Repair Manual

First Line Repair

Ascom a71 Alarm Transceiver and Ascom p71 Transceiver

2007-10-19/ Ver. A

Contents

1 Introduction

This repair manual is designed as a guide for the replacement of the casing. All other types of repair shall be made by the Ascom Service and Repair Department in Herrljunga.

Refurbish of the Ascom a71 Alarm Transceiver and Ascom p71 Transceiver may only be performed by service personnel with adequate training.

Note: Repair of intrinsicallysafe products (ATEX/IECEx) is only allowed at the Ascom Repair Centre in Herrljunga.

Note: Read the entire document before attempting to replace the casing.

Information about the General Service Policy, Repair Procedures, Spare Prices etc. can be found under *After Sales* on Ascom Wireless Solutions Extranet.

Information about Training policy, training program, course levels and actual courses can be found under *Training* on Ascom Wireless Solutions Extranet.

For configuration of the Alarm Transmitter, refer to the *User Manual, Ascom a71 Alarm Transceiver and Ascom p71 Transceiver, TD 92419GB*.

2 Exploded View and Spare Parts List

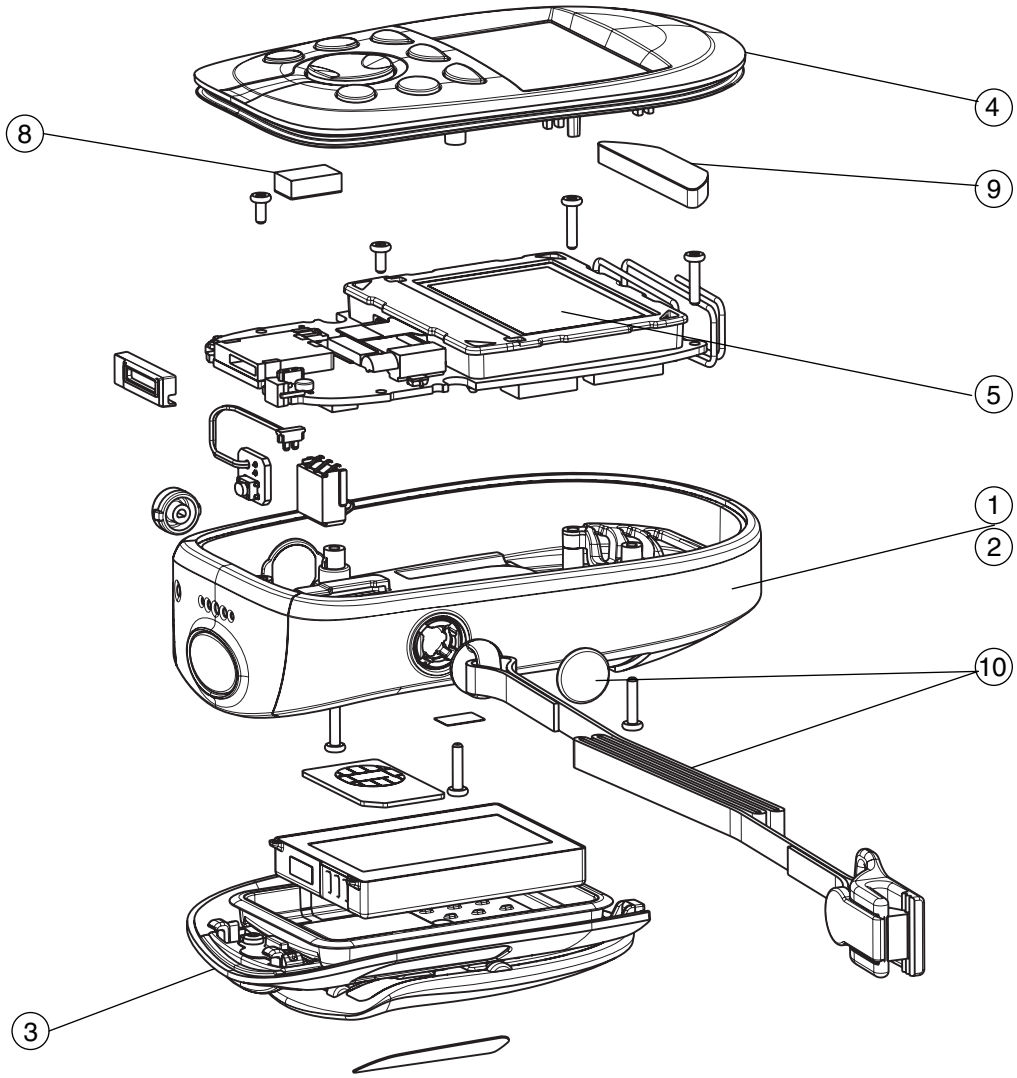

Figure 1. Exploded view a/p71

	Description	a/p71 Steel Grey	a/p71 Ice Blue
1	Frame complete	R901302	R901303
2	Frame complete alarm	R901304	R901305
3	Cover rear complete	R281767	R281768
4	Cover front complete	R281750 R490720 R490681	R281751 R490720 R490681
5	Display complete	R900933	R900933
8	Foam adhesive keypad connector	R490720	R490720
9	Foam adhesive antenna	R490681	R490681
10	Pull cord alarm complete	R281800	R281801

3 Replace the Casing

3.1 Preparations

3.1.1 Tools required

- DEPRAG 345-408U pneumatic screwdriver or one of equal quality
- Clean, anti-static, compressed air with a pressure of at least 6 bar
- ESD band and static free environment
- A pair of tweezers (to avoid touching, contacts, PCB etc with greasy fingers)
- Gloves (to avoid touching, contacts, PCB etc with greasy fingers)
- Screws which are recommended to be exchanged:
  2 short (4 mm, art.no R300532) for the circuit board.
  3 long (8 mm, art.no R300533) for the front and
  2 long for the circuit board.
- Portable Device Manager (PDM) software PDM-SB, for test purpose.
- User Manual Ascom a71 Alarm Transceiver and Ascom p71 Transceiver TD 92417GB)

3.1.2 Important points to consider

- The screwdriver must be calibrated
- Re-calibration must be done on a regular basis, after about every 500 handsets
- Screws shall be tightened with a torque of 9 ± 0.5 Ncm
- Never re-tighten screws. You will get the right compression if the screws are tightened in one action. Re-tightening will build up too much force in the casing and may cause it to crack in the long run.
- The screw head is TX6

Note: The importance of tightening the screws correctly.

Using the correct torque when tightening the screws is important for the IP-classification and for the overall strength and durability of the handset. The speed of the screwdriver is also important. A high speed tool will make better threads.

3.2 Disassemble

Note: Read all instructions before attempting to demount the Transceiver!

Figure 2. Disassembled Transceiver

3.2.1 Rear

1 If available for the unit, remove the pull-cord

2 Open the rear by pulling the plastic plate upwards.----gör pil-----

Figure 3. Opening the Transceiver rear

3 Remove the battery from the Transceiver.

Figure 4. Removing the battery

4 Remove the warranty seal. Clean the plastic with spirit to remove all traces of the warranty seal.

Figure 5. Removing the warranty seal

5 If existing, remove the pull-cord.

3.2.2 Front

1 Release the three screws holding the front.

Figure 6. Releasing the three screws holding the front cover

2 Turn the Transceiver and use the pair of tweezers to carefully pinch up the front. Be careful not damaging the TPE rubber and the flat keypad cable, which is very short!

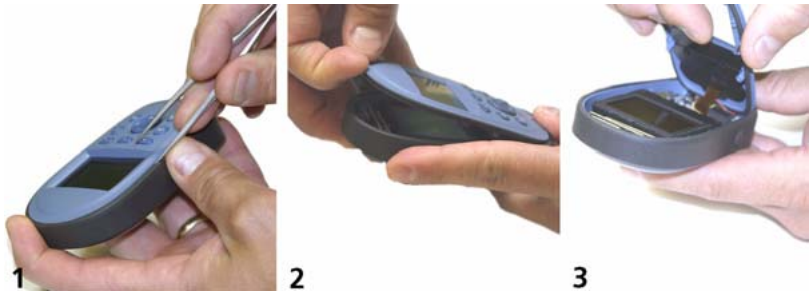

Figure 7. Opening the front cover

3 Lift very carefully off the keypad cable contact with the pair of tweezers and remove the front entirely.

3.2.3 Display

1 Lift carefully off the display cable with the pair of tweezers, then loosen the display in all four corners with the pair of tweezers and remove it.

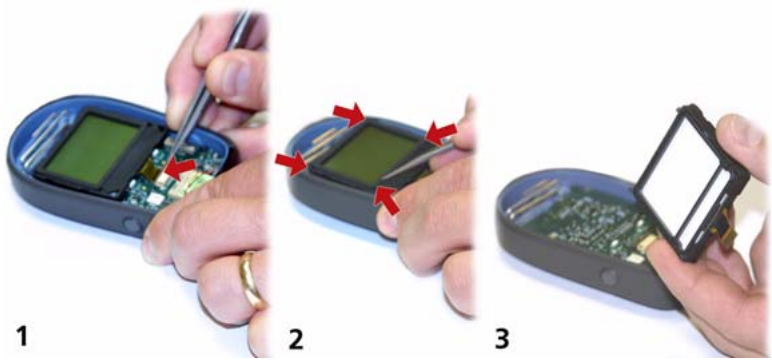

Figure 8. Removing the display

3.2.4 Circuit board

1 Lift off the alarm button contact with the pair of tweezers.

Figure 9. Removing contact for alarm button

2 Release the four screws (two long and two short) on the circuit board.

Figure 10. Releasing the four screws holding the circuit board

3 Lift carefully off the antenna from the snap-on holders with the pair of tweesers, then carefully lift out the printed circuit board backwards.
Be sure to keep the rubber sealing of the loudspeaker in place while removing the circuit board.

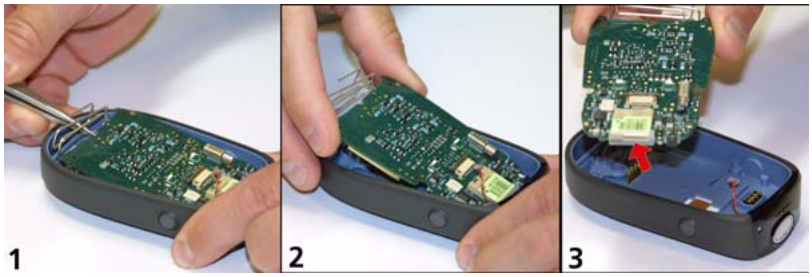

Figure 11. Removing the PCB

4 Lift out the push-button alarm contact with the pair of tweezers.

Figure 12. Lifting out the push-button alarm contact

3.2.5 Battery connector

1 Remove the battery connector by pushing it out with the pair of tweezers, or use gloves. Avoid touching the gold plating with your fingers.
Then turn the unit and lift out the battery connector.

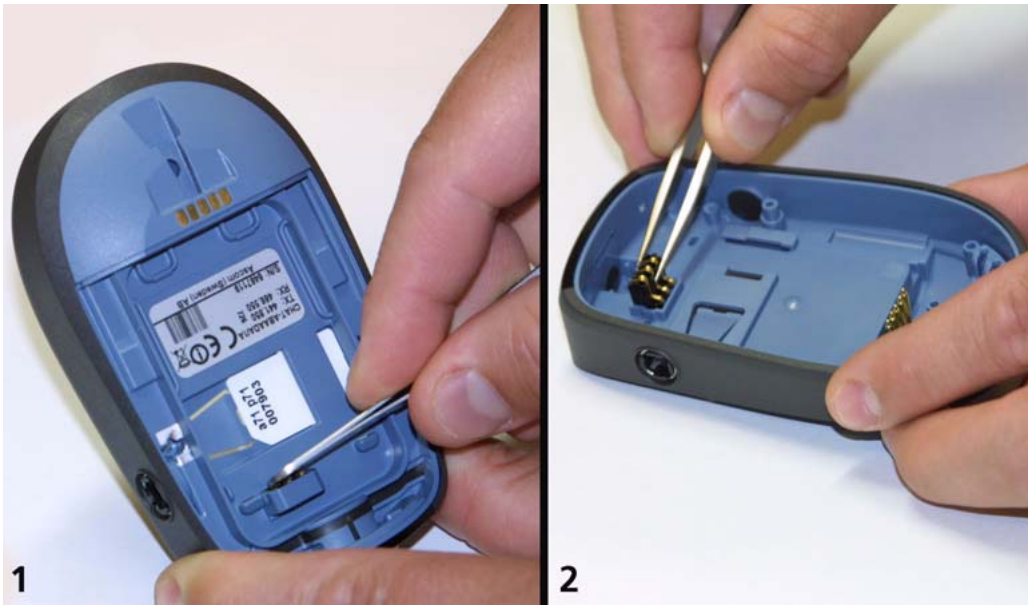

Figure 13. Removing the battery connector

2 Remove the SIM card.

Figure 14. Removing the SIM card

3.3 Assemble

Note: Read all instructions before attempting to assemble the Transceiver.

3.3.1 Battery connector

1 Insert the battery connector. Avoid touching the gold plating with your fingers. It is recommended to use a pair of tweezers or gloves.

Figure 15. Inserting the battery connector

2 Insert the push-button alarm contact.

Figure 16. Inserting the push-button alarm contact

3.3.2 Circuit board

3 Insert the printed circuit board. Be sure to hold the rubber sealing of the loudspeaker in place. Note that the cable must run in the cut in the circuit board.

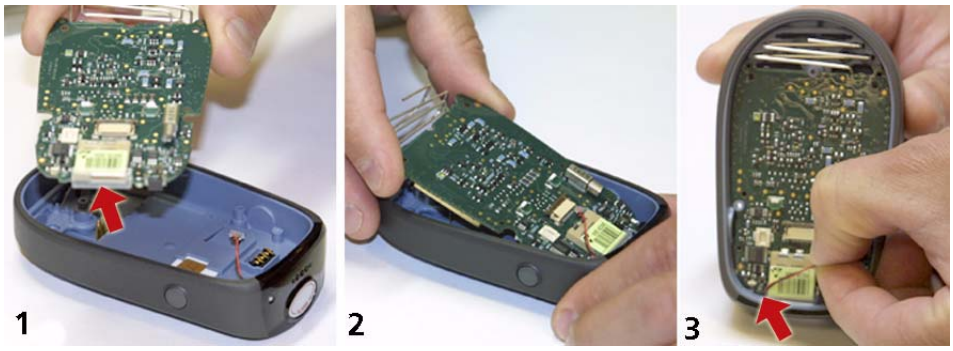

Figure 17. Inserting the printed circuit board. Mind the rubber sealing of the loudspeaker and that the cable runs in the cut.

4 Gently press the push-button alarm contact into its position. This can either be done with the tweesers or just with the fingers. The cable must run as in the figure.

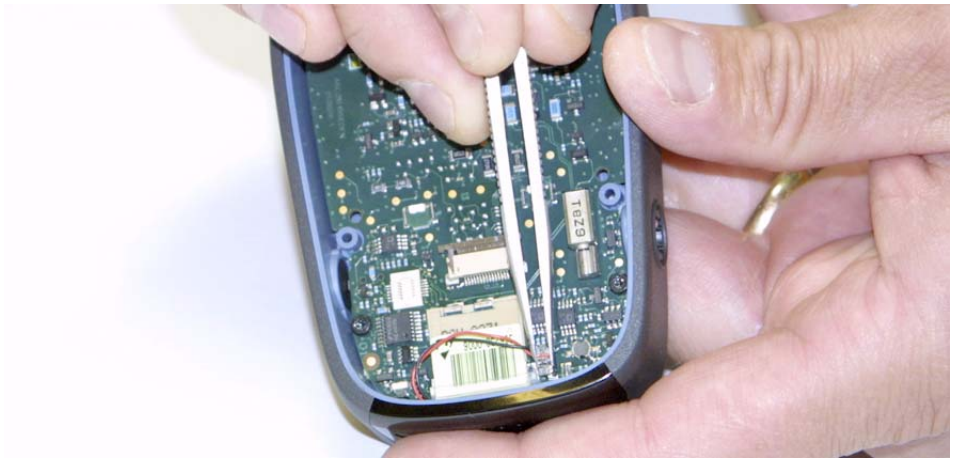

Figure 18. Attaching the push-button alarm to the PCB

5 Push carefully the antenna back into the two snap-on holders.

Figure 19. Carefully attaching the antenna into the snap-on holders

6 Fasten the PCB with four screws (two long 8 mm and two short 4 mm). Screws from the old Transceiver may be used. All screws shall be tightened with the torque of 9 ± 0.5 Ncm.

Figure 20. Fastening the three screws holding the circuit board

3.3.3 Display

7 Remove the transparent protection film from display, then insert it in the unit. Press gently on all four corners. Finally push back the display contact.

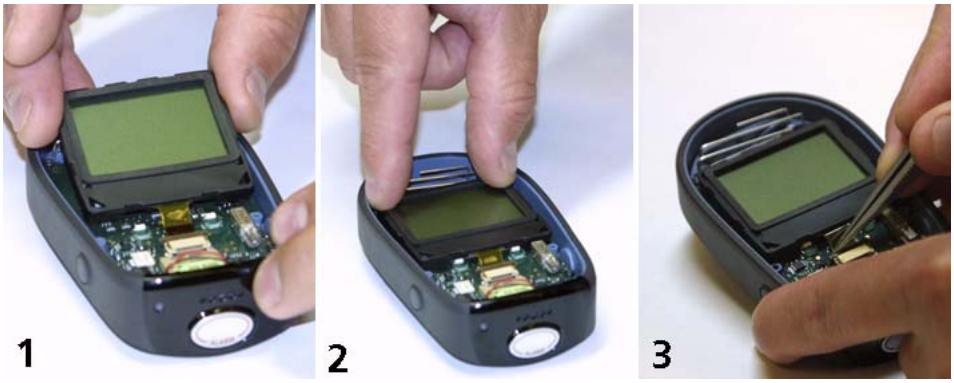

Figure 21. Inserting the display

8 Use clean anti-static compressed air to clean the inside of the front and frame.

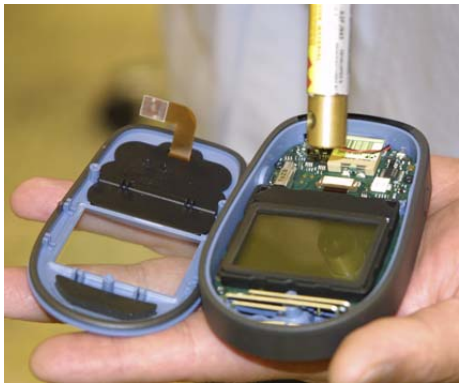

Figure 22. Cleaning with compressed air

3.3.4 Front

9 Fasten the keypad contact and, if not already mounted, the adhesive foam on top of it.

Figure 23. Fastening the keypad contact and if applicable, the adhesive foam

10 .Close the front and press it gently in place. Be sure not to pinch the cable!

Figure 24. Closing the front. Be sure not to pinch the cable!

11 Turn the unit around and fasten the front with three new 8 mm screws. Screws from the old Transceiver may not be used. All screws shall be tightened with the torque of 9 ± 0.5 Ncm.

Figure 25. Fastening the front cover

12 If desired put on a new warranty. If not already done, clean the plastic with spirit to remove all traces of the old warranty seal, then put on the new.

13 Insert the SIM by pressing down the plastic plate.

Figure 26. Inserting the SIM

14 Insert the battery.

Figure 27. Inserting the battery

15 Fasten the rear, note the hooks, and close the unit. Push the plastic plate downwards.

Figure 28. Closing the Transceiver

16 If available for the unit, attach the pull-cord and the adhesive for the display protection film.

Figure 29. Assembled Transceiver

Visual Check

1 Check the Transceiver for scratches in the plastics, fingerprints or dust in the display window etc.

4 Function Test

Always assure that the Transceiver is assembled correctly and that it is still functioning.

1 Press each key on the keypad and make sure that each button gives the right tactile feeling.

2 It is recommended to test the Transceiver in a test system. There are many solutions to such a system, below is one example of a test system.

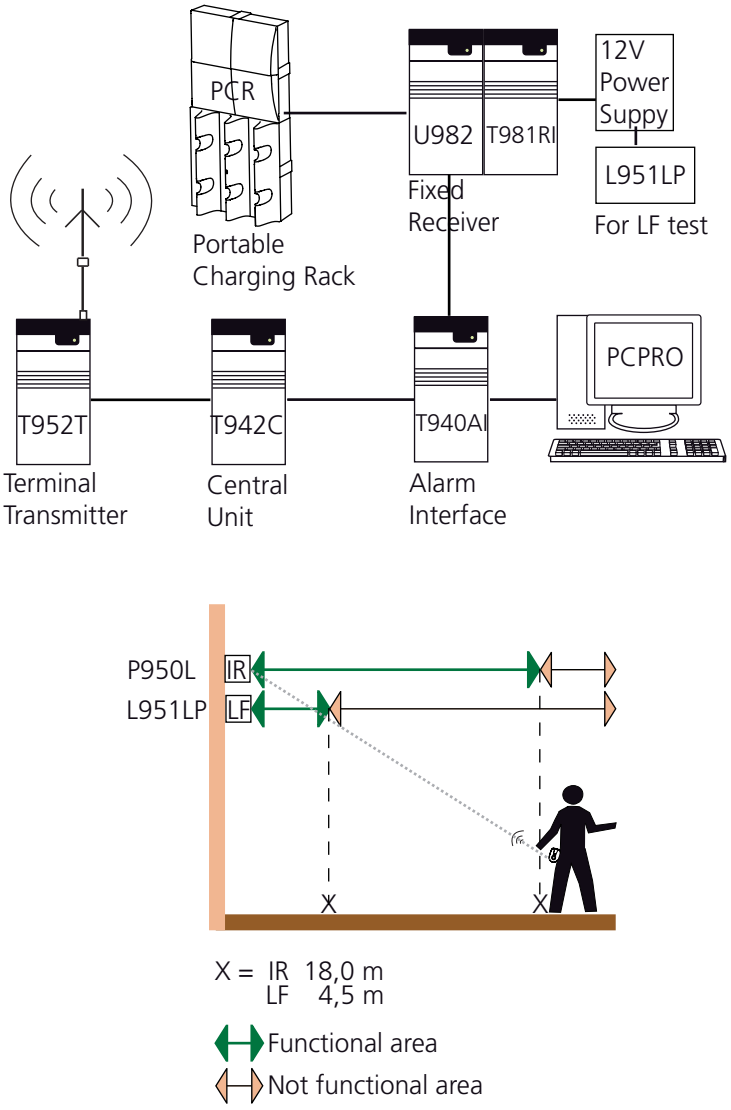

Figure 30. Example of a test system.

3 Press the alarm button and test the alarm functionality. Check that the button gives the right tactile feeling.

4 Check that the "Allow test mode" parameter for the Transceiver is activated in the Portable Device Manager (PDM-SB) software, see figure below:

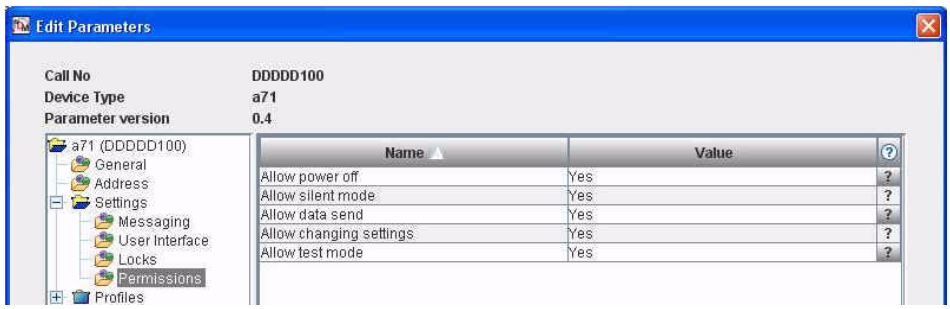

Figure 31. Allowing test mode for the transceiver.

5 Test the graphical user interface (GUI).
On the Transceiver, select Settings > System > Test > GUI Test. Then perform the following tests in the scroll list:

- Test Bleeper
- Test Green LED
- Test Red LED
- Test Vibrator - stop the vibrator with the "Mute" button to test the functionality and tactile feeling of this button.
- Test Backlight
- Test Display

6 Test the Location function, if available for the Transceiver:
Select Settings > System > Test >

- Location

7 Test the Man-down & No-movement alarm respectively, if available for the Transceiver:
Select Settings > Alarm Settings >

- M-Down Alarm
- No-movement Alarm

Above way of testing the Man-down & No-movement alarm is recommended (instead of "MD/NM test") because it evaluates each alarm separately.

8 Test the Pull-cord alarm, if available for the Transceiver:
Select Settings > Alarm Settings >

- Pull-cord alarm
- Check if the pull-cord clip is damaged

The pull-cord must be attached more that 5 seconds to generate an alarm.

9 If Pull-cord alarm *not* is tested:

- Test the security string (the pull-cord is also used as a security string)
- Check if the security string clip is damaged

10 Test IR. Define the test area in the test system that fulfills acceptable coverage with a fully working Transceiver, , see figure 30 on page 15. Then test the repaired unit. The best way to measure the coverage is to move from a "Not functional area" to a "Functional area" in the test system.

11 Test LF, same as IR, but with another area, see figure 30 on page 15.

5 Related Documents

User Manual, Ascom a71 Alarm Transceiver and Ascom p71 Transceiver	TD 92419GB
Data Sheet, Ascom a71 Alarm Transceiver and Ascom p71 Transceiver	TD 92410GB
Configuration Manual, Ascom a71 Alarm Transceiver and Ascom p71 Transceiver	TD92439GB
Quick Reference Guide, Ascom a71, Ascom p71 Alarm and Messaging Units	M2076030
Installation and Operation Manual Portable Device Manager (PDM), Windows version	TD 92325GB

6 Document History

For details, see change bars in the document.

Version	Date	Description
A	2007-10-19	First version