



PRKI-Service

Philips Radio Kommunikations Industri A/S (Copenhagen)

Concerning:	AP 4000 Serie Handset	93.01
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It has been necessary to introduce a new type of sparepart earpiece due to use up of stock in Eindhoven and obsolescence from the supplier.

The new earpiece will have the same 12NC: 3508 100 80150.

The earpiece has slightly different physical dimensions, but can be installed without any problems.

Change procedure:

- a) Open the handset and remove the deffectiv "old" earpiece.
- b) Desolder the connection wires from the "old" earpiece.
- c) Slide on heat shrinkable sleeves on the wires.
- d) Solder the "old" connections wires to the wires of the new earpiece and isolate with the sleeves or isolating tape.
- e) Press the new earpiece into the holder and reassemble the hanset.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning: **AP4000/AP6000**

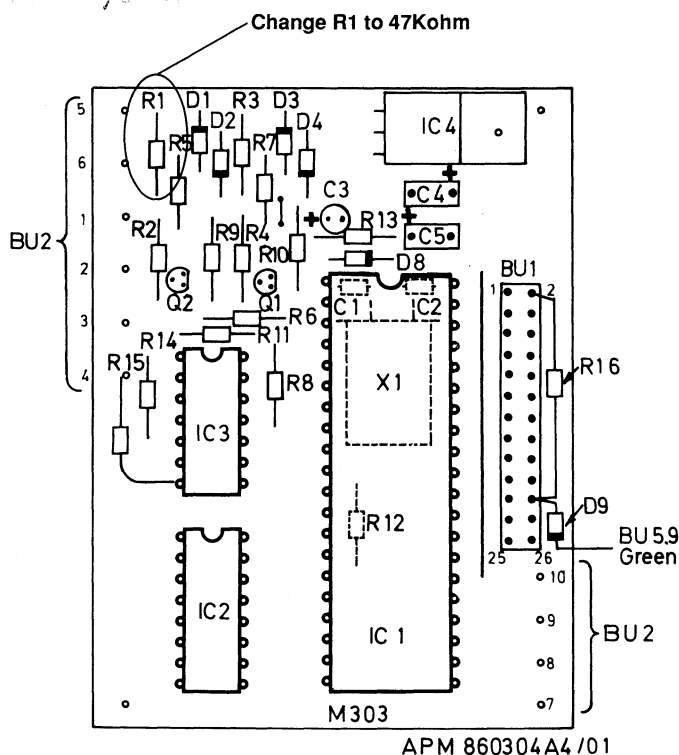
90.04

This service deals with information to service manuals for AP4000 series and AP6000 series.

To improve the communication between service interface unit AP4009 (SIU) and connected radio telephones, you may change the resistor R1 in the SIU to 47Kohm (See drawings below).

Ordering number for resistor R1, 47Kohm: 4822 116 52472.

Component location AP4009





PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning:	AP4007	91.01
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This service information deals with information to service manual for AP4112, 12 NC 9506 100 80030/1.
Audio noise which may originate from the handset AP4007, if the handset is used with a transceiver AP4112, can be cancelled by an up dating of the handset.

Up dating: Use a service pack 12 NC 5322 216 82069 to change the handsetprint in the handset AP4007.



PHILIPS

Philips Communication Systems

Til vore
NMT forhandlere

Philips Communication
Systems A/S
(Philips Danmark A/S)
Reg. nr. A/S 24 906

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Telex +45 31 33 20 44 +45 31 31 12 01
Cable 31211 PHILIP
Teletype 31212 71

Reference

Direct dialing

Page

NW/lmn

1990.11.19

Vedlagt følger 2 stk. serviceinformationer.

Philips Service vil tilsende jer 1 stk. af de tilhørende prommer, men for ap 4111 prommen må der regnes med lidt forsinkelse på grund af restordre.

De af jer, som allerede har modtaget prommen til ap 4112, må vi bede om at returnere denne, da det fejlagtigt er blevet en version 2.

Venligst returner til

*Philips Service
Att.: Hr. Leif Larsen
Prags Boulevard 80
2300 København S*

Øvrige serviceinformationer vil snarest blive tilsendt jer.

Med venlig hilsen

Niels Wulff

Bilag



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

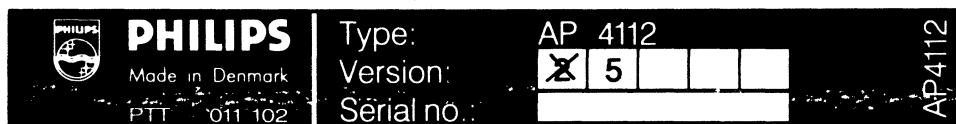
Concerning: **AP4112** **90.09**

This service information deals with information to servicemanual for AP4112, 9506 100 80030/1. The service information concerns information about new software, version 5.

The cause for a new software is as follows:

On a few AP4112, approximately 2%, the information on address 00 in the EE-prom suddenly disappears. As known the telephone number is programmed into address 00 and 01 in the EE-prom, and because of that, the telephone number then will be lost in some cases. To avoid losing the telephone number in those few cases, a new software is introduced. With the new software, the telephone number is placed on address 09 and 10 in the EE-prom.

When changing software from version 2 to version 5, you must change the digit on the typeplate from 2 to 5. This is to be done by making a cross, by engraving, over the digit 2 and then making a digit 5, by engraving, in the next free area on the typeplate (see drawing below).



The new software, version 5, replaces the old software, version 2.

The version 5 software is named as: **7053.5**
89-51.

Ordering number for software version 5: 5322 209 11958



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Philips Radio Communication Systems (Copenhagen)

Concerning:

AP4023/AP4024

90.08

This service information deals with information to servicemanuals for AP4000 series.

C-Pack, ordering number 9525 200 00110, and D-Pack, ordering number 9525 200 00120, delivered with batch number 90 34 02 and higher batch numbers, are packed with an improved auto cassette. The improvement deals with a better lock function, so it is easier to open the auto cassette.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning

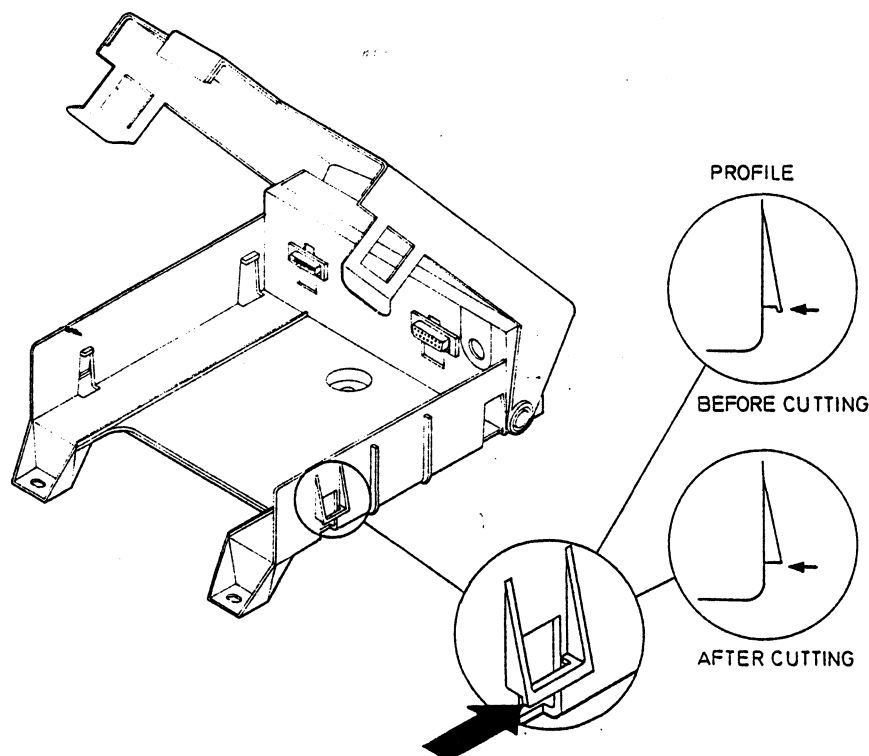
Mounting cassette AP4023/4024

90.06

This service information deals with information concerning the mounting cassettes AP4023/4024.

If the mounting cassette is mounted upside down e.g. under the dashboard it will be convenient to make a small modification on the cassette before it is mounted.

On the locking part of the cassette (both sides) is a small retaining rim at the edge (see detail on drawing below). Use a sharp instrument to remove these rims in order to avoid breaking the locking flaps on the lid when opening the cassette after the telephone has been installed.



APM900618A 3/00



PRCS-Service

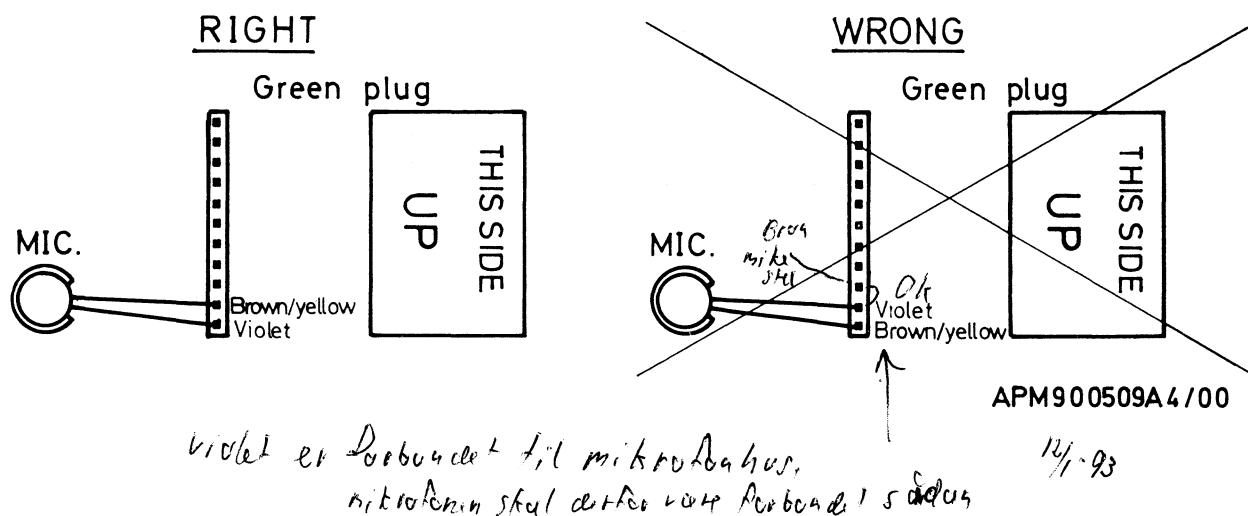
Philips Radio Communication Systems (Copenhagen)

Concerning:

AP4000 Series

90.05

A-packages and B-packages which is delivered in the weeks 9013 to 9018 (both included) might have a handset, AP4007, with reduced gain in handset microphone. The reason is a wrong placement of the two wires from the microphone, into the green plug. To get the right gain in the microphone, please change the placement of the two wires (see drawings below).



To get the socket out of the plug, press carefully the spring on the socket when pulling the wire, with the socket, out of the plug.

When mounting the wires, press the sockets into the green plug (remember to place the spring on the socket, the right way in the green plug).



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning: **AP 4007/4011/4012.**

90.01

This service information deals with corrections to the service manuals for AP4000 series.

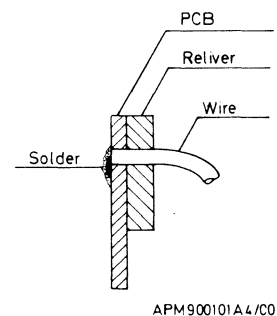
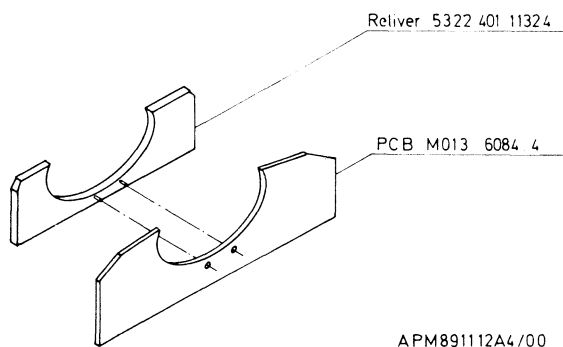
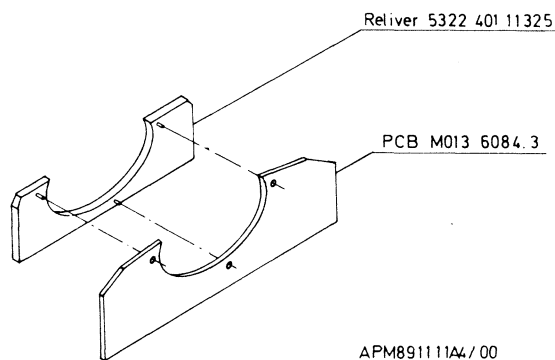
To avoid disconnection of wires on the PCB M013, please do as follows:

Mount the reliver, 12NC 5322 401 11325 for the old version version PCB M013 (printversion 6084.3) or reliver, 12NC 5322 401 11324 for the new version PCB M013 (printversion 6084.4).

Mounting the reliver, please do as follows:

Disconnect the wires and place the reliver on the PCB M013.

Keep the reliver close to the PCB and connect the wires to the PCB, by inserting the wires through the holes in the reliver and then connect/solder the wires to the PCB (see drawings below).





PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning: **AP4000 series.** **90.01**

This service information concerns service manuals for the AP4000 series.

Concerning removing the modules in the new FMS produced mobile telephone with coax cables without MCX plugs.

If a coax cable is mounted in a slot between two modules, it is very important that the cable is removed before the module is lifted up.

If not, the coax cable might be damaged.

Even if the coax cable is just slightly damaged, it must be replaced.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning:

AP 4002.

89.12

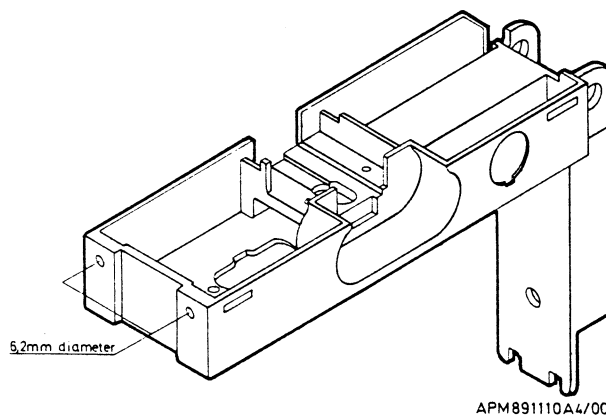
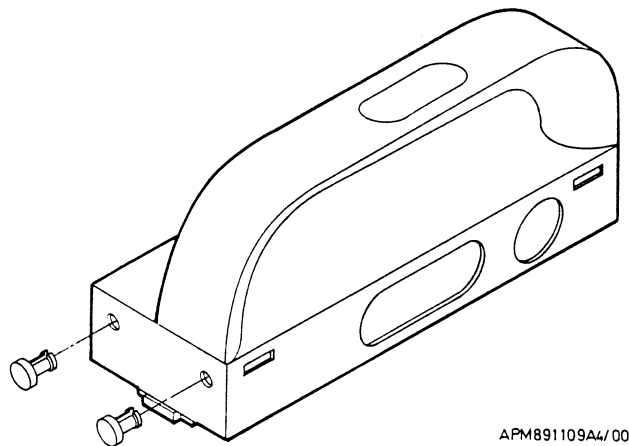
This service information deals with correction to service manuals for AP4000 series.

From ultimo october, the two screws 12NC 5322 502 21113 , and the two cap plugs 12NC 5322 462 41424 , will be replaced by two snaps 12NC 5322 417 50261.

The dimension of the two holes, for fastening the handle on the cassette angle, will be 6.2mm.

IMPORTANT !!

When inserting the snaps, be sure that the slot is located vertically (see drawing below).





PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning:

AP4001.

89.11

Ordering bottom part, 12 NC 5322 462 41465 , please notice that hole for fastening does not exist. That is quite normal !

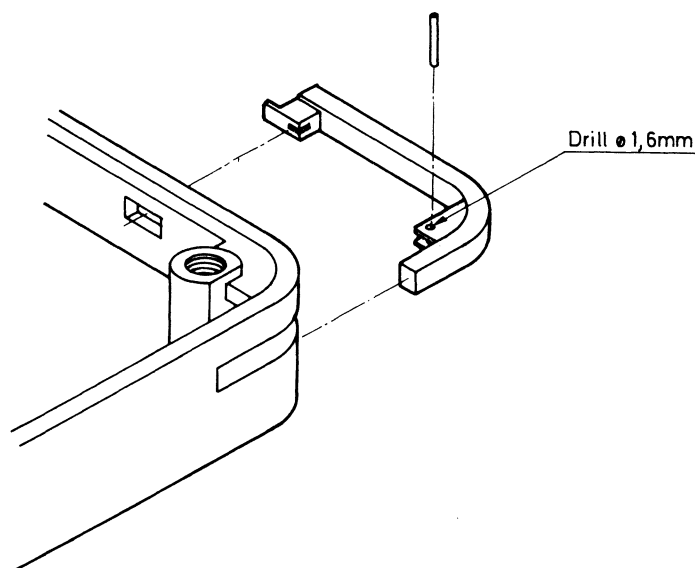
The hole has to be made, when you are mounting the bottom part.

The reason for that is tolerances. If the hole are made in advance, there can be some cases where the bottom part will come loose after mounting on the frontpart.

Please do as follows:

1. Put the bottom part on the battery.
2. Make a mark on the bottom part as close as possible to the frontpart, inside.
3. Take away the bottom part and make a hole by drilling, diameter 1.6mm, where the mark have been maked.
4. Put the bottom part on the battery and fasten the bottom part with the clamp pin.

See drawing below.



APM891107A4 / 00



PHILIPS

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STB 201

Afdeling/reference

1989-10-31

Service information vedr. ap 4000 og ap 6112.

Vedlagt følger:

1. Service information vedr. ny antenne til erstatning af "Algon" antennen, der udgår.
2. Service information vedr. GaAs-FET transistor CF930B, der udgår og erstattes med GaAs-FET transistor S942T. Dette berørre følgende ap 4000 moduler:

M 140 - Q1,

M 240 - Q15.

Til orientering skal oplyses, at GaAs-FET transistor CF930C også vil blive erstattet med ny GaAs-FET transistor S943T, som indgår i flg. moduler:

M 230 - Q1,

M 240 - Q12 og

M250 - Q2.

Service information vedr. CF930C følger snarest.

Det pointeres at S942T ikke kan erstattes af S943T eller omvendt, på samme måde som CF930B og C heller ikke kunne erstatte hinanden.

Ovennævnte udskiftning er sket p.g.a. kvalitetsforbedring.

Med venlig hilsen
Philips Service A/S

Freddy Bøtcher Kristiansen



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning:

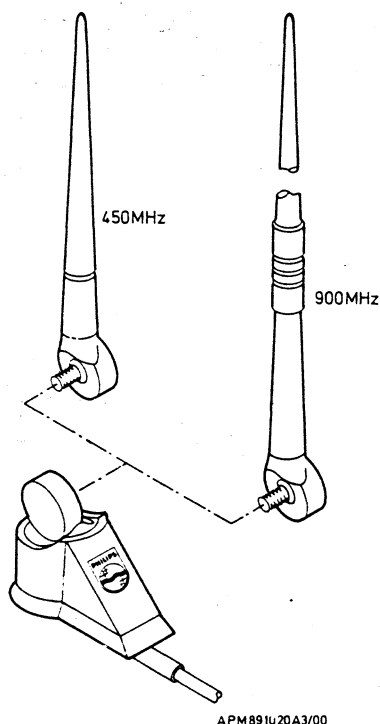
AP 6112/AP 4000 series.

89.10

Ultimo october 1989 the C, D and Pats carconnector packages will contain Quill antennas only. The present Algon antennas will no longer be delivered.

The C, D and Pats carconnector packages will include Quill antennas as below:

Item:	Comm. partnumber:
450Mhz Quill ant.package,0 db, part of the C and D package.	9525 502 00030.
450Mhz Quill antenna, 4 db.	9525 502 01060.
450Mhz Quill antenna, 0 db.	9525 502 01070.
900Mhz Quill ant.package,4 db, part of the C, D and Pats car- connector package	9525 502 00010.
900Mhz Quill antenna, 0 db.	9525 502 01040.
900Mhz Quill antenna, 4 db.	9525 502 01030.





PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning: **AP 4000 series** **89.10**

Ordering spare part: 5322 130 61763

GaAs-FET transistor S942T will be delivered only.

GaAs-FET transistor CF930B is no longer in stock.



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Telex 31201

STS

Afdeling/reference

1989-10-27

Service information vedr. 4112 89.10

Vedlagt følger service information for ap 4112, vedr. ordernumre for nye printmoduler til FMS-producerede ap 4112'ere.

Med venlig hilsen

Philips Service A/S

Freddy Bøtcher Kristiansen



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning:

AP 4112

89.10

Since the production has changed to Flexible Manufacturing System (FMS), the modules have been changed as well. Below you will find a listing of the FMS service modules, the duplex-filter and the coded E-PROM.

Ordering number for the System-module, M220:	5322 216 80198.
Ordering number for the IF/AF-module, M230-I:	5322 216 80248.
Ordering number for the RX-module, M240-I:	5322 216 80249.
Ordering number for the TX-module, M250-I:	5322 216 80251.
Ordering number for the PA-module, M260-I:	5322 216 80252.
Ordering number for the Supply filter-module, M270:	5322 157 60272.
Ordering number for the duplex-filter for the AP 4112:	5322 157 60526.
Ordering number for the coded E-PROM to system-module M220:	5322 209 11958.



PHILIPS

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Telex 31 201

Afdeling/~~reklam~~
SIS

1989-06-13

Service information samt info vedr. FMS produktion.

Vedlagt følger 1 stk. service information vedr. navigator Mk. 4.
Ændring af produktionsmetode for ap 4000.

Produktionsmetoden for ap 4111 er ændret pr. 1989-05-01 som det fremgår af vedlagte liste. Den nye produktionsmetode kaldes FMS, der står for "Flexible Manufacturing System". Brugeren vil ikke bemærke forskellen mellem tidligere produktionsmetode og nuværende.

For ap 4112 gælder, at FMS produktion vil starte efter fabriksferien.

Følgende 12NC-numre kan benyttes ved ordreafgivelse efter nærmere information fra PRC.

450MHz:

9506 100 13090 = White Philips A-Pack.
9506 100 13070 = Black Philips A-Pack.

900 MHz:

9506 100 13470 = White Philips A-Pack.
9506 100 13440 = Black Philips A-Pack.

Moduler: (Foreløbig kun for ap 4111).

IF/AF Amplifier M130-A = 8208 244 00321
RX Synthesizer M140-A = 8208 244 22341
TX/AF Amplifier M150-A = 8208 244 00371
PA-stage M160-A = 8208 244 00401

◦ Med venlig hilsen
Philips Service A/S

Freddy Bøtcher Kristiansen

The introduction of the FMS entails the following differences:

- COAX plug removed - to be soldered together with cables (three modules).
- Filter connectors taken out of the design, replaced by strip connectors which means that the M130 must be mounted with 4 additional capacitors with plug (SMD).
- The PA stage will be mounted with super clips instead of screws.
- The print has been prepared for ICCT (important for manufacturing only).
- Duplex filter. New, with tin-plated cables.
- COAX cables, new number because of greater length.
- New potentiometers, general on all print-boards.
- M130, M140 and M150 are trimmed jointly.
- Test points moved, removed or/and given new names.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning

AP 4112

89.05

When changing the PA-module or the power amplifier pay close attention to the following.

If a complete PA-module is in question notice the type of the power amplifier before mounting.

If the power amplifier is a SHWE 1065 control/verify the following:

On M220

R113 is a 4K7 resistor. If not, replace the resistor.

Order number: 3508 100 20330

On M260

C15 is removed.

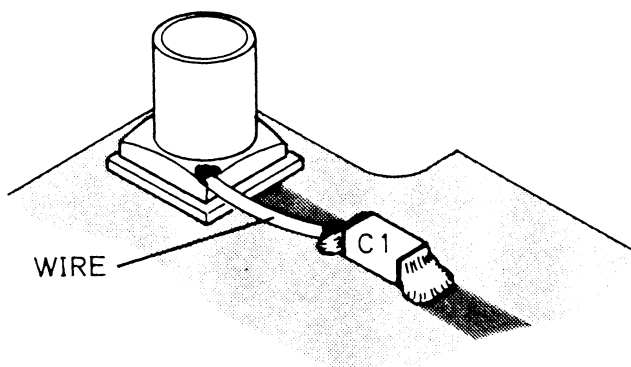
C11 is a 6u8 capacitor. If not, replace the capacitor.

Order number: 2222 122 56688.

C9 is a 5p6 capacitor. If not, replace the capacitor.

Order number: 2222 861 12568.

At the MCX plug where the signal from the TX-module enters add 8mm of 0.3square mm tinned wire between the base of the MCX plug and C1 (see figure below).



On PA-modules from the factory equipped with SHWE 1065 power amplifiers you only have to control your M220. If changing to another type of power amplifier e.g. M57794 everything have to be changed back to standard values as described in the Service Manual.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

Concerning **New types of EEPROM for AP 4112** **89.04**

Lately two new types of EEPROM has been introduced on the systemboard, one marked CAT93C46PI or one marked CAT93C46API. Unfortunately the one marked CAT93C46PI will not work unless the following modification has been made on the systemboard:

Cut the print connection between IC218 pin 6 and ground, and add a resistor R266 between IC 218 pin 6 and pin 8.(See fig 1.)

R266 10 Ω 1/10W Ordering number 2322 180 73109

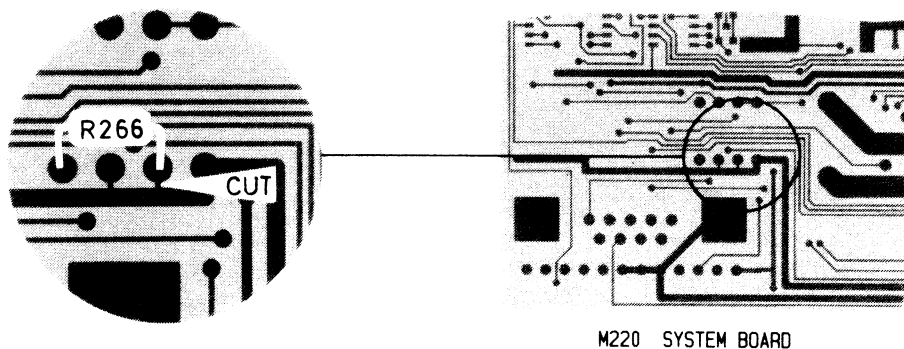


Fig 1.

The EEPROM marked CAT93C46API will function without this modification but in some sets the modification has been made together with this EEPROM but it has no effect.

Sets produced after April 6. 1989 will only have the CAT93C46API and will not be modified.

If the oldest EEPROM marked NMC9346NE are used no modification will be necessary.

~~All 3 types of EEPROM's are on stock on the same 12NC: Ordering number 3508 100 16380~~

EEPROM TYPE CAT 93C46 API EA ENESTE ANVENDBAR TREMOVER;
ORDERING NUMBER: 8208 244 01121.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

DC/LIGHTER CABLE FOR PORTABLE KIT

88.08

Lately, the lighter connector in some new models of eg. BMW and Mercedes have been changed to a new model with a larger diameter.

For this reason, the DC/lighter cable for the portable kit will be changed to a new type which will fit into both lighter connector diameters.

The new DC/lighter cable can also be used in connection with the AC/DC power supply available.

Ordering number for the new cable is 9506 100 71560.



PHILIPS

Til ap centre og forhandlere.

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Telex 31 201
sts
Afdeling/reference

1988-12-15

Service Information for ap 4000

Vedlagt følger 5 stk. service informationer for ap 4000.
Med venlig hilsen
Philips Service A/S

Freddy Bøtcher Kristiansen



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

AP 4002 PORTABLE KIT

88.12

Problem: Poor or no connection to the MTX.

This might be caused by loose coaxial insulation in the antenna angle.

In this case, mount a new antenna angle, ordering number: 8208 244 00111.

For mounting details see Service Information 88.06, ordering number: 9506 100 81060.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

AP 41X1

88.12

On the system board U1, C81 has been changed to new type capacitor.

New ordering number 3508 100 31370.

MESSAGE

DENMARK

Fax-No. 45 1 57 29 30

Telex 31201 PHIL DK

To *Freddy Krissiansen*
S 2 1 0

Fax-No.

From *Claus Pedersen*

M-SER

No.

Date

Page /

17.1.169 (86-12)

SERVICEINFORMATION

PRCS-SERVICE

concerning

AP 4000 series

88.11

Problem : Q3 and Q5 on unit 1, the systemboard (M120 or M220) are defective due to inductive spikes from the relay RE1.

Solution: Connect a protective diode from the collectors of Q3 and Q5 to ground.

For M120 refer to figure 1.

For M220 refer to figure 2.

The diode to be used is a BZX79-B24.

Ordering number:

4822 130 34398

The diode might be added as a preventive action when the telephone is handed in for service.

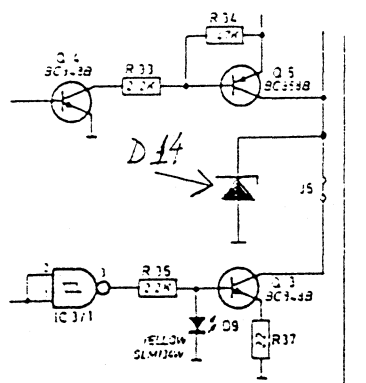


Figure 1.

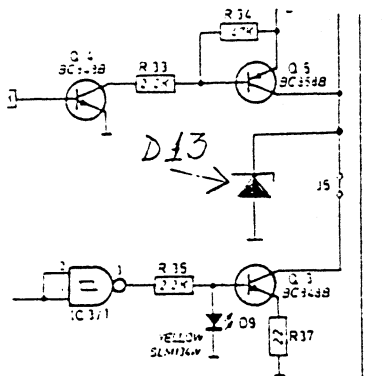
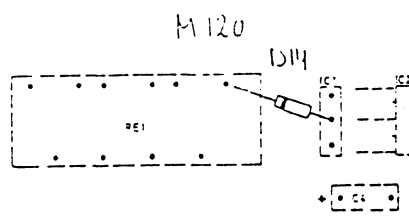
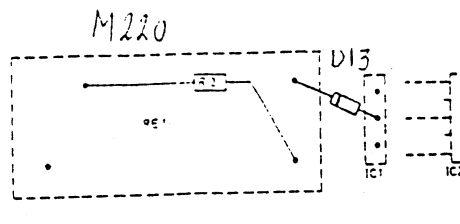


Figure 2.



NOTE: This will be followed by an ordinary SERVICEINFORMATION.

MESSAGE

DENMARK
Fax-No. 45 1 57 29 30
Telex 31201 PHIL DK

To *Freddy Kristiansen*
S 210

Fax-No.

From *Claus Pedersen*
Philips RCS

Copenhagen DK

No.

Date *88/122*

Page *1/1*

17.1.169 (86-12)

SERVICE INFORMATION

PRCS-SERVICE

concerning

AP 4002

88.11

Concerning : 1. Battery pack for Portable kit.
2. Antenna cable in Portable cassette.

1. In battery packs produced before June 1988 a shortcircuit might occur between battery indicator LED D9 and ground. This shortcircuit will only cause damage when the battery is supplied from e.g. the car battery via the DC cigar lighter cable.

In order to prevent this problem from occurring we suggest the following preventive maintenance when the equipment is handed in for service.

Cut a piece of PVC sleeve 2.5 centimeters, ordering number 0822 026 22235 (sold in meters), and slide the sleeve piece over the L-shaped terminal as shown on figure 1.

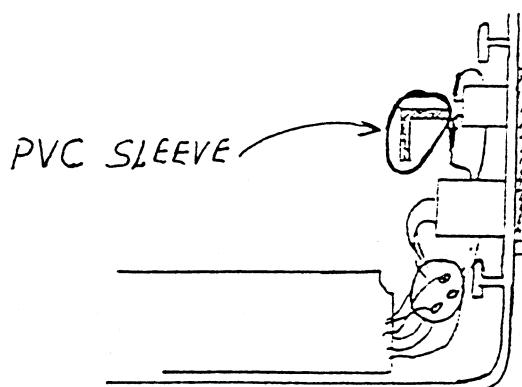


Figure 1.

2. In order to prevent damage to the antenna cable from the antenna angle to the radio in the portable cassette. When this has been disassembled for service, please follow this procedure:

- A. Remove the magnetic cover, remove the handle cover and carry out the service needed.
- B. Reinstall the handle cover while observing the cable routing where this is routed from the handle cover into the magnetic base area and make sure that the cable is not squeezed and that it is free to move without tightening up on the antenna angle shaft.

- C. Reinstall the magnetic base cover.

MESSAGE

DENMARK
Fax-No. 45 1 57 29 30
Telex 31201 PHIL DK

To *Freddy Krissiansen*
S 210

Fax-No.

From *Claus Pedersen*
Philips RCS
Copenhagen DK

No.

Date *88/125*

Page *1/1*

17.1.169 (86-12)

SERVICE HINT

PRCS-SERVICE

concerning

AP 4000 series

88.11

Fieldtest have shown that the PA-module and the Duplex-filter might come loose as time passes.

We therefore strongly recommend that, when a telephone is handed in for service, the screws holding both modules in question are tightened.

For AP 4xxx see items H, I, J, on figures below.

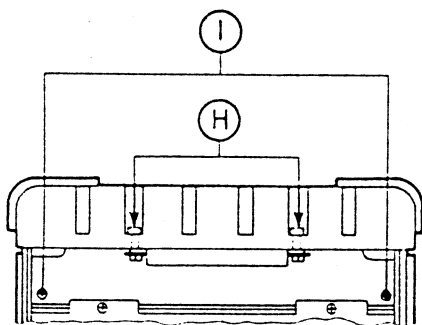


Figure 1.

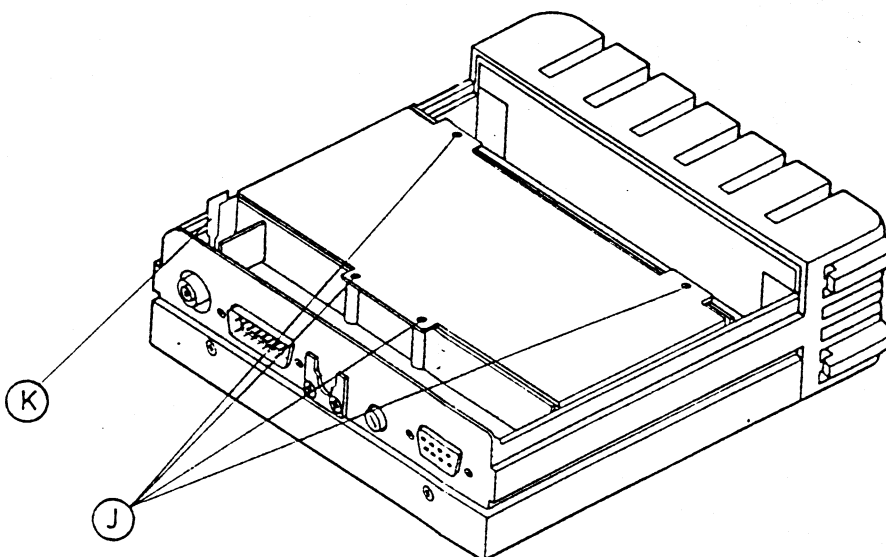


Figure 2.



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ap centre og forhandlere

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sts

Afdeling/reference

1988-11-04

Service information ap 4000, duplex filtre.

Vedlagt følger service information omhandlende fejlmontage af coaxkabel på nogle duplex filtre, hvilket medføre en utilsigtet stelforbindelse til chassis. Samtidig gøres opmærksom på, at samme utilsigtet stel kan forekomme, hvis lodningen af coax-kablerne ikke er foretaget omhyggeligt nok. D.v.s. at lodningen er for høj

Med venlig hilsen
Philips Service A/S

Freddy Bøtcher Kristiansen



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

AP 4112

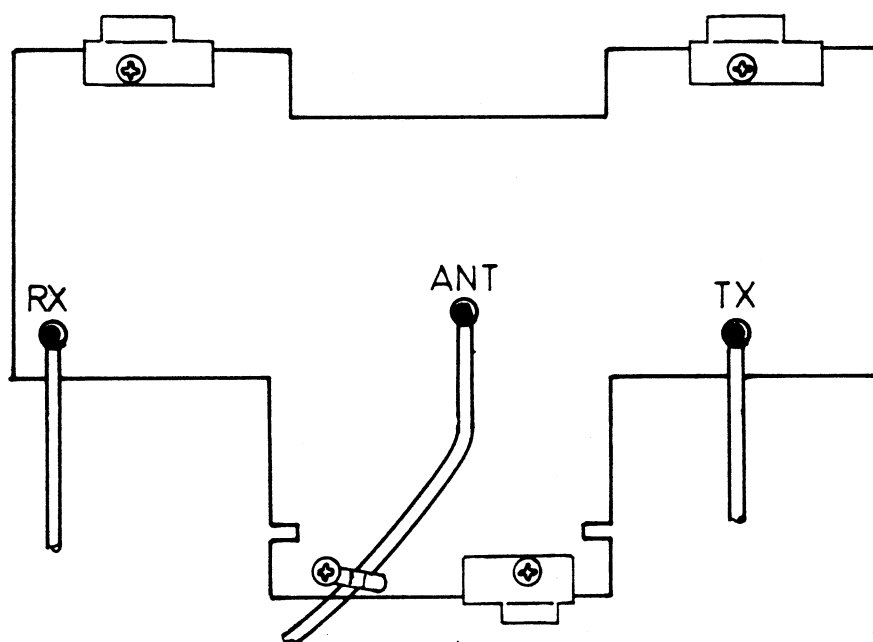
88.11

Concerning : Duplex problems in the transceiver.

Fault : In some cases the coax cable on the duplex filter may touch the cover of the transceiver.

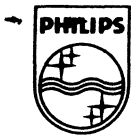
Repair : Please mount a soldertag, ordering number: 3508 100 46210, on the duplex filter placed as shown on fig. 1.

Hold down the coax cable with the soldertag and make sure that the cable does not touch the transceiver cover.



APM881012A4/00

Fig. 1



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

HANDSETS FOR AP 4000

88.10

Some changes have been made in the handsets to improve the quality.

A new type of handsfree loudspeaker cover is designed to make more room for the wire connection between the RF filter and the spiral cord wires.

Ordering number for the new cover is: 3508 101 53900.

In connection with the introduction of the new loudspeaker cover two new service packs have been made.

Ordering number for the spiral cord (black) and cover is: 8208 244 00261.

Ordering number for the spiral cord (white) and cover is: 8208 244 00271.

A new type of earpiece suspension is designed for the handset to improve the sound in the earpiece loudspeaker. If the suspension is changed to the new type, it is also necessary to change the reflector screen cloth disk, holder and the three Quick-lock rings.

IMPORTANT: Fig. 1 and fig. 2 show how to place the earpiece loudspeaker connections.

The reflector screen part has grooves which fit with this way of placing the connections.

Ordering numbers for the new parts are:

Earpiece suspension:	3508 101 52420
Reflector screen	: 3508 101 22420
Cloth disk	: 3508 101 02620
Holder	: 3508 101 53610
Locking ring	: 2512 700 08141

All the new parts for the earpiece loudspeaker have been collected in two service packs.

Ordering number is 8208 244 00281 for horizontal handsets (right) and vertical handsets.

And ordering number is 8208 244 00291 for horizontal handset (left).

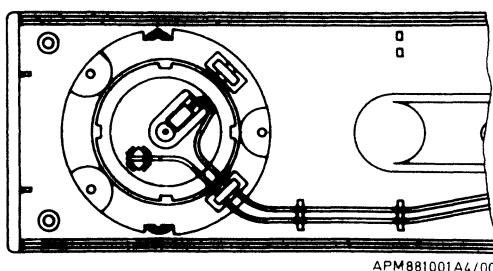


Fig. 1 Handset horizontal right, vertical

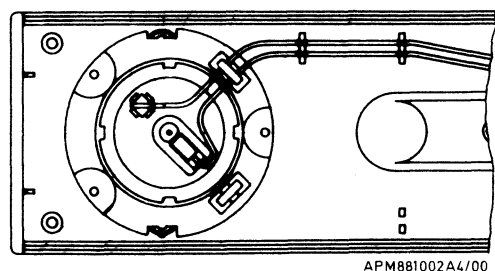


Fig. 2 Handset horizontal left



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

AP 4000

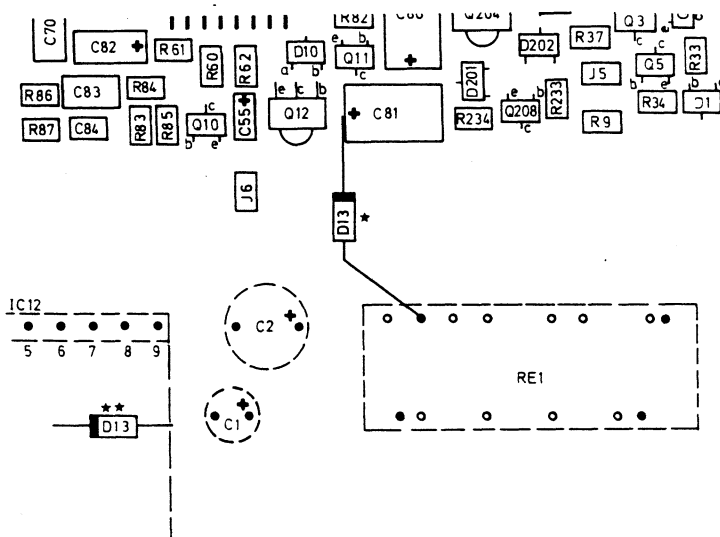
88.06

This service information concerns the system board unit 1 in the transceiver.
The factory has recently introduced some improvements in the power supply part.

The diode D13 (1N4001), ordering number 9330 630 30113, has been mounted as shown on the figures below and the diode D10 has been changed to a new type diode (BAW56), ordering number 9330 989 90215.

D13* Is mounted in system boards marked 3508 101 6124.1 (can also be mounted in earlier versions).

D13** Is mounted in system boards marked 3508 101 6124.2.





PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

AP 4112

88.07

For some time the "Power detect" connection between the system board and the PA-stage has been soldered in order to make a better connection.

This has been changed, so both the system board and the PA-stage will, from week 8824, be produced only with the gold plated connections instead of the tin plated.

When changing either of the modules, don't ever mix gold plated and tin plated connector. Use only tin plated together with tin plated and gold plated with gold plated.

Ordering number for system board (unit 1) with tin plated connection pins:

System board, unit 1

8208 244 01011

Ordering number for PA-stage (unit 5) with tin plated connector:

PA-stage, unit 5

8208 244 01051

Ordering number for system board (unit 1) with gold plated connection pins:

System board, unit 1, version 2

8208 244 01311

Ordering number for PA-stage (unit 5) with gold plated connector:

PA-stage, unit 5

8208 244 01251

Ordering number for gold plated pins for unit connectors for the system board:

3508 100 56190

Ordering number for female 4-pole gold plated connector for the PA-stage:

3508 100 56200

If having problems with the "Power detect" signal the solution might be to change the connector pins on the system board and the connector on the PA-stage to the gold plated type, which are available in a repair kit, ordering number:

8208 244 00231

WARNING ! ! !

Do not ever connect gold plated
connector pins into a tin plated
connector or vice versa.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

AP 4112

88.04

This service information concerns the service pack, ordering number: 8208 244 010131, containing the RX synthesizer.

Earlier this service pack contained both the RX synthesizer and the EEPROM.

With the implementation of software version 2 it is no longer necessary to change the EEPROM together with the RX synthesizer. Therefore, the EEPROM has been removed from the service pack.

AP 4112 with version 1 software.

If the RX synthesizer or the VCXO reference crystal has to be changed you must order both the RX synthesizer: 8208 244 01031 and the EEPROM: 8208 244 01121.

AP 4112 with version 2 software.

The EEPROM contains a temperature table which corrects the VCXO reference oscillator at high and low temperatures.

This temperature table must be initialized if the RX synthesizer module or the VCXO ref. osc. crystal has to be changed.

The following description of how to initialize the temperature table is only valid for AP 4112 software version 2.

Initialization of the temperature table.

- switch the transceiver ON
- press the button ***** , **→** , **0** .
- the display will show ENTER CODE
- press the button **1** , **9** , **3** , **7** .
- the display will show ACCEPTED

NOTE: When this function is activated the reference oscillator frequency must be readjusted. See Tuning of frequency.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

ap4111/ap4112

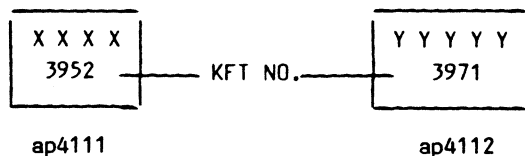
87.06

Complaints have been made about the level of the ringing signal and the sound level.

To solve these problems, certain changes were introduced some time ago in the ap4111 and the ap4112.

To find out whether the transceiver in question has been updated you will have to look at the KFT number on the systemboard (unit 1).

The KFT-number is printed on a small label on IC200.



If the number stated on the label is equal to the above number or higher, the changes have been introduced already on the systemboard.

If the KFT-number stated is lower than the above, the transceiver may be updated as follows:

ap4111: Introduce the following changes on the systemboard (unit 1):

Component	Old value	New value (ordering number)
R56	22K	10K (3508 100 20370)
R57	47K	15K (3508 100 20390)
R86	47K	6K8 (3508 100 20350)
R87	22K	1K5 (3508 100 20270)
C84	1N	2N2 (2222 590 16618)

ap4112: Introduce the following changes on the systemboard (unit 1):

Component	Old value	New value (ordering number)
R56	22K	10K (3508 100 20370)
R57	47K	15K (3508 100 20390)
R70	47K	33K (3508 100 20430)
R77	47K	33K (3508 100 20430)
R86	47K	6K8 (3508 100 20350)
R87	22K	1K5 (3508 100 20270)
C84	1N	2N2 (2222 590 16618)

The above mentioned changes makes the ap4111/ap4112 presenting the same output level as the legendary ap3733/02.

If the sound level eventhough seems too low a solution can in some cases be to mount an external loud-speaker pointed directly against the driver (user) or to mount a music muting relay.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

AP 4112

88.01

A new software for the mobile telephone AP 4112 has been introduced.

The coded EPROM will be marked:

³
7051.2 week 8740.

This new software will make the transceiver able to scan faster.

The ordering number for the coded EPROM is: 8208 244 01111.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

AP 4112

88.01

Fault indication : In some handsets a reset problem (confused display and led indications) has been observed when the mobile telephone is switched off and then on again immediately.

Fault : IC1 LM2931 will not reset fast enough.

Repair : If the problem occurs replace LM2931 by an L4805 voltage regulator.
L4805 ordering number: 3508 100 16930.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

ep4111/4112/4151/4171/4181

87.09

Fault : The mobile telephone switches itself off or may fail in the start-up procedure.

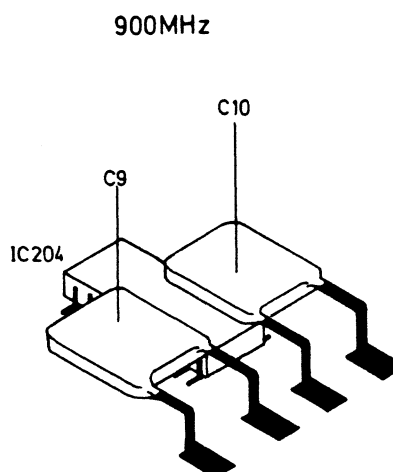
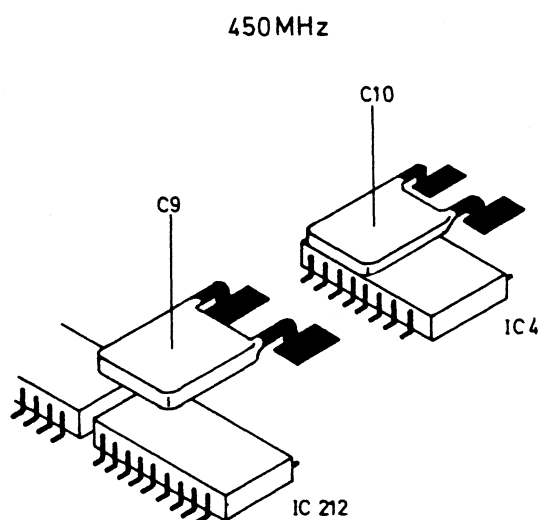
Troubleshooting: The capacitors C9 and C10 on the system board, unit 1, fails.

Repair : Remove the two SMD capacitors.

Clean the surface underneath the capacitors for solder and flux remnants.

Mount two new capacitors of the type 3508 100 31250 (270N) as shown on the figure.

Alternatively it is possible to use type 3508 100 31240 (220N) or type 3508 100 31260 (330N), but the two capacitors (C9/C10) must always be of equal value.



APM870912A3

Date

Repair request (one sheet per module/set)

Return no.

Ship to: **Philips Service A/S**
Teknisk Afdeling
Kornmarksvej 1
DK 2605 Brøndby
Denmark

☐ Module

☐ Complete set

Type no. Serial no.
(if module, please quote usage type no and serial no.)

Module code no.

--	--	--	--

--	--	--

--	--	--	--	--

Installation date

Nature of fault

☐ Intermittent

☐ Climatic problem

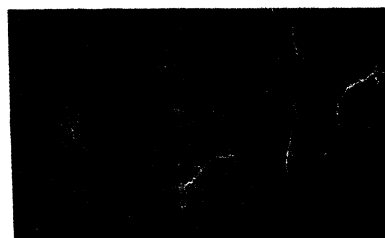
☐ Alignment

☐ Mechanical

Misc. (explain) _____

Fault description

Place on defective item



Organization

Signature



PHILIPS

AP RADIOTELEFON SERVICE
PANTERVEJ 24
7700 THISTED.

Prags Boulevard 80 · Postbox 1919
DK-2300 København S
Telefon 01 57 22 22
Telex 31201 · Telefax 01 57 00 44
Postgiro 1 02 36 32

Kornmarksvej 1
DK-2605 Brøndby
Telefon 02 45 43 33
Telex 31 201

Afdeling/reference
1988-01-20

Vedr.: Håndtering af ap 4000 moduler til renovering

Forkert håndtering og emballering af nævnte moduler giver anledning til yderligere to gennemgående fejltyper; synlige og usynlige skader.

1. De synlige skader

Disse er først og fremmest bøjede kontaktstifter på systemprintet. Er én eller flere kontaktstifter bøjet, knækker de ofte ved forsøg på at rette dem ud igen. De stifter, der ikke knækker ved denne operation, vil være svage og let knække ved det mindste tryk. Dette medfører, at mange systemprint må kasseres, da det er forbundet med store vanskeligheder at udskifte stifterne.

For at undgå skader som disse, må vi anmode om, at alle ap 4000 printmoduler, der indsendes til ombytning hos Philips Service, skal være emballeret i

skumforet papemballage - varenr. 8208 249 03800.

Det skal bemærkes, at den skumforede emballage er en genbrugsemballage, som ikke må anvendes som endelig emballage ved forsendelse, men skal være indeholdt i en almindelig papkarton.

2. De usynlige skader

En del komponenter, især de integrerede kredse, som de enkelte print er bestykket med, er følsomme over for statisk elektricitet. Nogle kredse ødelægges øjeblikkeligt, medens andre nedbrydes langsomt efter påvirkning af statisk elektricitet.

.../2



PHILIPS

-2-

Reference

Side

Dato

Vær derfor sikker på, at heller ikke defekte print udsættes for statisk elektricitet, ved altid at opbevare og sende disse i antistatiske poser:

Til systemprint: pose - varenr. 3508 101 80410

Til øvrige print: pose - varenr. 3508 101 80100

Lad os hjælpe hinanden med at øge kvaliteten ved også at håndtere og emballere defekte print til renovering korrekt.

Med venlig hilsen
PHILIPS SERVICE A/S

Birger Vessel

BVe/lmn

Philips INTERNT MEMO

Dato 1988-03-17

No. 242/bfh

Til: ap-værkstederne

Fra: Niels Wulff

Angående: Autotest med Marconi

Kopi
til:

V I G T I G T V I G T I G T V I G T I G T

Undersøgelsen har vist, at måling af følsomheden i AP 4112 med Marconi autotest kan give et fejlagtigt resultat i forhold til en manuel foretaget måling.

Vi må derfor kraftigt fremstille, at ovennævnte måling foretages manuelt.

Vi undersøger forholdet nærmere og vil snarest vende tilbage med yderligere informationer, så indtil da, anvend manuel test.

Med venlig hilsen

f. *Brit Hageskov*
Niels Wulff



SERVICE INFORMATION

Vedr. ap 4111 og ap 4112.

Det meddeles herved at handset til ap4111/4112, fra dags dato ikke længere er at betragte som reservedel. Print modul til erstatning/ombytning kan rekvireres fra Philips Service under følgende varenumre:

Print til ap4111 handset 8208 244 00141

Print til ap4112 handset 8208 244 01131

Ovenstående medfører, at handset der indsendes til ombytning, vil fra dags dato blive repareret efter regning, og returneret.

Handset vil stadig kunne købes hos ap Danmark.

Vedr. rettelse til service manual for ap3733-2.

Vedlagt følger 2 nye sider til service manual for ap3733-2.

Siderne 11-18 og 11-19 bedes indsættes under kapittel 11, bæretaske 31.



PHILIPS

Til ap centre og forhandlere

Prags Boulevard 80 · Postbox 1919
DK-2300 København S
Telefon 01 57 22 22
Telex 31201 · Telefax 01 57 00 44
Postgiro 1 02 36 32

Kornmarksvej 1
DK-2605 Brøndby
Telefon 02 45 43 33
Telex 31 201

Afdeling/reference STS/FBK.

1987.09.16.

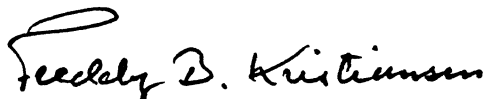
Vedr.: Service Information for ap 4112.

Vedlagt følger service information for ap 4112,
./ omhandlende fejl på C13 på system printet.

Ved servicering, hvor C13 er defekt og der på samme
system print er monteret en diode D10, som omtalt i service
informationen, skal D10 fjernes og C13 udskiftes.

Ved montage af SMD-komponenter, skal der altid anvendes
varmluft-loddekolbe, og varmluftstrømmen må ikke overstige
240° C. Komponent og print må højst varmes i 10 sekunder.

Med venlig hilsen


Freddy B. Kristiansen



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

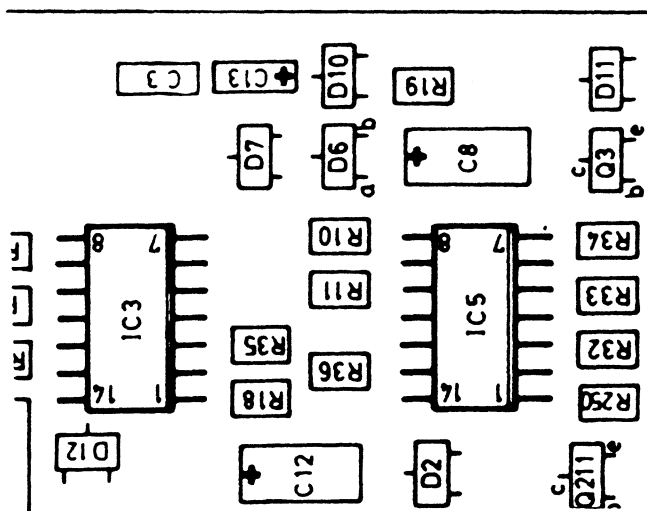
ap4112

87.09

Fault : C13 on the system board unit may break down or short circuit in some earlier production series.

Troubleshooting: A diode D10 is mounted across R19 in some earlier production series. This causes to high voltage on the capacitor C13.

Repair : Remove D10 (and shift C13).





PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

ap4112

87.06

1. Fault : ON/OFF circuit fails.

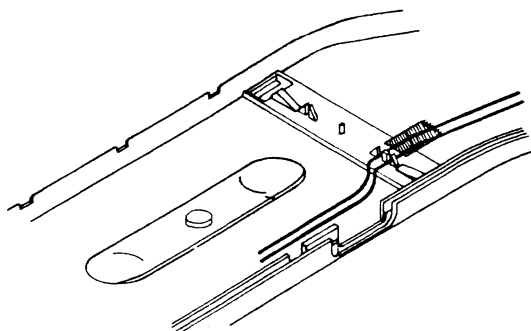
Troubleshooting: Small pieces of solder waste may be left around or under C9 and C10 on the systemboard, unit 1.

Repair : Remove C9 and C10 and clean both the print and the bottom part of the capacitors for solder and flux remnants. Replace the capacitors.

2. Fault : No sound in the handset loudspeaker.

Troubleshooting: The wires for the handset loudspeaker may have been squeezed with a shortcircuiting between the shielded underpart and the loudspeaker wire as a result.

Repair : Shift the wires for the loudspeaker and place a small piece of isolating tape on the bottom part of the handset as shown on the figure.



APM870616A4

NOTE: The introduction of the above shown change is recommended to be made in all handsets handed in for repair at the service shop. The change has been introduced in the factory from handset No. 25601.

3. Fault : The mobile telephone fails to communicate with the base station (MTX).

Troubleshooting: Data from the mobile telephone are distorted immediately after the TX module (unit 4) has been switched on.

Repair : Remove D8 on unit 4 if the week code on IC4 on unit 4 is 8647 or higher.



PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

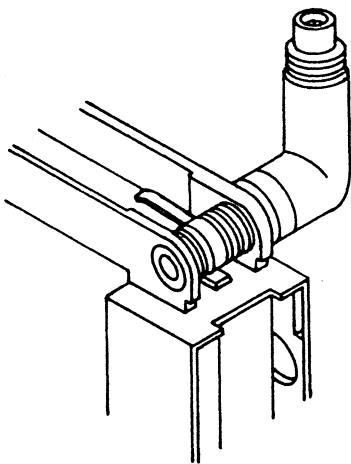
ap4002, portable tray

87.06

A new plate spring for the antenna angle in the portable tray has been introduced. The new spring replaces the old ordinary type, the benzing ring, and the grounding spring.

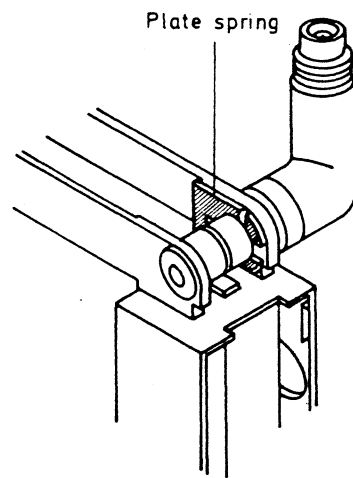
Service code number for the new plate spring is 3508 101 21760.

The plate spring is now included also when the antenna angle (8208 244 00111) is ordered.



APM 870624A4

Fig. 1 Old type



APM 870623A4

Fig. 2 New type with plate spring



SERVICE MEDDELELSE

Vedr. ap 4112.

En del af de første 200 producerede ap 4112 er monteret med en fejlbehæftiget synthesizer kreds, som snarest skal udskiftes. Kredsen støjer så meget, at synthesizeren har vanskeligt ved at låse op.

Fejlen konstateres ved at det tager meget lang tid for mobil telefonen at få service indicatoren (den grønne LED) til at lyse, samt at det tager meget lang tid at få opkald igennem.

De fejlbehæftigede RX-synthesizer moduler (unit 3) samt E²PROM'en IC 218 på systemprintet (unit 1) indsendes til Philips Service, Teknisk Afdeling, for ombytning.

Serienummeret, på det apparat hvor RX-synthesizeren er afmonteret, skal opgives ved ombytningen.

Når den nye synthesizer og den nye E²PROM er installeret og der skal laves performance test, gøres opmærksom på en ændring i service manualen for ap 4112.

Ændringen er følgende:

Afsnit 4 The Radio unit side 23 step 3.

Hvor der står -Adjust R77 on IF/AF module (unit 2), until the first two digits show approx. 40 (HEX).

Ret det sidste til 6B(HEX).

Denne rettelse vil være rettet i nyt supplement, som udkommer sidst i januar 1987.

Den omtalte fejl er rettet i alle apparater, produceret efter uge 649. (Uge 49 i 1986).





SERVICE INFORMATION FRA PRCS

Vedr. ap 4112.

1. Hvis RX-synthesizeren (unit 3) skal udskiftes, skal E²PROMmen altid skiftes samtidig.
E²PROMmen er IC218, på systemprintet. E²PROMmen indeholder telefonnummer, kodenummer, låsekode, information om reference-oscillatorens krystal på RX-synthesizeren samt nogle informationer der indgår i styringen af transeiveren.
Ved ombytning af unit 3, skal E²PROMmen derfor altid indsendes samtidig, til Philips Service. En ny E²PROM vil ligeledes altid medfølge et ombyttet RX-modul.
2. I brugervejledningen oplyses om, at på kortnummer 13 er lagret service telefonnummeret. Det vil derfor være naturligt, at samtidig med klargøring af mobil telefonen - programering af telefonnummer m.v. - at det lokale service værksteds telefonnummer bliver lagt ind på kortnummer 13.





SERVICE INFORMATION

Vedr. ap 4001/ap 4002.

Ny version 2 af batteripakken (ap 4001) og det bærbare kit (ap 4002) er fremstillet, hvorfor følgende forskelle forekommer når version 2 anvendes:

L/H omskifteren i håndtaget stilles i position "L", og en extern strømforsyning er tilsluttet den bærbare installation.

ap4111, software version 2 og 3:

Mobil telefonen skifter automatisk fra "low power out" til "high power out" første gang mobil telefonen slukkes og tændes igen. Hvis den externe strømforsyning afmonteres, vil mobil telefonen automatisk gå tilbage til "low power out" næste gang der slukkes og tændes igen.

ap4111, software version 4:

Mobil telefonen skifter automatisk fra "low power out" til "high power out" når extern strømforsyning tilsluttes.

ap4112, software version 2:

Mobil telefonen skifter automatisk fra "low power out" til "high power out" hvis extern strømforsyning tilsluttes. I handsettets display vil altid skrive "low power".

ADVARSEL:

Version 2 af ap4002 (bærbare kit) må kun anvendes sammen med batteripakke version 2.

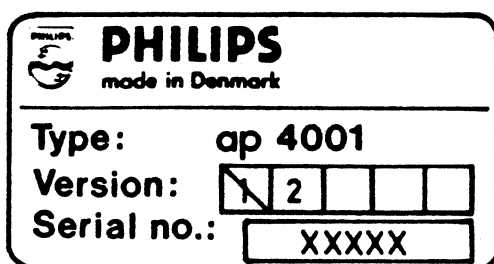
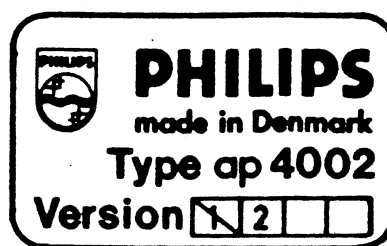
(Hvis bærbare kit version 2 anvendes sammen med batteripakke version 1, vil mobil telefonen reagere som en mobil installation).

Batteripakke version 2 kan anvendes sammen med version 1 bærbare kit uden problemer.





Hvis version 1 batteripakke eller bærbart kit modificeres til version 2, skal typeskiltet korrigeres som vist på nedenstående tegning.

*Batteripakke**Bærbart kit*

Ændringerne i den nye batteripakke består af følgende tilføjelser:

1 diode (D10), 1 kondensator (C1) og 1 ledning monteret på punkt E, på modul M300 til stik BU2, pin 1.

Diagram, komponentplaceringstegning og wiring diagram vedlagt.

Ordrenummer for D10: 9332 116 80682.

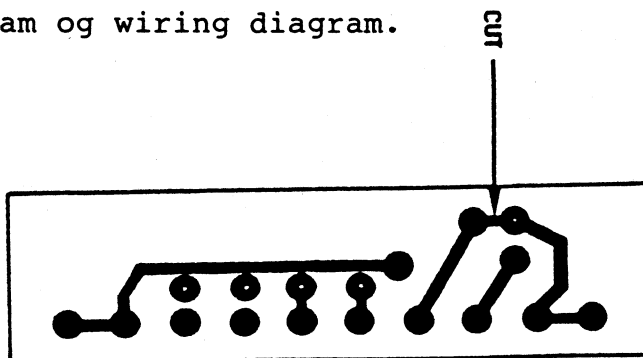
Ordrenummer for C1 : 2222 032 15222.

Ændringerne i det nye bærbare kit består af følgende:

En ledning monteres på pin 4 af det 15-polede "amphenol" stik til pin 1 på det 3-polede stik.

Printbanen, som forbinder pin 1 og pin 4 på det 15-polede stik, afbrydes som vist på nedenstående tegning.

Se endvidere vedlagte diagram og wiring diagram.





PRCS-Service

Philips Radio Communication Systems (Copenhagen)

CONCERNING

ap4112

87.01

This is a supplement to the service manual for the mobile telephone ap4112 (Manual ordering number 9506 100 80030).

It deals with corrections and additions to the service manual and changes introduced during the production.

Chapter: CPH860902 (Installation instructions).

Page 3 and 4 : The magnetic base is now included in the mounting tray kit and the mounting cassette kit.

For reference set

Page 12 : Telephone number coding:

Please add the following note to point 6.:

If the password includes the digit "0" the button **#** should be used instead of **0**.

(This means if the password is 307 you must press **3**, **#**, **7** and the display reads 3_7).

Chapter: CPH860903 (Operating instructions).

Page 10, line 4 : This line should read:
from the bottom "Each telephone number that you wish to store may contain a maximum of 20 digits".

Page 10 : Please add the following note:
at the bottom In Switzerland the number 90000 (Swedish emergency number) will appear if short number address 99 is dialed.

Page 11, sect. A : Please add:
If call transfer to a certain subscriber number is activated (special PTT-service) the subscriber number is stored in short number address 98.

Page 16, sect. f : The mobile telephone does not return to the HI EFFECT function. The selected function is remembered after the mobile telephone has been switched ON/OFF.

Note: When LO EFFECT is selected and an external power supply is connected to the portable kit the mobile telephone automatically transmits with HI EFFECT eventhough the display reads LO EFFECT. This only happens when the portable kit (handle+battery pack) is version 2.

Page 17 : Add to the section A. Locking level 1:
Switzerland: It is not possible to call any number which begins with: 00 or 114.

Add to the section B. Locking level 2:
Under the part "Emergency numbers which are allowed": Switzerland: 117,118,144 and 140.

Chapter: 860904 (Radio unit).

Please replace the pages 1, 15-18, and 39-45 with the enclosed new pages.

Page 19 : Please add at the bottom of this paragraf:

(" 4 " → " 0 ")

Note: If the digit "0" is included in the password use the button " # " instead of " 0 ".

Page 23, step 3 : Please correct so that it reads:

Line 2: - Set the signal generators output frequency to 9350125MHz, 1kHz modulation, 3kHz deviation and the level to 10uV_{emf}.

Line 6: - Adjust R77 on the IF/AF module (unit 2) until the first two digits show approx. 6B (HEX).

Chapter: CPH860905 (Handset).

Pages 11-13 : Please replace the pages 11-13 with the enclosed pages.

Chapter CPH860906 (Portable kit - ap4000 series).

A new version of the portable kit has been introduced. Please place the enclosed new chapter CPH861206 as chapter 9 in the manual.

Ersetzt; 96 sat