

**PHILIPS Consumer
Communications**

Centre du Mans

Service Repair Support

VY-V-640-120-2

Page : 1 of 45

Language : EN

Date : 23/04/02

SERVICE MANUAL

Repair for Cellular Telephone

LEVEL2

Fisio 120 VOICE



& Fisio 121 W@P



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SERVICE Manual

Last updates :

DATE	MODIFICATION	PAGE
23/04/02	CREATION	
25/11/02	New Data Connect Cable Part No	4
	Add RF Pliers Part No	4
	Suppress of Component list	44 - 45 - 46

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1.0 PURPOSE

This document establishes the functional test and inspection procedures for the first level service repair of the FISIO 120/121 transceivers.

2.0 SCOPE

The test plan is applicable to all levels of service repair of the FISIO 120/121 transceivers.

3.0 REFERENCE

None.

4.0 GLOSSARY/ACRONYM LIST

Board	Transceiver Without LCD and Plastics parts
LCD Module	LCD part with plastic cover, earpiece and vibrator
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
- Fisio 120 Mat Software provided by Philips
- Digital Multimeter - Recommended Model : Fluke
Specification with current reading in mA.
- Digital Radiocommunication Tester.
- Coupling system with shielded chamber
or
- RF Pliers With mechanical adaptation - 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 FISIO 120/121.

6.1 User Interface Test

Use the Test SIM Card « SP » to test the transceivers as follows :

- On/Off button
- LCD Backlight
- Keyboard Test
- Buzzer Test
- Vibrator Test
- Audio Test
- 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 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.



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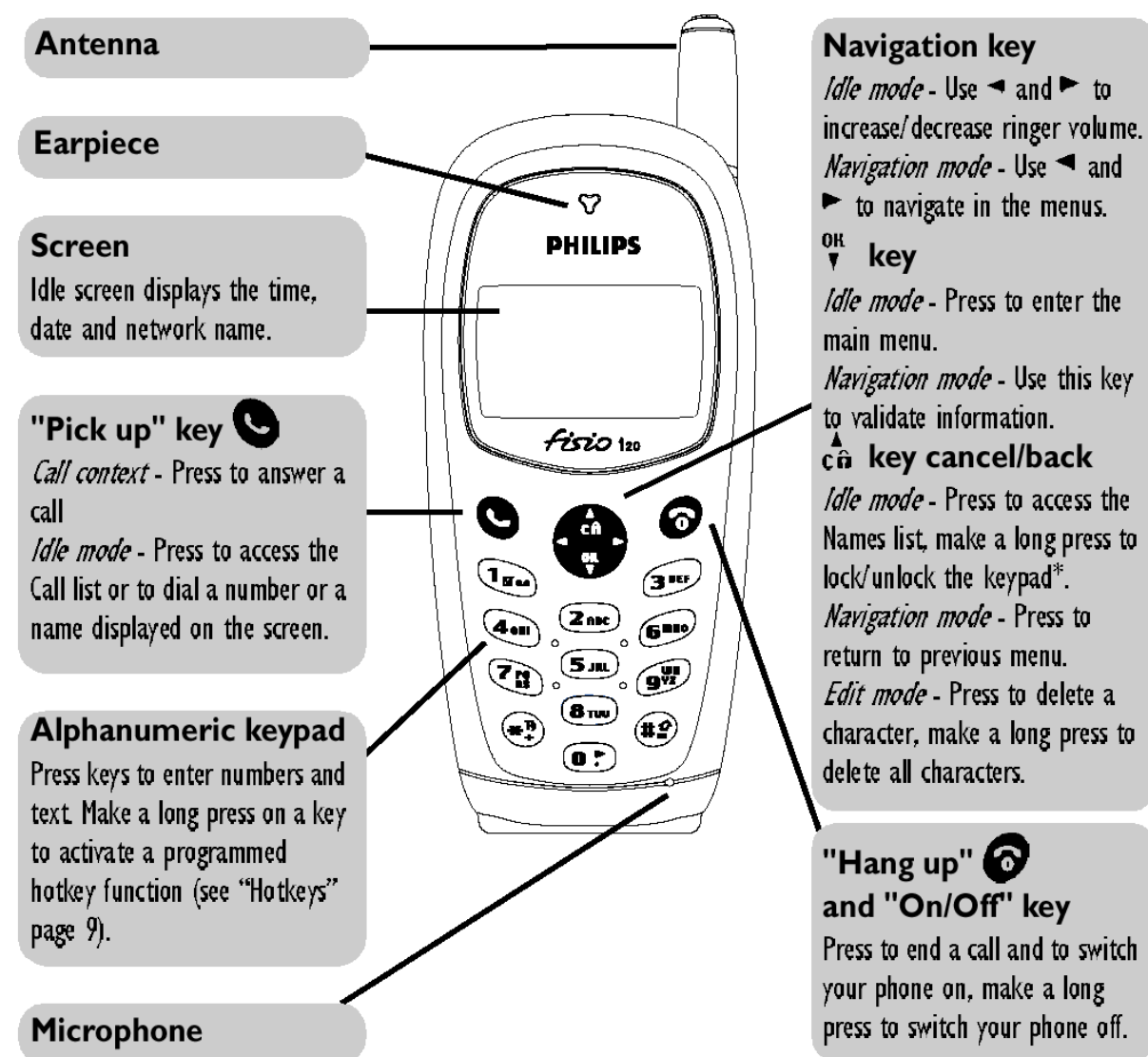
Language : EN

Date : 23/04/02

7.0 BEFORE STARTING

7.1 Description Of The Transceiver

Discover your phone





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7.2 Description Of The Display















Idle screen




After switching your phone on and entering the PIN code (see page 6), your phone displays the idle screen which means that it is ready to be used. In idle mode, up to 13 symbols can be displayed (max. 6 simultaneously in idle mode).


 If the  symbol isn't displayed, the network is not available. You may be in a bad reception area (e.g. in a tunnel): if possible, move to a different location. When browsing lists and menus, the phone automatically returns to idle screen over a 2 mn period of inactivity.

Symbols

- | | |
|---|---|
|  Alarm clock activated. |  Voice mail - You have received a new voice mail. |
|  Silent - Your phone will not ring when receiving a call. |  Keypad lock - Indicates that the keys are protected from being pressed accidentally. |
|  Vibra - Your phone will vibrate when receiving a call. |  Roaming - You are using a network other than your subscribed one. |
|  SMS message - You have received a new message. |  Home zone - You are currently within the home zone. Subscription dependent function, please contact your operator. |
|  SMS full - Memory for messages is full. Delete old messages to receive new ones. |  Battery - The bars indicate the battery level (4 bars = full, no bars = recharging needed). |
|  Call Forward Unconditional to number - Incoming voice calls are forwarded to a number other than voice mail. |  Network : your phone is connected to a network |
|  Call Forward Unconditional to voice mailbox - Incoming voice calls are forwarded to voice mail. |  Reception quality : the more bars are shown the better the reception is. |

Make a call

 Before making your first call, ensure you have entered your PIN code as described page 6 and eventually set a code of your choice as explained page 11.

- I In idle mode, enter the phone number using the keypad. To edit the number, scroll using ◀ or ▶ and press  to delete an incorrect digit.

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7.3 Using The Carousel

The carousel is a circular loop of icons displayed on the screen. These icons provide access to the different menus and sub menus used to operate your phone.

The carousel

A carousel is a loop of icons displayed on the screen, each icon representing a feature or option used to operate your phone:



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 above. To select the next or previous feature or option, press ◀ (left) or ▶ (right) and press ^{OK}▼ when the menu of your choice appears on the screen. Another sub-carousel or a list will then appear.

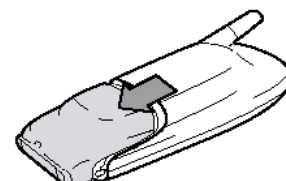
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7.4 Removing The Battery

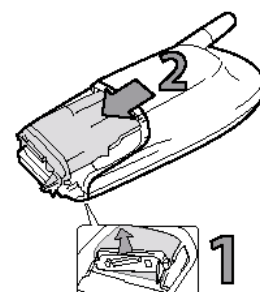
- 1 Press on the top of the battery cover and push the cover to remove it.



Make sure the phone is switched off before removing the cover.

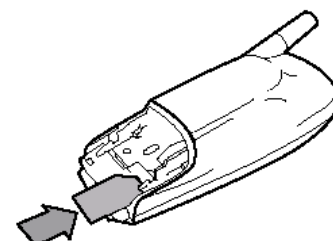


- 2 Remove the battery by first lifting the bottom clip (1) and the battery upwards, then pushing it downwards (2).



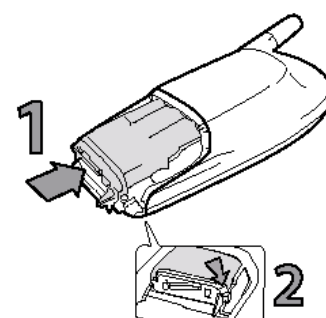
7.5 Inserting The Micro SIM-Card

Insert the SIM card in its slot, under the metal clip holder, push until it stops. Be careful that the clipped corner of the card is in the correct position as shown opposite.



7.6 Inserting The Battery

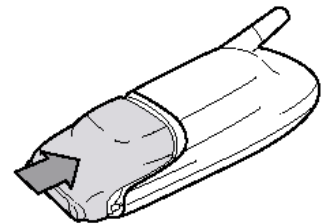
Slide the battery pack back into its slots until it stops (1) and push the clip downwards (2)



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7.7 Attach The Battery Cover

Replace the phone's battery cover, by sliding it until the latch catches.

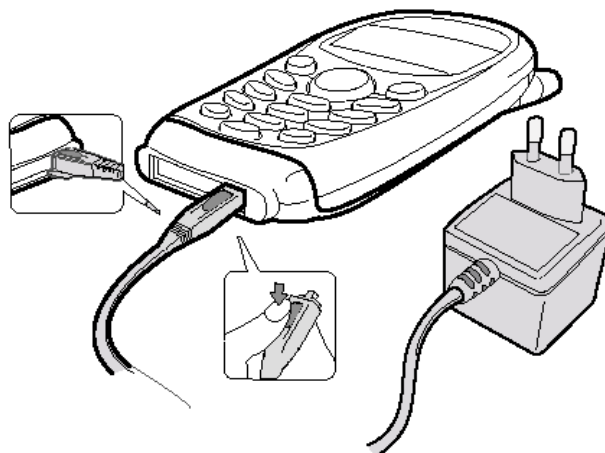


7.8 Charging The Battery



Your phone is powered by a rechargeable battery.

- *For a full recharging please allow the charger to be connected for about 10 to 14 hours (e.g., over night).*
- *To optimise battery capacity, allow it to fully discharge 3 times in a row. Then, to maintain its optimal capacity, do not wait until the indicator reaches low (i.e., when only 1 bar is displayed in the battery indicator).*
- *Disconnect the battery if you do not use the phone for several days.*
- *You can use the phone while it is on charge.*
- *If the battery is completely flat, the battery icon will only reappear after 2 or 3 mn of recharging. Meanwhile, you cannot make a call.*



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- 1 Once the battery and the battery cover are connected to the phone, plug the connector into the right hand socket at the base of the phone.
- 2 Then plug the transformer unit into an easily accessible AC power socket.



Bars moving ➡ battery is charging

Bars steady ➡ battery is fully charged

7.9 Customise your Phone

You can customise your mobile phone by removing the front cover and the battery door, and replace them with different ones.

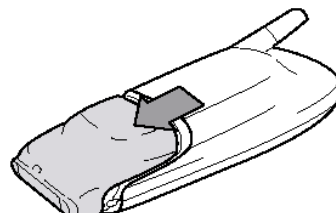


You must always remove the battery when customising your phone.

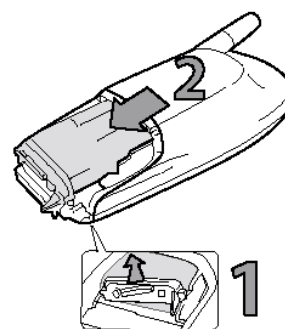
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- 1 Press on the top of the battery cover, then push the cover to remove it.


 *Make sure the phone is switched off before removing the cover.*

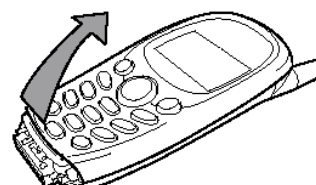


- 2 Remove the battery by both lifting the bottom clip and the battery upwards (1), and pushing it downwards (2).

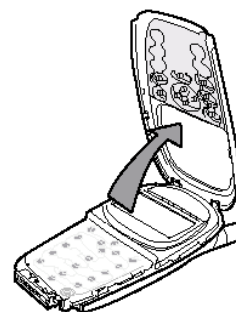


- 3 Then lift the cover from the bottom of the phone and remove it.

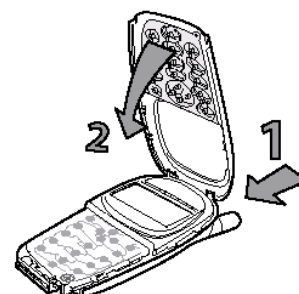
 *Make sure you handle the product with care when the front is removed, in order not to damage the keys which are then unprotected.*



- 4 Remove the keypad from the front cover you remove. Then place it in the new front cover.



- 5 Put the new front cover on your phone: hook the front housing onto the hinges on the top of the phone (1), then press the bottom down until the latches catch (2).



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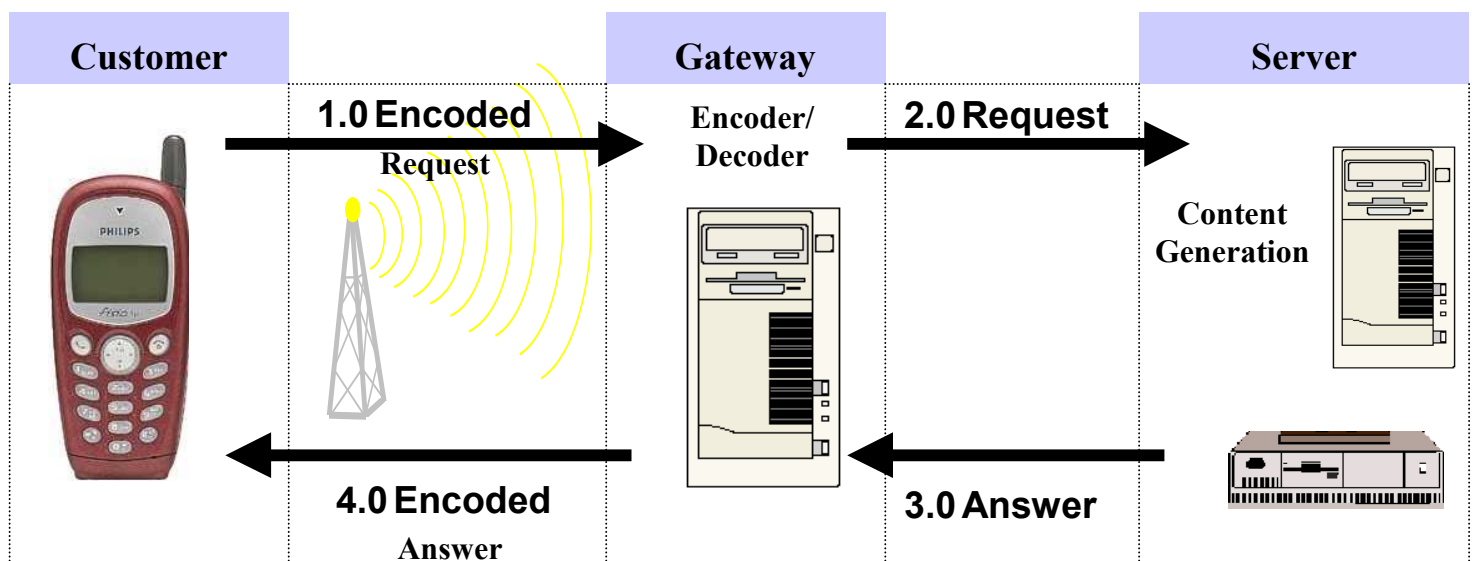
7.10 W@P Introduction

The purpose of W@p (Wireless Application Protocol) is to enable easy and fast delivery of relevant information and services to mobile users. However, mobile Internet does not mean navigating on the Internet with a wireless device but rather to access to some services in a mobile context.

The W@P architecture was designed to enable standard Internet servers to provide services to wireless devices. The W@P wireless protocol is based on Internet standards such as HTTP and TLS but has been optimized according to the constraints of the wireless terminals: low memory capacity, small screen size and of the network: limited bandwidth.

The W@P architecture is made up of 4 technological parts which are necessary for accessing W@P services on a mobile phone. These are:

- W@P navigator or browser
- Mobile operator network
- W@P gateway / W@P server
- Web server



* Subscription

The customer has to contact his Network Operator to inquire about his subscription and the options he can subscribe to. Generally the customer just have to request his W@P access to his provider and he will not be charged for that.

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*** W@P parameters**

Parameters have to be set in the mobile phone in order to access W@P services . However, there are two cases depending on the commercial offer:

* Transceiver sold via an operator package(with subscription included):

- Parameters cannot be accessed from the W@P settings menu of the mobile phone:
The transceiver is W@P locked. The W@P connections will always be made from the operator W@P homepage and search engines will be available. The customer will have to ask for a password from his/her operator to unlock the W@P settings.

- Parameters can be accessed from the W@P settings menu of the mobile phone:

The customer changes the W@P parameters according to his/her own convenience.

* Retail transceiver(without subscription included):

- Phones are configured by the manufacturer with no W@P parameter. The end user has to ensure that the W@P functionalities and a data/fax options have been subscribed.

The end user has also to set the W@P parameters by asking for them from his/her operator or by using parameters of another company (available on Internet, newspaper etc.)

Detailed parameters

Phone Number (or dial-up number) : to establish a connection with the Internet Service Provider

Login (or User Name) : if requested by your ISP

The password : if requested by your ISP

IP address for the Gateway : for communications between Internet Service Provider and Gateway
& Port Number (for a secure or non secure connection)

Home page address(or URL address): for communications between Gateway and Web server

Please note that it is important to respect small and capital letters according to your operator instructions.
It is also possible that your provider does not require the Login and/or Password.

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8.0 TEST PROCEDURES

Concerning Fisio 120, it exist to memory size,:

- one is “1 Meg” with Software 9417XXXX
- the other size is “2 Meg” with software Product 9427XXXX

To read the software product, Insert a “SP” Card with battery in the product, Shut ON and Press *#3825*#
 → Software version appeared on the LCD.

The “1Meg” version hasn’t MAT (Manuel Auto Test) inside, and to check fonctionnalités of it, you need to use an external MAT Software Application → Refer to § 8.1

MAT software Application is available for all Fisio 120/121 Software Product.

8.1 Initial Functional Check for Fisio 120 Voice “1 Meg version”

Necessary to have MAT Software for each Software product version with Computer (Pentium 200Mhz - 64 Mo RAM)

8.1.1 Launch the MAT Software corresponding to the Product Software



8.1.2 Connect your Product (Without Sim Card) to the Data Connect cable

8.1.3 Switch ON your Phone With Key ON/OFF and Wait the below message



8.1.4 Check The “TAT MODE” on the Product LCD

8.1.5 Click on the “OK” Icon and the Product LCD will show a message which contains information of FA (Final Adjustment) status and 12NC.

8.1.6 Follow the instructions as mentioned below :

Step	Procedure	Observation
1	Press Key 1	Key Without test
	Press Key 1 again.	Left corner displays 1 00
2	Press key 2 (Audio loop local effect)	"LocalEffect" " XX XX XX" " XX XX"
	Press key 2 again	Left corner displays 2 01

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3	Press key 3 Audio loop test (Speak to Mic and listen echo from Speaker) Press key 3 again	"AUDIO xx xx xx xx" "EEP xx xx xxxx " Left corner displays 3 02
4	Press key 4 Check for the Backlight function in the same time. Press key 4 again	Key Without test Left corner displays 4 03
5	Press Key 5 (Checkerboard test) Press Key 5 again	Checkerboard 1 pixel on Left corner displays 5 04
6	Press Key 6 (Inverted Checkerboard) Press Key 6 again	Checkerboard 2 pixel on Left corner displays 6 05
7	Press Key 7 Press key 7 again	All pixels are on Left corner displays 7 06
8	Press key 8 (Eeprom Status) Press Key 8 again	"EEPROM STAT" H-XXXX-XX-XX(No Digit "1" or "2" allowed) L-XXXX-XX-X SimLk XXXXX (Sim lock Status) Left corner display 8 07
9	Press Key 9 Product information Compare information with label printed on back case Press key 9 again	"PROD INFO" "XXXXXXXX" (PN Number) "XXXXXXXX" VY made in Le Mans SA made in Singapore EO made in Shenzhen Left corner displays 9 08
10	Press key 0	"ADC MEASURES" "XXXX XXXX"

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	Press key 0 again	"XXXX XXXX" Left corner displays 0 09
11	Press * (IMEI Test) Compare IMEI with label printed on back case Press * again	"IMEI TEST" "XXXXXX/ 50 / XXXXXXXX" 06 made in Singapore 50 made in Le-Mans 69 made in China Left corner displays * 12
12	Press # (FA Status) Press # again	"FA/12NC" FA GOOD (Must be good) X XXXXXXXXXXXX (12NC) Left corner displays # 13
13	Press C Press C again	Handsfree XX XX XX XX XX Left corner displays C 15
14	Press the Left arrowhead (Melody Test) & vibrator Press Left again	User Melody should be heard and vibrations felt < Left corner displays 0C
15	Press the Right arrowhead (Memory Test) Press Right again	"MEMORY TEST" "XXXXXXXX" "XXXXXXXX" "RAM OK" > Left corner displays 0D
16	Press "take Away" button Press Green button again	"MANUAL TEST" "GOOD" Left corner displays OF
17	Press "Hang up" button Press Red button again	"MANUAL TEST" "BAD" Left corner displays 10

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18	Press OK	“PAGE” “SELECTION” “00”
	Press Key 1	“PAGE” “SELECTION” “01”
18	Press OK	Left corner display OK OE O1
19	Press Key 7	“ANTENNA TST” “Tx Level XX” “CHANNEL XXX”
	Press the Right arrowhead	“Tx Level” Increasing
	Press the Right arrowhead	“Tx Level” Decreasing
	Press Key *	“CHANNEL” Increasing
	Press Key #	“CHANNEL” Decreasing
	Press key 7 again	Left corner displays 7 06 01
20	Press OK	“PAGE” “SELECTION” “01”
	Press OK again	Left corner display OK OE O1

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

8.1.8 Perform visual check on battery connectors, car kit connectors and casing. If corrosion or deform, swap the board.

8.1.9 Perform RF test Chapter 8.3

8.1.10 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 Initial Functional Check for Fizio 121 W@P & Fizio 120 Voice “2Meg version”



- 8.2.1 Insert the Test Production Card into the SIM Reader at the back of the cellular phone and clip a charged battery on the phone.
- 8.2.2 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.
- 8.2.3 Follow the instructions as mentioned below :

Step	Procedure	Observation
1	Press Key 1 Press Key 1 again.	Key Without test
2	Press key 2 (Audio loop local effect) Press key 2 again	"LocalEffect" " XX XX XX" " XX XX" Left corner displays 2 01
3	Press key 3 Audio loop test (Speak to Mic and listen echo from Speaker) Press key 3 again	"AUDIO xx xx xx xx" "EEP xx xx xxxx " Left corner displays 3 02
4	Press key 4 Check for the Backlight function in the same time. Press key 4 again	Key Without test Left corner displays 4 03
5	Press Key 5 (Checkerboard test) Press Key 5 again	Checkerboard 1 pixel on Left corner displays 5 04
6	Press Key 6 (Inverted Checkerboard) Press Key 6 again	Checkerboard 2 pixel on Left corner displays 6 05

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7	Press Key 7 Press key 7 again	All pixels are on Left corner displays 7 06
8	Press key 8 (Eeprom Status) Press Key 8 again	"EEPROM STAT" H-XXXX-XX-XX(No Digit "1" or "2" allowed) L-XXXX-XX-X SimLk XXXXX (Sim lock Status) Left corner display 8 07
9	Press Key 9 Product information Compare information with label printed on back case Press key 9 again	"PROD INFO" "XXXXXXXX" (PN Number) "XXXXXXXX" VY made in Le Mans SA made in Singapore EO made in Shenzhen Left corner displays 9 08
10	Press key 0 Press key 0 again	"ADC MEASURES" "XXXX XXXX" "XXXX XXXX" Left corner displays 0 09
11	Press * (IMEI Test) Compare IMEI with label printed on back case Press * again	"IMEI TEST" " XXXXXX/ 50 / XXXXXXXX" 06 made in Singapore 50 made in Le-Mans 69 made in China Left corner displays * 12
12	Press # (FA Status) Press # again	"FA/12NC" FA GOOD (Must be good) X XXXXXXXXXXXX (12NC) Left corner displays # 13

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13	Press C Press C again	Handsfree XX XX XX XX XX Left corner displays C 15
14	Press the Left arrowhead (Melody Test) & vibrator Press Left again	User Melody should be heard and vibrations felt  Left corner displays 0C
15	Press the Right arrowhead (Memory Test) Press Right again	"MEMORY TEST" "XXXXXXXX" "XXXXXXXX" "RAM OK"  Left corner displays 0D
16	Press "take Away" button Press Green button again	"MANUAL TEST" "GOOD" Left corner displays OF
17	Press "Hang up" button Press Red button again	"MANUAL TEST" "BAD" Left corner displays 10
18	Press OK Press Key 1 Press OK	"PAGE" "SELECTION" "00" "PAGE" "SELECTION" "01" Left corner display OK 0E 01
19	Press Key 7 Press the Right arrowhead Press the Right arrowhead	"ANTENNA TST" "Tx Level XX" "CHANNEL XXX" "Tx Level" Increasing "Tx Level" Decreasing

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19	Press Key * Press Key # Press key 7 again	"CHANNEL" Increasing "CHANNEL" Decreasing Left corner displays 7 06 01
20	Press OK Press OK again	"PAGE" "SELECTION" "01" Left corner display OK OE O1

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

8.2.4 Perform visual check on battery connectors, car kit connectors and casing. If corrosion or deform swap the Board.

8.2.5 Perform RF Chapter 8.3

8.2.6 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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8.3 RF Test

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

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

8.3.3 Set RF losses as following (tested with antenna coupler):
These values are theoretical and have to be defined clearly.

	Channel	RX	TX		Channel	RX	TX
900 MHz	63	5,0	5,2	1800 MHz	598	27,0	13,0
	3	4,0	3,2		512	23,0	10,0
	62	5,0	5,2		700	27,0	13,0
	123	6,0	4,1		884	19,0	16,7

8.3.4 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

8.3.5 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)

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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8.3.6 Radio test plan

Find below all the measurements which 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

	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

BER Measurements on 104 frames = 8200 bits minimum

- ☛ 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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8.3.7 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 Center.

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8.3.8 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		-85dbm	0%
BER		-102dbm	2.44%
FER		-102dbm	0%

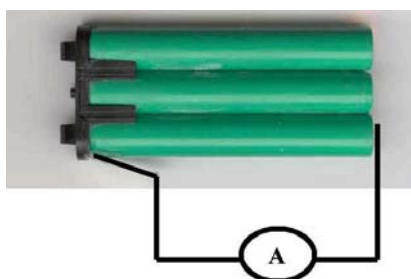
If a phone is out of the specifications, it must be sent to the Repair Center.

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8.4 Battery Charging (IGN : Ignition) / Current Consumption

8.4.1 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 reference Battery with a multimeter added (see picture) for current measurement.



- Plug the connector of the charger 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.

After few seconds a charge current of $50 < I \text{ (mA)} < 70$ have to be observed

- Unplug the charger

8.4.2 Current consumption

a) Check current_OFF :

When the mobile is OFF the current measured must be : $0.06 < I \text{ (mA)} < 0.25$

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b) Check Current_ON

- Turn the mobile on.

When the mobile is ON (backlight activated) the current measured must be : $75 < I \text{ (mA)} < 125$
This measurement has to be operated during first seconds after switch on.

c) Check Current_maximum

- Press on OK to activate Page selection. Press the Key 1 and then OK to select Page 1
- Press on Key 4 to select Antenna test. Press on the left arrowhead of the Compass Key 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 ON) the current measured must be : $100 < I \text{ (mA)} < 200$

- Remove the battery.
- Gently slide the card out away from the Product

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8.5 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.

8.5.1 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)

8.5.2 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 one



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
And press OK

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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

8.5.3 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.

8.5.4 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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8.5.5 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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8.56 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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9.0 ASSEMBLY/DISMANTLEMENT PROCEDURES

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

9.1 Dismantlement Procedure

9.1.1 Removing the battery

Press on the top of the battery cover, then push the cover in direction as indicated in diagram below in order to remove it.



Remove the battery by lifting both the bottom clip and the battery upward (1), and pushing it downward (2).

9.1.2 Removing the front cover/keypad

Hold the transceiver firmly, Follow the below Picture 1 and 2.



Picture 1



Picture 2

Take the front cabinet from the sub-assembly and remove the keypad.



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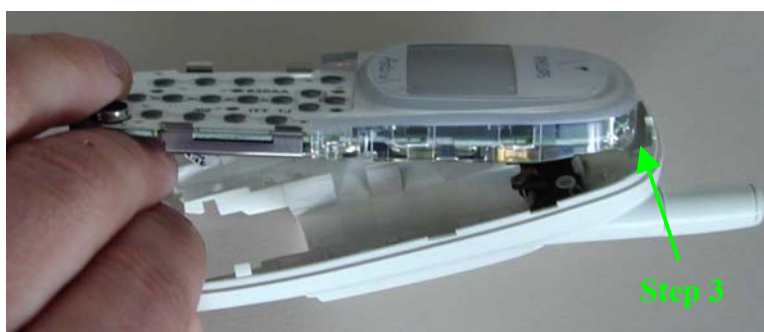
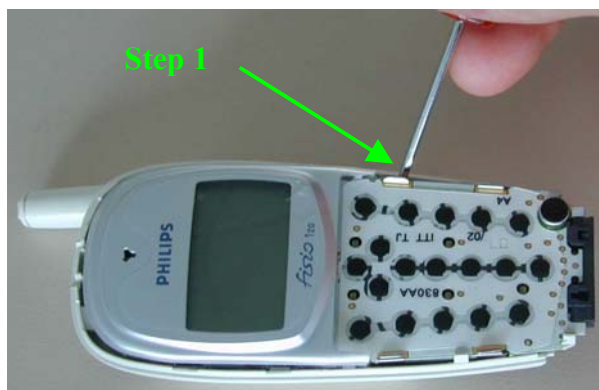
9.1.3 Removing the CN label

Insert a Scalpel or a Cutter on the rear cabinet to detach the CN label stick part from it.



9.1.4 Removing the sub-module

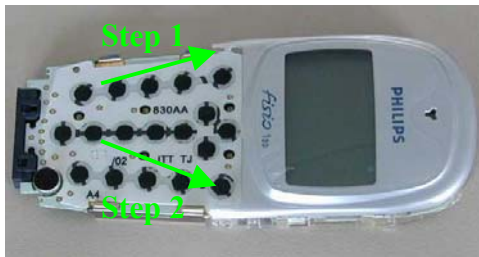
Insert a screw driver between sub-module and the rear cabinet and push on it. Repeat the same on the opposite side. Remove sub-module from rear cabinet.



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9.1.5 Removing the window assembly (LCD holder)

With your hand, push on the left Side bottom of the LCD Holder, Repeat the same for the opposite side. Push on the LCD Bottom to remove this one.



9.1.6 Removing the LCD.

Remove the LCD by taking it out from the LCD holder.

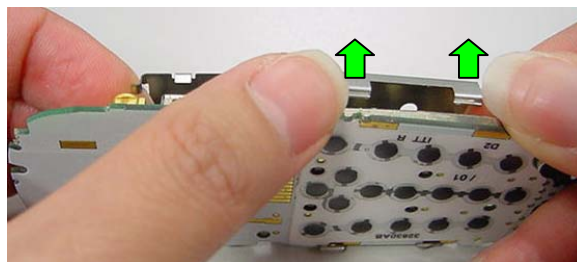
9.1.7 Removing the earpiece

Insert the screw driver between the gap of the earpiece and the LCD holder and tilt the screw driver in order to lift the earpiece. Please note that the earpiece is attached to LCD holder with adhesive so only a small pressure is required.

Please take care not to damage the earpiece membrane while removing.

9.1.8 Removing the SIM holder

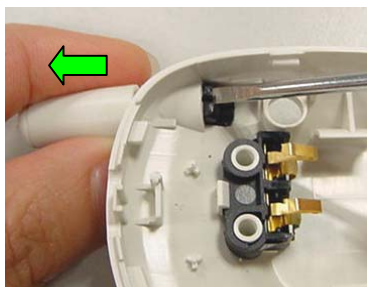
On one side, push both the metal grips of the SIM holder outward. Once the grips loosen, the SIM holder should be removed.



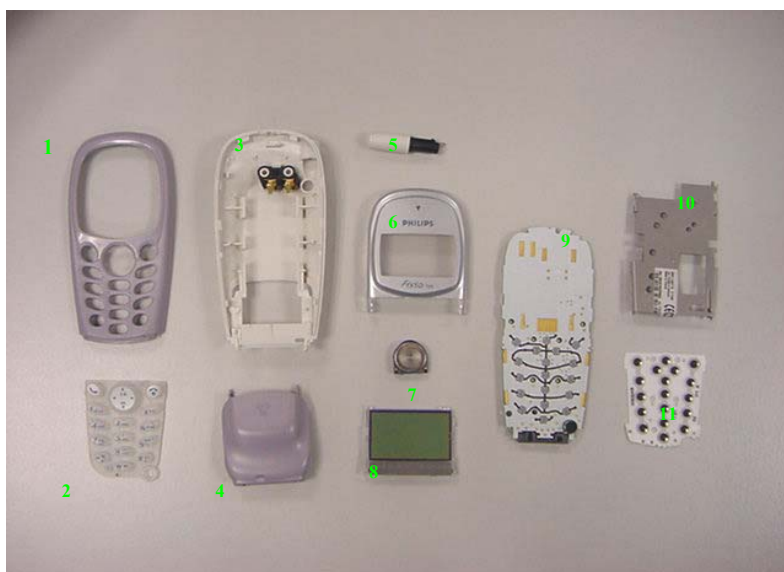
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9.1.9 Removing the antenna assembly

Using a screw driver, depress the attach antenna and at the same time pull it out from the other end.



9.1.10 Disassembled parts in a glance



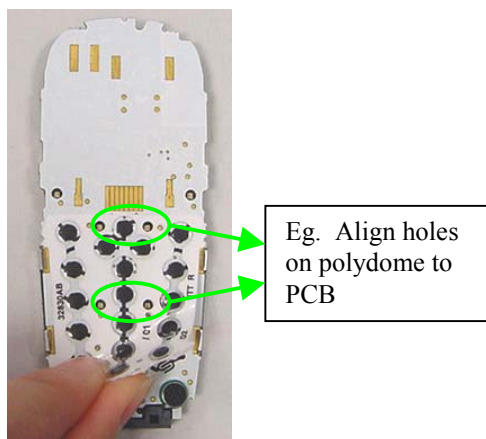
1. Front Casing
2. Keypad
3. Rear cabinet (circled item is battery contact)
4. Battery Cover
5. Antenna Assembly
6. LCD Holder / Window Assembly
7. Earpiece + Vibrator
8. LCD
9. PCBA main board
10. SIM holder
11. Polydome

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9.2 Assembly Procedure

9.2.1 Attaching the polydome

Remove the protective sheet. Put the polydome in front of the two PCB holes and stick it on.



9.2.2 Attaching the SIM holder

Place the metal SIM holder over the shields (middle and bottom) and press it firmly so that the metal grips get closed on the PCB main board.



Rear View



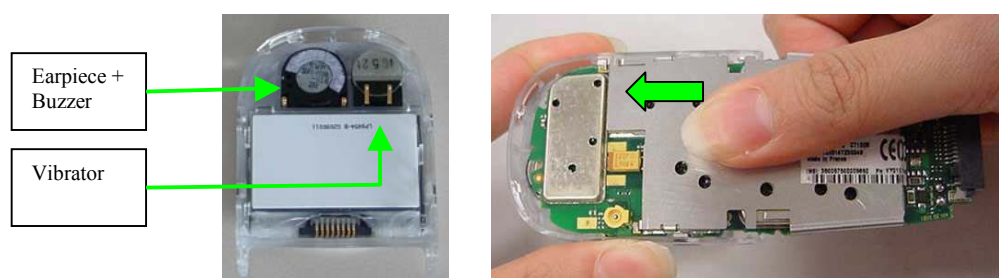
Front view

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9.2.3 Assembling LCD holder

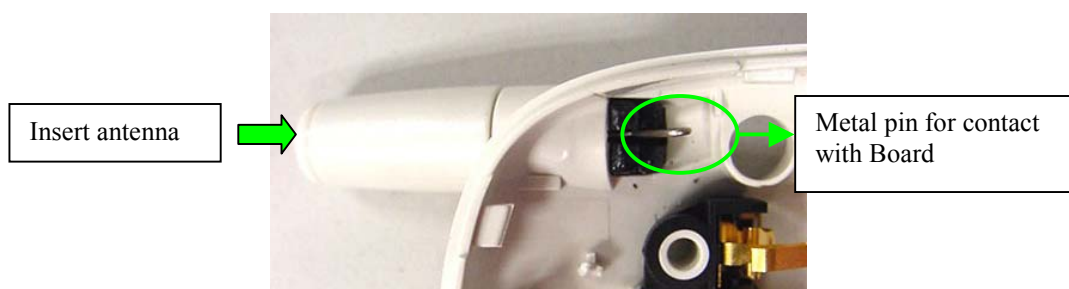
Check that the earpiece, vibrator and LCD are attached to the LCD Holder.

Place the board on the LCD Holder slightly below the top of it.
Press and push the board to the top. Check the Click. The board should be fixed.



9.2.4 Inserting antenna assembly

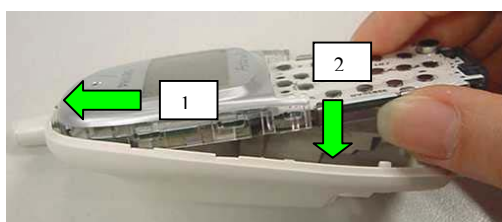
Take an antenna assembly and insert it into the antenna hole at the top of the rear cabinet.



9.2.5 Attaching sub-module to rear cabinet

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Insert the sub-module in the top of the rear cabinet.
The LCD Module locks into the two top catches.
Once in position, press the sub-module against the rear cabinet.
Be careful, CN label must be positioned on the rear cabinet and not below.



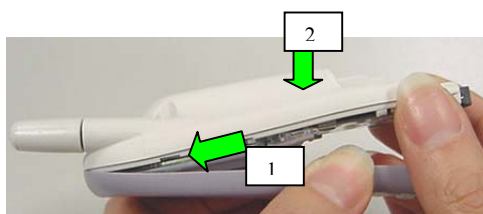
9.2.6 Sticking the CN label part

After rear cabinet attaching, stick the CN label part on it (with scalpel for example).



9.2.7 Replacing the front cabinet

Take a rubber keypad and line it on the front cabinet. Take the rear assembly and insert it into the front cabinet starting from the top. Once locked, press them firmly together until the catches snaps on.



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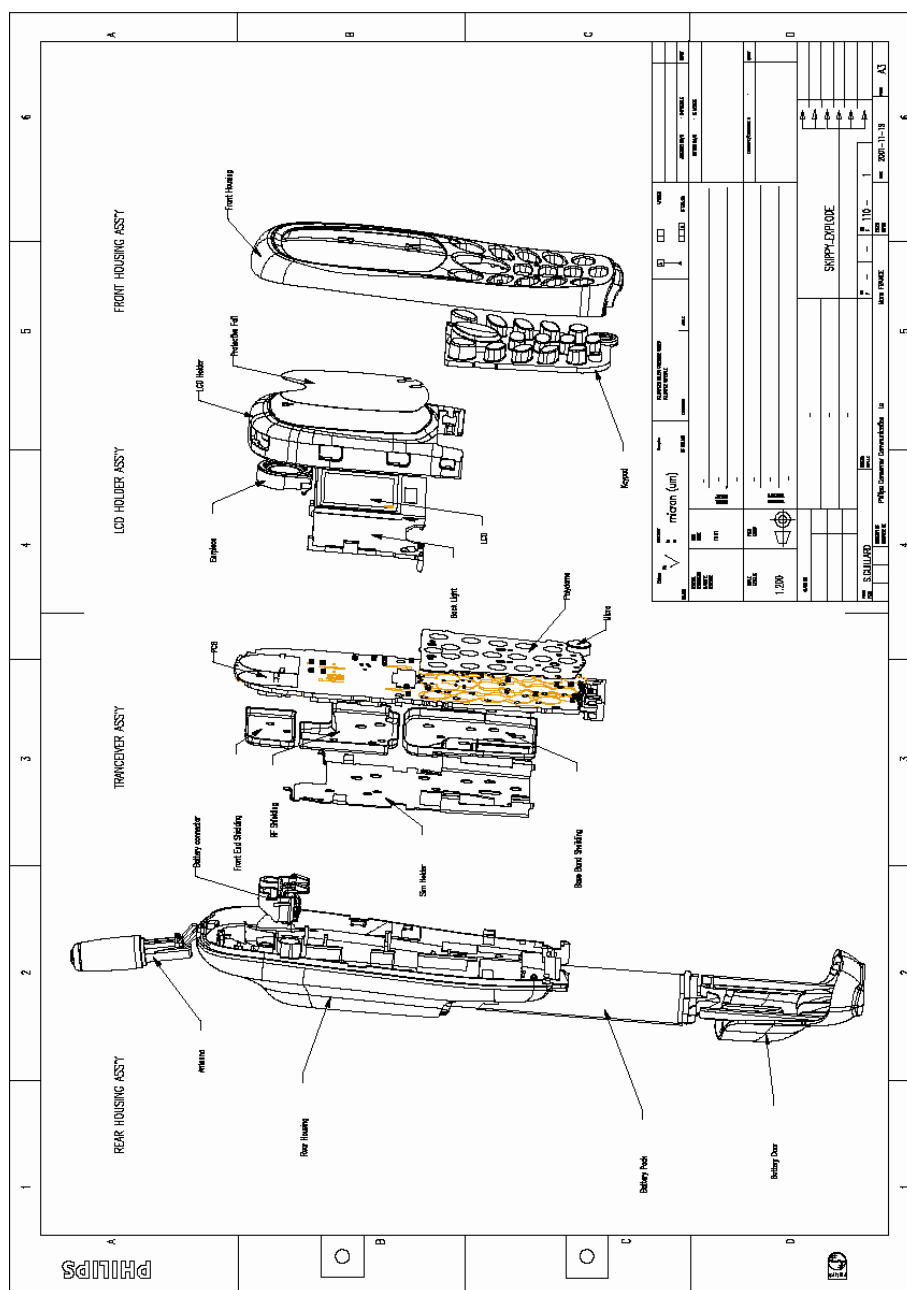
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9.3 Exploded view of the transceiver



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10 SOLUTIONS IN CASE OF PROBLEMS DURING THE TESTS

Under no circumstances the phone have to be disassembled (Except Customizations Parts) 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.
- 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, try to fix the mobile. If the failure can't be found out then 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, 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 holder.
- Check the SIM 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 SIM Card connector is defective 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”, “6” and “7” . 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 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 Change the LCD Holder.

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 they are not correct, Change the LCD Holder.

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 Defective antenna

- If the antenna is broken or curved => replace it without change the rear cabinet.

10.9 Keyboard problems

-The keyboard can be checked with the test SIM card.

- If a key or a row does not respond, check the keyboard, change it if necessary. Check the polydome, change it if necessary.

If the failure cannot be found out, swap the board.

10.10 Problems to send SMS messages

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

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ANNEX 1

PHILIPS CONSUMER COMMUNICATIONS

Customer Services

New Product & Measurement



PHILIPS

An Iris code is 4 digits with the following description :

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

IRIS REPAIR CODING SYSTEM

The code '1000' is used for No Fault Found

	1	2	3	4	6	7	8
	NO ACTION	LEVEL	QUALITY	NOISE	PHYSICAL PROBLEMS	SPECIAL FUNCTIONS	OTHER CONDITIONS
1	117 Pow er problem 119 Short battery life 11B Switch on/off recurrent 11X Other Pow Sup problem	121 Charging problem Does not charge battery	136 Display function problem Character/pixel absent 13B No backlight		166 Physical damage 169 Damaged plug or socket 169 Defective serial 16G Broken LCD 16X Other Physical damage	171 General function problem 171 Faulty clock function 178 Faulty memory function 17F W@P function not operable	185 Special requirements 18Z Upgrade to be done only 18Z Symptom not available
2	21A No reception Drops calls	220 Reception level problem	231 Transmission problem No emission 234 No radio link between Handset & Base ¹	240 Noisy or distorted audio 244 Echo		277 Special communication problem 277 No dial tone 278 No buzzer ring 279 Not registering	
5	510 No audio	521 Audio level problem Low audio level			560 General problem with answering machine. ¹	Poor special audio function 57A Hands-free problem ¹	
6	61B No mechanical 61D Vibrator not operable 61D Pilot/compass key not operable			648 Mechanical noise Foreign parts inside			
7	715 No data processing operation 72B No keyboard operation 72B No subscription ¹	721 Faulty data processing Charge on i/c calls ² 725 Contact your dealer ²	730 Excessive Balance ²			774 Special data processing function problem 774 Defective CU ¹ 775 Tariff update failure ²	781 SIM card problem 781 SIM blocked ² 782 IMSI Failure ² 783 Does not read SIM card 785 SIM Error 48xx

¹ In Green, special code for cordless products.

² In Red, special code for Cellnet returns