

# **PAMS Technical Documentation**

## **NHX-7 Transceivers**

# **Chapter 7**

## **Service Tools**

### AMENDMENT RECORD SHEET

Amendment Number	Date	Inserted By	Comments
	<b>10/97</b>		Original

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## Battery Adapter BDC-3

The Battery Adapter BDC-3 is used along with an external battery capacity meter to check battery capacity.

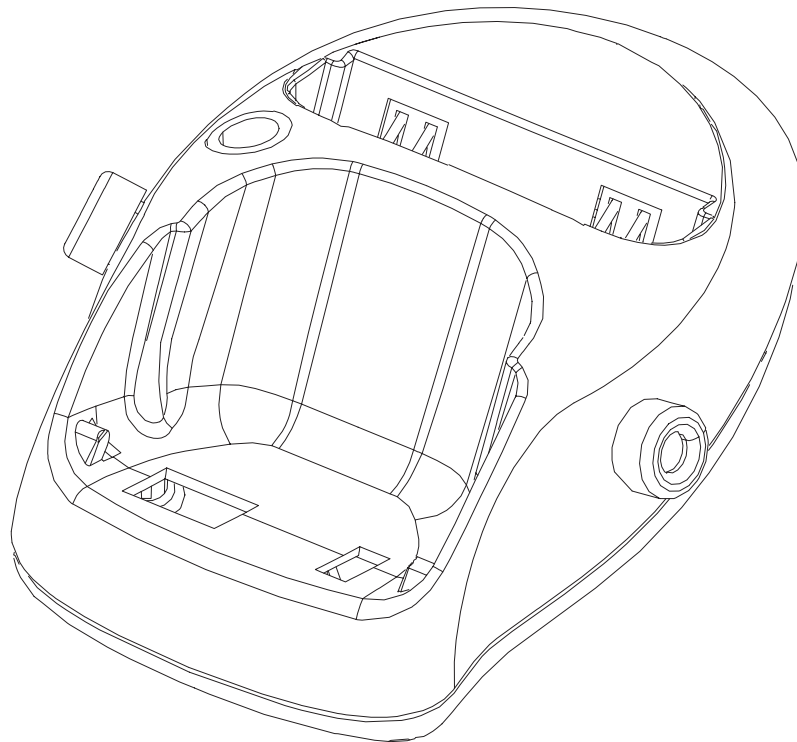
Note that Li-ion batteries have an internal protection circuit to prevent deep discharge.

### Product Code

Battery Adapter BDC-3:

0770083

### View of BDC-3



## Service Battery BBD-3

The Service Battery BBD-3 is used in place of the phone's normal battery during service, to supply a controlled operating voltage to the phone for current and charger calibration, and is also required when flashing the phone.

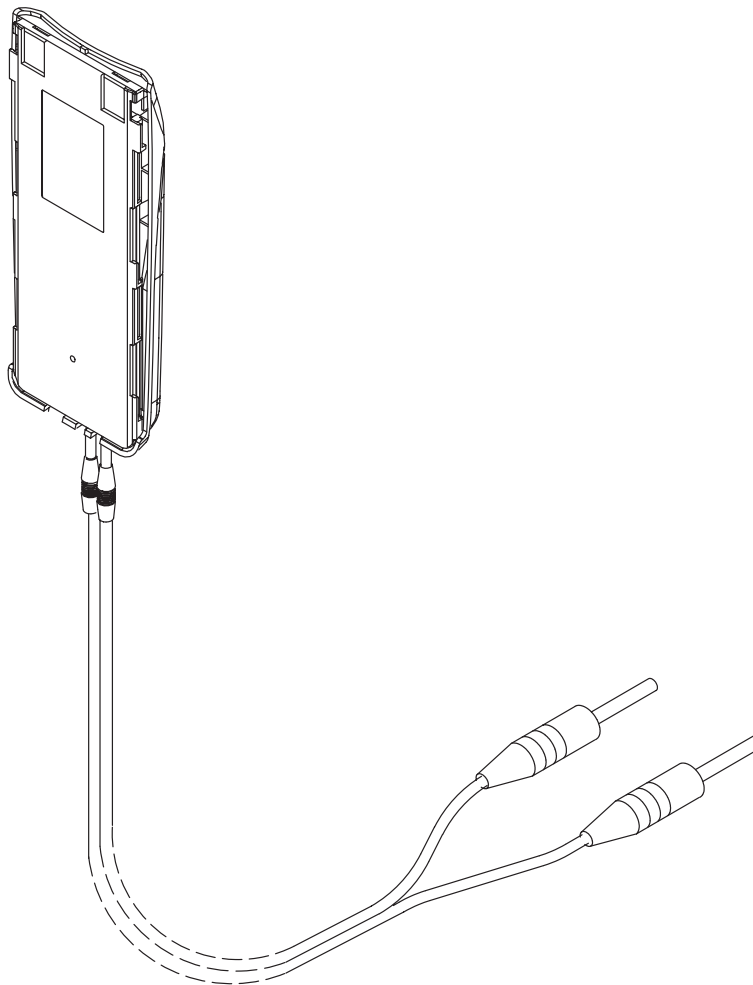
Note that the cable SCB-3 (0730114) is also required for charger calibration.

### Product Code

Service Battery BBD-3:

0775071

### View of BBD-3



## Test Frame JSU-7

The Test Frame JSU-7 is used to troubleshoot and repair both system/RF and UIF modules of NHX-7 phones. \*

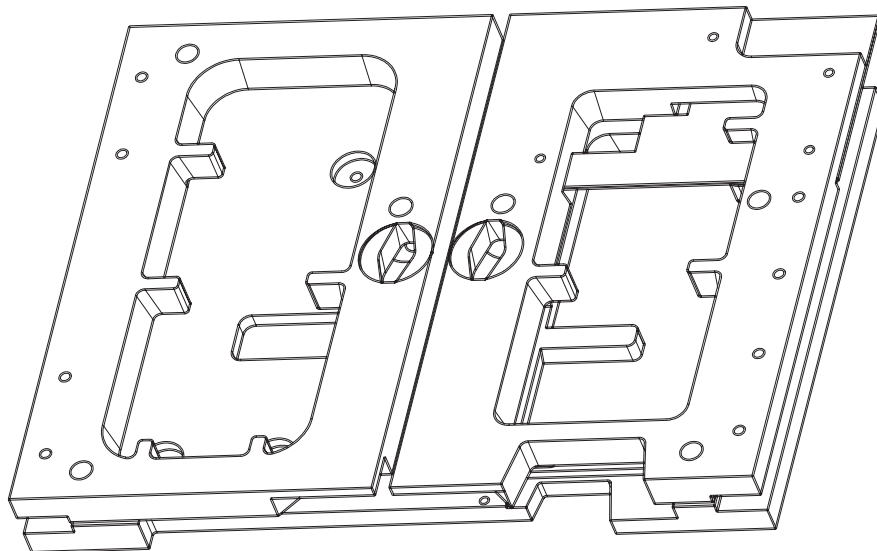
Test frame includes power connector, RF connector, test rip and possibility to set UI-module internal/external control by jumpers.

### Product Code

Light Module Jig JSU-7:

0770159

### View of JSU-7



\*) Connect the External antenna cable SCX-7, service Cable SCH-5, and the DC Cable PCS-1 to the JSU-7 jig.

The service cable SCH-5 can be replaced by the DAU-9P cable.

**Note:** The nominal supply voltage for JSU-7 is +3.6 V.  
The supply voltage must not exceed +5.0 V.

### Rip connector layout

Pin	Line Symbol	Parameter	Notes
1			Not connected !
2			Not connected !
3			Not connected !
4			Not connected !
5			Not connected !

Pin	Line Symbol	Parameter	Notes
6			Not connected !
7	ROW0	Keyboard matrix row 0	
8	ROW1	Keyboard matrix row 1	
9	ROW2	Keyboard matrix row 2	
10	ROW3	Keyboard matrix row 3	
11	COL0	Keyboard matrix column 0	
12	COL1	Keyboard matrix column 1	
13	COL2	Keyboard matrix column 2	
14	COL3	Keyboard matrix column 3	
15	XPWRON	Power on/off detection line	
16	GND	Analog ground	
17	KEYBLIGHT	Illumination control	External control If jumper X7 assembled to position 1.
18	LCDBLIGHT	Illumination control	External control If jumper X8 assembled to position 1.
19	VBATT_OUT	Battery voltage line to current meter	If jumper X9 assembled.
20	VBATT_IN	Battery voltage line from current meter	
21	LCDCLK	Display driver clock (external)	
22	SCLK	Mux'd LCD serial dataclock	
23	LCDENX	Display driver enable	
24	LCDDC	Mux'd LCD data or command	
25	LCSDA	Mux'd LCD driver serial data	
26	LCDRES	Reset for display driver	
27	VL	LCD voltage	
28	BUZZER	Buzzer PWM control	External control If jumper X10 assembled to position 1
29	GND	Analog ground	
30	GND	Analog ground	
31	DGND	Digital ground	
32	DGND	Digital ground	
33	EARN	Speaker negative	
34	EARP	Speaker positive	
35			Not connected !
36			Not connected !

### Jumper connections

Jumper X7 sets the control source of the keyboard backlight. When jumper assembled to position 1, external source is selected. When position 2 selected, internal (phone) control is selected.



Jumper X8 sets the control source of the LCD backlight. When jumper assembled to position 1, external source is selected. When position 2 selected, internal (phone) control is selected.

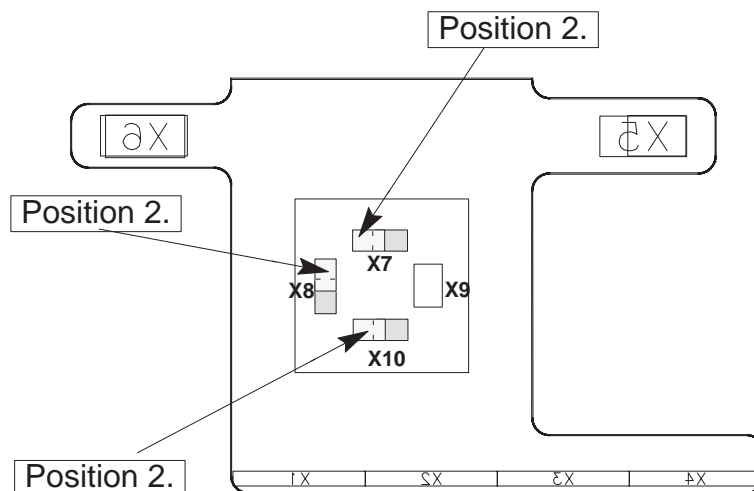
Jumper X9 sets the current measuring ability on/off. If jumper is assembled, internal (phone) control without current meter is selected. If jumper has not been assembled, current measurement option is selected. The current meter shall be placed between pins 19 and 20. Battery supply comes from the phone.

Also it is possible to supply battery voltage to directly to UI-module. Then the supply voltage shall be connected to pin 20. The jumper shall not be assembled.

Jumper X10 sets the control source of the buzzer PWM signal. When jumper assembled to position 1, external source is selected. When position 2 selected, internal (phone) control is selected.

**Note: The default setting for jumpers X7,X8 and X10 is position 2 and jumper X9 is assembled.**

#### View of JSU-7 MS3\_01 switching PCB (2/2 rear side)



## RF cable SCX-7

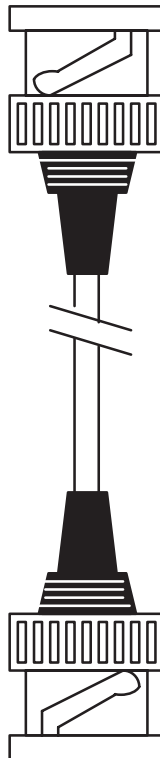
50 ohm coaxial cable SCX-7, length of 0.7 m is used to connect the antenna connector of the test jig JSU-7 to RF-measuring equipment. JSU-7 is a service jig for NHX-7 ETACS handportable phone.

### Product Code

RF cable SCX-7:

0770161

### View of SCX-7



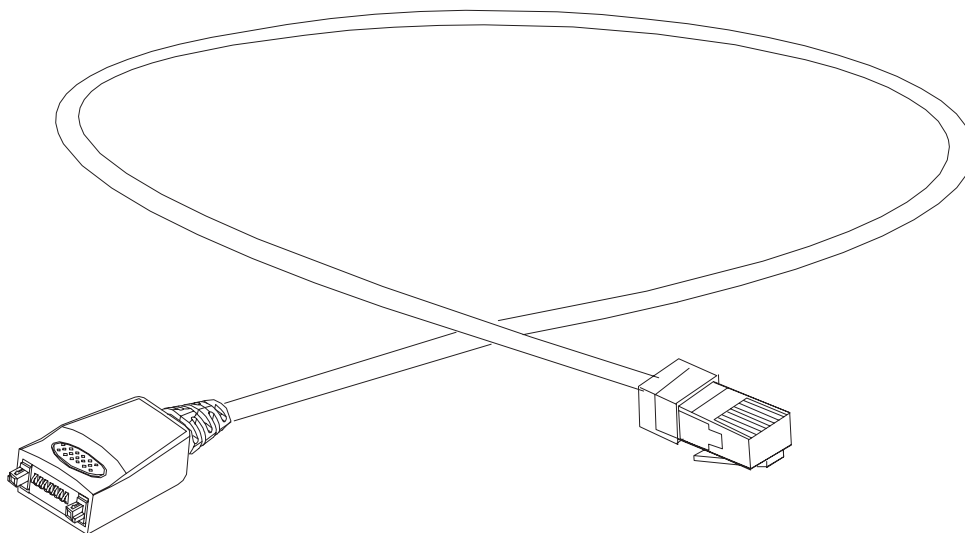
## Service Cable SCH-5

The Service Cable SCH-5 is used between the phone and modular T-adapter.

### Product Code

Service Cable SCH-5: 0730098

### View of SCH-5



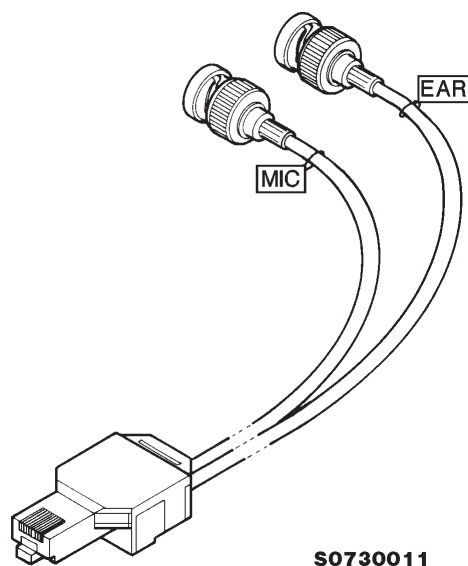
## Audio Cable ADS-1

Audio cable is an adapter routing AF signals (MIC/EAR) from 8 pin modular connector to two BNC connectors. It is used to connect SCH-5 and DAU-9S.

### Product code

Audio Cable ADS-1: 0730011

### View of ADS-1



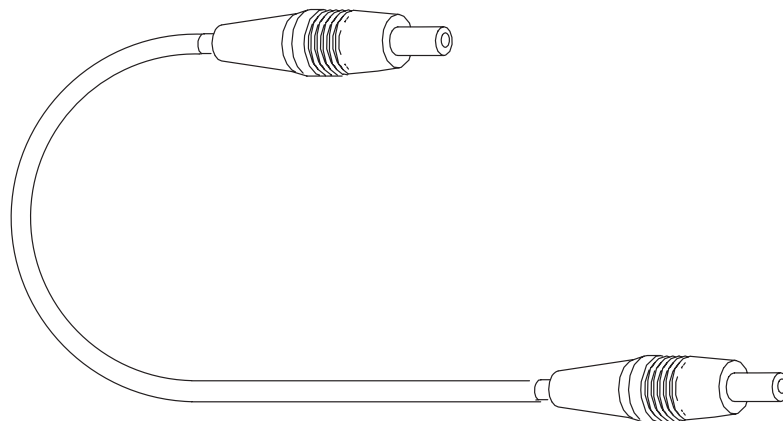
## DC Cable SCB-3

The DC Cable SCB-3 is used to connect the Service Battery to the charger connection Vin of the phone when doing the charger calibration service procedure.

### Product Code

DC Cable SCB-3: 0730114

### View of SCB-3



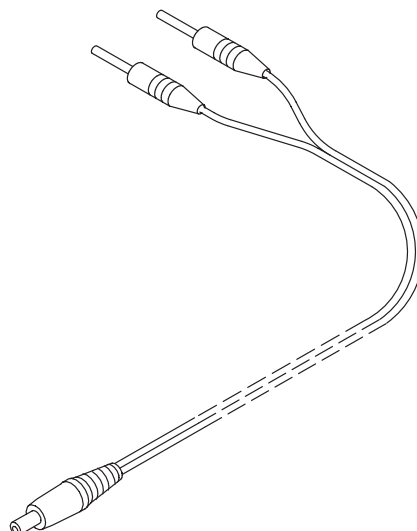
## Power Cable PCS-1

The Power Cable PCS-1 is used to connect the module jig JSU-7 to external power supply.

### Product Code

Power Cable PCS-1: 0730012

### View of PCS-1



## Antenna Adapter AAT-7X

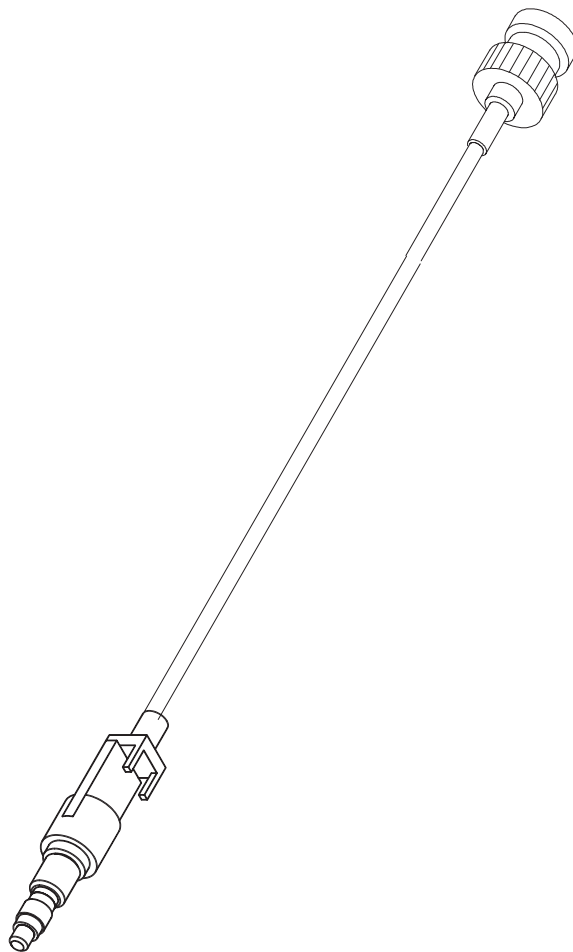
The Antenna Cable is used to connect the transceiver to measuring equipment during tuning.

### Product Code

Antenna Adapter AAT-7X:

0770162

### View of AAT-7X



## MBUS Cable DAU-9S

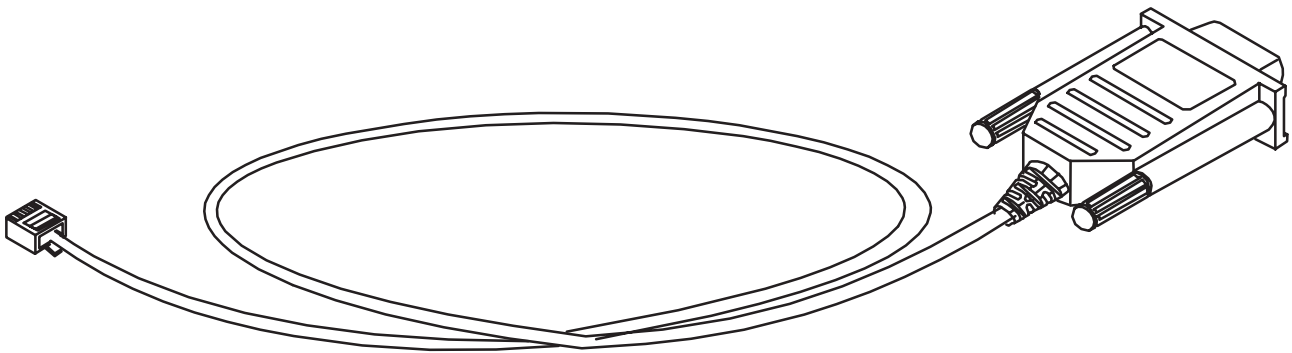
The MBUS Cable DAU-9S has a modular connector, and is used with the modular T-adapter.

### Product Code

MBUS Cable DAU-9S:

0730108

### View of DAU-9S



## MBUS Cable DAU-9P

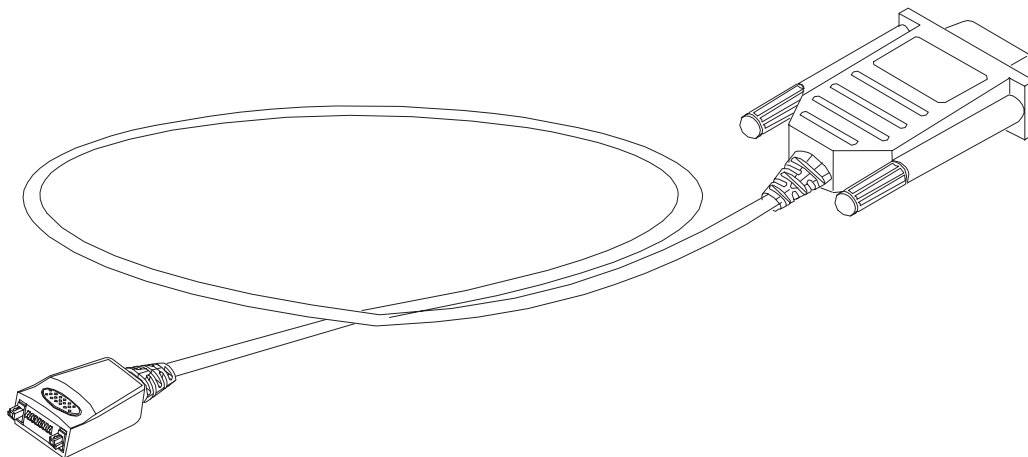
The MBUS Cable DAU-9P has a phone system connector, and is used between the phone and external devices.

### Product Code

MBUS Cable DAU-9P:

0730109

### View of DAU-9P



## Modular Cable XCM-1

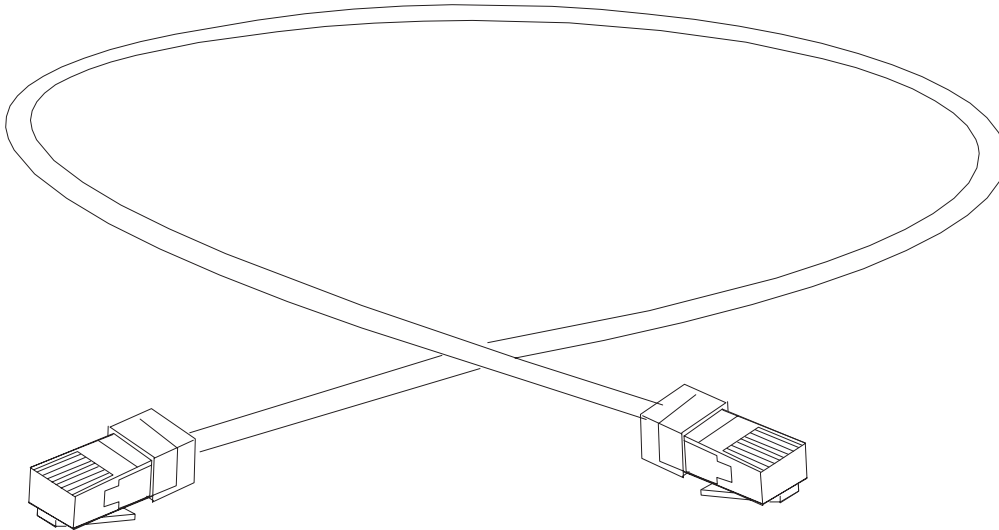
The modular Cable XCM-1 is a standard 1m long 8-core flat cable with male modular-8 connectors in both ends.

### Product Code

Modular Cable XCM-1

4626131

### View of XCM-1



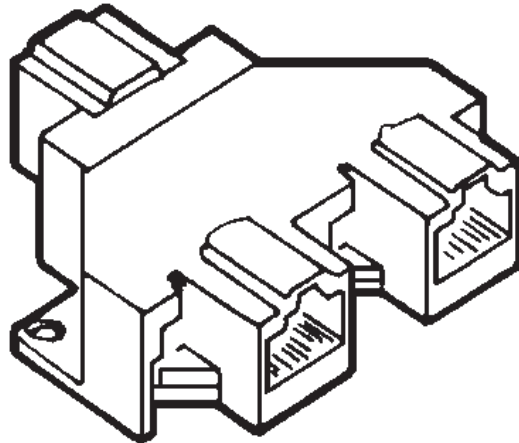
## Modular T-adapter

The modular T-adapter is a suitable branching unit to provide the needed parallel modular connections.

### Product Code

Modular T-adapter: 4626134

### View of Modular T-adapter



## SW Security Device PKD-1

SW security device is a piece of hardware enabling the use of the service software when connected to the parallel (LPT) port of the PC. Without the dongle present it is not possible to use the service software. Printer or any such device can be connected to the PC through the dongle if needed.

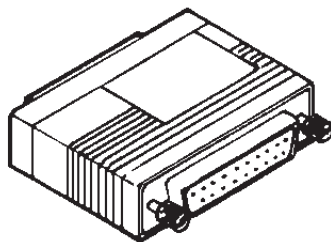
*Caution: Make sure that you have switched off the PC and the printer before making connections!*

*Caution: Do not connect the PKD-1 to the serial port. You may damage your PKD-1!*

### Product Code

SW Security Device PKD-1: 0750018

### View of SW Security Device



**G0750018**

### View of DAU-9P