max 250°C)
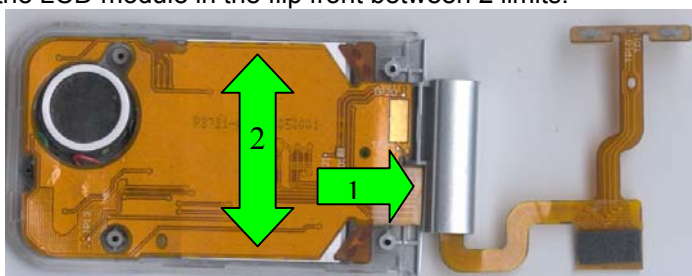   4   - Disconnect Green Wires.

→ **THE PRODUCT IS NOW COMPLETELY DISMANTLED.**

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9.2   Assembly

9.2.1   Inserting LCD Module

1 - Insert the flex in the flip split.
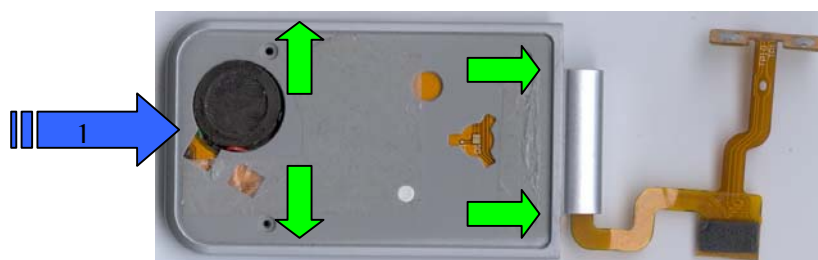2 - Put the LCD module in the flip front between 2 limits.

9.2.2   Buzzer positioning

- Put the buzzer at the correct place,
- Flip hole and earpiece have to correspond
- Buzzer have to be on the adhesive

Adhésive part   Flip hole

9.2.3   Flip rear inserting

1 - First insert the left side from the flip in the correct position
2 - Push on the front flip to active the 4 clips

9.2.4   Flip Screwing

Screw the 4 screws on the flip looking out the autoforming:
- With specific screw driver, turn the screw to the left to find the thread
- After that you have to screw to the right and stop when it's little bit more difficult
    → **0.1N/m**

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9.2.5   Spring inserting

- Push on the spring in its place to insert it.

9.2.6   Clamshell assembly

1 - Cross the LCD flex in the split housing.
2 - Put the two clamshell parts in the below hinge with taking care of the flex !
3 - The Clamshell must be opened.
4 - Push on the red spring.
5 - Clip the two clamshell parts.

1 - Split housing

LCD flex

9.2.7   Keypad & Micro Assembly

1 - Close the clamshell
2 - Put the keypad at the correct place
3 - Check the locating pin of the keypad and, push on them
4 - Insert the microphone
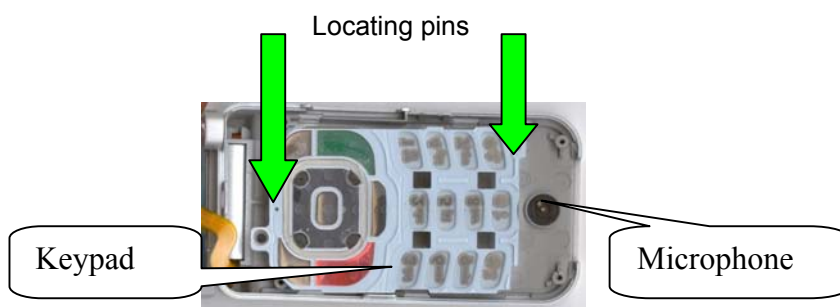
Locating pins

Keypad

Microphone

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9.2.8   Mylar positioning

Insert the Mylar with thanks to the 3 Locating pins.
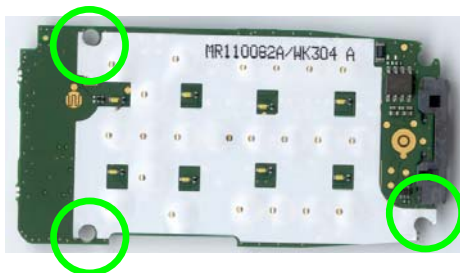
9.2.9   Board inserting

1 - Put the board inside the cabinet with shielding view.
2 - Put it in front of the 4 screws places.
3 - Push on the board to fix it with two clips.

9.2.10   LCD Connector & Lateral Keypad

- You just have to connect the LCD Connector .
- Insert the flex lateral keypad, and fix the plastic lateral keypad on the flex.

LCD connector   Lateral keypad
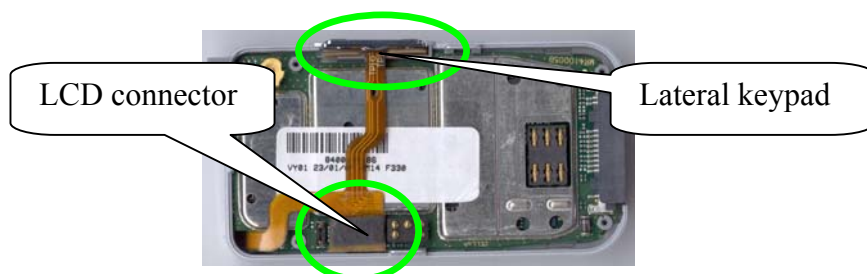
- This positioning point is very important due to a lot of unfonctionnel Keypad

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9.2.11   Vibrator positioning

- Insert the vibrator in its place.
- Check the SIM holder fonctionnality

Vibrator

SIM holder
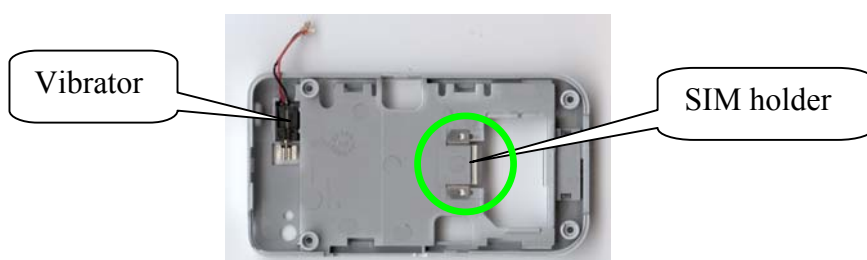
9.2.12   Rear Housing inserting

1 - Connect the vibrator. It does not exist polarisation on it.
2 - Put the rear housing on the board.
3 - Take care to put wire out of the screw crossing.

1 - Vibrator connection
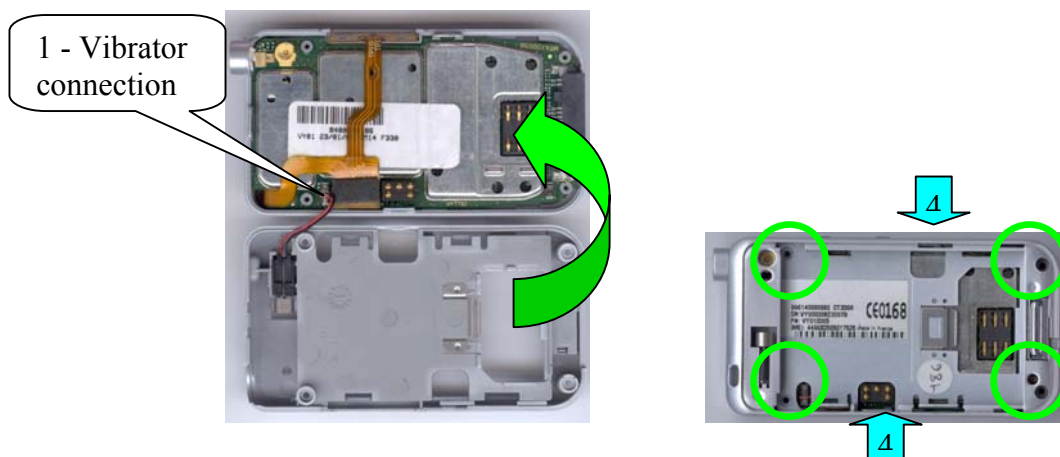
4 - Clip the rear on the front.
5 - Push on it, on all the outside parts.
6 - Screw the 4 screws on the flip looking out the autoforming.

- With specific screw driver, turn the screw to the left to find the thread.
- After that you have to screw to the right and stop when it's little bit more difficult.
        → **0.1N/m**

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9.2.13   Antenna

   - The Antenna is ready to be screwed.

9.2.14   Flip Insert

   - Clean the flip front.
   - Take a new "double side adhesive".
   - Remove the plastic protection.
   - Take the new colour flip insert and put it first in the upper part of your product.
   - After checking the correct position, push on the bottom of the flip insert (left & right sides).
   - Check the adhesive function on all flip Insert parts.

9.2.15   Battery & Battery door Inserting

   Please refer to chapter 7.6

→ **THE PRODUCT IS NOW COMPLETELY ASSEMBLED**

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9.3   Exploded view

1 → **BATTERY COVER**
2 → **REAR HOUSING ASS'Y**
3 → **FRONT HOUSING ASS'Y**
4 → **KEYPAD SILVER ASS'Y**
5 → **FLIP INSERT ASS'Y**
6 → **FLIP REAR HOUSING ASS'Y**
7 → **FLIP FRONT HOUSING ASS'Y**
8 → **BATTERY ASSY STANDARD330**
9 → **LCD MODULE**
A → **ANTENNA P330**
B → **VIBRATOR**
C → **RED SPRING**
D → **SIDE KEY PLASTIC**
E → **SCREW AUTOFORMING**
F → **POLYPHONIC BUZZER**
G → **EARPIECE**
H → **FLIP DOUBLE SIDE AHESIVE**

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10.0 SOLUTIONS IN CASE OF PROBLEMS DURING THE TESTS

Under no circumstances the phone have to be disassembled to fix a defect detected during the test procedure on level 1.

10.1   The phone does not switch on.

- Check the tactile feeling of the "ON/OFF" button.
- Check the LCD Fonction
- Active the ON/OFF Buttom Clamshell
- Remove the battery. Check that both the connectors of the phone and those of the battery are not damaged.
- Clean the connectors.
- Plug the battery again, making sure that it is securely fitted. Charge the mobile until the icon has stopped flashing. Then unplug from the charger and attempt to switch the mobile on.

If it still does not switch on. If the failure can't be found out then dismantle the product and swap the board.

10.2   Charge does not start or no detection of the charger. (refer to chapter 8.3)

- Check the charger contacts for dust or missing pins.
- Check the mobile connector.
- Remove the battery. Check that both the connectors of the phone and those of the battery are not damaged.
- Check the charger individually with a reference mobile. If the charger works properly try to charge the customer mobile with a reference battery.

If neither of the battery and the charger can be incriminated, dismantle the mobile change the battery connector. If the problem remains, swap the board.

10.3   The display shows "No SIM card. Please insert your SIM card." or "SIM FAILURE"

- If the SIM card cannot be inserted, check for any foreign part and try to remove it.
- Check the SIM Card connector. All the contacts must be at the same level. Make sure that there is no dust on the connector contacts and the SIM card contacts.
- If the test SIM card can be detected but the message "SIM Failure" remains on the customer's card, his card must be damaged. Ask him to contact his network operator.

Otherwise dismantle the product change the Simcard connector. If the problem remains, swap the board.

10.4   Display problems

Contrast, icons and matrix of the display can be checked with the test SIM card by pressing keys "5".
If everything works in test configuration that means that a phone setting is disabled or does not suit well. It can be solved in the phone menu.

Otherwise dismantle the product change the Module LCD. If with a new Module LCD the problem remains, swap the board.

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10.5   Buzzer problems

Buzzer tone can be checked with the test SIM card by pressing key "1" and "Left arrowhead".
- If it does not sound properly dismantle the mobile change the Buzzer. If the problem remains swap the board.

10.6   No sound in Loudspeaker

The sound from the loudspeaker can be checked with the test SIM card by pressing key "3".

- Check the microphone and the earpiece, If needed dismantle the product change the loudspeaker then the microphone. If the audio problem cannot be solved, swap the board.

10.7   Communication problems

- Sound quality can be checked in audio loop test (sound distortion, whistling, echo, …)
- If the mobile passes the radio tests successfully, we can assume that the phone works properly. The customer must check the coverage area of his network operator or that he does not use the phone in a radio shadow (outside the coverage area, in a tunnel or between tall buildings, …)

- If the mobile does not pass the radio tests, swap the board.

10.8   Keyboard problems

-The keyboard can be checked with the test SIM card.
- If a key or a row does not respond, check the keyboard. If needed dismantle the product change the keypad or the keypad holder (including zebra connectors) . If the problem remains, swap the board.

10.9   Clamshell

- Check the green/red led function after close Clamshell function with MAT card.
- Check the Keypad
- Check the LCD function

10.10   Problems to send SMS messages

Check the Center number. It may be empty or wrong.

11.0 RECOMMENDED PART LIST CT3308 PHILIPS 330

See File " PHILIPS 330 Lvl2 Components List.pdf " under the Internet Web Site
http://philipscscc.soft2you.net/   in " Technical Support \ Component List \ Wireless \ PHILIPS 330 " section

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ANNEX 1

PHILIPS CONSUMER COMMUNICATIONS
GSM & DECT Customer Services

PHILIPS

IRIS REPAIR CODING SYSTEM

The code '1000' is used for No Fault Found

An iris code is 4 digits with the following description:

Condition code
1-Constant
2-Intermittent
4-Two hours after switch on

	1 NO ACTION	2 LEVEL	3 QUALITY	4 NOISE	6 PHYSICAL PROBLEMS	7 SPECIAL FUNCTIONS	8 OTHER CONDITIONS
GENERAL (1)	Power problem 117 Short battery life 119 Does not switch on 11B Switch on/off recurrent 11X Other Pow Sup problem	Charging problem 121 Does not charge battery	Display function problem 136 Character/pixel absent 13B No backlight		Physical damage 166 Damaged plug or socket 169 Defective aerial 16G Broken LCD 16X Other Physical damage	General function problem 171 Faulty clock function 178 Faulty memory function 17F WGP function not operable 17G Blue Tooth not operable 17H Voice dial/command problem	Special requirements 185 Upgrade to be done only 182 Symptom not available
COMMUNICATION (2)	No reception 21A Drops calls	Reception level problem 220	Transmission problem 231 No emission 234 No radio link between Handset & Base	Noisy or distorted audio 240 244 Echo		Special communication problem 277 No dial tone 278 No buzzer ring 279 Not registering	
AUDIO (5)	No audio 510	Audio level problem 521 Low audio level			560 General problem with Answering machine	Poor special audio function 57A Hands-free problem	
MECHANISM (6)	No mechanical 61B Vibrator not operable 61D Pilot/compass key not operable			Mechanical noise 648 Foreign parts inside			
DATA PROCESSING (7)	No data processing operation 715 No keyboard operation 72B No subscription	721 Specific pb with Cellnet products				Special data processing function problem 774 Defective CLI 775 Defective SMS	SIM card problem 781 SIM blocked 782 Display frozen 763 Does not read SIM card 765 SIM Error 48xx

¹ In Green, special code for cordless products.
² In Red, special code for GSM products

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