PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 1** of **63** **Language : EN** **Date : 11/02/03**

SERVICE MANUAL

Repair for Cellular Telephone

Fisio 620 – Fisio 625

LEVEL 2

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 2 of 63 Language : EN Date : 11/02/03

SERVICE Manual

Last updates :

DATE	MODIFICATION	PAGE
23/04/02	CREATION	
11/02/03	- Add Fisio 625 Picture - Add Fisio 625 test consumption - Part List Chapter	Page 1 Page 35 Page 62

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 3** of **63** **Language : EN** **Date : 11/02/03**

CONTENTS

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 4 of 63 Language : EN Date : 11/02/03

1.0 PURPOSE

This document establishes the functional test and inspection procedures for the first level service repair of the FISIO 620 Transceiver (CT3328) and FISIO 625 Transceiver (CT3329).

2.0 SCOPE

The test plan is applicable to all levels of service repair of the FISIO 620 transceiver (CT3328) and FISIO 625 Transceiver (CT3329).

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
- Production Test SIM Card   - Part No. : 4311 255 00781
- Test SIM Card « SP »   - Part No. : 4311 255 00782
- Digital Multimeter   - Recommended Model : Fluke
                        Specification with current reading in mA.
- Digital Radiocommunication Tester.

- Coupling system with shielded chamber.
Or
- Cradle with RF Cable   - Part No.: 9911 240 34508

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 5** of **63** **Language : EN** **Date : 11/02/03**

6.0   TEST AND INSPECTION PLAN

The test plan is derived from the Product Test Reference of FISIO 620 and FISIO 625.

6.1   User Interface Test

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

- On/Off button
- LCD Backlight
- Keyboard Test
- 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 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.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 6** of **63** **Language : EN** **Date : 11/02/03**

Or It can be tested using the Cradle (in this case a measurement of the power radiated by the antenna has to be performed)

Use the Test SIM Card « SP »to test the following RF items
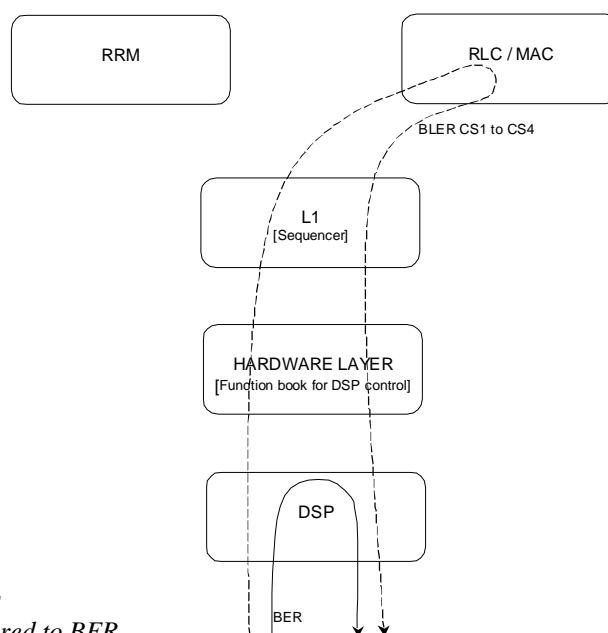
- GSM 900 / DCS 1800 band
- GPRS capability

In case the RF tester is not suitable for GPRS tests, GSM900/DCS1800 test may be considered as sufficient provided that the sensivity tests are strengthened by reducing the RF level down to -104dBm.

This reasoning is based on the fact that all the protocol steps (GPRS attach, GPRS detach, …) are achieved on the GSM/DCS bands and validated by Philips Approval department.

The new parameter to check, introduced by GPRS, would be BLER (Blocks Error Rate).

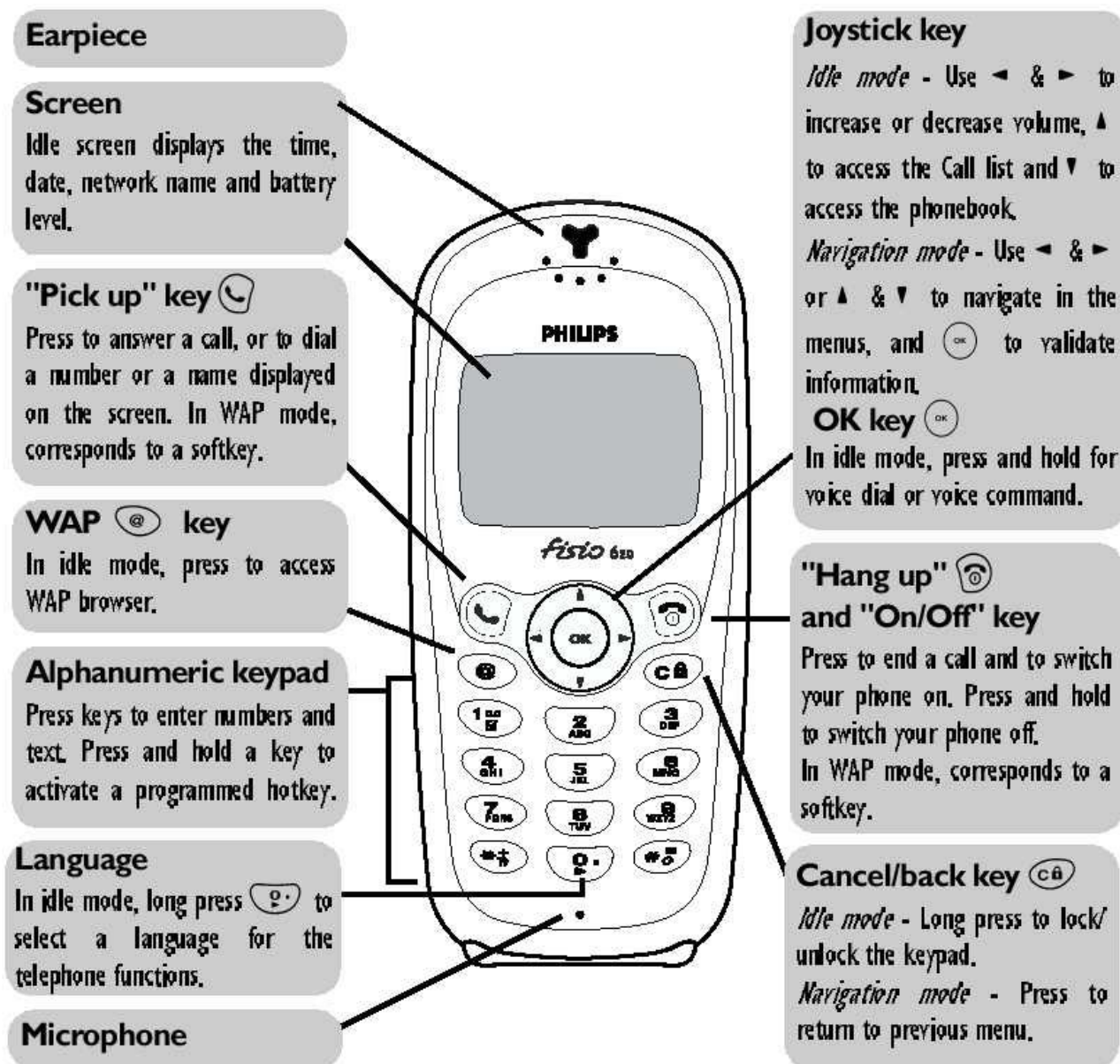As shown on the drawing, it involves more modules than BER

RRM

RLC / MAC

BLER CS1 to CS4

L1
[Sequencer]

HARDWARE LAYER
[Function book for DSP control]

DSP

BER

Signals paths
BLER compared to BER

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 7 of 63 Language : EN Date : 11/02/03

7.0   BEFORE STARTING

7.1   Description Of The Transceiver

Earpiece

Screen
Idle screen displays the time, date, network name and battery level.

"Pick up" key ☎
Press to answer a call, or to dial a number or a name displayed on the screen. In WAP mode, corresponds to a softkey.

WAP @ **key**
In idle mode, press to access WAP browser.

Alphanumeric keypad
Press keys to enter numbers and text. Press and hold a key to activate a programmed hotkey.

Language
In idle mode, long press ⑨ to select a language for the telephone functions.

Microphone

Joystick key
Idle mode - Use ◄ & ► to increase or decrease volume, ▲ to access the Call list and ▼ to access the phonebook.
Navigation mode - Use ◄ & ► or ▲ & ▼ to navigate in the menus, and (OK) to validate information.

OK key (OK)
In idle mode, press and hold for voice dial or voice command.

"Hang up" ☎ **and "On/Off" key**
Press to end a call and to switch your phone on. Press and hold to switch your phone off.
In WAP mode, corresponds to a softkey.

Cancel/back key (C🔒)
Idle mode - Long press to lock/unlock the keypad.
Navigation mode - Press to return to previous menu.

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 8 of 63 Language : EN Date : 11/02/03

7.2   *Description Of The Display*
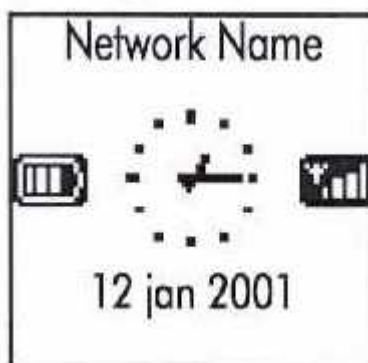
Silent - Your phone will not ring when receiving a call.	**SMS message** - You have received a new message.
Vibra - Your phone will vibrate when receiving a call.	**Call Forward Unconditional to voice mailbox** - All your incoming calls are being forwarded to voice mail.
Keypad lock - Protects the keys from being pressed accidentally.	**Battery** - The bars indicate the battery level (4 bars = full, I bar = low).
SMS full - Memory for messages is full. Delete old messages to receive new ones.	**Home zone** - A zone designated by your network operator. Subscription dependent, contact your service provider for details.
Call Forward Unconditional to number - All your incoming voice calls are being forwarded to a number other than voice mail.	Ү **GSM Network :** your phone is connected to a GSM network **Reception quality :** the more bars are shown the better the reception is.
Voice mail - You have received a new voice mail.	**Memo** - A memo or conversation has been recorded and saved but not yet played.
Alarm clock activated.	**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-640-620-3** **Page : 9** of **63** **Language : EN** **Date : 11/02/03**

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.
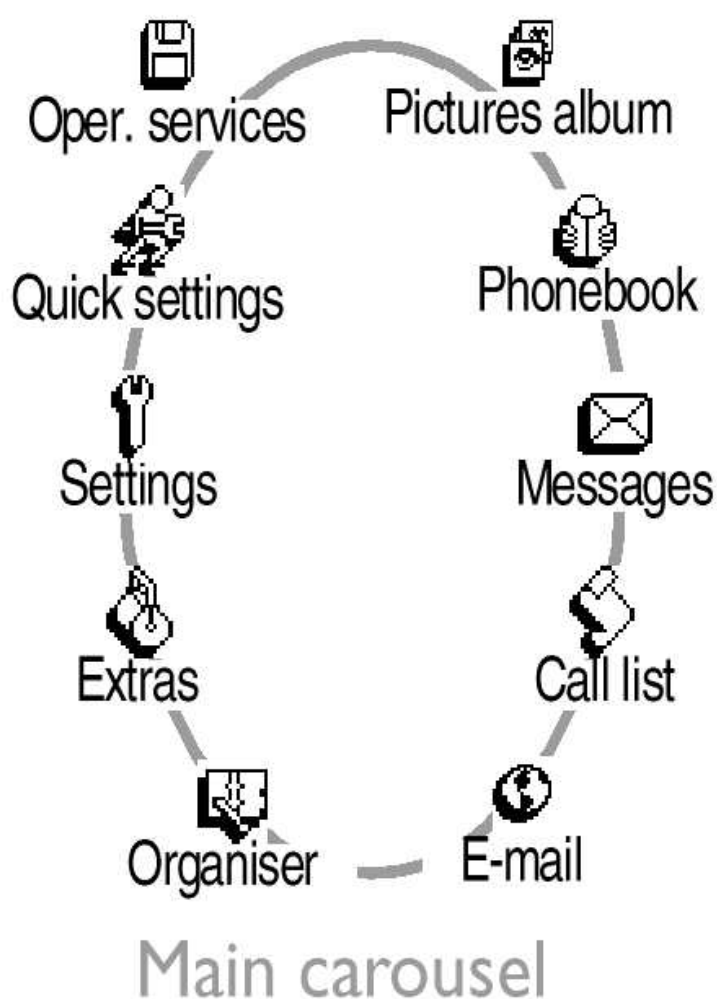
Main carousel

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 10** of **63** **Language : EN** **Date : 11/02/03**

7.4 Removing the Battery

I   Press on the two clips on each side of the back cover of your phone, as shown opposite (I). Rotate the cover from the bottom of the phone and remove it (2).

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

2   Remove the battery pack by sliding it downwards from its slot (I), then lifting it upwards (2).

7.5 Inserting The MICRO-Card

Insert the SIM card in its slot, under the metal clip holder, until it stops. Be careful that the clipped corner of the card is in the bottom left corner as shown opposite.
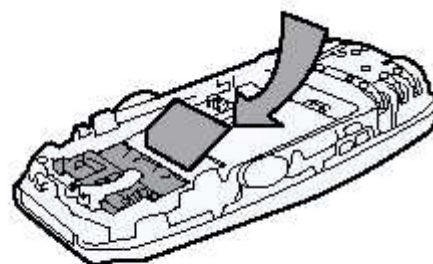
| PHILIPS Consumer Communications

Centre du Mans | Service Repair Support | VY-V-640-620-3
Page : 11 of 63
Language : EN
Date : 11/02/03 |

7.6   Inserting The Battery

Slide the battery pack into its slots, metallic connectors downwards, until it stops.
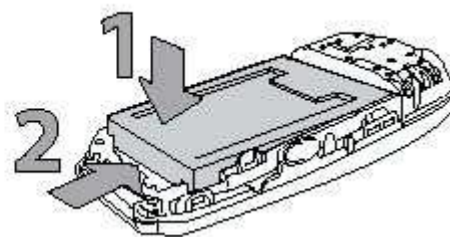
7.7   Attach The Battery Cover

Put the back cover back on your phone: hook the front housing onto the hinges on the top of the phone (1), then press the bottom down until latch catches (2).
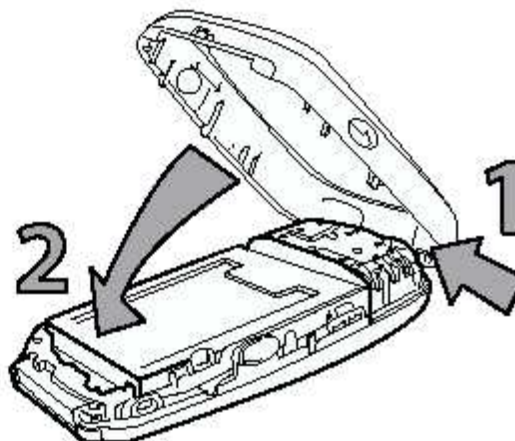
VY-V-640-620-3

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 12 of 63 Language : EN Date : 11/02/03

7.8   Charging The Battery

Your phone is powered by a rechargeable battery. A new battery is partially charged and an alarm will warn you when the battery reaches low.

✆ *We recommend that you do not remove the battery when the phone is switched on: you may lose all your personal settings (see information on battery safety, page 82).*

1   Once the battery and battery cover are clipped on the phone, plug the charger (supplied with the phone, in the box) into the right hand socket at the base of the phone as shown below.

2   Plug the transformer unit into a main AC power socket with easy access. The 🔋 symbol indicates the state of charge:

- During charging the 4 charge indicators change; Each bar represents around 25% of charge.
- **When all 4 bars are steady the battery is fully charged and you can disconnect the charger**.
- When the battery is charged, remove the connector by pressing the release button on top of the connector.
- Depending on the network and condition of use, talk time goes from 2.30 to 4.30 hours and standby time from 1 to 2 weeks.

✆ *Keeping the charger plugged to the mobile when the battery is fully charged doesn't damage the battery. The only way to turn off the charger is to unplug it, so use an easily accessible AC power socket. You can connect the charger to an IT supply (Belgium only).*

3   If you don't intend to use your phone for several days, we recommend you to disconnect the battery.

✆ *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 minutes of charging.*
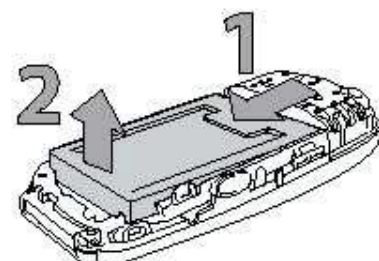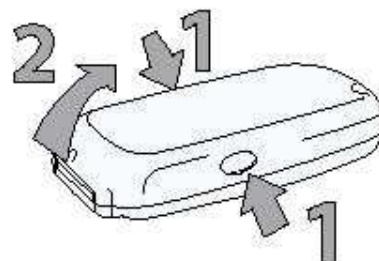
PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 13 of 63 Language : EN Date : 11/02/03

7.9   Customise your Phone

You can customise your mobile phone by removing front and back covers and replace them with different ones.

🔴 *You must always remove the battery and make sure the phone is switched off before removing the cover when customising your phone.*

I   Press on the two clips on each side of the back cover of your phone, as shown opposite (I). Rotate the cover from the bottom of the phone and remove it (2).
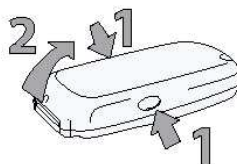
2   Remove the battery pack by sliding it downwards from its slot (I), then lifting it upwards (2).
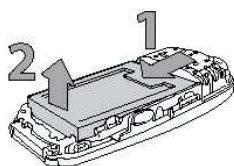
3   Then hold the phone upside down and place your forefinger on the connectors. Press the two inner clips with your left fingers as shown opposite (I) and pull the cover from the top while pushing the inside part of the phone with your forefinger still on the connectors (2).
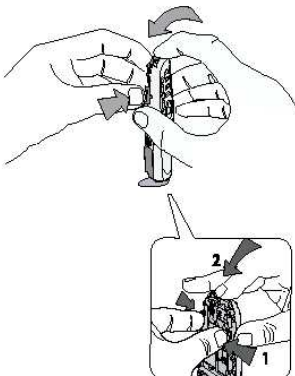
🔴 *Make sure you handle the product with care when the front is removed, in order not to damage the joystick key which is then unprotected, and also try not to touch the screen Do not turn on your mobile phone when front and back covers are removed.*
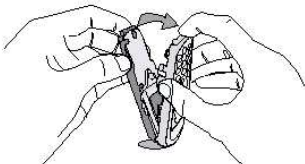
PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 14** of **63** **Language : EN** **Date : 11/02/03**

4   Remove the keypad and place it in the front cover that will replace the one you just removed.

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).
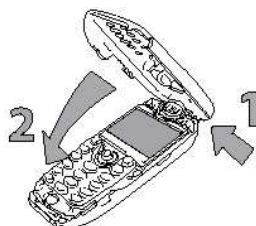
6   Slide the battery pack into its slots, connectors downwards, until it stops.

7   Put the back cover back 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).
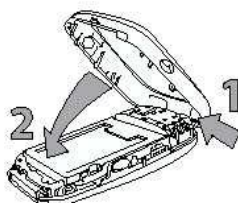
PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 **Page : 15** of **63** **Language : EN** **Date : 11/02/03**

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
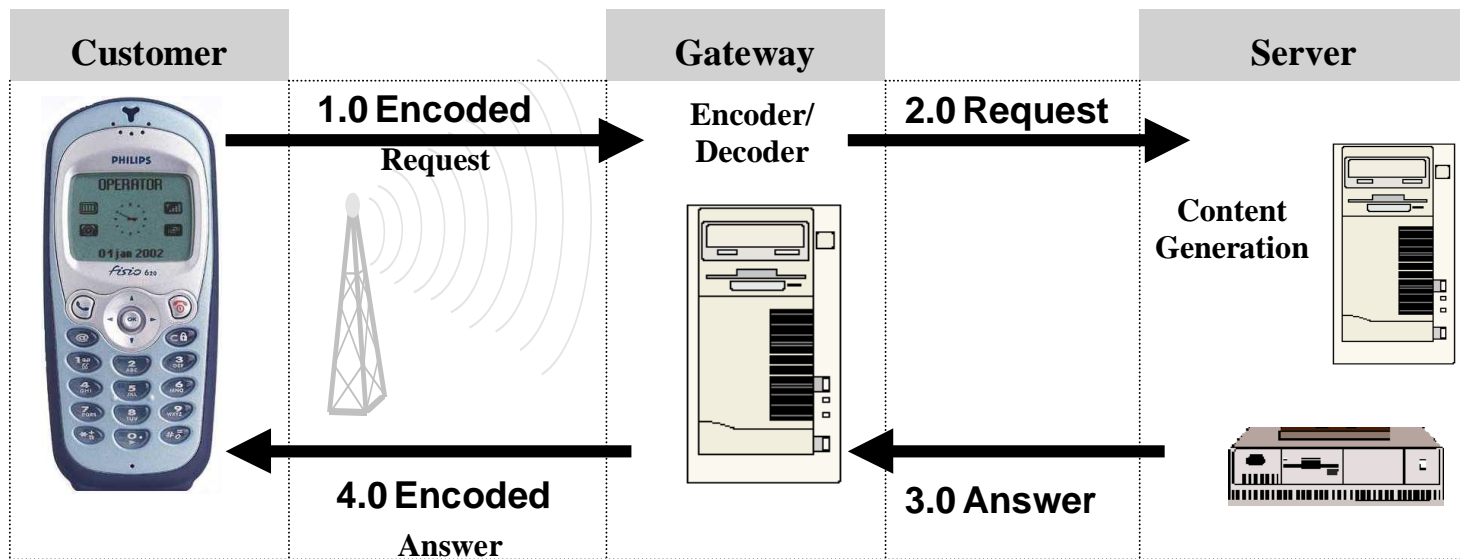
PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 **Page : 16** of **63** **Language : EN** **Date : 11/02/03**

* 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.

* 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.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 17** of **63** **Language : EN** **Date : 11/02/03**

7.11 GPRS Introduction

7.11.1 Presentation

The GPRS does not constitute to him alone a separate mobile network, but a supplementary layer added to a existing GSM network.

It can be thus settled without any supplementary license. This means that all the operators who have a GSM license can develop their network towards it.

Furthermore, the GPRS uses wavebands attributed to the GSM. that means a band in the 900 MHz, the other one in the 1800 MHz and finally the third for the USA, in the 1900 MHz

The GPRS, also called GSM 2+, rests on the transmission of data packets. This principle, already held for example for the protocol X.25, allows to allocate to the other communications, the time-outs of a first communication (wait of an answer to an Internet request for example).

Conceived to reuse at most the existing GSM infrastructures, the expansion of the GPRS requires the implementation of a network infrastructure based on the data packets routing and the introduction of bridges to lean on existing GSM networks.

This technology, capable of supplying transfer rates rising up to 115 kb/s (against 9,6 kb/s for the GSM), offers interesting features:

- Several channels can be allocated to a single user;
- Several users can share a single channel;
- The transmission rate is independent from rising and downward links.

7.11.2 Services / Possibilities / Limitations

Domains of application

While the WAP stops in the consultation of the Internet pages, the GPRS allows to widen the service offer. Besides the access to Internet (or Intranet), from the traditional mobiles phones, it allows a better access to e-mails containing joined files.

A rate higher than the wired public network

Today, the transmission rate of a standard GSM network in "connected" mode does not overtake 9,6 kbit/s, even 14,4 kbit/s by establishment of specific software. It is five times less fast compared to the standard wired network, which authorises 56 kbit/s with a V90 modem.
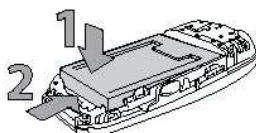
PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 18 of 63 Language : EN Date : 11/02/03

With the GPRS, a transmission rate included between 40 and 115 kbit/s is available. Everything depends on the number of virtual canals or " time slots " used, and on coding scheme (CS1 to CS4). GPRS acts on the compression of the data as a multiplier of transmission rate. In 3+1 multislots mode (three slots for the network towards mobile, and a slot for the mobile towards network), it's allows a transmission rate of 40 kbit/s with a CS2 coding scheme.

With (8+1)multislots using the CS4 coding scheme, one achieves in practice 115 kbit/s (in theory 175 kbit/s).

If, as it seems to be the current will of the operators, GPRS re-uses the existing GSM infrastructure, notably by keeping the network of current base stations (BTS), upgrading the BTS software.

Average time to send an E-mail with a 10 pages attached document :

Standard	Rate	Time elapsed
Current GSM	9,6 kbit/s	7 min.
Standard Modems (V90)	57,6 kbit/s	70 sec.
RNIS	128 kbit/s	31 sec.
GPRS	144 bit/s *	28 sec.
EDGE	384 kbit/s *	10 sec.
UMTS	2 Mbit/s	2 sec.

* : in optimal conditions

Three types of air terminals

Three types of air terminals were defined to meet the needs of the GPRS: the basic model (class B) is foreseen for the voice and the data in not simultaneous mode. The professional or industrial model (class C) is data exclusively (the air terminal is used as a modem). Finally the up-market (class A) is compatible voice/data simultaneously. This class A terminal is problematic. The power of calculation required at the moment has a strong incidence on its production cost and makes it dissuasive.

In the GPRS standard, three new types of mobile terminal have been defined:
Class A terminal, which supports simultaneous circuit-switched and packed-switched traffic;
Class B terminal, which supports either circuit-switched or packed-switched traffic (simultaneous network attachment) but does not support both kinds of traffic simultaneously;
Class C terminal, which is attached either as a packed-switched or circuit-switched terminal.

The terminal types are further differentiated by their ability to handle multislot operations. The terminal can use from 1 up to 8 time slots on the uplink and on the downlink channel. 18 services classes are defined in function on the number for support time slots.

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 **Page : 19** of **63** **Language : EN** **Date : 11/02/03**

Service Class	Max Number of Slots			Multislot type
	Max Rx	Max Tx	Total available	
1	1	1	2	1
2	2	1	3	1
3	2	2	3	1
4	3	1	4	1
5	2	2	4	1
6	3	2	4	1
7	3	3	4	1
8	4	1	5	1
9	3	2	5	1
10	4	2	5	1
11	4	3	5	1
12	4	4	5	1
13	3	3	6	2
14	4	4	8	2
15	5	5	10	2
16	6	6	12	2
17	7	7	14	2
18	8	8	16	2

Fig. 1 Service Classes - Multislot operations

Four different channel-coding schemes have been defined for GPRS to make optimum use of varying radio conditions. Usage of higher coding schemes allows to send more data in the same number of time slots.

Channel Coding Scheme	CS-1	CS-2	CS-3	CS-4
Data rate per timeslot (kbps)	9.05	13.4	15.6	21.4

Fig. 2 GPRS Coding Schemes

Philips Fisio620 features GPRS Class B. With GPRS Class B, if you receive incoming calls while in the middle of a data session, you receive a notification; and vice versa.

Philips Fisio620 is enabled to support GPRS up to Class10 (4Rx, 2Tx) [depending on networks developments]. GPRS Class10 enables to receive information at least 4 times faster than a standard GSM connection and to send them 2 times faster. That is why GPRS Class10 is particularly suitable for surfing on the WAP pages, exchanging emails or using your phone as a modem for Internet surfing, Intranet browsing or file transfer.

Philips Fisio620 is SMG31bis - Coding schemes 1,2,3 and 4.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 20** of **63** **Language : EN** **Date : 11/02/03**

7.11.3 Technical characteristics

Circuit switched mode or virtual access

The first advantage of the GPRS is to allow a better use of the radio and technical resources. While the GSM works in "connected" mode, called also "circuit-switched" mode, the GPRS uses for its part the virtual connection mode. In "virtual" mode, the resources are shared. The transmission channel is never allocated to a unique user, but shared between several users. Every user has it when he needs it and only in that case. The rest of the time they are available. The circuit switched mode corresponds to the functioning of a GSM line or still a standard telephone line. It consists in establishing a physical link between two points or two correspondents. Once the number was dialled, a circuit is permanently allocated to the communication, without any sharing with the other customers. This mode of functioning which does not take into account periods of silence, when no data is passed on, does not optimise at its best the radio resources.

The GPRS puts in evidence the more important role of the network administrator. In a GSM infrastructure the role of the administrator amounts to affect physical resources at the beginning of every communication. With the GPRS, its role is more important. It consists in assigning, in real time, the physical resources (memories and electronic circuits), in managing the radio resources, and in affecting them according to the demand.

The GPRS settles down on the existing GSM network

The GPRS-system is built upon the existing GSM-infrastructure. Basic stations undergo no modification with exception of the specific software, that can be installed by downloading.

Next, the Basic Stations Controller (BSC) should be doubled by a Packet Controller Unit (PCU).
Then comes the path intended for data packets, its composed of :
- The Serving GPRS Specific Node (SGSN) , equivalent of the Mobile Switch Controller (MSC), which aims to check subscribers registering , to authenticate them and to authorise the communications,
- The Access module (GGSN) to the IP world (Internet or Intranet).

GGSN and SGSN are described later.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 21** of **63** **Language : EN** **Date : 11/02/03**

7.11.4 Network Architecture
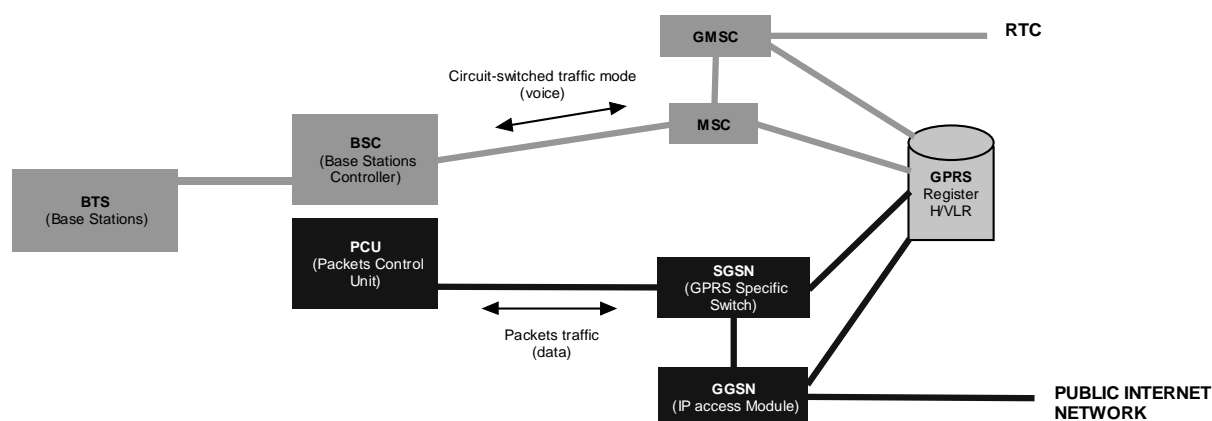
GPRS network architecture

The constituents of the GPRS network GPRS

There is the software layers architecture for every constituent of a GPRS network.

SNDC   SubNetwork Dependant Convergence
LLC   Logical Link Control
RLC   Radio Link Control
GGSN   Gateway GPRS Support Node
SGSN   Serving GPRS Support Node
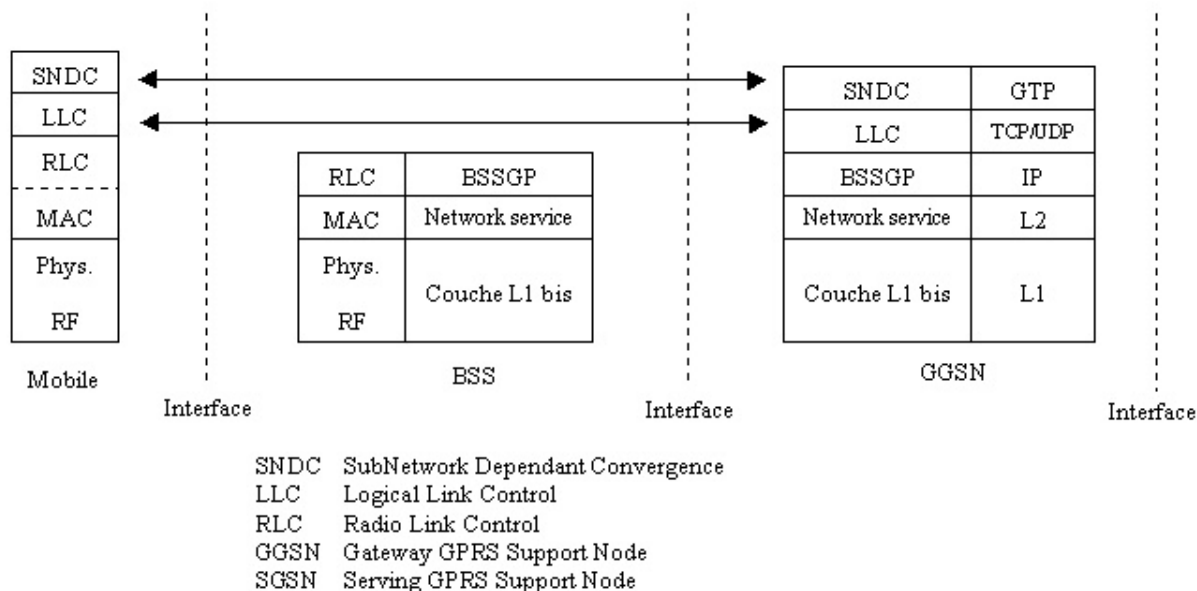
Software layers of a GPRS network

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 22** of **63** **Language : EN** **Date : 11/02/03**

In the mobile terminal, appears from the bottom to the top the following layers :

- The physical layer, constituted of two functional sub-layers;

  - The RF sub-layer, which manage the radio operations of the terminal. It emits the data received from the physical layer. It decodes the data coming from the base station (BTS) and transmits it to the physical layer .for interpretation
  - The physical layer produces the frames, those ones will be emitted by the RF layer; about the frames received from the network, it detects and corrects transmission errors.
- The MAC layer (or RLC for Radio Link Control) manages the radio link between the terminal and the Base Station (BTS), that means re-emission mechanisms in case of error, The function of access controller for the radio resources when several air terminals are in competition. The RLC can request the re-emission of a data packet ;
- The higher layer SNDC (Sub-Network Dependant Convergence) manages the mobility, the ciphering and data compression.

GGSN : *Gateway GPRS Support Node* ,

The GGSN provides the interface towards the external IP packet networks. Actually, from the external IP network's point of view, the GGSN acts as a router for the IP-addresses of all subscribers served by the GPRS-networks. To make this possible the GGSN exchanges routing information with the external networks and sets up connections towards external networks. Similar to the SGSN, the GGSN deals with session management, specifically the connection towards the external networks. Also, as many SGSN can connect to one GGSN, it has to associate subscribers to the right SGSN.

SGSN : *Serving GPRS Support Node*

The SGSN forwards incoming and outgoing IP packets addressed to and from a mobile station. It serves all GPRS-subscribers that are located and attached within the geographic SGSN service area.. A subscriber may be served by any SGSN in the GPRS network depending on location. The traffic is rooted from the SGSN to the BSC, via the BTS to the mobile station. O make this packet traffic possible, signalling with several other nodes is necessary, for instance the Home Location Register (HLR) , the Mobile Switching Centre (MSC), the BSC and the GGSN, as well Short Message Service-nodes (SMS). From these signalling connections the SGSN handles important GPRS functions such as ciphering and authentication, session management, mobility management and the logical link management towards the mobile station.

Packets routing

The routing of every packet is independent from the one who precedes it or by the one who follows it. During the connection phase of a GSM terminal in a network, the signalling exchanges are multiple, and to face the constraints of the packet mode, the information of routing obtained to forward the first packet to a GSM terminal is stored in the GGSN. So, the routing of following packets is selected according the context stored in the GGSN (the Temporary Logical Link Identity or TLLI).

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 23** of **63** **Language : EN** **Date : 11/02/03**

7.11.5 GPRS Attach and GPRS Detach procedures

The procedure for a GPRS attach is made by the MS to the SGSN. After Having executed a successful GPRS attach, mobility management contexts are established in the MS and the SGSN, setting the MS in the READY state. The MS is then able to activate PDP-contexts. The procedure of GPRS attach is illustrated below.

```
        MS              SGSN              HLR

        |  1. Attach Request |                |
        |------------------->|                |
        |                    |                |
        |  2. Authentication |                |
        |<..................>|<..............>|
        |                    |                |
        |                    | 3. Location Update |
        |                    |<..............>|
        |                    |                |
        | 4. Attach Accept   |                |
        |    Response        |                |
        |<-------------------|                |
        |                    |                |
        |  5. Attach Complete|                |
        |...................>|                |
        |                    |                |
```

GPRS attach procedure
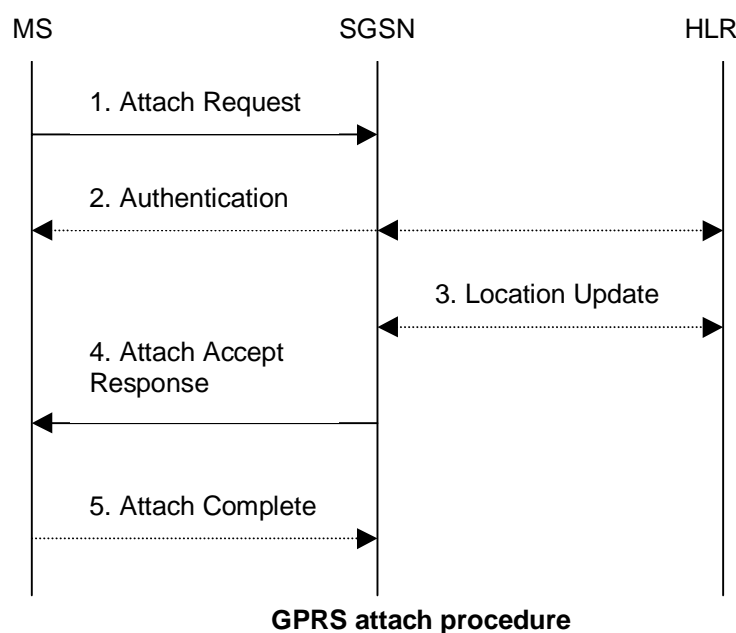
1. The MS sends a GPRS *attach request* which includes the GPRS mobile class and the multislot class.
2. *Authentication* is carried out in the same manner as with GSM, but instead of the MSC, it's the SGSN that sends the IMSI of the MS to the HLR, initiating the encryption algorithm.
3. A *location update* procedure stores the current SGSN of the MS in the HLR.
4. The *attach accept* response assigns a Temporary Logical Link Identity (TLLI) to the MS.
5. A GPRS *attach complete* response from the MS to the SGSN confirms the attach.

After the authentication within the GPRS attach procedure, no additional authentication is required during the entire GPRS-session. A GPRS detach will terminate the ongoing GPRS-session. This detach could be initiated explicitly by the MS or the SGSN, or implicitly when the STANDBY-timer runs out.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 24** of **63** **Language : EN** **Date : 11/02/03**

7.12 E-Mail Presentation

7.12.1 Introduction

Philips Fisio620 features an e-mail application allowing you to send and receive e-mails. It is same functions with the email used on PC It is very similar. You can receive, retrieve or send email (text) and with picture attachment (The maximum mail size is 10Kb)

E-mails can then be forwarded to someone else and attachments stored in your mobile phone.
This feature is subscription-dependent and specific to Internet Service Providers (ISP): your mobile
phone readily supports them if they are included in your subscription.

Philips Fisio620 supports 2 sets of email addresses parameters. Mailboxes 1 and 2 feature the same Settings and options. Configuring them differently will allow you to have two different e-mail accesses/addresses from your mobile phone.

7.12.2 Protocols / Network

Protocols :

Philips Fisio620 has an email application that supports POP3 (for receiving email) and SMTP protocols (for sending) to access Internet email servers supporting these protocols. POP3 and SMTP are widely supported by Internet service providers and intranets companies.

Network :

You can use e-mail with GSM or GPRS Networks. So you must configure the GSM or/and GPRS access Networks Settings like Wap configuration.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 25** of **63** **Language : EN** **Date : 11/02/03**

8.0   TEST PROCEDURES

8.1   *Initial Functional Check for Fisio 620-CT3328 and Fisio 625-CT3329*

Before to start the test procedure check the appearance of the humidity sticker located at the back of the phone. Refer to *CASES OUT OF WARRANTY GSM* document to identify if the product is in/out of warranty.

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

8.1.2   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 :

PAGE SELECTION 00

Step	Procedure	Observation
1	Press Key 1 Press Key 1 again.	Key without Test Left corner displays 1 00
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	Backlight must be on 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

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 26 of 63 Language : EN Date : 11/02/03

7	Press Key 7 Press key 7 again	All pixels are on Check for the Red Backlight function in the same time. 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-XX SimLk XXXXXX (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" "XXXXXXXXX" (PN Number) "XXXXXXXX (Soft 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 / XXXXXXX" 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 XXXXXXXXXXX (12NC) Left corner displays # 13

PHILIPS Consumer Communications	Service Repair Support	VY-V-640-620-3
Centre du Mans		**Page : 27** of **63** **Language : EN** **Date : 11/02/03**

13	Press C Press C again	HandsFree Xx xx xx Xx xx Left corner displays C 18

14	Press the Left / Up arrowhead (Melody Test) & vibrator
	
	Press Left again
	
	Press Up again
		User Melody should be heard and vibrations felt
		
		Left corner displays <
		                                       0C
		Left corner displays UP
		                                        0A

15	Press the Right / Down and arrowhead
	(Memory Test)
	
	Press Right again
	
	Press Down again
		"MEMORY TEST"
		"XXXXXXX"
		"XXXXXXX"
		"RAM OK"
		
		Left corner displays >
		                                       0D
		Left corner displays DOW
		                                        0B

18	Press OK Press OK again	"PAGE" "SELECTION" "XX" Left corner display OK 0E
19	Press @ Press @ again	Key without Test Left corner display @ 17
20	Press Green button Press Green button again	" MANUAL TEST" " GOOD " Left corner displays SEN OF
21	Press Red button Press Red button again	" MANUAL TEST" " BAD " Left corner displays END 10

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 28 of 63 Language : EN Date : 11/02/03

> By pressing OK key to display "PAGE SELECTION".
Select "1" to change page "01" then press OK key again

PAGE SELECTION 01

Step	Procedure		Observation
22	Press Key 3 (Sleep mode) Press Key 3 again.		"Sleep Mode" Left corner displays 3 02
23	Press Key 7 (Antenna Test) Press Key 7 again		"ANTENNA TST" Tx Level 10 CHANNEL 0055 • Use Up/Down arrowhead Key to change level • Use On or Off Keys for channel selection • To switch DCS/ GSM / E-GSM, Press "C" Keys. Left corner displays 7 06
24	Press Key 9 (Power Test) Press Key 9 again		" Power [Channel]-[level] " " -XXX -XXX -XXX" " -XXX -XXX -XXX" " -XXX -XXX -XXX" Left corner displays 9 08

25	Press Key #
	(Defenses Code)
	
	Press Key # again
			"DEFENSES"
			        "0f"
			"Defenses of "
			"Bloc XX XXXX" (Block number / Parts Names)
			"Bloc XXXXXXXX" (Blocking Defenses)
			
			Left corner displays #
			                                      13

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 swap board.

8.1.6   Perform RF Test (See Chapter 8.3)

8.1.7   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.

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	**VY-V-640-620-3** **Page : 29** of **63** **Language : EN** **Date : 11/02/03**

8.2   RF Test

8.2.1   The Test SIM Card "SP" must be inserted in t he 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):
This values are theoretical. 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

8.2.4   The following operations must be done:

- Synchronization/Registration
- Call set up from the mobile
- Voice loopback (to check the sound quality and HandsFree)
- 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.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 30** of **63** **Language : EN** **Date : 11/02/03**

8.2.6   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 and HandsFree)	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

 ☿ 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.

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 31 of 63 Language : EN Date : 11/02/03

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 Center.

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 32 of 63 Language : EN Date : 11/02/03

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 Center.

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 33 of 63 Language : EN Date : 11/02/03

8.2.9   GPRS Specification (900Mhz & 1800 Mhz)

RADIO : GPRS part				
	Class 4	Class 10	Class 12	§ GSM 11.10
Rx				
Rx Levels	idem GSM 900/1800			21.5
Rx Levels Linearity	idem GSM 900/1800			21.5
Sensivity				
BER/FER -85dBm (8200 samples)	idem GSM 900/1800			14.2.1
BER/FER -102dBm (8200 samples)	idem GSM 900/1800			14.2.1
BLER CS-1 (-104dBm)	< 10% on 400blocs with 20 blocs errors			14.16
BLER CS-2 (-104dBm)	< 10% on 400blocs with 20 blocs errors			14.16
BLER CS-3 (-104dBm)	< 10% on 400blocs with 20 blocs errors			14.16
BLER CS-4 (-101dBm)	< 10% on 400blocs with 20 blocs errors			14.16
Tx				
Phase error RMS	idem GSM 900/1800 on last timeslot			13.16.1
Phase error Peak	idem GSM 900/1800 on last timeslot			13.16.1
Frequency error	idem GSM 900/1800 on last timeslot			13.16.1
Output Power Levels	GSM 900/1800 on all timeslot and conf.			13.16.2
Power Ramping	GSM 900/1800 on all timeslot and conf.			13.16.2

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

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 34 of 63 Language : EN Date : 11/02/03

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.

- 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 $100 <$ I (mA) < 300 have to be observed

- Unplug the charger

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 35 of 63 Language : EN Date : 11/02/03

8.3.2   Current consumption

a) Check current_OFF :

When the mobile is OFF the current measured must be : 0.035 < I (mA) < 0.300

b) Check Current_ON

- Turn the mobile on.

For Fisio 620 :

When the mobile is ON (backlight activated) the current measured must be :   70 < I (mA) < 130
<div align="center">This measurement has to be operated during first seconds after switch on.</div>

For Fisio 625 :

When the mobile is ON (backlight activated) the current measured must be :   130 < I (mA) < 210
<div align="center">This measurement has to be operated during first seconds after switch on.</div>

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 7 to select Antenna test. Press on the left arrowhead of the Jog 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 the current measured must be :   140 < I (mA) < 240

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

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 36 of 63 Language : EN Date : 11/02/03

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)

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 37 of 63 Language : EN Date : 11/02/03

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

Press OK to access the menu and select W@P
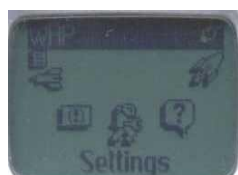
Press the Compass key left or right to find Settings and press OK
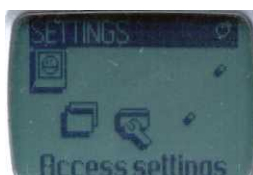
Press the Compass key left or right to find Access Settings and press OK

Several W@P configurations can be stored. Select one

Press the Compass key left or right to find Chang and press OK

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
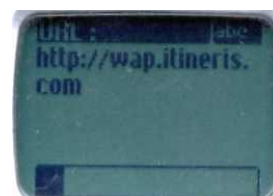
Enter the home address and press OK

Bearer :
        This parameter allows to specified the type of network used when launching a WAP session

Press OK to set the network used

Press the Compass key left or right to select the network

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 **Page : 38** of **63** **Language : EN** **Date : 11/02/03**

8.4.2.1 GSM Settings

Press the Compass key left
or right to find GSM Settings
and press OK

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
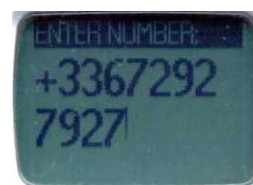
Enter the phone number
and press OK

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

Press OK to
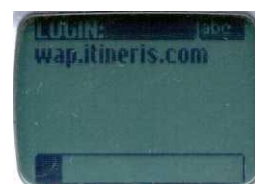set the login

Enter the login and
press OK

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 39 of 63 Language : EN Date : 11/02/03

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)

Enter the IP parameter
And press OK

Enter the IP parameter
and press OK

8.4.2.2 GPRS Settings

Press the Compass key left
or right to find GPRS
Settings and press OK

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : **40** of **63** Language : EN Date : 11/02/03

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

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
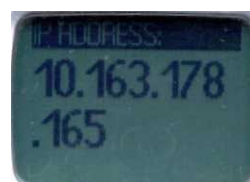
Enter the IP parameter and press OK

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 41 of 63 Language : EN Date : 11/02/03

APN :

APN is the address of the external data network used to establish the connection with WAP Service Provider.
This parameter is provided by the operator and is set as follows.

Press OK to
set the APN

Enter the APN IP or
Address

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 are still present.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 42** of **63** **Language : EN** **Date : 11/02/03**

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.**

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 **Page : 43** of **63** Language : EN Date : 11/02/03

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).

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 44** of **63** **Language : EN** **Date : 11/02/03**

8.5 E-Mail Test Procedure

With regard to the mobile phones only two things can prevent the E-mail 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-mail problems the following process must be observed.

➢ 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 to access the menu and select **E-mail icon**.

- Select a mailbox and press OK.
- Press the Compass Key left or right to find Settings and press OK

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 45 of 63 Language : EN Date : 11/02/03

8.5.2.1 Network Access

- Press the Compass Key left or right to find Network access and press OK

Nwk access

   This menu allows you to configure your phone and to handle the connection to the network, whether GSM or GPRS, in order to then connect to the appropriate Internet server that will let you send and receive e-mails.

Warning : *All options described below are operator and/or subscription dependent.*

GSM Settings :

GSM Settings

     This menu allows you to enter or change the GSM settings communicated to you by your operator.

For this Settings :

• **Phone Number**
• **Login**
• **Password**

➡ It's the same configuration that Wap GSM Settings. (See Chapter 8.4.2.1 GSM Settings) :

• **Auto disconnection**
     Allows you to select an inactivity time period after which the phone automatically disconnects (if a connection was is progress) from the network.

Départ. Technical support- CM640	PROCEDURE	COMPANY RESTRICTED

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 **Page : 46** of **63** **Language : EN** **Date : 11/02/03**

GPRS Settings :

This menu allows you to enter or change the GPRS Settings communicated to you by your operator.

For this Settings :

• **APN**
• **Login**
• **Password**

➥ It's the same configuration that Wap GSM Settings. (See Chapter 8.4.2.2 GPRS Settings) :

Bearer :

Allows you to select the type of network used when launching a connection to the e-mail server. Press < or > to select:

• **GSM**
Your mobile will only use the GSM network for e-mail connections.
Press , to confirm your choice.
• **GPRS**
Your mobile will only use the GPRS network for e-mail connections.
Press , to confirm your choice.
• **GPRS first**
Your mobile will first try to connect to the GPRS network, then to the
GSM network if the GPRS network isn't available when launching an
e-mail connection. Press , to confirm your choice.

• Return to the E-mail Settings Menu and press the Compass Key left or right to find E-mail Server and press OK

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 47 of 63 Language : EN Date : 11/02/03

8.5.2.2 E-mail Server

E-mail server

The menus described in this section feature settings needed to connect to the e-mail server of your Internet Service Provider (ISP) via your mobile phone.

- **POP3 address**
Allows you to enter the IP or DSN address of the POP3 server, which is used to receive e-mails.
Select **POP3 address** and press 'OK' enter the address and press OK when it finished.

- **Login**
Allows you to enter the login needed for connection to the server. Select Login
and press ,, enter the login and press ,.

- **Password**
Allows you to enter the password needed for connection to the server. Select
Password and press ,, enter the password and press ,.

- **Personal e-mail address**
Allows you to enter the e-mail address needed to send and receive e-mails.
Select Address and press ,, enter your e-mail address and press ,.

- **SMTP address**
Allows you to enter the IP or DSN address of the SMTP server, which is used
to send e-mails. Select SMTP address and press ,, enter the address and
press ,.

8.5.2.3 Advanced

Advanced

The menus described in this section feature advanced settings that may have been pre-configured, so that you shouldn't have to change any of them. If the fields of these menus are empty, or if you encounter connection problems.

- **Port POP3**
Allows you to enter the port number of the POP3 server, used to receive e-mails.
- **Port SMTP**
This menu allows you to enter the port number of the SMTP server, used to send e-mails.
- **DNS address**

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 48 of 63 Language : EN Date : 11/02/03

This menu allows you to enter the DNS address of the external data network you want to connect to.This field can be empty.

8.5.3   E-mail Application launch

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 form 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 are 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 operator before first use, in order to have the appropriate GPRS parameters.

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

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 49 of 63 Language : EN Date : 11/02/03

9.0   ASSEMBLY / DISMANTLEMENT PROCEDURES

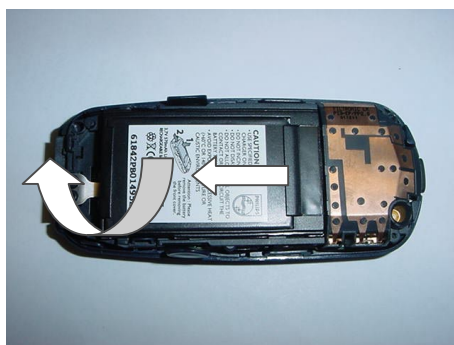## 9.1   Dismantlement

    9.1.1   Remove Back Cover
    9.1.2   Press on 2 clips on the side of the Cover. Release Cover from the bottom of the phone.

Release Clip on both sides and release the back Cover from the bottom

    9.1.3   Remove battery
    9.1.4   Sliding it downward and lift it up.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 50 of 63** **Language : EN** **Date : 11/02/03**

9.1.5   Remove Front Cover

- Lift the phone upside down, place your finger on the connectors
- Press the inner clips with your two fingers
- Pull the Cover from the top while still pressing the clips and the connectors.
- Handle with care and not to damage the jog stick (Keypad) which is unprotected

Hold front Cover at bottom

Inner Clips

Release latch here
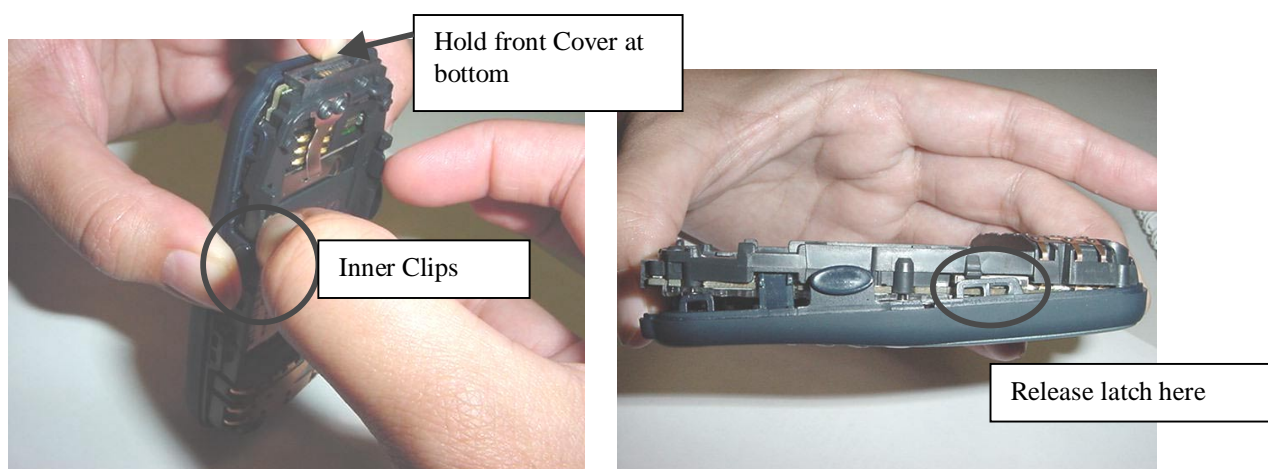
9.1.6   Recover the Keypad on the board.
9.1.7   Careful not to touch the LCD panel.
9.1.8   Dismantle LCD panels and Chassis Ass'y.

- Release 6 screws as shown on the picture.
- Remove Jog Key . Do not use too much force.
- Use your finger to separate LCD panels and Chassis Ass'y. Do not touch LCD glass.
- Be Careful of NOT TO damage the HandsFree Gasket on the Chassis Ass'y.
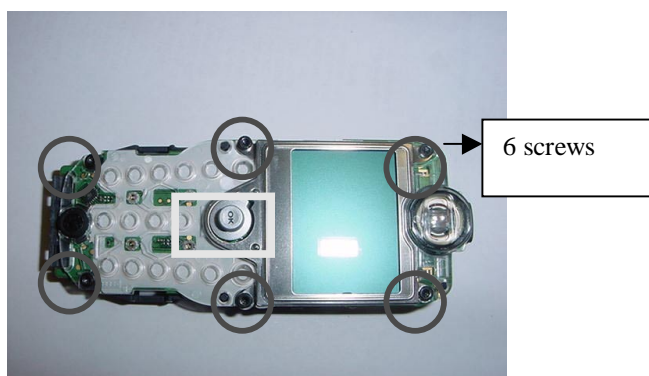
6 screws

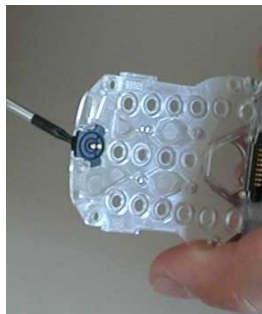| PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 51 of 63 Language : EN Date : 11/02/03

9.1.10 Remove Keypad Metal Dome. **Do not re-use it for assembly.**
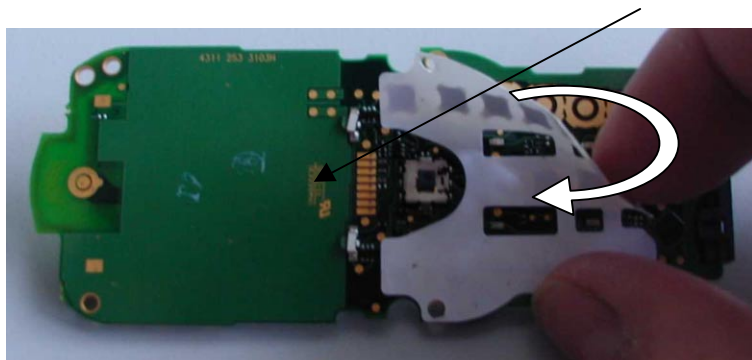
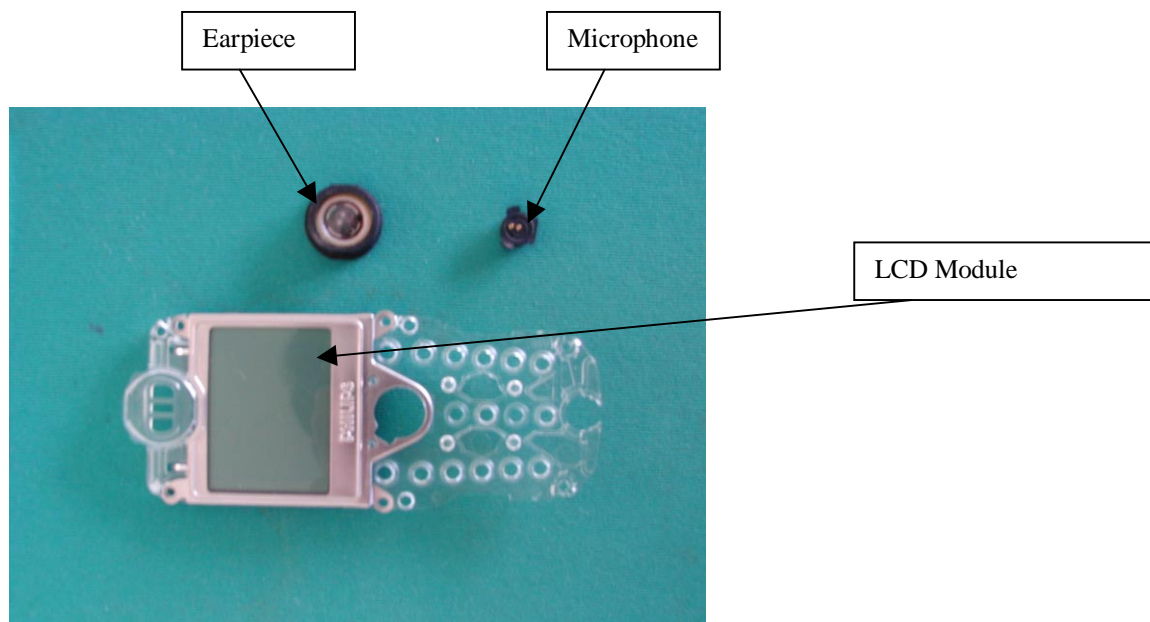9.1.11 Remove Earpiece with a screwdriver.
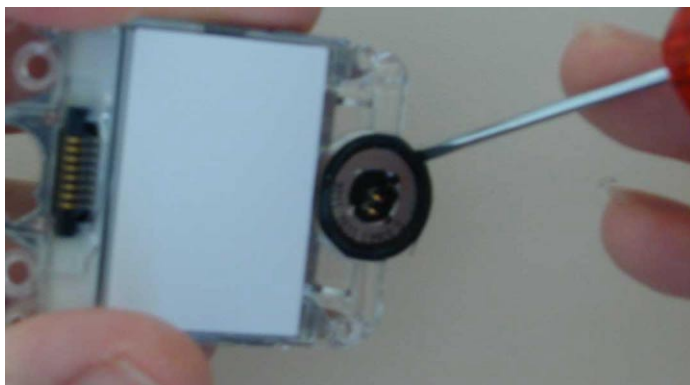
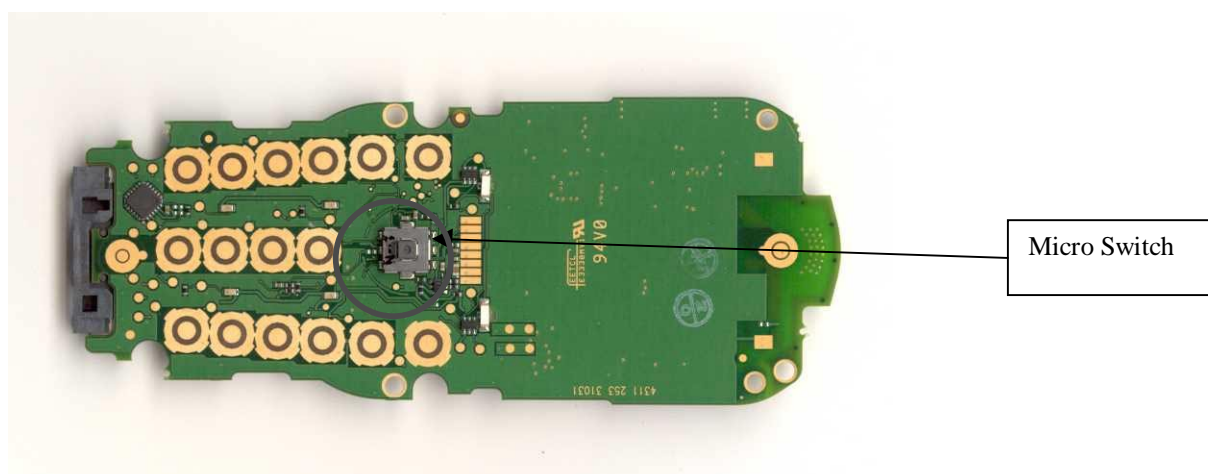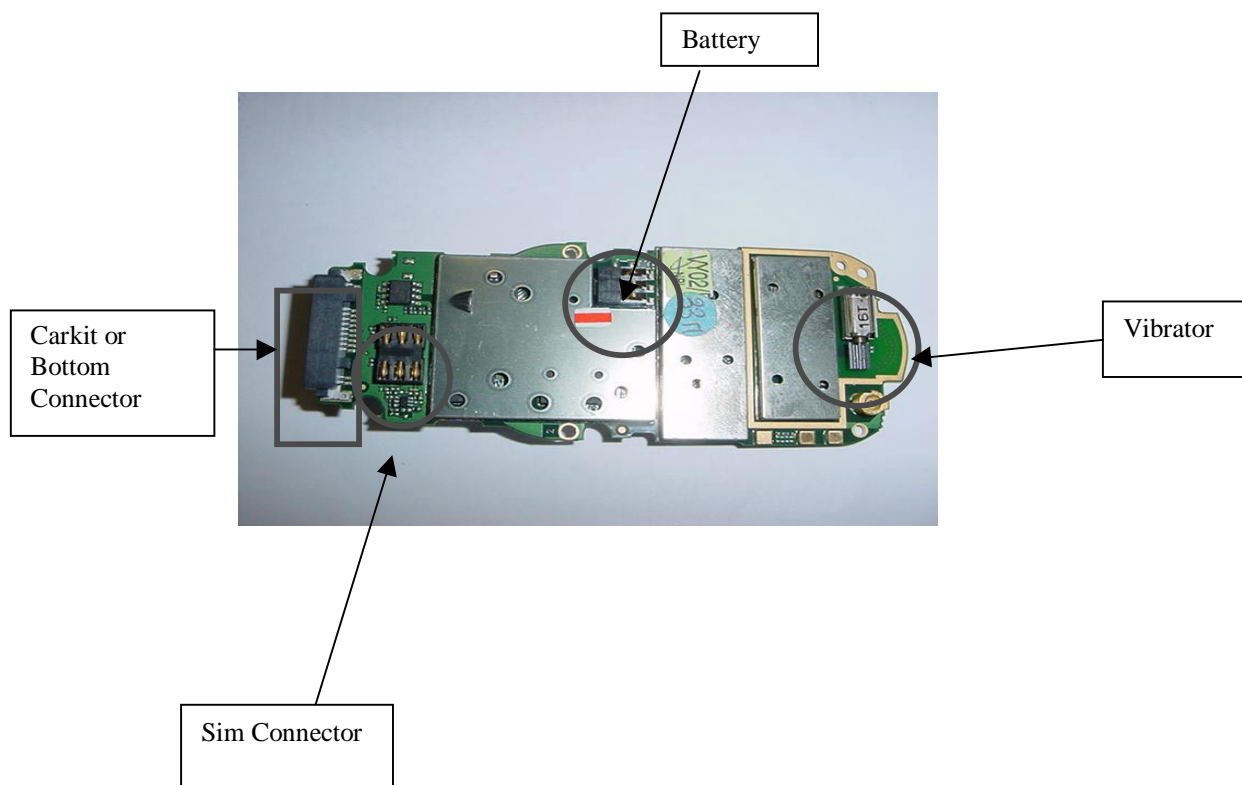9.1.12 Remove Microphone by pushing it with a screwdriver.

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : **52** of **63** Language : EN Date : 11/02/03

9.1.13   Module LCD decomposition.

9.1.14   PCB View

SIDE A

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 53** of **63** **Language : EN** **Date : 11/02/03**

SIDE B

Battery

Carkit or
Bottom
Connector

Vibrator

Sim Connector

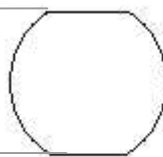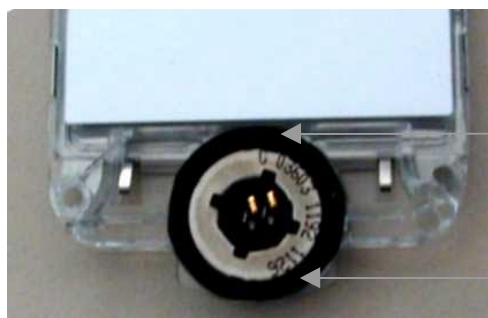| **PHILIPS Consumer Communications** **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 54** of **63** **Language : EN** **Date : 11/02/03**

9.2 Assembly

9.2.1   Set the microphone on the LCD MODULE with the help of two marks which must be on the top.
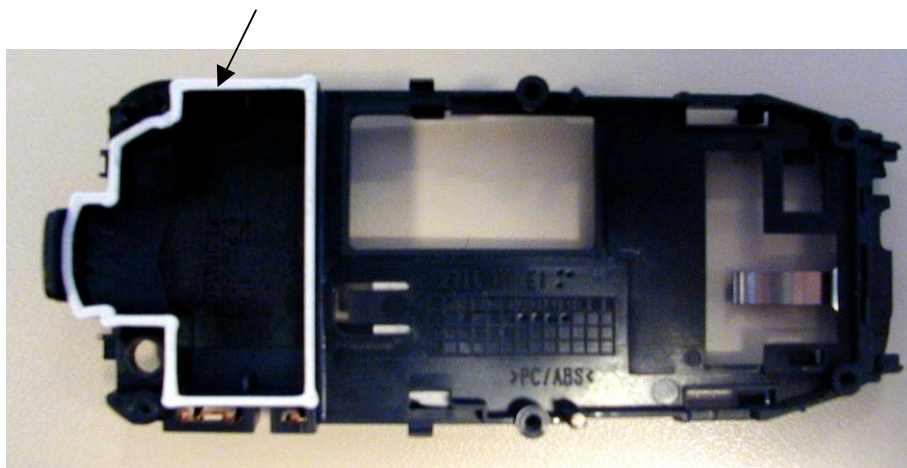

Check presence of two Springs

9.2.2   Set the earpiece on the LCD MODULE. You must respect only the Plane parts on up and down place
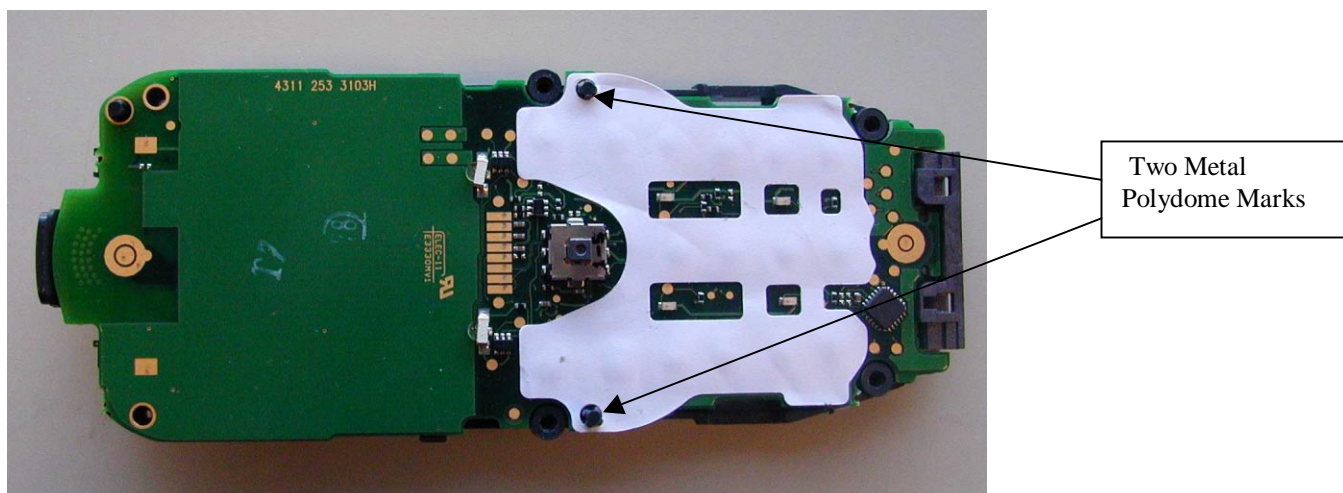
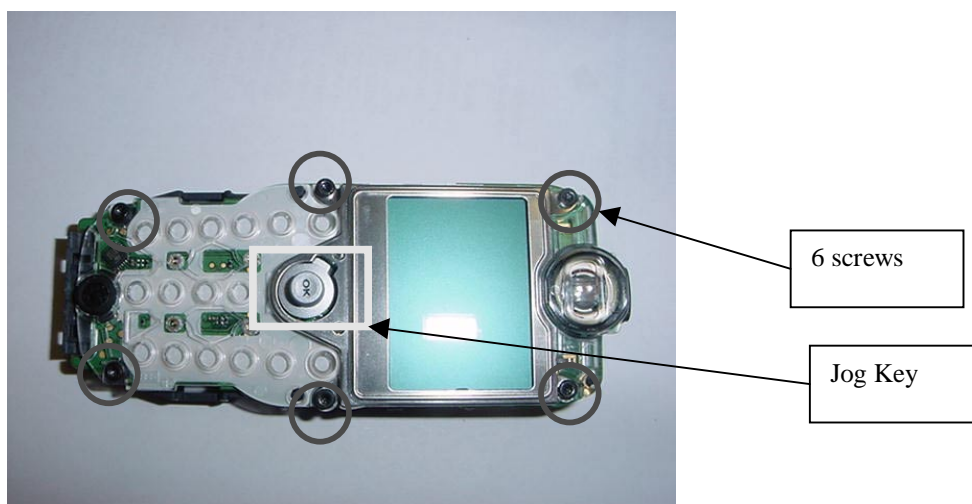| PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 55 of 63 Language : EN Date : 11/02/03

9.2.3   Check if the HandsFree Gasket on the Chassis Assy is on correct place.

9.2.4   Place the Metal Polydome with the help of two identifications marks

Two Metal Polydome Marks

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 56 of 63 Language : EN Date : 11/02/03

9.2.5   Place the LCD MODULE and tighten with 6 screws as shown in earlier picture.
9.2.6   Use an ionized air gun to clean the LCD
9.2.7   Put back the jog key on the correct orientation

9.2.8   Put back the Keypad in Front Cover
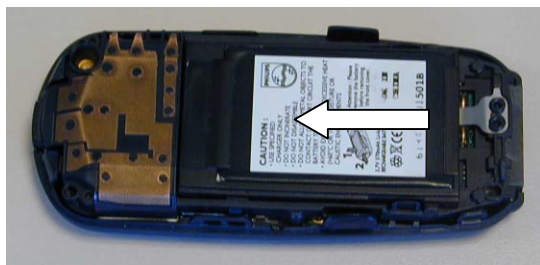
PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 57** of **63** **Language : EN** **Date : 11/02/03**

9.2.9   Put back the front cover, hook the front cover onto the hinges on top of phone, then press it down until latches catch.

9.2.10   Slide the battery pack into its slot, connectors downwards until it stops

9.2.11   Put the back Cover back, hook onto the hinges on top of phone, then press it down until latches catch.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 58** of **63** **Language : EN** **Date : 11/02/03**

9.3   Explosed View
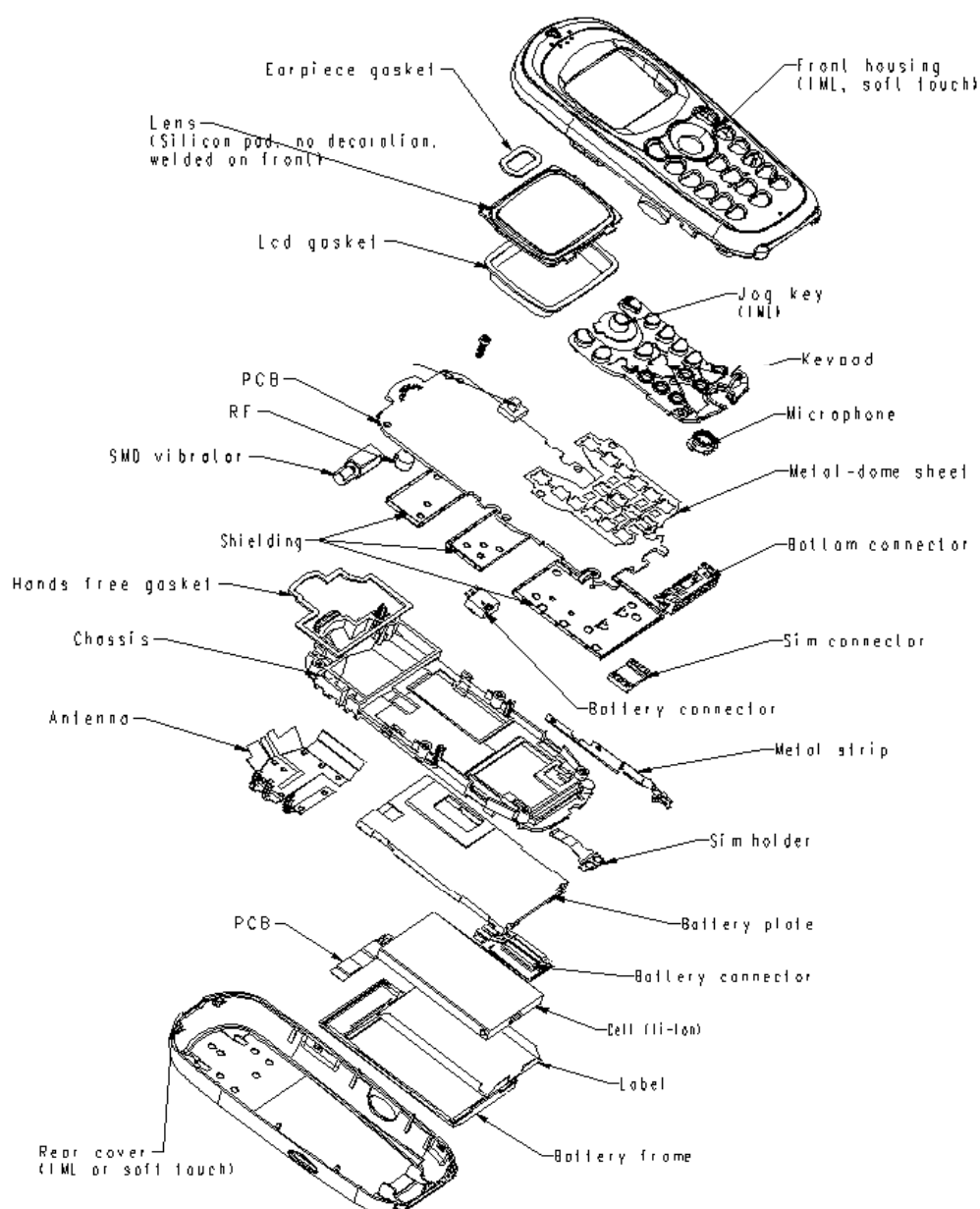
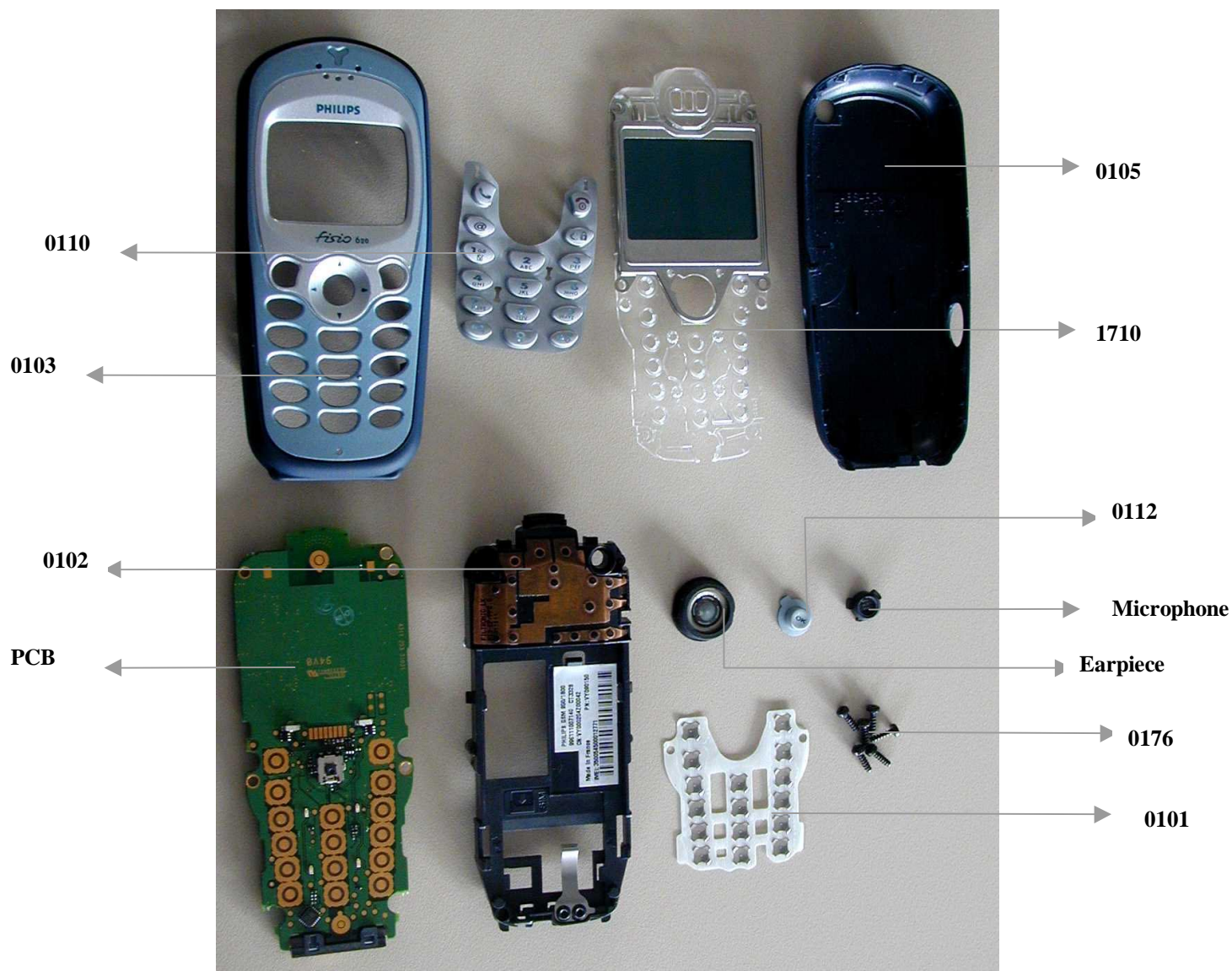| PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 59 of 63 Language : EN Date : 11/02/03

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 60** of **63** **Language : EN** **Date : 11/02/03**

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 *except customization parts.*

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 or damaged and fix them if it is necessary.
- 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 and fix them if it is necessary.
- 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 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 SIM Card connector is defective change it.
- 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 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.

If LCD doesn't work yet, try to fix the mobile by Changing LCD Module, Otherwise, swap the board.

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 61** of **63** **Language : EN** **Date : 11/02/03**

10.5   Buzzer problems

Buzzer tone can be checked with the test SIM card by pressing "Left or up arrowhead".
It is the same component than loudspeaker.

Try to fix the mobile, Otherwise, swap the board.

10.6   No sound in Loudspeaker and HandsFree Problems

The sound from the loudspeaker can be checked with the test SIM card by pressing key "3".
Check HandsFree in Radio test when the mobile is on Audio Loop Test by pressing "OK" and Select "Call HandsFree".
- Check the microphone and the earpiece and Fix them if it is necessary. If the failure cannot be found out, swap the board.

10.7   Communication problems

-    Sound quality can be checked in audio loop test (sound distortion, whistling, echo, …)
-    If the mobile pass 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, change it if necessary. If the failure cannot be found out, swap the board.

10.9   Problems to send SMS messages

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

PHILIPS Consumer Communications **Centre du Mans**	**Service Repair Support**	**VY-V-640-620-3** **Page : 62** of **63** **Language : EN** **Date : 11/02/03**

11.0 RECOMENDED PART LIST CT3328 FISIO 620

SEE File **"FISIO 620 Lvl2 Components List.pdf"** under Internet Web Site **"http://philipscscc.soft2you.net/"** in "Technical Support \ Component List \ Wireless \ Fisio 620" section.

12.0 RECOMENDED PART LIST CT3329 FISIO 625

SEE File **"FISIO 625 Lvlv2 Components List.pdf"** under Internet Web Site **"http://philipscscc.soft2you.net/"** in "Technical Support \ Component List \ Wireless \ Fisio 625" section.

PHILIPS Consumer Communications Centre du Mans	Service Repair Support	VY-V-640-620-3 Page : 63 of 63 Language : EN Date : 11/02/03

ANNEX 1

PHILIPS CONSUMER COMMUNICATIONS
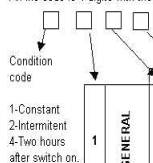Customer Services
New Product & Measurement

PHILIPS

An Iris code is 4 digits with the following description :

☐ ☐ ☐ ☐

Condition code

1-Constant
2-Intermitent
4-Two hours after switch on.

IRIS REPAIR CODING SYSTEM
The code '1000' is used for No Fault Found

		1 NO ACTION	2 LEVEL	3 QUALITY	4 NOISE	6 PHYSICAL PROBLEMS	7 SPECIAL FUNCTIONS	8 OTHER CONDITIONS
1	GENERAL	**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 W@P function not operable	**Special requirements** 185 Upgrade to be done only 18Z Symptom not available
2	COMMUNICATION	**No reception** 21A Drops calls	**220 Reception level problem**	**Transmission problem** 231 No emission 234 No radio link between Handset & Base [1]	**240 Noisy or distorted audio** 244 Echo		**Special communication problem** 277 No dial tone 278 No buzzer ring 279 Not registering	
5	AUDIO	**510 No audio** 521 Low audio level	**Audio level problem**			**560 General problem with Answering machine.** [1]	**Poor special audio function** 57A Hands-free problem [1]	
6	MECHANISM	**No mechanical** 61B Vibrator not operable 61D Pilot/compass key not operable			**Mechanical noise** 648 Foreign parts inside			
7	DATA PROCESSING	**No data processing operation** 715 No keyboard operation 72B No subscription [1]	**Faulty data processing** 721 Charge on i/c calls [2] 725 Contact your dealer [2]	730 Excessive Balance [2]			**Special data processing function problem** 774 Defective CLI [1] 775 Tariff update failure [2]	**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

REV 02 - JULY 2000.

PCC/VY/660/O/IRIS CODE TABLE/0011/MCH/LTA