4 — Service Tools and Service Concepts

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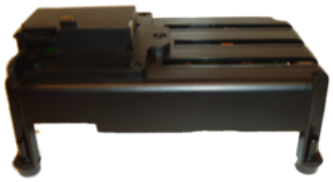
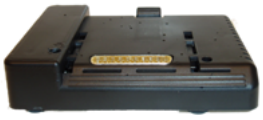
Service tools

List of Service Tools

The table below gives a short overview of service tools that can be used for testing, error analysis and repair of product , refer to various concepts.

<table>
<tr><td rowspan="2">  </td><td>AD-23FS</td><td>Flash adapter</td><td>0780391</td></tr>
<tr><td colspan="3">AD-23FS has the following features:
• Provides galvanic connection to terminal test pads
• Provides standardized interface towards Control Unit
• Provides RF connection using galvanic connector or coupler
Multiplexing between USB and FBUS media, controlled by Vusb</td></tr>
<tr><td rowspan="2"> </td><td>CA-35S</td><td>power cable</td><td>0730327</td></tr>
<tr><td colspan="3">The power cable CA-35S is used to power up the interface adapter SS-46.</td></tr>
<tr><td rowspan="2">  </td><td>CU-4</td><td>Control unit</td><td>0770831</td></tr>
<tr><td colspan="3">CU-4 is a general service tool used with a module jig and a flash adapter.
CU-4 requires an external 12 V power supply.
The unit has the following features:
• software controlled via USB
• EM calibration function
• Forwards FBUS/Flashbus traffic to/from terminal
• Forwards USB traffic to/from terminal
• software controlled BSI values
• regulated VBATT voltage
• 2 x USB2.0 connector (Hub)
• FBUS and USB connections supported</td></tr>
</table>

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DKU-2	USB connectivity cable	0730238
USB to Pop-Port™ connector cable.		

FPS-10	Flash prommer	0080321

FPS-10 interfaces with:

- PC
- Control unit
- Flash adapter
- Smart card

FPS-10 flash prommer features:

- Provides flash functionality for BB5 terminals
- Smart Card reader for SX-2 or SX-4
- Forwards USB traffic through it
- Provides USB to FBUS/Flashbus conversion
- Provides LAN to FBUS/Flashbus and USB conversion
- Vusb output switchable by PC command

FPS-10 sales package includes:

- FPS-10 prommer (0770503)
- Power Supply with 5 country specific cords (0675525)
- USB cable (0730322)

JBT-9	Bluetooth test and interface box (sales pack)	0081490

The JBT-9 testbox is a generic device to perform Bluetooth bit error rate testing and doing cordless FBUS connection via Bluetooth. An ACP-8x charger is needed for BER testing and AXS-4 cable in case of cordless testing interface usage.

- JBT-9 testbox (0770336)
- Installation and warranty information (9360613)

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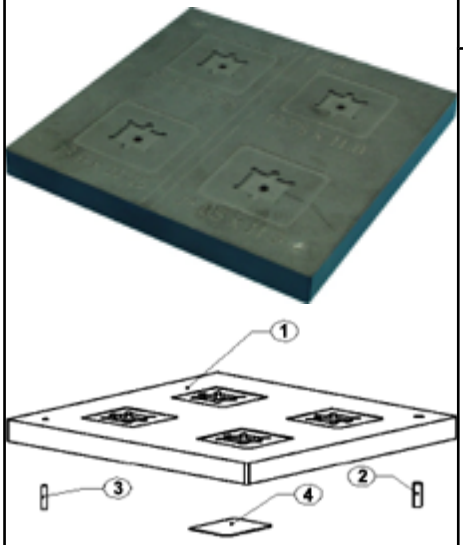
MJ-26	Module jig	0770833

MJ-26 is meant for component level troubleshooting.

The jig includes an RF interface for GSM, WCDMA and Bluetooth. In addition, it has the following features:

- Provides mechanical interface with Engine module
- Provides galvanic connection to all needed test pads in module
- Multiplexing between USB and FBUS media, controlled by Vusb
- UI test interface
- MMC interface
- Duplicated SIM connector
- Audio components: IHF, MIC, earpiece
- Connector for control unit
- Access for Pop-Port™ system connector

Note: In the picture CU-4 is connected to MJ-26 . CU-4 is not part of the MJ-26 sales package and has to be ordered separately.



MJS-76	LGA rework jig	0770417

This tool is used in LGA type component reworking purposes in central service centers.

Parts list:

Part number	Part name	Material code	Drawing number	Qty
1	Frame		SME5S910	1
2	Cylindrical pin 3 x 12	640b003		1
3	Cylindrical pin 3 x 12	640B012		1
4	Type label	9380601		1

PCS-1	Power cable	0730012

The PCS-1 power cable (DC) is used with a docking station or a module jig to supply a controlled operating voltage.

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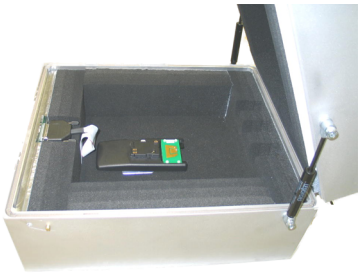
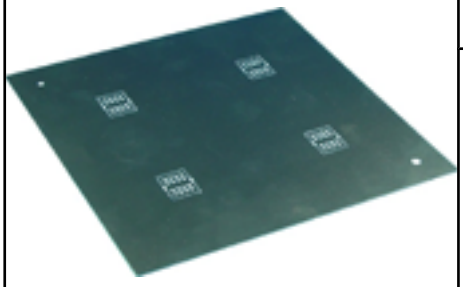
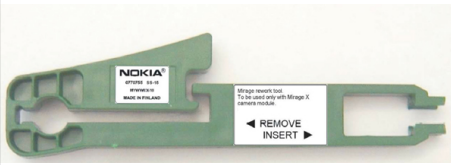
	PKD-1	SW security device	0750018
	SW security device is a piece of hardware enabling the use of the service software when connected to the parallel (LPT) port of the PC. Without the device, it is not possible to use the service software. Printer or any such device can be connected to the PC through the device if needed. **Caution:** Do not connect the PKD-1 to the serial port.		
	RF shield box	RF shield box	N/A
	Because the WCDMA network disturbs the RX side testing of the WCDMA phone and the Tx signal of the WCDMA phone can severely disturb the WCDMA network, a shield box is needed in all testing, tuning and fault finding which requires WCDMA RF signal. The shield box is not an active device, it contains only passive filtering components for RF attenuation.		
	RJ-48	Rework jig	0780365
	RJ-48 is a soldering jig used for soldering and as a rework jig for the engine module.		
	SA-64	RF coupler	0780409
	SA-64 is a coupler for WCDMA / GSM RF testing. It is used together with AD-23FS flash adapter.		
	SES-3	Stencil	4350383
	SES-3 stencil is used with MJS-76 / 0770417 and it supports the PA component. SES-3 is made for reworking purposes used in central service level.		
	SS-15	Camera removal tool	0770755
	The camera removal tool SS-15 is used to remove/attach the camera module from/to the socket on the phone PWB.		

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	SS-46	Interface adapter	0780510
	SS-46 acts as an interface adapter between AD-23FS adapter and FPS-10.		
	SX-4	Smart card	0780392
	SX-4 is a BB5 security device used to protect critical features in tuning and testing. SX-4 is also needed together with FPS-10 when DCT-4 phones are flashed.		
	XCS-4	Modular cable	0730178
	XCS-4 is a shielded (one specially shielded conductor) modular cable for flashing and service purposes.		
	XRF-1	RF cable	0730085
	The RF cable is used to connect, for example, a module repair jig to the RF measurement equipment. SMA to N-Connector ca. 610mm. Attenuation for: • GSM850/900: 0.3+-0.1 dB • GSM1800/1900: 0.5+-0.1 dB • WLAN: 0.6+-0.1dB		

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Service concepts

Flash concept with FPS-10

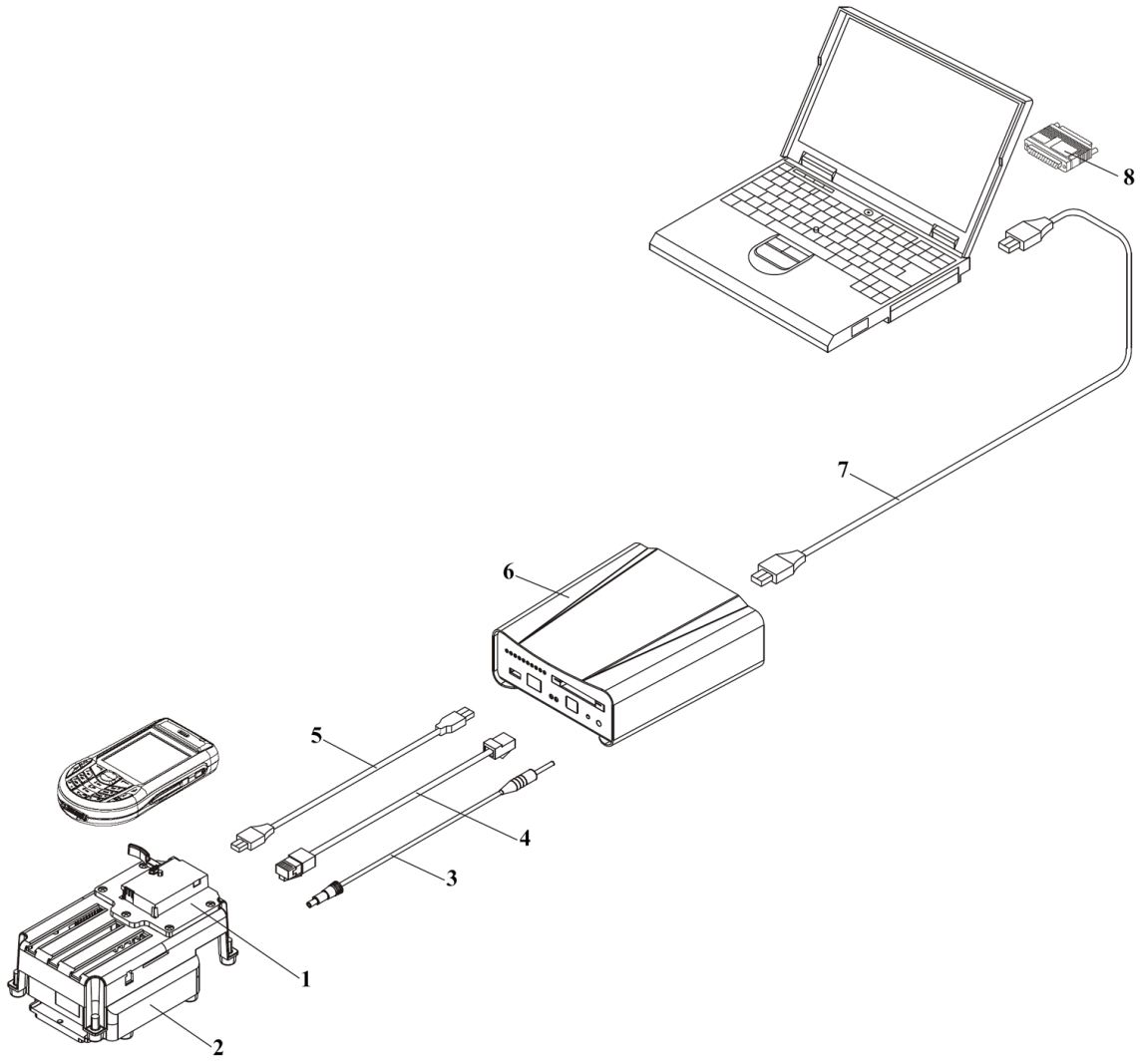

Figure 35 Basic flash concept with FPS-10

Item	Description	Type	Code
1	AD-23FS	Flash adapter	0780391
2	SS-46	Interface adapter	0780510
3	CA-35S	Power cable	0730327
4	XCS-4	Modular cable	0730178
5		Standard USB cable	
6	FPS-10	Flash prommer box	0080321
7		Standard USB cable	
8	PKD-1	SW security device	0750018

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MJ-26 module jig concept

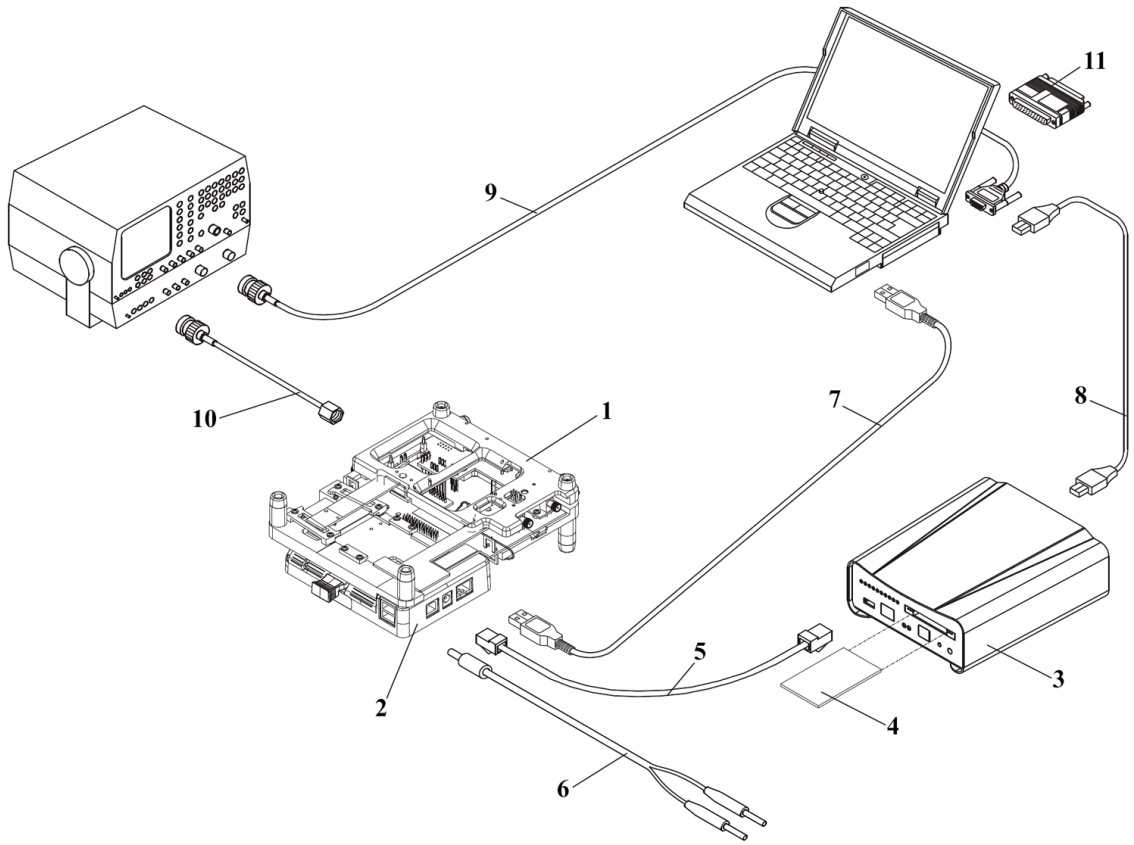

Figure 36 MJ-26 module jig service concept

Item	Type	Description	Code
1	MJ-26	Module jig	0770833
2	CU-4	Control unit	0770831
3	FPS-10	Flash prommer box	0080321
4	SX-4	Smart card	0780392
5	XCS-4	Modular cable	0730178
6	PCS-1	DC power cable	0730012
7		Standard USB cable	
8		Standard USB cable	
9		GPIB control cable	
10	XRF-1	RF antenna cable	0730085
11	PKD-1	SW security device	0750018
12		RF shield box	N/A

Note: Item 12 not shown in the picture.

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POS (Point of Sale) flash concept

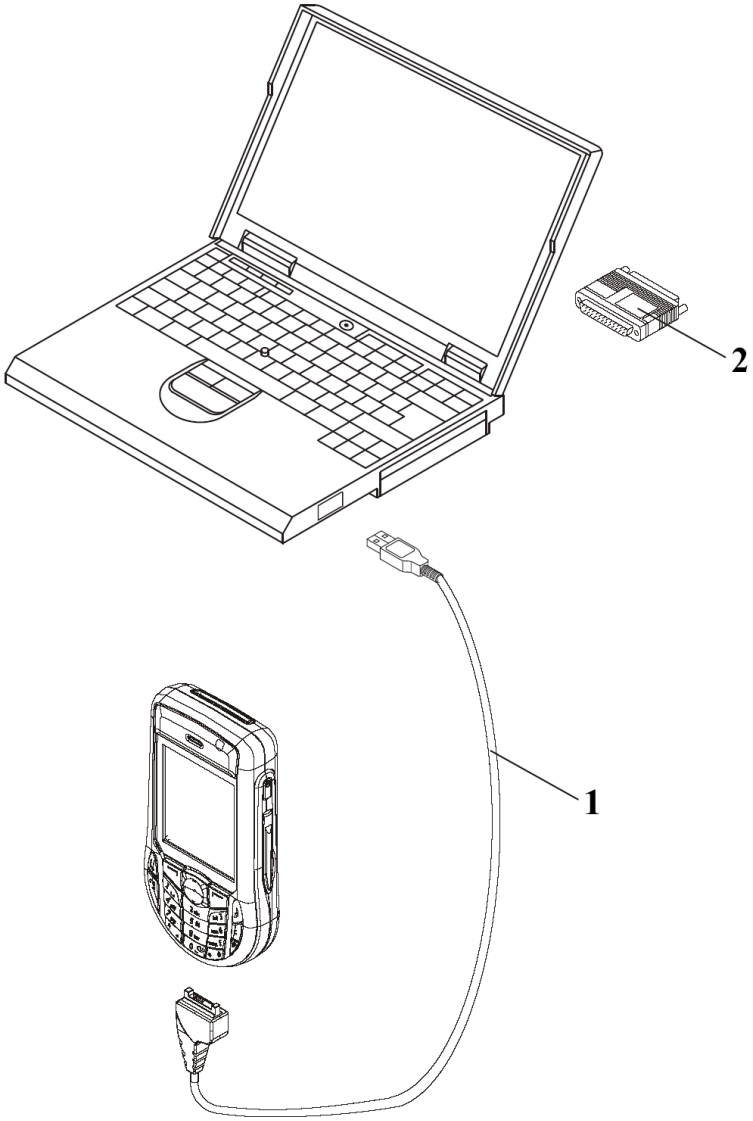

Figure 37 POS flash concept

Item	Type	Description	Code
1	DKU-2	USB connectivity cable	0730238
2	PKD-1	SW security device	0750018

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Service concept for RF testing and BB tuning

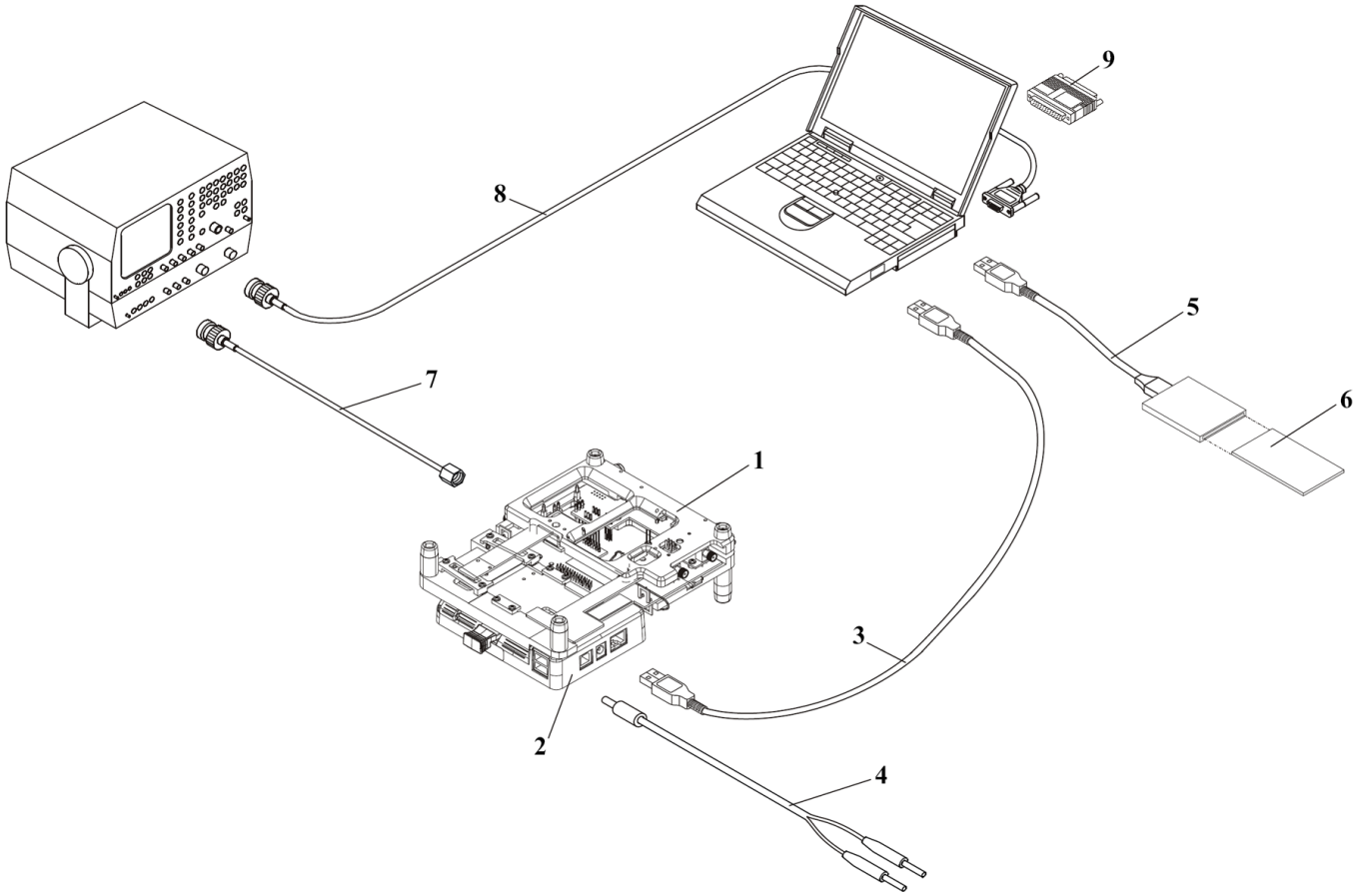

Figure 38 Service concept for RF testing and BB tuning

Item	Description	Type	Code
1	MJ-26	Module jig	0770833
2	CU-4	Control unit	0770831
3		Standard USB cable	
4	PCS-1	DC power cable	0730012
5		Standard USB cable + smart card reader	
6	SX-4	Smart card	0780392
7	XRF-1	RF cable	0730085
8		GPIB control cable	
9	PKD-1	SW security device	0750018
10		RF shield box	N/A

Note: Item 10 not shown in the picture.

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CU-4 flash concept with FPS-10

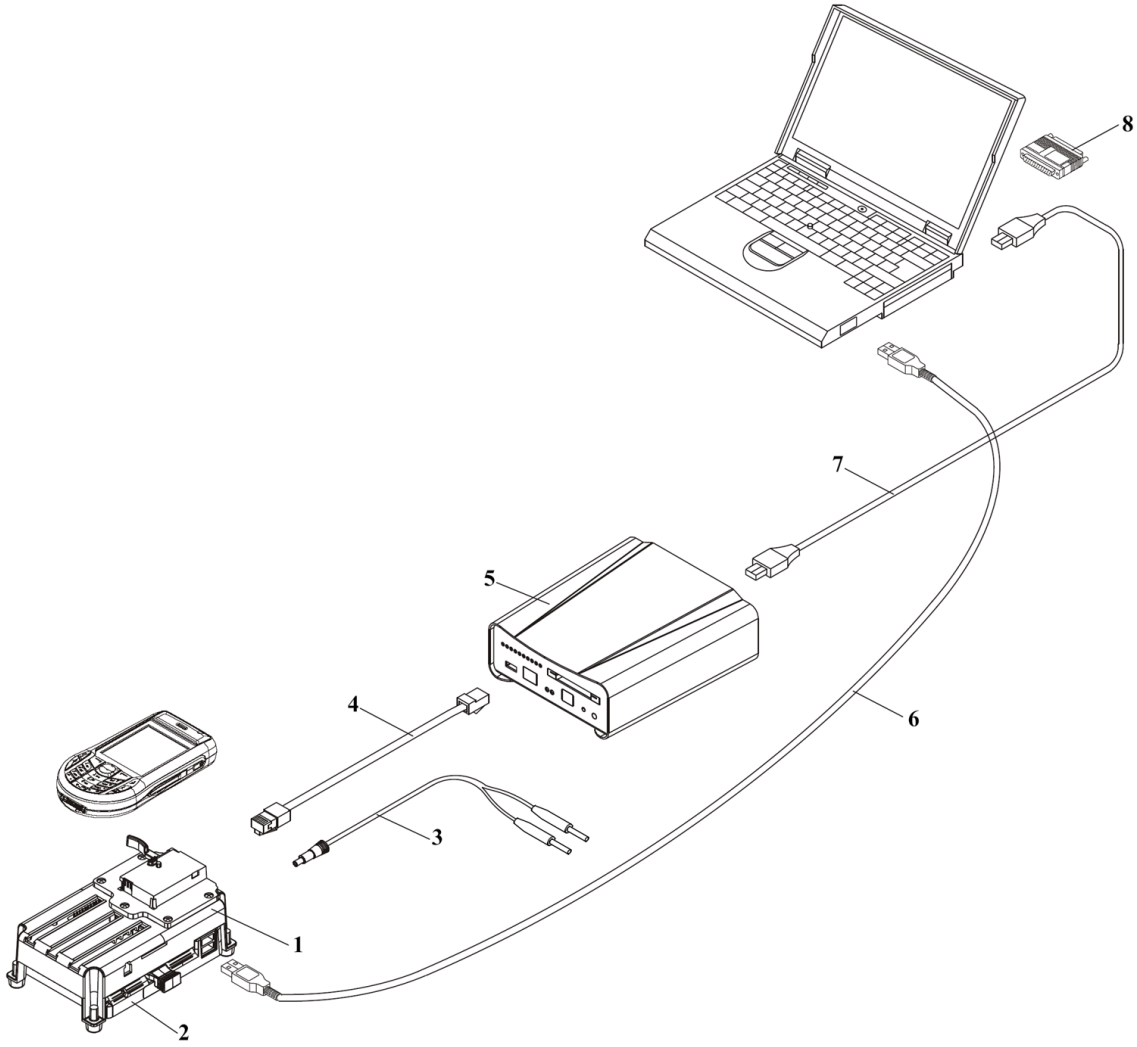

Figure 39 CU-4 flash concept with FPS-10

Item	Description	Type	Code
1	AD-23FS	Flash adapter	0780391
2	CU-4	Control unit	0770831
3	PCS-1	Power cable	0730012
4	XCS-4	Modular cable	0730178
5	FPS-10	Flash prommer box	0080321
6		Standard USB cable	
7		Standard USB cable	
8	PKD-1	SW security device	0750018

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RF testing concept with RF coupler

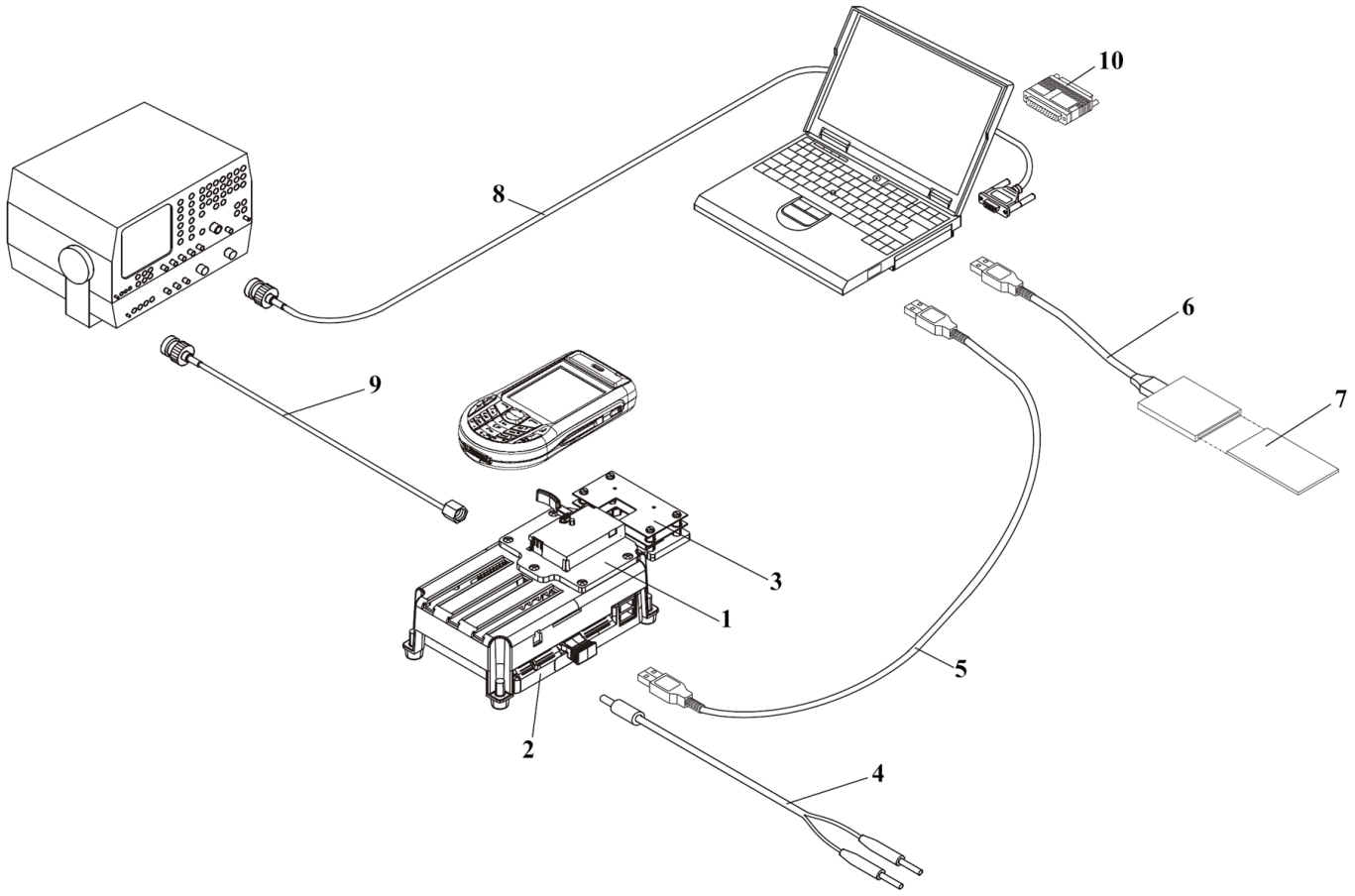

Figure 40 RF testing concept with RF coupler

Item	Type	Description	Code
1	AD-23FS	Flash adapter	0780391
2	CU-4	Control unit	0770831
3	SA-64	RF coupler	0780409
4	PCS-1	Power cable	0730012
5		Standard USB cable	
6		Standard USB cable + smart card reader	
7	SX-4	Smart card	0780392
8		GPIB control cable	
9	XRF-1	RF antenna cable	0730085
10	PKD-1	SW security device	0750018
11		RF shield box	N/A

Note: Item 11 not shown in the picture.

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