Nokia Customer Care

3-Service Software Instructions

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Quick Guide for Phoenix Service SW Installation



Phoenix installation steps in brief

These are the basic steps to install the Phoenix

-Connect a DK2 Dongle or FLS-4S POS Flash Device

-Install the Phoenix Service SW

-Install the Data Package for Phoenix

-Configure users

-Manage connection settings (depends on the tools you are using)

-Phoenix is now ready for FLS-4S Point Of Sales Flash Device use.

-If you use FPS-8:

--Update FPS-8 SW

--Activate FPS-8

--Update JBV-1 Docking Station SW (only when needed)

Phoenix is now ready to be used also with FPS-8 flash prommer and other tools

The Phoenix Service Software installation contains:

- -Service software support for all phone models included in the package
- -Flash update package files for FPS-8* and FLS-4S programming devices
- -All needed drivers for:
- -- DK2 dongle
- -- FLS-4S point of sales flash device
- -- USB devices

Separate installation packages for flash update files and drivers are also available, but it is not necessary to use them unless updates appear between Phoenix Service SW releases. If separate update packages are used, they should be used after Phoenix and data packages have been installed.

The phone model specific data package includes all changing product specific data:

Product software Binary files

Files for type label printing

Validation file for the Faultlog repair data reporting system

All product specific configuration files for Phoenix software components

Please refer to Service Manual and Technical Bulletins for more information concerning phone model specific service tools and equipment setup.

Phoenix Service SW

Before installation

• Check that a Dongle is attached to the parallel port of your computer .

• Download the installation package/application file produced in wk 33, 2004 or higher version (e.g. *phoenix_service_sw_a13_2004_08_5_42.exe*) to your computer (eg C:\TEMP)

Close all other programs

• Run the application file produced in wk 33, 2004 or higher version (e.g. *phoenix_service_sw_a13_2004_08_5_42.exe*) and follow the instructions on the screen

• Administrator rights may be required to be able to install Phoenix depending on the Operating System

• If uninstalling or rebooting is needed at any point, you will be prompted by the Install Shield program.

If at any point during installation you get this message, Dongle is not found and installation can't continue.

Possible reasons may be defective or too old PKD-1Dongle (five digit serial number Dongle when used with FPS-8 Prommer) or that the FLS-4S POS Flash Dongle is defective or power to it is not supplied by external charger.

Check the COM /parallel ports used first! After correcting the problem Installation can be restarted.



Startup

Run the application file produced in wk 33, 2004 or higher version e.g. *phoenix_service_sw_a13_2004_08_5_42.exe* to start installation. Install Shield will prepare.



Click "Next" in Welcome dialog to continue.



Choose destination folder, it is recommended to use the default folder C:\ProgramFiles\Nokia\Phoenix. Choose "Next" to continue. You may choose another location by selecting "Browse" (<u>not rec-ommended</u>)



Setup copies the components, progress of the setup is shown. Please wait...



Drivers will be installed and updated, please wait.. the process may take several minutes to complete.



If the operating system does not require rebooting (Windows 2000, XP) the PC components are registered right away.



Click "Finish" to finalize. Phoenix is ready for use.



If the operating system used requires restarting your computer (Windows 98, SE, ME) the Install Shield Wizard will tell you about it. Select "Yes..." to reboot the PC immediatelly and "No..." to reboot the PC manually afterwards.

Phoenix Service Software Setu	p
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed Phoenix Service Software A. Before you can
	use the program, you must restart your computer.
	 Yes, I want to restart my computer now. No, I will restart my computer later.
	Remove any disks from their drives, and then click Finish to complete setup.
InstallShield	< <u>B</u> ack Finish Cancel

After the reboot components are registered and Phoenix is ready for use. <u>Note that Phoenix</u> <u>doesn't work, if components are not registered</u>.

Now the installation of Phoenix Service SW is ready and it can be used after :

Installing Phone model specific Phone Data Package for Phoenix

Configuring users and connections

FLS-4S can be used right away

FPS-8* can be used after updating Flash Update Package files to it

If reboot is not needed components are registered after copying them.



If restarting of your computer is not needed, Click "Finish" to exit the setup.

Phoenix is now ready for use.

Now the installation of Phoenix Service SW is ready and it can be used after:

- Installing Phone model specific Phone Data Package for Phoenix
- Configuring the connections
- Updating the Flash Update Package files used with FPS-8* and FLS-4S* tools

Update installation of Phoenix

If you already have the Phoenix Service SW installed on your computer, sooner or later there will be need to update it when new versions are released.

<u>Always use the latest available versions of both the Phoenix Service SW and the Phone Specific Data Package</u>. Instructions can be found in phone model specific Technical Bulletins and Phone Datapackage readme.txt files (shown during installation).

To update the Phoenix you need to take exactly the same steps as when installing it for the first time.

- Download the installation package to your computer hard disk
- Close all other programs
- Use "Add/Remove Program" in "control panel" to remove old Phoenix. (Recommended).
- Run the application file produced in wk 33, 2004 or higher version (e.g. *phoenix_service_sw_a13_2004_08_5_42.exe*)
- Newer version of Phoenix will be installed.
- Driver versions are checked and updated if necessary

When you update the Phoenix from old to new version (e.g. update from 2003_9_2_3 to 2003_33_5_22), the update will take place automatically without uninstallation

f you try to update the Phoenix with the same version that you already have (e.g. $a10_{2003}_{33}_{522}$ to $a10_{2003}_{33}_{522}$) you are asked if you want to unistall the version of Phoenix you have on your PC.

In this case you can choose between total uninstallation and repair just like whan you choose to uninstall Phoenix service software from the Windows control panel.

If you try to install an older version (e.g. downgrade from *a11_2003_41_1_24* to *a10_2003_33_5_22* installation will be interrupted.



Always follow the instructions on the screen.

How to uninstall Phoenix

Uninstallation can be done manually from Windows Control Panel - Add / Remove Programs. Choose "Phoenix Service Software" and click "Add/Remove".

Choose "Remove" to uninstall



Progress of the uninstallation is shown.



If the operating system does not require rebooting, select "Finish" to complete.



If the operating system used requires rebooting, Install Shield Wizard will tell you about it. Select "Yes..." to reboot the PC immediatelly and "No..." to reboot the PC manually afterwards.



Repair

If you experience any problems with service software or suspect that files have been lost, you can use the repair – function before completely reinstalling Phoenix. Note that the original installation package (application file produced in wk 33, 2004 or higher version e.g. *phoenix_service_sw_a13_2004_08_5_42.exe*) must be found on your PC when you run the repair setup.

Run Windows Control Panel - Add / Remove Programs, choose "Phoenix Service Software" and click "Add/Remove". In the following view choose "Repair".



Phoenix will reinstall components and register them, procedure is the same as in update installation.



Choose "Finish" to complete.

Data Package for Phoenix (Product Specific)

Before installation

Product Data Package contains all product specific data to make the Phoenix Service Software and tools usable with a certain phone model.

It also includes the latest version of flash update package for FLS-4S* and FPS-8*

- Check that the Dongle is attached to the parallel port of your computer.
- Install Phoenix Service SW
- Download the installation package (eg *RH-59/ 60_dp_v_XX_XX_MCUSWx_xx.exe*) to your computer (e.g. C:\TEMP)
- Close all other programs
- Use "Add/Remove Program" in "control panel" to remove old data package of RH59/60
- Run the application file (eg *RH-59/60_dp_v_XX_XX_MCUSWx_xx.exe*) and follow instructions on the screen

<u>Please note that very often the Phoenix Service SW and the Phone Specific Data Package for</u> <u>Phoenix come in pairs</u>, meaning that certain version of Phoenix can only be used with certain version of Data Package.

Always use the latest available versions of both. Instructions can be found in phone model specific Technical Bulletins and readme.txt – files of the data packages.

Installation of Phoenix Data Package (Product Specific)

Run the *RH-59/60_dp_v_XX_XX_MCUSWx_xx.exe* to start installation.

When you choose "Next" the files needed for installation will be extracted. Please wait...

💐 RH-59 Phone Data Package - InstallShield Wizard	8	×
Extracting Files The contents of this package are being extracted.	2	
Please wait while the InstallShield Wizard extracts the files needed to install RI Phone Data Package on your computer. This may take a few moments.	H-59	
Extracting data2.cab		
InstallShield	Cancel	1

Choose "Next" to continue.



From this view you can see the contents of the Data Package.

Read the text carefully.

There should be information about the Phoenix version needed with this data package. Choose "Next".



Confirm location and choose "Next" to continue.

Install Shield checks where the Phoenix application is installed and the directory is shown. Choose "Next" to continue.

RH-59 Phone Data Package Setup			8	×
Choose Destination Location Select folder where setup will install files.			X	
Setup will install RH-59 Phone Data Package i	n the following fo	older.		
To install to this folder, click Next. To install to another folder.	a different folder,	, click Browse and	d select	
Destination Folder				
C:\Program Files\Nokia\Phoenix			Browse	
InstallShield				
	< Back	Next >	Cancel	

Choose "Next" to start copying the files.

RH-59 Phone Data Package Setup			8	X
Start Copying Files			2	
To start installing the files, click Next.				
Current Settings:				
Installation path: C:\Program Files\Nokia\Phoeni	*		× •	
InstallShield			 	
	< Back	Next >	Cancel	

Phone model specific files will be installed.. please wait...

RH-59 Phone Data Package Setup	<u>a</u>	×
Setup Status		
RH-59 Phone Data Package Setup is performing the requested operations.		
Installing		
C:\Program Files\Nokia\Phoenix\products\RH-59\rh590_nai3.19md_3		
]
InstallShield		
	Cancel	

Choose "Finish" to complete installation.

RH-59 Phone Data Package S	etup	<u>a</u>
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed Phone Data Package. Click Finish to exit the wiz	I RH-59 ard.
	< Back Finish	Cancel

You now have all phone model specific files installed in your Phoenix Service SW. Now Phoenix can be used to for example flash phones and print type labels after :

- Configuring users
 - Managing connections
 - FLS-4S can be used right away
 - FPS-8* can be used after updating Flash Update Package files to it

How to uninstall Data Package

Uninstallation can also be done manually from Windows Control Panel / Add / Remove Programs/ "RH-59/60 Phone Data Package".

If you try to install the same version of Phoenix Data Package that you already have, you are asked if you want to uninstall the version you have on your PC.

Answer "OK" to uninstall, "Cancel" if you don't want to uninstall. Older versions of data packages do not need to be uninstalled.

Uninstall RH-59 Phone Data Package	8	X
Do you want to completely remove the RH-59 Phone Data Package and all of its components?	applica	tion
OK Cancel		

Older versions of data packages don't need to be uninstalled unless instructions to do so are given in the readme.txt of the data package and bulletins concerning the release. Please read all related documents carefully.

Once the previously installed Data package is uninstalled, choose "Finish".

RH-59 Phone Data Package S	etup 🗐
	Uninstallation complete InstallShield Wizard has completed the uninstallation of RH-59 Phone Data Package. Click Finish to exit the wizard.
	< Back Finish Cancel

Run the *RH-59/60_dp_v_XX_XX_MCUSWx_xx.exe* again to continue installation from the beginning.

How to configure users

Start Phoenix Service SW and Login. To add new user choose "Edit". If user ID is already con-

Login		<u>?×</u>
<u>U</u> ser ID Du (test user)		Edit
jtu (test user)		<u></u>
<u>0</u> K	<u>C</u> ancel	<u>H</u> elp

figured, choose your own user ID from the list and choose $\ensuremath{^{\circ}\text{OK}}\xspace$

Choose "Add " to continue.

Edit users	?×
tu (test user)	<u>0</u> K
	<u>C</u> ancel
	<u>H</u> elp
	<u>M</u> odify
	<u>R</u> emove
	<u>A</u> dd

Type in your name and Initials to fields and choose "OK"

Add				? ×
<u>N</u> ame	Repair Tec	hnician		
<u>I</u> nitials	RT	Language 🛛		V
	<u>j</u> k	<u>C</u> ancel	<u>H</u> elp	

User has now been created, choose "OK"

Edit users	? ×
RT (Repair Technician)	<u>0</u> K
	<u>C</u> ancel
	Help
	<u>M</u> odify
	[<u>R</u> emove]
	<u>A</u> dd

You are now able to login with this username, choose "OK"

How to Manage Connections

Start Phoenix Service SW and Login.



Choose "Manage Connections" From "File" – Menu



Existing connections can be selected , edited, deleted and new ones created by using this dialog.

A connection can be created either manually or by using a Connection Wizard.

To add new connection, choose "Add" and select if you want to create it manually or by using the Wizard.

🚯 Manage Connections	×
Priority list: FPSS COM1 FBUS FBUS COM3 NO CONNECTION	App <u>ly</u> Revert Add Edit Remove
	<u>H</u> elp

Choose "Next" to continue.

In the next dialogs you will be asked to select some settings for the connection.



Manual Settings

A) For FLS-4S POS Flash Device choose following connection settings: Media: FBUS

COM Port: Virtual COM Port used by FLS-4S. Please check this always!

(To check please go to Windows / Control Panel / FLS Virtual Port / Configuration)

(To check please go to Windows / Control Panel / FLS Virtual Port / Configuration)



B) For FPS-8 Flash Prommer choose following connection settings:

Media: FPS-8

Port Num: COM Port where FPS-8 is connected

COMBOX_DEF_MEDIA: FBUS

Choose "Finish" to complete.

If you use the Wizard, connect the tools and a phone to your PC and the wizard will automatically try to configure the correct connection.

Activate the connection you want to use by clicking it and use up/down arrows to move it on top of the list. Choose "Apply".

The connection is now selected and can be used after closing the "Manage Connections" window.



Selected connection will be shown on the right hand bottom corner of the screen.

	FPS8	COM1	FRUS
	LL20	COMIT	LDO2

To use the selected connection, connect the phone to Phoenix with correct service tools, make sure that it is switched on and select "Scan Product".

🌃 Phoenix				
<u>F</u> ile	<u>E</u> dit	<u>P</u> roduct	Flashing	<u>M</u> ainl
<u>1</u>	<u>l</u> ew Pr	ofile		
<u>(</u>	<u>)</u> pen P	rofile		
2	<u>à</u> ave P	rofile		
9	Save P	rofile <u>A</u> s		
Manage Connections				
Scan <u>P</u> roduct Ctrl-R			-R	
<u>[</u>	<u>C</u> hoose Product			
Close Product				
<u>P</u> rint Screen				
E	E <u>x</u> it			

When the Product is found, Phoenix will load product support and when everything is ready, name of the loaded product support module and its version will be shown on the bottom of the screen.

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How to Update Flash Support Files for FPS-8* and FLS-4S*

Before installation

Install Phoenix Service SW

Install phone model Specific Datapackage for Phoenix

The flash support files are delivered in the same installation package with Phoenix data packages or newer Phoenix packages beginning from September 2003.

Normally it is enough to install the Phoenix and phone data package only because the Phoenix installarion always includes the latest flash update package files for FLS-4S / FPS-8*.

Separate installation package is for flash support files is available, and the files can be updated according to this instruction if updates appear between Phoenix / data package releases.

Installing the flash support files

If you are not using separate installation package, you can skip this section and continue from yhe next section after installing a new Phone Data package.

Start by double clicking *flash_update_03_12_000.exe* . Installation begins.



If the same version of Flash Update package already exists, and you want to reinstall them, the prevous package is first uninstalled. Restart installation again after that.

.

Uninstall Flash Update		×
Do you want to completely remove t and all of its components?	he Flash Update	03.05.001 application
ОК	Cancel	

If you try to downgrade the existing version to older ones, the setup will be aborted. If yoy really want to downgrade, unistall newer files manually from Control Panel and then re run the installation again.

8	You have newer version of the application. If you want to install older version you need to uninstall the current version before.
	Setup will exit.
	(OK)

If an older version exists on your PC and it needs to be updated, Choose "Next" to continue installation.



It is **highly** recommended to install the files to the default destination folder **C:\Program FilesWokia\Phoenix**.

Choose "Next" to continue. You may choose another location by selecting "Browse" (not recommended).

InstallShield Wizard			×
Choose Destination Location Select folder where Setup will install files.			X
Setup will install Flash Update in the following f	older.		
To install to this folder, click Next. To install to a another folder.	a different folder	, click Browse ar	nd select
Destination Folder C:\Program Files\Nokia\Phoenix InstallShield		_	Browse
	< Back	Next>	Cancel

Installation continues...

•	InstallShield Wizard	×
, 1 7	Setup Status	AN I
•	Flash Update Setup is performing the requested operations.	
1	Installing: Flash Update files	
1	C:\Program Files\Nokia\Phoenix\Flash\te_amd.fia	
1	73%	
C	(
C	t .	
ł	:	
ł	F	
[[InstallShield	Cancel

Choose "Finish" to complete procedure.

• FLS-4S can be used right after Flash Update Package is installed.

• FPS-8* must be updated by using Phoenix!

InstallShield Wizard	
	InstallShield Wizard Complete
	Setup has finished installing Flash Update on your computer.
	< Back Finish Cancel

How to update the FPS-8* Flash Prommer SW

Start Phoenix Service Software



Select"FPS-8 / FPS-8C maintenance" from"Flashing" menu.

🌃 Phoenix									
<u>F</u> ile	<u>E</u> dit	<u>P</u> roduct	Flashing	<u>T</u> ools	<u>W</u> indow	<u>H</u> elp			
🗅 🖻 🗐			<u>F</u> PS-8 Flash						
	_		FPS-8	3 <u>C</u> Flash					
			FPS-8 / FPS-8C <u>M</u> aintenance						

When new FPS-8 flash update package is installed to computer you will be asked to update the files to your FPS-8 Prommer. Select"Yes" to update files..

Prommer SW Update	×
New version of prommer software is available! Do you want to update?	
Version 03.05.001	
Do not show this dialog again	
Yes No	

Update procedure takes a couple of minutes, please wait until you are notified that update has been successfull. Choose "OK" and close "FPS8 Maintenance" – UI. .

Update [Done	<
•	Prommer SW updated succesfully.	

FPS-8 Mainter	nance							_ □
- FPS-8 Info		1 -	Flash Box Files					
S/N	70939		File name	Туре	File ID	Version	Size	
HW	, SF11_09		t2_amd_b.fia te_amd_b.fia	Algo Algo	1 2	004.024.001		
Flash Size	80MB		s3_amd_b.fia s2_amd_b.fia	Algo Algo	3	004.024.001 004.024.001		
Free Flash (b)	83886080		w3_amd_b.fia t2_int_b.fia	Algo	5	004.024.001		
SRAM Size	32MB		te_int_b.fia	Algo Algo	7 8	004.024.001		
Free SRAM (b)	33554432		t2_amd.fia	Algo Algo	9 10	004.024.001		
Boot SW	B0.09		s3_int_b.fia	Algo	10	004.024.001		
FPGA	fpga0313.bin		s2_int_b.ria w3_amd.fia	Algo	12	004.024.001		
Application SW	A3.05		w2_amd.ha t2_intel.fia	Algo Algo	14 15	004.024.001 004.024.001		-
Selftest Status	TEST OK		🗖 Log File Write					
Progress Info		J L						
FLASH size:80MB, SRAM size:32MB, Serial nb::70939, SRAM memory used 0 of 33554432, 33554432 bytes left FLASH memory used 0 of 83886080, 83886080 bytes left.								
<u>U</u> pdate	Delete Repo	ort	Re <u>s</u> et <u>A</u> ctiva	te Deac <u>t</u> iv	vate Dg	tails <u>C</u> los	•	<u>H</u> elp

View after successful prommer software update

FPS-8 sw can also be updated by pressing"Update" button and selecting appropriate **fps8upd.ini** file under *C:\Program Files\Wokia\Phoenix*\Flash - directory

Open				?	X
Look in: 🔂	Flash	- 🗈	<u></u>	* 🔳	
fps8upd.in					
File <u>n</u> ame:	fps8upd.ini			<u>O</u> pen	
Files of <u>type</u> :	Ini files (*.ini)		•	Cancel	

All files can be loaded separately to FPS-8. To do this, just press right mouse button in Flash box files" window and select file type to be loaded.

More information and help can be found from the "Help" dialog.
FPS-8 Activation and Deactivation

• Before the FPS-8 can be successfully used for phone programming, it must be first <u>activated.</u>

• If there is a need to send FPS-8 box to somewhere e.g. for repair, box must be first <u>deactivated</u>.

Activation

Before FPS-8 can be successfully used for phone programming, it must be first activated.

Fill in first "FPS-8 activation request" sheet, in the FPS-8 sales package and follow the instructions in the sheet.

When activation file is received (e.g. 00000.in), copy it to **C:\ProgramFiles\Wokia\Phoenix\BoxActivation -** Directory on your computer

(This directory is created when Phoenix is installed).

Start Phoenix Service Software.

Select "FPS-8 / FPS-8C maintenance" from "Flashing" menu.

🌃 Phoenix			
<u>File Edit Product</u>	Flashing <u>T</u> ools <u>W</u> indow <u>H</u> elp		
0 🖻 🗐	<u>F</u> PS-8 Flash		
, 	FPS-8 <u>C</u> Flash		
	FPS-8 / FPS-8C <u>M</u> aintenance		

Select "Activate" from the "FPS8/8C Maintenance" - UI.

🌃 FPS-8 / FPS-8C Ma	aintenance					_ 🗆 ×
FPS-8 FPS-8C						
FPS-8 Info	Flash box files					×
S/N 70943	File name	Туре	File ID	Version		<u>U</u> pdate
HW ICEAL C	u_amd.fia	Algo	1	004.015.000		Delete
JSFII_U	u_amd_b.fia	Algo	2	004.015.000		
Flash size 16MB	u_cbusb.ha	Algo	3	004.015.000		Report
Free Flash (b) 167772	u intel.fia	Algo	5	004.015.000		Roost
10///2	u_st.fia	Algo	6	004.015.000		<u>Ueser</u>
SRAM size 8MB	u_st_i.fia	Algo	7	004.015.000		Help
Free SBAM (b) 838860	t1_amd.fia	Algo	8	004.015.000		
	ti_amd_b.tia	Algo	9	004.015.000		
Boot sw B0.09	t1_intel fia	Algo	11	004.015.000		
foga03	06 mes v0 t1 int b.fia	Algo	12	004.015.000		
град пруско	t2_amd.fia	Algo	13	004.015.000		
Application A2.10	t2_amd_b.fia	Algo	14	004.015.000		Activation/Deactivation —
	t2_cbusb.fia	Algo	15	004.015.000	-	Activate
Selftest status			2855	E F		
TEST OK Da	stails 📕 🗖 Log file write .					Deac <u>t</u> ivate
Progress info						
Getting file information					_	
File information got						
HW ver:SF11_09,						
SBAM size: 8MB.						
Serial nbr:70943,						
SRAM memory used 0	of 8388608. 8388608 bytes left					
FLASH memory used U	or 1677/216. 1677/216 bytes left	35				•

The activation file you saved to C:\ProgramFiles\Nokia\Phoenix\BoxActivation - directory will be shown (e.g. 00000.in), check that it is correct.

Open			? ×
Look jn: 🧲	BoxActivation	- 🗈 💆	
File <u>n</u> ame:	I		<u>O</u> pen
Files of <u>type</u> :	Supported files (.in)	▼	Cancel

Box will be activated when you choose "Open".

Turn FPS-8 power off and on to complete activation.

Deactivation

Start Phoenix Service Software.

Select "FPS-8 / FPS-8C maintenance" from "Flashing" menu.

Select "Deactivate" from the "FPS8/8C Maintenance" - UI.

Confirm Deactivation by choosing "Yes", Box will be deactivated.

WARNIN	G WARNING 🛛 🕅
?	Do you really want to deactivate selected card? Card can not be used before activated with a proper activation file again! Deactivate?
	Yes <u>N</u> o

Turn FPS-8 power off and on to complete deactivation.

JBV-1 Docking Station SW

The JBV-1 Docking Station is a common tool for all DCT-4 generation products. In order to make the JBV-1 usable with different phone models, a phone specific Docking Station Adapter is used for different service functions.

The JBV-1 Docking Station contains Software (Firmware) which can be updated.

You need the following equipment to be able to update JBV-1 software:

- PC with USB connection
- Operating System supporting USB (Not Win 95 or NT)
- USB Cable (Can be purchased from shops or suppliers providing PC hardware and accessories)
- JBV-1 Docking Station
- External Power Supply 11-16V

Before installation

- Download *Jbv1_update.zip* file to your computer (e.g. C:\TEMP) from your download web site.
- Close all other programs
- Follow instructions on the screen

Installing SW needed for the JBV-1 SW update

Note: DO NOT CONNECT THE USB CABLE / JBV-1 TO YOUR COMPUTER YET!

Run *Jbv1_update.zip* file and start SW Installation by double clicking *Setup.exe*.

Files needed for JBV-1 Package setup Program will be extracted.



Installation begins, please read the information shown and Choose "Next" to continue.



Use suggested destination folder where JBV-1 SW Package will be installed and choose "Next" to continue.



Select "Full" Installation and choose "Next" to continue



Program Folder will be created. Choose "Next" to continue, Software files will be installed.



After successful installation, choose "Finish" to complete.



NOW YOU CAN CONNECT THE USB CABLE / JBV-1 TO YOUR COMPUTER!

Connect power to JBV-1 (11-16V DC) from external power supply, then connect USB Cable between JBV-1 USB connector and PC. Windows will detect connected USB cable and detect drivers for new HW.

Follow the instructions and allow Windows to search and install the best drivers available. After this procedure the actual JBV-1 SW update can begin.



Updating the JBV-1 Docking Station software

The next step is to install or update the JBV-1 USB drivers which are delivered with the JBV-1 SW installation package. They can be found in folder:

C:\Program Files\Nokia\ JBV-1 Firmware Update\JBV-1USB driver

If there is no previously installed JBV-1 Firmware update package installed on your computer, Windows will detect connected USB cable and detect drivers for new HW. You will be prompted about this, please follow the instructions and allow Windows to search and install the best Drivers available.

If there is a previously installed JBV-1 Firmware update package (v 17 or older) on your computer, please update the JBV-1 USB Driver. *Please see the readme.txt – file under*

C:\Program Files\Nokia\ JBV-1 Firmware Update\JBV-1USB driver – folder for instructions on how to update the JBV-1 USB Driver.

After you have installed or updated the JBV-1 USB driver, the actual JBV-1 SW update can begin.

Go to folder C:\Program Files\Nokia\JBV-1 Firmware Update\JBV-1 Firmware Update and start JBV-1 Update SW by double clicking **fwup.exe**.

JBV-1 Firmware update starts and shows current satus of the JBV-1 connected.

If firmware version read from your JBV-1 is not the latest one available (v. 17 or older), it needs to be updated to version 18 by choosing "Update Firmware".

,	,	

🚹 JBV-1 Firmware Update		×			
Device Status					
JBV-1 Connected					
External powersupply connected					
Firmware version 17					
Serial number 0PKC02390011					
······	[
<u>R</u> efresh Status	<u>U</u> pdate Firmware				

To update your JBV-1 to new version 18 choose file JBV1v18.CDE and "Open"

Please wait, it takes a while until you can hear a "click" from the JBV-1.

The older sw file JBV1v17.CDE is visible in this view only if the previous JBV-1 SW package has been installed on your computer.

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Service Tool Concept For Baseband Tuning Operations

EM calibrations should be carried out in JBV-1 Docking Station equipped with DA-35 Docking Station Adapter.

Note: RF tunings must be carried out in MJ-15 module jig, JBV-1.

Power to JBV-1 should be supplied from an external DC power supply, not FPS-8 prommer.

JBV-1 input voltages:

Maximum +16 VDC

Nominal input for RF tunings is +12 V DC.

Service concept for baseband tunings



Table 1:

Item	Accessory type	Service Accessory	Product code
1	JBV-1	Docking Station	0770298
2	DA-35	Docking Station adapter	0770674
3	CA-5S	DC-DC Cable	0730283
5	PCS-1	DC power cable	0730012
6	DAU-9S	Service FBUS cable	0730108
7	PKD-1	Software protection key	0750018
8	Service SW	CD-ROM	

Baseband Tuning operations

Energy management tuning

External power supply needed.

Energy Management (EM) Calibration is used for calibrating Battery and Charger settings of the phone.

Preparation for EM Calibration:

- Connect the DC Cable SCB-3 between JBV-1 and Vin of the Phone for Charger calibration.
- Connect 12...15 V from the Power Supply to JBV-1.
- NOTE! Check that the connection is F-BUS (does not work with M-BUS).

Select Tuning => Energy Management Calibration.



Energy Management values to be calibrated are checked.

Select "Read from Phone" to show the current values in the phone memory and to check that the communication with the phone works.

16	Energy Management Ca	alibration			
			Calibrated	Phone Values	
		ADC Offset [mV]			
		ADC Gain [0.0001 mV/bit]			<u>C</u> alibrate
	Battery Size	BSI Gain [100 Ohm]			Save To Phone
	Rattery Temperature	BTEMP Gain			Bead From Phone
	Battery Voltage	SCAL Offset [mV]			
		SCAL Gain			Help
	🔽 Charger Voltage	VCHAR Gain			
	Charge Current	ICHAR Gain			
	Status:				

Select "Calibrate" to run the selected calibrations.

Limits for Energy Management Calibration:

Tabl	e 2:
------	------

Parameter	Min.	Max	Note
ADC gain	25400	29000	VBatt, BSI, BTemp
DC offset	-50	50	ADC voltage offset
BSI gain	970	1100	ADC BSI calibration gain
BTEMP gain	2075	2275	ADC BTEMP calibration gain
VBAT gain	10000	11000	ADC VBATT Voltage gain
VBAT offset	2300	2900	ADC VBATT Voltage offset scale
VCHAR	58000	62000	Charge voltage
ICHAR	4050	4800	charge current

If values shown are within limits select "Save To Phone" to save the values in the phone.

NOTE! Only the values of the checked tunings (Battery size, Battery Temperature etc.) are saved.

Close the "Energy Management Calibration" - dialog to end tuning.

You must manually switch the phone on after exiting "Energy Management Calibration" – dialog.

LCD contrast tuning

Extra equipment not needed.

This function is used to calibrate the LCD Contrast.

Must be done when LCD module is changed and there is considerable difference in the contrast.

Select Testing => Display Tune



Move the sliders to reach good LCD contrast.

🌾 Display Tune	
Contrast tuning Contrast factory [50 %]	Display metrics Display width: Not available Display height: Not available
Contrast factory offset [15 52]	Display type: Not available Default Help

Close the "Display tune" dialog to end tuning.

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Receiver Tuning: Quick Guide for Tuning With Phoenix



General remarks

RF tunings must be performed in the same order as shown in this document. The order of the corresponding menu items in the Service SW may be different.

If baseband tunings are needed, they should be completed before the RF tunings.

Avoid unnecessary tuning – factory-tuning values are always the most accurate ones.

NOTE! RF tunings need to be done ONLY if any RF block component is replaced.

Screen shots described in this document may change as the service software is developed.

Kindly refer to the Phoenix help files, the phone model specific service manual and bulletins for help.

Service Tool Concept for RF Tuning Operations

NOTE! RF tunings need to be done ONLY if any RF block component is replaced.

- All RF tuning operations must be carried out in the MJ-15 Module Jig!
- Power to MJ-15 must be supplied from an external DC power supply, <u>not</u> FPS-8 prommer
- MJ-15 input voltages:

Maximum + 5 VDC

Nominal input for RF tunings is +4.2 V DC

Minimum +3V DC

· Remember the cable attenuation when setting required RF levels



Figure 1:RF tuning setup

Та	b	le	1	÷	
			-	-	

Item:	Туре:	Service accessory:	Product code:
1	MJ-15	Module jig	0770739
2	PCS-1	DC power cable	0730012
3	XRF-1	Modular cable	0730085
4	DAU-9S	Service Mbus cable	0730108
5	PKD-1	Software protection key	0750018
6	CD-ROM	Service SW	

Autotuning

Autotune feature is designed to align product's RF part easier and faster. By this autotune component the product is tuned automatically. The user only needs to press '**Tune**' and the product's RF is tuned and results are shown to the user. Component controls all the needed RF equipment (RF generator and TX measuring device) except voltage supplier.

NOTE! Automatic tuning is ALWAYS the primary tuning mode. Manual tuning is not recommended.

Following diagram describes how the Autotune component is located in the TSS architecture:



Figure 2: Autotune component in TSS architecture

Autotune is a pair of two different components. One is User Interface and the other is FunctioNal. UI does not contain any functionality. MTI takes care of phonet messages.

The Autotune component can be found under Tuning menu:

Figure 3: Autotune menu in Phoenix





Set loss

Figure 5:Set loss menu



This is the component for saving RF-losses (of cables and jigs) to file. These loss values are needed when you tune the phone with Phoenix (using Auto-Tune component). When you measure the losses you have to be very careful, because these values affect directly how well the phone is tuned.

NOTE! This component is only for Auto-Tune uses.

Cal	ble Jig Produ	ict		
	Frequencii	1 0 6 6		<u>L</u> oad
	80000000	5.00	Г	Save
	851000000	5.10	-	2
	853000000	5.70		Help
	857000000	5.50	-	
	858000000	5.60		
	854000000	5.30		

Figure 6:Loss values

Environment

Hardware requirements:

PC with Windows 98/2000/NT

Power supply

Product specific module jig

RF-splitter and -cables

RF equipment (only one of each is needed)

Tx:

Agilent E4406 (VSA series transmitter tester)

Agilent E4445 (PSA series transmitter tester)

Rohde&Schwarz, FSE-family of Signal Analyzers

Rohde&Schwarz, FSIQ-family of Signal Analyzers

Rx:

Agilent ESG family of RF Signal Generators

Rohde&Schwarz, SME-family of Signal Generators



GPIB addresses are not defined. Component finds the addresses and uses them automatically.

If several TX tuning devices are connected, this component uses Agilent (VSA or PSA). In RX side, Agilent has highest priority.

Protection

Components are protected by PKD-1CS, PKD-1NS, PKD-1 and PKD-1P dongles using standard TSS protection procedure. Autotuning itself is possible with all these dongles but with PKD-1P and PKD-1 dongles user is not able to set the loss.

Receiver Manual Tuning

RX channel select filter calibration

Extra equipment / external RF signal not needed.

Must be done before other RX calibrations.

This function is used to calibrate RX channel select filter in GSM Phones.

Rx Channel select filter is tuned only in one band = Single calibration for both bands.

Select Tuning => Rx Channel select filter calibration.



"Save to Phone " is checked by default

Uncheck "Save to Phone " if you don't want the values to be saved to phone (eg testing)!

Press "Tune" to start the tuning

K Rx Channel Select Filter Calibration				
HELGA Register			1	Start
DTOS I Address	Rc	18		Tune
DTOS Q Address	Rc	18	Save to Phone	Stop
BBF I Address BIQUAD I R 18	BIQUAD I C	22		Help
BBF Q Address BIQUAD Q R 17	BIQUAD Q C	22		

Tuning values must be 0...31

If values shown are within limits, choose "Stop"

Close the "RX Channel Select Filter Calibration"-dialog to end tuning

Close the Rx Channel select filter calibration dialog, the values are saved to phone

RX Calibration

RF generator needed.

This tuning performs RX Calibration.

Must be done separately on every band!

Calibration is automatically performed at GSM850, then at GSM1800 and finally at GSM1900 band. If tuning is successful, it continues in the next band.

AFC tuning is done while GSM850 band RX Calibration is performed.

Remember to take jig and cable attenuations into account!

Select Tuning => Rx calibration



Press "Calibrate" 'to start tuning.

🌃 Rx Calibration	
	Calibrate
	<u>H</u> elp
Press Calibrate button	

Set RF generator to required GSM850 frequency => OK

Set RF generator to required frequency => OK

Tuning step 1 of 3 - Rx Calibration with band GSM850
Set the Rf signal generator:
Power level: -60 dBm
Input signal frequency: 881.667710 MHz
Press OK to tune, press Cancel or ESC to exit tuning process.
OK Cancel

Tuning values and ADC readings are shown.

Typical values and limits in GSM850 RX Calibration:

GSM850	Typical value	Low limit	High limit
Afc value:	-90	-350	350
Afc slope:	270	150	350
Rssi 0:	65.09375	58	68
Rssi 1:	71.09375	64	74
Rssi 2:	76.90625	70	80
Rssi 3:	82.90625	76	86
Rssi 4:	88.90625	82	92
Rssi 5:	93.71875	88	98
Rssi 6:	99.71875	94	104
Rssi 7:	105.53125	100	110
Rssi 8:	111.53125	106	116
Rssi 9:	117.53125	112	122
Rssi 10:	123.53125	118	128
Rssi 11:	129.53125	124	134
Rssi 12:	135.53125	130	140
Rssi 13:	141.53125	136	146
Rssi 14:	147.53125	142	152

Table 2:

Set RFgenerator to required GSM1800 frequency => OK



Tuning values and ADC readings are shown.

Typical values and limits in (GSM1800) RX Calibration

GSM1800	Typical value	Low limit	High limit
Rssi 0:	62.40625	58	68
Rssi 1:	68.40625	64	74
Rssi 2:	74.265625	70	80
Rssi 3:	80.265625	76	86
Rssi 4:	86.265625	82	92
Rssi 5:	91.859375	88	98
Rssi 6:	97.859375	94	104
Rssi 7:	103.71875	100	110
Rssi 8:	109.71875	106	116
Rssi 9:	115.71875	112	122
Rssi 10:	121.71875	118	128
Rssi 11:	127.71875	124	134
Rssi 12:	133.71875	130	140
Rssi 13:	139.71875	136	146
Rssi 14:	145.71875	142	152

Set the RF generator to required GSM1900 frequency => OK

Tuning step 3 of 3 - Rx Calibration with band GSM1900	×
Set the Rf signal generator:	
Power level: -60 dBm	
Input signal frequency: 1960.067710 MHz	
Press OK to tune, press Cancel or ESC to exit tuning process.	
OK Cancel	

Tuning values and ADC readings are shown.

Typical values and limits in (GSM1900) RX Calibration

GSM1900	Typical value	Low limit	High limit
Rssi 0:	66.25	61	71
Rssi 1:	72.25	67	77
Rssi 2:	78.09375	73	83
Rssi 3:	84.09375	79	89
Rssi 4:	90.09375	85	95
Rssi 5:	93.25	88	98
Rssi 6:	99.25	94	104
Rssi 7:	105.09375	100	110
Rssi 8:	111.09375	106	116
Rssi 9:	117.09375	112	122
Rssi 10:	123.09375	118	128
Rssi 11:	129.09375	124	134
Rssi 12:	135.09375	130	140
Rssi 13:	141.09375	136	146
Rssi 14:	147.09375	142	152

Table 4:

If values are within limits, they are saved to the phone after successful tuning of each band. Close the "Rx Calibration" dialog to end tuning

RX band filter response compensation

RF generator needed.

This operation must be done separately on each band!

Start RX Calibration at GSM850, then continue at GSM1800 band and finally on the GSM1900 band

NOTE! Remember to do RX calibration before doing Rx Band Filter Response Compensation!

Remember to take jig and cable attenuations into account!

Select Tuning => Rx band filter response compensation



Select "Yes" to start tuning with values already saved to the phone

Tune start		X
Load Values from	phone PM?	
Yes	<u>N</u> o	

Select "Manual tuning" and tuning starts.

Hx Band	evel 80 · ·	JN	Start, Read from PM area	
Channel	Input Frequency (MHz)	Measured Level Difference (dB)	<u>M</u> anual Tuning	
		-1.734 -0.984	<u>A</u> uto Tuning]
		-U.516 -0.094 -0.016	Stop, Write to PM area]
		0.063	Help	1
		-0.516 -0.516	Signal Generator Setting:	-
		0.000	+ cable attenuation.	
		0.000		
		0.000	Table to Ulipboard: Select Letf Top of table	
		0.000 0.000	(with text "Unannel"). Press left mouse	
		0.000		

You are asked to supply 9 different RF frequencies to the phone.

The tuning begins from GSM850 band and continues the same way for GSM 1800 and GSM1900 bands

Set the first required frequency and level => OK

ľ

1anual Tuning		×
Set 867.26771 MHz, le + cable attenuation, Press OK. (Press ESC	ivel -80 dBm to RF generator to interrupt seq	uence.)
ОК	Cancel	

Set the 2nd required frequency and level => OK

Manual Tuning	×
Set 869.26771 MHz, le + cable attenuation, Press OK. (Press ESC	vel -80 dBm to RF generator. to interrupt sequence.)
ОК	Cancel

Set the 3rd required frequency and level => OK

Manual Tuning	×
Set 871.66771 MHz, le + cable attenuation, Press OK. (Press ESC	evel -80 dBm to RF generator. to interrupt sequence.)
ОК	Cancel

Set the 4th required frequency and level => OK



Set the 5th required frequency and level => OK

Manual Tuning	×				
Set 881.66771 MHz, level -80 dBm + cable attenuation, to RF generator. Press OK. (Press ESC to interrupt sequence.)					
ОК	Cancel				

Set the 6th required frequency and level => OK

Manual Tuning	×
Set 887.06771 MHz, le + cable attenuation, Press OK. (Press ESC	evel -80 dBm to RF generator. to interrupt sequence.)
ОК	Cancel

Set the 7th required frequency and level => OK

Manual Tuning	×
Set 891.86771 MHz, le + cable attenuation, Press OK. (Press ESC	vel -80 dBm to RF generator. to interrupt sequence.)
OK	Cancel

Set the the 8th required frequency and level => OK

Manual Tuning	×					
Set 893.86771 MHz, level -80 dBm + cable attenuation, to RF generator. Press OK. (Press ESC to interrupt sequence.)						
OK	Cancel					

Set 9th required frequency and level => OK

Manual Tuning	×				
Set 895.86771 MHz, level -80 dBm + cable attenuation, to RF generator. Press OK. (Press ESC to interrupt sequence.)					
OK	Cancel				

Typical values and limits in Rx Band Filter Response Compensation GSM850:

	Input		
Channel	Frequency (MHz)	Low limit (dB)	High limit (dB)
118	863.26771	-10	3.5
128	869.26771	-3.5	3.5
140	871.66771	-3.5	3.5
172	878.06771	-3.5	3.5
190	881.66771	-3.5	3.5
217	887.06771	-3.5	3.5
241	891.86771	-3.5	3.5
251	893.86771	-3.5	3.5
261	895.86771	-10	3.5

Choose "Stop, write to PM area"

If the values shown are within limits, choose "Yes" to save values to the phone.

1

Continue tuning from GSM1800. Choose the correct band from the dropdown menu.

🌃 Pl	hoen	ix									
File	Edit	Pro	duct	Flashing	Testing	Tuning	Tools	Window	Help)	
0	Ê		0	perating mo	de: Loca	al 💌	Rea	id I	Band:	GSM 850	•
			-					1 -		GSM 850	
										GSM 1800	
										GSM 1900	

Repeat the same steps as for the GSM850 band above.

Typical values and limits in Rx Band Filter Response Compensation GSM1800:

	Input		
Channel	Frequency (MHz)	Low limit (dB)	High limit (dB)
497	1802.26771	-10	3.5
512	1805.26771	-3.5	3.5
535	1809.86771	-3.5	3.5
606	1824.06771	-3.5	3.5
700	1842.86771	-3.5	3.5
791	1861.06771	-3.5	3.5
870	1876.86771	-3.5	3.5
885	1879.86771	-3.5	3.5
908	1884.46771	-10	3.5

Choose "Stop, write to PM area"

If the values shown are within limits, choose "Yes" to save values to the phone.

End Tuning		×
Save Values to p	hone PM?	
Yes	<u>N</u> o	

Continue tuning from GSM1900. Choose the correct band from the dropdown menu.

🌃 Pl	noeni	×								
File	Edit	Product	Flashing	Testing	Tuning	Tools	Windo	w Helj	p	
D	2	日 🛛 or	perating mo	de: Loca	al 💌	Rea	ad	Band:	GSM 1800	•
									GSM 850 GSM 1800 GSM 1900	

Repeat the same steps as for the GSM850 and GSM1800 bands above.

Typical values and limits in Rx Band Filter Response Compensation GSM1900:

	Input		
Channel	Frequency (MHz)	Low limit (dB)	High limit (dB)
496	1927.06771	-10	3.5
512	1930.26771	-3.5	3.5
537	1935.26771	-3.5	3.5
586	1945.06771	-3.5	3.5
661	1960.06771	-3.5	3.5
736	1975.06771	-3.5	3.5
794	1986.66771	-3.5	3.5
810	1989.86771	-3.5	3.5
835	1994.86771	-10	3.5

Choose "Stop, write to PM area".

If the values shown are within limits, choose "Yes" to save values to the phone.

Close the "RX Band Filter Response Compensation" – dialog to end tuning.

Rx Am suppression

RF generator is needed.

Must be done separately on each band!

Start RX Am Suppression at GSM850, then continue at GSM1800 band and finally at the GSM1900 band.

Remember to take jig and cable attenuations into account!

Select Tuning => Rx Am Suppression



Press "Start" to begin tuning.

5 5		
Kon Phoenix		
File Edit Product Flashing Testing	ı Tuning Tools Window Help	
🛛 🗅 😅 🔚 🗍 Operating mode: 🗔	cal 💌 Read Band: GSM 850 💌	
🔀 Rx Am Suppression		
Rf Generator's settings:	LO_I sign 0-6 bits 0 0 LO_Q sign 0-6 bits 0 0	Save & Continue

Adjust signal generator accordingly and press "OK" to tune.

×

When tuning is finished, press "Save & Continue".

_ 🗆 ×	
<u>S</u> tart	
Save & <u>C</u> ontinue	
Hab	
<u> </u>	

Tuning continues automatically at GSM1800 band.

Adjust signal generator accordingly and press "OK" to tune.

Tuning step 2 of 3 - RxAm Suppression with band GSM1800	x
Set the Rf signal generator:	
Power level: -23 dBm	
AM modulation: 83 %	
Modulation signal frequency: 1 kHz	
Input signal frequency: 1852.867710 MHz	
Press OK to tune, press Cancel or ESC to exit tuning process.	
OK Cancel	

When tuning is finished, press "Save & Continue".

<u>S</u> tart
Save & Continue
<u>H</u> elp

Tuning continues automatically at GSM1900 band.

Adjust signal generator accordingly and press "OK" to tune.

•••	
Tuning step 3 of 3 - RxAm Suppression with band GSM1900	x
Set the Rf signal generator:	
Power level: -23 dBm	
AM modulation: 83 %	
Modulation signal frequency: 1 kHz	
Input signal frequency: 1970.067710 MHz	
Press OK to tune, press Cancel or ESC to exit tuning process.	
OK Cancel	

When tuning is finished, press "Save & Continue".



If the Rx Am Suppression tuning was completed successfully, press "OK" to stop tuning.

Rx Am Su	Ippression	×
•	RxAm Suppression tuning was completed successfully.	
	ОК	

Close the Rx Am Suppression window.

RX DTOS balance calibration

Extra equipment / external RF signal not needed

Must be done separately on each band!

Start RX Calibration for GSM850, then continue at the GSM1800 band and finally at the GSM1900 band.

This Calibration is used for calibrating DSP control words values.

Select Tuning => Rx DtoS Balance Calibration



NOTE! No RF-input is allowed to feed when calibrating

Choose "OK" and "Start", tuning begins automatically at the GSM850 band.

Please re	emember! 🔀
£	No RF-input is allowed to feed into Phone while calibrating

Select "OK" to start tuning with values already saved to the phone


Press "Calibrate"



If values shown are within limits, Select "Stop" choose "Yes" to save values to the phone

Tune en	ding 🛛 🕅
?	Do you want to save values to phone?
	<u>Yes</u> <u>N</u> o

Continue tuning from GSM1800. Choose the correct band from the dropdown menu.



Repeat the same steps as for the GSM850 band.

If values shown are within limits, choose "Yes" to save values to the phone.

Continue tuning from GSM1900. Choose the correct band from the dropdown menu.

M PI	hoen	ĸ								
File	Edit	Product	Flashing	Testing	Tuning	Tools	Window	Help		
] 🗅	Ê	日 🛛 or	perating mo	ide: Loc	al 💌	Rea	id E	Band: G	SM 1800	•
								G	ISM 850	- 1
								G	iSM 1800	
								G	ISM 1900	

Repeat the same steps as for the GSM850 and GSM1800 bands.

If values shown are within limits, choose "Yes" to save values to the phone.

Close the RX DtoS Balance Calibration dialog to end Receiver tuning.

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RH-59 Manual Alignment with Phoenix

In Phoenix, select connection Fbus and Product Gemini. If you power up the board before selecting Fbus, it works without any error messages. Use the module jig or other device for RF and Bus connection. Attenuation of the probe alone is 0.5 dB for 900 MHz and 1dB for 1800MHz.

Use CDM55 or other suitable device. Default channels are

37 for GSM900

700 for GSM1800

The alignments must be performed in the order shown to give reliable results.

The way to save data to the phone and to load data from the phone is made different in the various tunings. Always look what is shown in the windows regarding these issues and act accordingly.

To vary a selected parameter you can use + and – key or in some cases directly type the new value. + and – steps the value for every press. Repeat function seems not to work. In I/Q you can use the side arrows.

RX calibration

Select Maintenance, Tuning, RX Calibration

Select Band: GSM 900

Select Automatic and follow the promts

The result should be like the shown:



GSM1800 RX calibration

- 1 The existing data in the phone is shown
- 2 Calibrate, and the new data is shown
- 3 Stop, and the little window pops up where you can select to save or not
- 4 Select GSM1800 in the top bar and repeat at channel 700

~~~	
🔀 Phoenix	
File Edit Product Flashing Testing 1	Tuning Tools Window Help
Operating mode: Local 💌 Read	Band: GSM 1800 💌
Rx Calibration	X
Calibration values:	Start
Rssi 0 : 57.453125	
Rssi 2 : 69.453125	Save & <u>C</u> ontinue
Rssi 3 : 75.453125 Rssi 4 : 81.453125	Help
Rssi 5 : 90.406250 Rssi 6 : 96.406250	
Rssi 7 : 102.406250	
Rssi 8 : 108.406250 Rssi 9 : 114.406250	
Rssi 10 : 120.406250 Rssi 11 : 126.406250	
Rssi 12 : 132.406250	
Rssi 13 : 138.406250 Rssi 14 : 144.406250	
PaTemp : 118.000000	

- 5 The existing data in the phone is shown
- 6 Calibrate, and the new data is shown
- 7 Stop, and the little window pops up where you can select to save or not

## RX channel select filter

- 1 Select Maintenance, Tuning, Rx Channel Select Filter Calibration
- 2 Press Start and you can select to load values from the phone or not
- 3 Press AutoTune
- 4 Press Stop and you can select to save values to the phone or not

😮 Phoenix			
File Edit Product Flashing Testing Tuning Tools Window H	lelp		
Operating mode: Local 💌 Read Rx/Tx Channel: 37	942.400000 Active Ur	nit: 🖪 🔽 📕 Band: 🗍 GSM 3	900 🔻
K Channel Select Filter Calibration			
Filter Adjustment Decimal 33 Hex 0x21 xTau Binary 100001 Capacitor array ₩ 5 ↓ 4 ↓ 3 ↓ 2 ↓ 1 ₩ 0	I Sa <u>v</u> e to Phone	Start Tune Stop Help	

Note: This calibration requires no input signal

#### RX band filter response

- 1 Select Maintenance, Tuning, Rx Band Filter Response Compensation
- 2 Press Start, Read from PM area and you can select to load values from the phone or not
- 3 Press Manual Tuning
- 4 Set the Signal generator according to the pop-up windows

5 When finished press Stop, Write to PM area and you can select to save values to the phone or not

#### 6 Repeat for GSM1800

Phoenix	t Flashing Testing Tuning	Tools Window Help	
Vperating mode:	er Response Compensation	and: TGSM 900	
Input Signal Le	Input Frequency (MHz)	Measured Level ADIFFERENCE (dB)	Save & Continue
965	923.26771	5.750	Help
975	925.26771	6.328	
987	927.66771	6.672	- Tuning mode
1009	932.06771	6.906	
37	942.46771	6.984	C Automatic
90	953.06771	5.859	🖲 Manual
114	957.86771	5.656	
124	959.86771	5.750	
136	362.26771	5.750	
		0.000	Copying table to clipboard: press mouse left button on the left top of the table (with text 'Channel').

Note: This calibration requires a lot of different frequencies from the generator. If you have a signal generator with a frequency list option you can with advantage use Auto Tuning (Dwell should be around 10ms).

# Tx power tuning

## Select Maintenance, Tuning, Tx Power Level Tuning

## TX power tuning GSM

Coefficient	Target dBm	<u>S</u> tart
0.7043	32.5	
0.6247	31.0	Save & Lontinue
0.5409	29.0	
0.4744	27.0	
0.4219	25.0	
0.3798	23.0	
0.3462	21.0	Band: GSM 900
0.3200	19.0	Tx PA mode: High
0.2332	17.0	i ngn
0.2020	10.0	
0.2033	11.0	
0.2506	9.0	
0.2300	7.0	
0.2386	5.0	
0.2170	-30.0	
0.2170		
	Coefficient 0.7043 0.6247 0.5409 0.4744 0.4219 0.3798 0.3462 0.3200 0.2992 0.2826 0.2693 0.2596 0.2596 0.2596 0.2439 0.2386 0.2386 0.2170	Coefficient         Target dBm           0.7043         32.5           0.6247         31.0           0.5409         29.0           0.4744         27.0           0.4744         27.0           0.4744         27.0           0.4219         25.0           0.3798         23.0           0.3462         21.0           0.3200         19.0           0.2992         17.0           0.2826         15.0           0.2596         11.0           0.2596         9.0           0.2439         7.0           0.2439         7.0           0.2386         5.0           0.2170         -30.0

1 Select edge off, GSM 900

2 Press Start and select from where to load values. It is best is to have PC saved data from a good phone. The data from a good phone can be saved to PC for later use. .

		- Para strainly a	and the second s		and the second sec
perating ma	de Local	1	Beed	C Change with Raset	TxPAMode: High • TxDataType: All1
FC 3153	Active	Unit: The P	Fx/Tx Cher	wel: 37 897.400000	
Te Power L	ovel Tuning				
5 1.1	Coefficient	TargetdBm	EAC	200 Det 1	
5	0.6945	32.5	710		
6	0.6147	31.0	626	Stop	
7	0.5321	29.0	\$44		
8	0.4657	27.0	427	Calculate coefficients	
9	0.41.40	25.0	424	The strengt of	
10	0.3736	23.0	382	Load from	
81	0.3437	21.0	348	Partnasht manory	
12	0 31 45	190	321	The second s	
13	0.2935	17.0	300	Sava to	
14	0 2755	150	287	P Permanent memory	
15	0.2632	13.0	26.9	F 80	
16	0.2530	11.0	250	1.10	
17	02449	10	250	i an	
18	0.2385	2,0	243	Bant CITHING OF	
19	0.2334	5.0	238	and here and the	
Base 📕	0.2131	-30.0	218	Edge: Cf +	
Test	02131		218		
				TxPAMode_High =	
				Zero DAC:	
				and the second sec	
Tx chernel	N			1 1	

3 Select the modulation 1, 0 or random in Tx Data Type. Select random if a GSM tester is used. Then it can synchronise to the burst.

- 4 Select Tx PA Mode High
- 5 Tune the highlighted values to the wanted power (Use average burst power)
- 6 Tune base level to -28dBm (CMD55 can keep synchronisation close to the lowest level).

#### 7 Calculate coefficients

erating mo	de Local		Beed	C Change with Raset	Tx PA.Mode.	High 💌	TxDeta Type: A	0
C 3153	Active	Unit: Ta P	Fx/Tx Cher	seat. 37 897,400000				
e Power Le	well Tuning							
(	Coefficient	TargetdBm	EAC	Store 1				
	0.6945	32.5	710					
	0.6147	31.0	\$28	Stab				
	0.5321	29.0	\$44					
	0.4657	27.0	477	Calculate coefficients				
i	0.41.40	250	424	The contract of the				
0	0.3736	23.0	382	Loed for				
195	0 3417	21.0	348	Parrissent memory				
2	0 31 45	19,0	321					
3	0.2935	17.0	300	29/9.0				
4	0 2755	150	287	P Permanent memory				
5	0.2632	13.0	26.9	IT PC				
6	0.2530	11.0	250					
7	02449	9.0	250	i na seconda antes				
8	02385	7.0	243	Band CITH SUD				
1000	0.2334	5.0	238					
lase	0,2131	-30.0	218	Edge: Cr P				
est.	0 21 31		218					
				TxPAMode_High				
				Zero DAC:				
				and the second sec				

8 Select Tx PA Mode low and tune the high lighted values.

9 The base level coefficient is taken from the high mode. Do not change it.

10 Calculate and select Stop

Stop Tx Power Level Tuning	×
Do you want to stop tuning?	(Yes)
Pressing Yes will stop the tuning and save the values to selected destinations. Pressing No will continue tuning without saving.	No
Save values to Phone Permanent Memory Save values to PC	Help

If you are satisfied with the coefficients and the power, then save to the Permanent memory.

You can also save the table to the PC, so that you can load it to an other phone. Or you can select not to do anything by removing both ticks.

Only way to end the tuning session is with Yes

# TX power tuning GSM1800

## 1 Select GSM 1800 band (PCN)

ile E	o <b>enix</b> Edit Pro	oduct Flashing Test	ing Tuning Tools	Window Help
Oper	ating mo	de: Local 💌 📘	Read Tx Power	r Level: 5 🗾 🛛 Tx PA Mode: High 💌
Tx D	ata Type	e All 1 💌	AFC: 3146	Active Unit: 🛛 🔽
K	Tx Pov	ver Level Tuning		
11		Coefficient	Target dBm	Start
	0	0.6206	29.5	
	1	0.5631	28.0	Save & C <u>o</u> ntinue
	2	0.5000	26.0	
	3	0.4500	24.0	
	4	0.4115	22.0	
	5	0.3801	20.0	
	6	0.3545	18.0	Band: GSM 1800
	7	0.3353	16.0	
	8	0.3194	14.0	TX FA IIIOUE. High
	9	0.3065	12.0	
	10	0.2974	10.0	
	11	0.2897	8.0	
	12	0.2836	6.0	
	13	0.2788	4.0	
	14	0.2750	2.0	
	15	0.2720	0.0	
	Base	0.2510	-30.0	
	Test	0.2610		
		1 700		
	Tx chan	nel: 700 		Help
	riequen	Cy. 1747.00 MH2		

#### 2 Start

## 3 Select where to get values from. Normally Permanent Memory

Start Tx Power Level Tuning	×
Load From:	OK
Permanent memory	Cancel
PC default values PC saved values Current values	Help

4 OK

perating m	ide Local		Beed	C Shange with Reset	TxPAMode	High 🛃	TxDate Type:	AB
FC 3153	Active	Unit Ta	Fix/Tx Cher	met 701 1747.830000				
ts Power L	rvel Tuning							
-	Coefficient	Terpet dBm	DAC	C Store				
0	0.6687	29.5	684					
1	0 6032	28.0	\$17	Stop				
2	0.5321	26.0	544					
3	0.4780	240	486	Calculate coefficients				
4	0.4321	22.0	442					
5	0.3957	20.0	405	Loed tron				
6	0.3638	18.0	377	Emmakert concerner #				
7	0.3458	16.0	154					
8	0.3291	140	336	Save to				
9	0.3146	12.0	321	P Parmanent memory				
10	0 3027	10.0	209					
11	0.2933	0.0	300	I PC				
12	0,2850	6.0	282					
13	0.2838	40	287	Baset Constant and				
14	0.2755	2.0	282	erend: Langu Lund -				
15	0.2729	0.8	279	Edge 01 v				
Base 📕	0.2550	-30.0	265					
Test	0.2530	c services	264	TxPAMade High *				
				Zero DAC:				
				(3)				
Tx chernel	730			E and				
Frequency	1747.00 MH	E 21		Delb				

1 Select the wanted modulation. Random if a GSM tester is used, so that you can synchronise the burst.

- 2 Only high mode is possible
- 3 Tune the highlighted values to the wanted power
- 4 Tune base level to -27dBm
- 5 Stop

Stop Tx Power Level Tuning	×
Do you want to stop tuning?	Yes
Pressing Yes will stop the tuning and save the values to selected destinations. Pressing No will continue tuning without saving.	No
Save values to Phone Permanent Memory	
Save values to PC	Help

6 Select where to save the values, one, both or no one can be selected.

7 Yes. That is the only way to end tuning.

## I/Q tuning

#### Select Maintenance, Tuning, Tx IQ tuning

Set CMD55 to Narrow Spectrum on the same band as the phone.

#### Selected in the top menu..

1/6 Phoenix
File Edit Product Flashing Testing Tuning Tools Window Help
Operating mode: Local 💌 Read Band: GSM 900 💌 Operation Mode: Burst 💌
Rx/Tx Channel: 37 897.400000 Tx Data Type: All 1 Tx PA Mode: High 💌
Tx IQ Tuning
Mode: Manual 💌 Edge: Band:
-10%; -5% 0% 5% 10%; TX1DC offset:
-10%; -5% 0% 5% 10%; TX <u>Q</u> DC offset:
-6.0 6.0 Amplitude diff:
27.0 ⁰ 153.0 ⁰ Phase diff:
VBatt DAC: Next
<u>Start</u> <u>Finish</u> Llose <u>H</u> elp
· · · · · · · · · · · · · · · · · · ·

- 1 Select where to get values. Normally select Load From Product
- 2 Start
- 3 Tune offset values to lowest carrier. Use Side arrows or +, .
- 4 Tune Amplitude and phase to lowest sideband.

5 Check eventually with other modulation (0).

Eis.
(ettings
Reset Bend GSM 1800 Develop Mode Burst
Tx Data Type: All 1 P Tx PA Mode: High P Edge: Off
Stort
P Load from Product Says to Product
180

Remember to tick Save to Product if you want to save the values in the phone.

6 Stop to end the tuning with the selected save option .

The same procedure for PCN as for GSM.

Remember to tick Save To Product.

Stop. Ends tuning.

#### RF control

THE purpose of this feature is to check the receiver or transmitter without going in call. It works very much like a call, but you have control via the PC, and not via the tester.

The TX mode GSM900 can select between Free, High and Low mode. It changes the PA mode, but changes also the power level if a level selected is not supported in that mode.

퉪 Ph	ioenix
File	Edit Product Flashing Testing Tuning Tools Window Help
Оре	rating mode: Local 💌 Read
	Common GSM RF Control Values
	Active Unit: Rx Rx/Tx Channel: 37 942.400000
	Band: GSM 900 💌 AFC: 3146
	Operation Mode: Burst
	RX Control Values
	Monitor Channel: 37 942.400000
	AGC: 14: FEG_ON + 24 dB + const_BB_gain
	TX Control Values
	Edge: Off 💌 Tx Data Type: All 1 💌
	Tx PA Mode: High 🔽 Tx Power Level: 5 💌
	<u>C</u> lose <u>H</u> elp

If you want to tune at other channels than the default, then you must select it first in RF control and then start the tuning.

## Call testing

If all tunings are done and the phone TX and RX are working, a call is the ultimate test of the phone.

Set CMD55, or similar tester, to manual test and switch the phone to normal if it was in local. Remember to have a test simcard in the phone.

When the phone has made a registration a call can be made, and it is possible to let the phone answer via Phoenix. In the Autocaller (Maintenance Testing) you can answer by ticking Answer when button pushed and then posh the button.

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# **RH-60 Manual Alignment with Phoenix**

In Phoenix select connection Fbus and Product Gemini. If you power up the board before selecting Fbus, it works without any error messages. Use Jig or other device for RF and bus connection. Attenuation in the probe alone is 0.5dB for 850 and 1dB for 1900. Use CMD55 or other suitable device.

Default channels are: 37 for GSM850 and

661 for GSM1900.

The alignments must be performed in the order shown to give reliable results.

The way to save data to the phone and to load data from the phone is made different in the various tunings. Always look what is shown in the windows regarding these issues and act accordingly.

To vary a selected parameter you can use + and - key or in some cases directly type the new value. + and - steps the value for every press. Repeat function seems not to work. In I/Q you can use the side arrows.

## RX calibration

Select Maintenance, Tuning, RX Calibration

Select Band: GSM850

Select Automatic and follow the prompts

The window should look like this:



- 1 Select Automatic, set to 60dBm in small window in top bar
- 2 Start and select PM settings in the start parameters that pop up

#### 3 OK

Fie For X	ew <u>Product</u> P	Jashing Maintenance Iools BD Window Help
🗅 📽 🔒 🗍	Operating mode	Local 💌 Bead 🔽 Dhange with Reset
Connection Fb	us	Settings Begistration
Autom. 60	dom 1st Mar	⊾ - 50 dbm 2nd Man 05 dbm
Band: GSM 900	7	
Item	Value	Stop.
VDX0 cal	568.00	
Aic value	3050.00	Calibrate
Slope C1	2916.00	
Slope C2	-547.00	Help
Slope C3	1.00	
Resi0	64.91	Calibration mode
Rssi1	70.91	Calibration mode
Resi2	76.91	• Automatic
Resi3	82.91	C Manual
Resi4	88.91	
Resi5	96.45	
Rasi6	102.45	
Resi7	108.45	
Rasi8	114.45	
Resi9	120.45	
Resi10	126.45	
Resi11	132.45	
Resi12	138.45	
Rasi13	144.45	
Resi14	150.45	
Rssi14	150.45	

The existing data in the phone is shown

- 1 Calibrate, and the new data is shown
- 2 Stop, and the little window pops up where you can select to save or not
- 3 Select GSM1900 in the top bar and repeat at channel 661.

Ele Edt View Broduct Flashing Maintenance Iools BD Window Help         Image: State Sta	1 Phoenix			
Image: Connection       Pues       Settings       Begistration         Autom       gg       dbm       1st Man       gg       dbm         Band       GSM 1800       Image: Connection       Image: Connection       Image: Connection         Band       GSM 1800       Image: Connection       Image: Connection       Image: Connection         Item       Value       Stop       Resid       Resid       GSM 1800         Item       Value       Stop       Resid       Resid       Resid       Resid         Resid       6275       Galbrate       Resid	Elle Edit ⊻iew Brock	uct Flashing <u>M</u> ain	lenance <u>I</u> oo	ls <u>B</u> D <u>W</u> indow <u>H</u> elp
Connection         Fbue         Settings         Begistration           Autom         go         dom         1st Man         go         dom         2nd Man         go         dom           Band         GSM 1800         Image: Connection         Image: Connecti	🗋 🗅 😂 🖬 🗍 Opera	ting mode: Local	2	Bead C Change with Reset
Auton. g) dbm 1st Man g) dbm 2nd Man g5 dbm Band GSM 1800 P	Connection Fbus	×	Settings	Begistration
Band         SSM 1800           Fix Calibration         Stop.           Resi0         62.75         Calibrate           Resi2         74.75         Calibrate           Resi2         74.75         Eleb           Resi3         90.75         Eleb           Resi6         92.75         Calibrate           Resi6         92.75         Eleb           Resi6         92.75         Eleb           Resi7         104.75         Resi8           Resi8         110.75         Resi8           Resi8         110.75         Manual           Resi11         128.75         Manual           Resi12         134.75         Resi13         140.75           Resi14         146.75         Resi14         146.75	Autom. 30 dom	1 st Man 50	dbm 2nd	Man 85 dbm
Item         Value         Stop.           Read0         62.25         Galbrate           Read1         68.75         Calbrate           Read2         74.75         Help           Read5         92.75         Help           Read5         92.75         Read5         92.75           Read5         92.75         Help         Calbrate           Read5         92.75         Read6         98.75           Read5         92.75         Read6         98.75           Read6         98.75         Read6         98.75           Read6         98.75         Read6         98.75           Read6         98.75         Read6         98.75           Read6         98.75         Read6         98.75           Read6         10.75         Read6         Nanual           Calbration mode         C Automatic         Manual           Read11         122.75         Read11         122.75           Read13         140.75         Read14         146.75           Read14         146.75         Read14         146.75	Band GSM 1900 💌			
Item         Value           Rasi0         62.75           Rosi1         68.75           Rosi3         00.75           Rosi6         92.75           Rosi8         10.75           Rosi8         110.75           Rosi10         122.75           Rosi11         128.75           Rosi13         140.75           Rosi14         146.75		🏠 Rx Calibration		
Resi0       62.75         Resi1       68.75         Resi3       90.75         Resi3       90.75         Resi6       92.75         Resi6       98.75         Resi7       104.75         Resi8       110.75         Resi9       116.75         Resi10       122.75         Resi11       128.75         Resi13       140.75         Resi13       140.75         Resi14       146.75		Item	Value	Stop.
Rovit         68.75         Calbrate           Resi2         74.75         Help           Resi3         90.75         Help           Resi6         92.75         Resi6           Resi7         104.75         Resi8           Resi8         110.75         Resi8           Resi8         110.75         Resi8           Resi8         110.75         Manual           Resi10         122.75         Manual           Resi11         128.75         Manual           Resi13         140.75         Resi13           Resi13         140.75         Resi13           Resi14         146.75         Resi13		RealO	62.75	
Resi2       74.75         Resi3       00.75         Resi4       86.75         Resi5       92.25         Resi6       98.75         Resi6       98.75         Resi6       98.75         Resi6       98.75         Resi6       98.75         Resi6       98.75         Resi7       104.75         Resi8       110.75         Resi10       122.75         Resi11       128.75         Resi13       140.75         Resi14       146.75		Reeit	68.75	Calbrate
Roi3       00.75         Roi3       92.75         Roi3       104.75         Roi3       110.75         Roi3       116.75         Roi10       122.75         Roi11       122.75         Roi12       134.75         Roi14       146.75		Rssi2	74.75	
Resi4       86.75         Resi6       92.75         Resi6       98.75         Resi7       104.75         Resi8       110.75         Resi10       122.75         Resi11       128.75         Resi13       140.75         Resi13       140.75         Resi14       146.75		Reei3	80.75	Help
Res6       92.75         Res6       98.75         Res7       104.75         Res8       110.75         Res10       122.75         Res11       128.75         Res12       134.75         Res13       140.75         Res14       146.75		Rasi4	85.75	
Res6     98,75       Res8     104,75       Res9     116,75       Res10     122,75       Res11     128,75       Res12     134,75       Res13     140,75       Res14     146,75		Rssi6	92.75	- Calibration mode:
Assi7     104.25       Resi8     110.75       Resi9     116.75       Resi10     122.75       Resi11     128.75       Resi12     134.75       Resi13     140.75       Resi14     146.75		Rasi6	98.75	G hutematic
Res8         110.75           Rss9         116.75           Res10         122.75           Rss11         128.75           Res12         134.75           Res13         140.75           Res14         148.75		Rssi7	104.75	Children
Hase9         116.75           Resi10         122.75           Resi11         128.75           Resi13         140.75           Resi13         140.75           Resi14         146.75		Rasi8	110.75	Manual
Resi10     122.75       Resi11     128.75       Resi12     134.75       Resi13     140.75       Resi14     148.75		Rssi9	116.75	
H3311 128.75 Reci12 134.75 Rasi13 140.75 Reci14 146.75		Resi10	122.75	
Heel2 134.75 Resi13 140.75 Reci14 146.75		Bss11	128.75	
H3313 140.75 Recit4 146.75		Hoo12	134.75	
		Rss13	140.75	
		Hoort 4	145.75	
		1		

- 1 The existing data in the phone is shown
- 2 Calibrate, and the new data is shown
- 3 Stop, and the little window pops up where you can select to save or not

## Tx power tuning

#### Select Maintenance, Tuning, Tx Power Level Tuning

#### TX power tuning GSM

Phoenix - [Tx Power Level Tuning]		- O X
CELE Edit View Broduct Flashing Maintena	nce Iools <u>B</u> D <u>W</u> indow <u>H</u> elp	_ # ×
🗅 🎯 🖬 🛛 Operating mode: 🛛 Local	💌 🔄 🖂 🗆 Qhange with F	leset
Connection Fbus	B Registration	Tx Power Level: 5
Tx PA Mode: High 💌 🛛 Tx Data Type: 🗛 1	AFC: 3050	Active Unit Rx 💌
Press Start to begin Tx Power Level Tuning	Start Stop Bandt GSM 900 C Edge: Off C Tx PA Mode: High C Delogiste coefficients	*
-		
	Heb	
۲		×

1 Select edge off, GSM 850

2 Press Start and select from where to load values. Best is to have PC saved data from a good phone. The data from a "good" phone can be saved to PC, for use later.

🐁 Pho 🔨 Ek	enix - [Tx Powe	er Level Tuni roduct Fjeshir	ng) ng <u>M</u> aintenan	ce Iooks <u>A</u> O <u>W</u> indow <u>H</u> elp	×		
יטו	D 🗃 🖬 _ Operating mode:   Local 🔄 _ Bead 🔽 Ohange with Reset						
Connection Fbus Settings Begistration Tx Power Level: 19							
Tx PA	Mode: High 💌	Tx Data 1	Type: Al 1	AFC: 305	0 Active Unit: 🛛 💌		
	Coefficient	Target d'An	DAC	926	<u>^</u>		
5	8 7787	32.5	796	22,000			
6	0.6964	31.0	712	Stop			
7	0.6107	29.0	624				
8	0.5425	27.0	554				
9	0.4897	25.0	500	Band: GSM 900 💌			
10	0.4476	23.0	457				
11	0.4142	21.0	423	Edge: Dif 💌			
12	0.3875	19.0	396				
13	0.3664	17.0	374				
14	0.3493	15.0	357	Tx PA Mode: High 💌			
15	0.3357	13.0	343				
17	0.3245	9.0	332	Calculate coefficients			
18	0.3093	7.0	316	Zaraza contracto			
19	0.3032	5.0	310		_		
Base	0.2727		205				
Test	0.0000		0	Zero DAC:			
				Help			
•					<u>ا</u> م		

3 Select the modulation 1, 0 or random in Tx Data Type. Select random if a GSM tester is used. Then it can synchronise to the burst.

- 4 Select Tx PA Mode High
- 5 Tune the highlighted values to the wanted power (Use average burst power)
- 6 Tune base level to -28dBm (CMD55 can keep synchronisation close to the lowest level )

7 Calculate coefficients

1 Phoen	iz - [Tx Powe	r Level Tuni	ng]				
C Die 1	Tok New D	roduct hjashi	ng Maintenar	ice Iools HU Window Help	느렌즈		
🗋 🖻	Dperal	ing mode: Lo	cal	<ul> <li>Bead</li> <li>Change with Reset</li> </ul>			
Connect	Connection Fbus Settings Registration Tx Power Level 19						
Tx PA Me	ode: Low 💌	Tx Data	Type: AL1	AFC: 3050 A	votive Unit: 🛛 🖂		
	Coefficient	Target dBm	DAC	Start.	-		
5	0.6253	32.5	639				
6	0.6253	31.0	639	Sjop			
7	0.6253	29.0	639				
8	0.5547	27.0	567				
9	0.4997	25.0	511	Bandt GSM 900 💌			
10	0.4561	23.0	466				
11	0.4214	21.0	431	Edge Diff. X			
12	0.3938	19.0	402	Coger on			
13	0.3718	17.0	390				
14	0.3540	15.0	362	Tx PA Mode: Low 💌			
15	0.3400	13.0	347				
16	0.3296	11.0	336				
17	0.3195	9.0	326	Calculate coefficients			
18	0.3120	7.0	319				
19	0.3057	5.0	312				
Base	0.2727		275	Zee DAC			
Test	0.2727		279	Zeo cinc. 1			
				Heb			
					=(		

- 8 Select Tx PA Mode low and tune the high lighted values.
- 9 The base level coefficient is taken from the high mode. Do not change it.
- 10 Calculate and select Stop

Stop Tx Power Level Tuning	×
Do you want to stop tuning?	(Yes )
Pressing Yes will stop the tuning and save the values to selected destinations. Pressing No will continue tuning without saving.	No
✓ Save values to Phone Permanent Memory ✓ Save values to PC	Heb

If you are satisfied with the coefficients and the power, then save to the Permanent memory.

You can also save the table to the PC, so that you can load it to an other phone. Or you can select not to do anything by removing both ticks.

The only way to end the tuning session is with Yes

## TX power tuning GSM1900

1 Select GSM 1900 band (PCN)

Phoenix - [Tx Power Level Tuning]						
🚹 Ele	Edit View B	roduct Fjashin	ig <u>M</u> aintenan	ce <u>I</u> ools <u>B</u> D <u>W</u> indow <u>H</u> elp	X	
	Dperal	ting mode: Loc	;al	▼ <u>B</u> ead □ Change with F	leset	
Connec	Connection Fbus Settings Begistration Tx Power Level: 19					
Tx PA N	iode: Low 💆	Tx Data 1	ype: All 1	AFC: 3050	Active Unit 🛛 💌	
	Coefficient	Target dBm	DAC	Start	<u> </u>	
5	0.6253	32.5	639			
6	0.6253	31.0	639	Sjop		
7	0.6253	29.0	639			
8	0.5547	27.0	567			
9	0.4997	25.0	511	Band: GSM 1800 💌		
10	0.4561	23.0	466			
11	0.4214	21.0	431	Edge 00 K		
12	0.3938	19.0	402	coge for I		
13	0.3718	17.0	390			
14	0.3540	15.0	362	Tx PA Mode:		
15	0.3400	13.0	347			
16	0.3286	11.0	336			
17	0.3195	9.0	326	<u>Calculate coefficients</u>		
18	0.3120	7.0	319			
19	0.3057	5.0	312			
Base	0.2727		279			
Test	0.2727		279	Zero Dielz:		
				Help		
					-	

## 2 Start

3 Select where to get values from. Normally Permanent Memory

Start Tx Power Level Tuning	×
Load From:	OK
Permanent memory	Cancel
Permanent memory PC default values PC saved values Current values	Help

4 OK

🐁 Phoen	ія - [Тя Роне	a Level Tuni	ing]	
🔥 <u>F</u> ile .	<u>E</u> dit ⊻jew <u>P</u>	roduct Fjashi	ng <u>M</u> aintenan	ce Iools BD Window Help
D 🚅	Doesd	ing mode: Lo	cal	Bead Change with Beset
1	-	- A	_	
Connect	ion  Fbus		<ul> <li>Setting:</li> </ul>	Tx Power Level 15
Tx PA M	ode: High 💌	TxData	Type: Rand	AFC: 3050 Active Unit: Tx 💌
_ ····				
	Coefficient	Target dBm	DAC	Start 🗧
0	0.7639	29.5	781	
1	0.6913	28.0	707	Sjop
2	0.6149	26.0	629	
3	0.5539	24.0	566	
4	0.5062	22.0	517	Band: GSM 1800 💌
5	0.4683	20.0	479	
6	0.4380	18.0	448	Eday Dill y
7	0.4141	16.0	423	coge on
8	0.3951	14.0	404	
9	0.3803	12.0	389	Tx PA Mode: High 💌
10	0.3683	10.0	376	
11	0.3586	8.0	366	
12	0.3504	6.0	358	Galculate coefficients
13	0.3442	4.0	352	
14	0.3392	2.0	347	_
15	0.3353	0.0	343	7
Base	0.3118		319	Zero DAL: ]
Test	0.2727		279	
				Heb
				*

1 Select the wanted modulation. Random if a GSM tester is used, so that you can synchronise the burst.

- 2 Only high mode is possible
- 3 Tune the highlighted values to the wanted power
- 4 Tune base level to -27dBm
- 5 Stop

Stop Tx Power Level Tuning	×
Do you want to stop tuning?	Yes
Pressing Yes will stop the tuning and save the values to selected destinations. Pressing No will continue tuning without saving.	No
Save values to Phone Permanent Memory	
Save values to <u>P</u> C	Help

- 6 Select where to save the values, one, both or no one can be selected.
- 7 Yes. That is the only way to end tuning.

## I/Q tuning

#### Select Maintenance, Tuning, Tx IQ tuning

Set CMD55 to Narrow Spectrum on the same band as the phone.

Selected in the top menu..

A Phoneir - ITs 10 Tuning)		
Ele Edit View Product Flashing Maintenand	ce Iools <u>B</u> D <u>W</u> indow <u>H</u> elp	X
Derating mode: Local	Bead      Change with Recei	
Connection Fous Settings	<u>Registration</u>	Band GSM 900 💌
Operation Mode: Butst	et 37 942.400000 ] Tx Data T	pec All Y
Tx PA Mode: High 💌		Edge N/A
TX1 DC offset	100 % Says to Prod	<u>ducț</u>
Amplitude difference:	6.0 	

1 Select where to get values. Normally select Load From Product

2 Start

- 3 Tune offset values to lowest carrier. Use Side arrows or +, .
- 4 Tune Amplitude and phase to lowest sideband.

5 Check eventually with other modulation (0).

🏠 Phoenix - [Tx IQ Tuning]
See Edit View Product Flashing Maintenance Tools BD Window Help6
🗈 🍅 🛃 _ Operating mode: Local 💌 _ Bead 🗖 Change with Reset
Connection Fbus Settings Begistration Band GSM 900 V
Operation Mode: Burst 💌 Rx/Tx Channel: 37 897.400000 Tx Data Type: All 1
Tx PA Mode: Free 💌 Edge N/A
TX   DC offset         0.000         Start           -100 %         100 %         Start           TX Q DC offset         0.500         Belp
-100 % For Load from Product
Amplitude difference: 0.0 -6.0
Phase difference: 87.0 27.0° 153.0° 153.0°

Remember to tick Save to Product if you want to save the values in the phone.

6 Stop to end the tuning with the selected save option .

Transport (Tx IQ Tuning)
💦 Elle Edit View Product Flashing Maintenance Icols BD Window Help 📃 🖉 🗙
🗈 🗃 🛃 _ Destating mode: Local 💌 _ Bead 🗖 Qhange with Reset
Connection Fous Settings Begistration Band GSM 1800 Y
Operation Mode: Burst 💌 Rx/Tx Channet 700 1747.800000 Tx Data Type: All 1 💌
Tx PA Mode: Free Edge N/A
TX   DC offset:     0.000       -100 %     Store       -100 %     Store       Help     Help       TX @ DC offset:     -0.500       -100 %     IO0 %
AmpRude difference: -0.2 -6.0 6.0
Phase difference: 91.5

The same procedure for all GSM bands.

Remember to tick Save To Product.

Stop. Ends tuning.

#### RF control

This menu can be placed in maintenance or in tuning dependent of Phoenix.

It is meant to check the receiver or transmitter without going in call. It works very much like a call, but you have control via the PC, and not via the tester. The TX mode GSM850 can select between Free, High and Low mode. It changes the PA mode, but changes also the power level if a level is selected that is not supported in that mode.

If you want to tune at other channels than the default, then you must select it first in RF control and then start the tuning.

Phoenix	er Tech OD Witcher Hele	
Die Local	Bead     Dange with	Reset
Connection Fbus	tings Registration	Edge N/A
AF Controls		
Band: GSM S00 💌	Tx PA Mode: High	
Active Unit: Rx 💌	Tx Power Level: 5	
Dperation Mode: Burst	Tx Data Type: All 1	2
Rs/Tx Channel Burst 00	)	
Monitor Channet 37 942.400000	)	
AGC: 14 FEG_ON + DTOS_ON + B	B_42 = VISain_72 ▼	
AFC: 3050	Help	

If you want to tune at other channels than the default, then you must select it first in RF control and then start the tuning.

## Call testing

If all tunings are done and the phone TX and RX is working a call is the ultimate test of the phone.

Set CMD55, or similar tester, to manual test and switch the phone to normal if it was in local. Remember to have a test simcard in the phone.

When the phone has made a registration a call can be made, and it is possible to let the phone answer via Phoenix. In the Autocaller (Maintenance Testing) you can answer by ticking Answer when button pushed and then push the button.

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# **Flashing Setup Instructions**

# POS (Point of Sale) flash concept



## Figure 1:POS flash

## Table 1:

Item	Туре	Description	Code
1	SF-10	Point of Sales flash loading adapter	0770492
2	XCS-1	Service cable	0730218
3	ACF-8	AC charger	0680032
4	FLS-4S	FLS-4S sales package E&A	0080541
	FLS-4S	FLS-4S sales package APAC	0080542
	FLS-4S	FLS-4S sales package US	0080543
5		Service SW CD-ROM	

## Flash Concept with Flashing adapter



## Figure 2:Flash concept with flashing adapter

Table	2:
-------	----

Item	Туре	Description	Code
1	SF-10	Point of Sales flash loading adapter	0770326
2	FLC-2	Power cable, incl. in SF-10 sales package	0730185
3	XCS-4	Modular cable	0730178
4	FPS-8	Flash prommer box with 2x SF12 SRAM	0080321, 0080346
5		Centronics (printer) cable, incl. in FPS-8 sales package	0730029
6	AXS-4	RS-232 (D9-D9) cable, incl. in FPS-8 sales package	0730090
7	PKD-1	Software protection key	0750018
8		Service SW CD-ROM	
9	ACF-8	AC charger, incl. in FPS-8 sales package	0680032

## Module jig concept



## Figure 3:Module jig concept

		•
'l'al	ble	3:

ltem	Туре	Description	Code
1	MJ-15	Module jig	0770416
2	PCS-1	DC power cable	0730012
3	XRF-1	RF antenna cable	0730085
4	DAU-9S	Service FBUS cable	0730108
5	PKD-1	Software protection key	0750018
6		Service SW CD-ROM	

# JBV-1 flash concept

Nokia Customer Care

NOKIA



## Figure 4:JBV-1 flash concept

Table	4:
-------	----

Item	Туре	Description	Code
1	JBV-1	Docking station	0770298
2	PCS-1	DC power cable	0730012
3	XCS-4	Modular cable	0730178
4	FPS-8	Flash prommer box	0080321
5	Printer cable	Incl. in FPS-8 sales pack	0730029
6	AXS-4	D9 – D9 cable, incl. in FPS-8 sales pack	0730090
7	PKD-1	Software protection key	0750018
8		Service SW CD-ROM	
9	ACF-8	AC charger, incl. in FPS-8 sales pack	0680032

## Service concept



## Figure 5:Service concept

Table 5:

Item:	Туре:	Service accessory:	Product code:
1	JBV-1	Docking station	0770298
2	DA-35	Docking station adapter	0770674
3	CA-5S	DC-DC cable	0730283
4	XRF-1	RF antenna cable	0730085
5	PCS-1	DC power cable	0730012
6	DAU-9S	Service FBUS cable	0730108
7	PKD-1	Software protection key	0750018
8		Service SW CD-ROM	

# Parallel flash concept



## Figure 6:Parallel flash concept

Tabl	le	6:
Tabl	e	6:

ltem	Туре	Description	Code
1	DA-35	Docking station adapter	0770674
2	JBV-1	Docking station	0770298
3	XCS-4	Modular cable	0730178
4	PCS-1	DC power cable	0730012
7	AXS-4	D9 – D9 cable, incl. in FPS-8C sales pack	0730090
8	Printer cable	Incl. in FPS-8C sales pack	0730029
10	PKD-1	Software protection key	0750018
11		Software (PC SW + SF11C SW)	
17	FPS-8C		0080396