



**MOTOROLA**

Motorola GmbH, CSS Center Flensburg, Mobile Devices

Title: Troubleshooting-Guide **MPx220**

Doc. No: TSG\_MPx220

Version: 1.0

Date: 07.06.2005

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## Debug - Guide

# MPX220





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<i>Modified</i>	<i>Date</i>	<i>By</i>



## **1 Preamble**

This document was created to assist analyzers when fixing problems on Motorola GSM Phones. All information was collected during the repair in the Repairentitlement Group Flensburg.

## **2 Basic tips**

### Software upgrade:

- At each softwareupdate only use the latest released software (if available). This is important to make sure, that known software bugs are eliminated.

### Visual inspection:

- Check for liquid damage (water indicator)
- Check for missing, broken or unsoldered parts
- Check for mechanical damage (board twisted, tracks defect etc.)

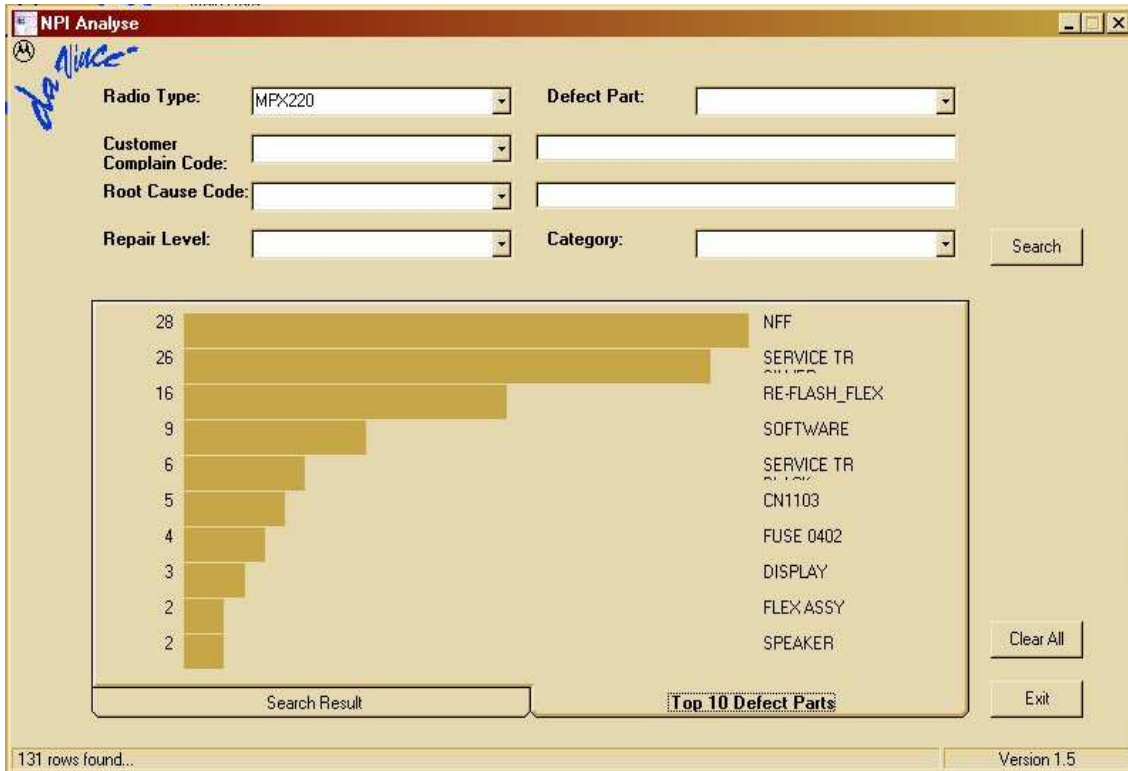
### Cross check:

- Before beginning to replace/change parts or soldering anything, try to consider the failure from all sides.



### **3 Top ten defective parts**

This shows an analysis-summary of MPX220 repaired in NPI – process:



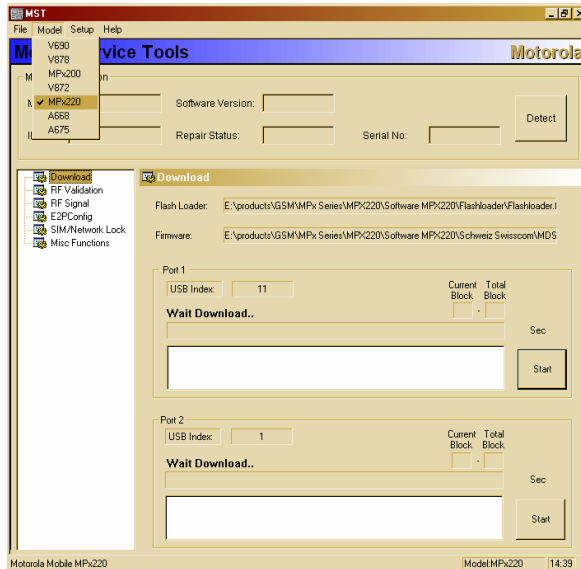


## **4 Setup and working with MST**

### **4.1 Setup of MST**

Before the using of MST some general preferences need to be configured.

After starting MST you have to switch to the product you want to handle. This is necessary each time you start MST.



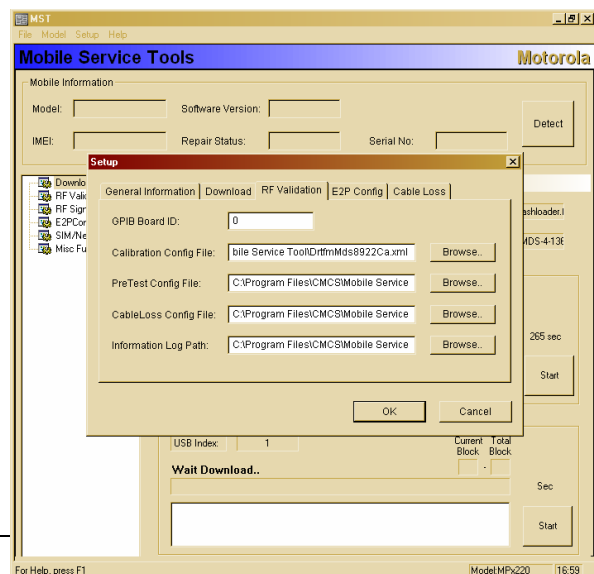
***Only before the first use of MST on a PC you have to configure some general preferences in the setup-menu:***

#### **'RF validation'**

On tab 'RF validation' you have to choose the correct config files for the testset you use. The path to the config files is

C:\Program Files\CMCS\Mobile Service Tool\ (the files have been created automatically while the installation of MST)

Additional you have to choose an information log path for log files of each operation. Create a folder on your local harddisk for example.





Overview of the correct config files

Agilent 8960:

Calibration Config File	DrtfmMds8960Ca.xml
PreTest Config File	DrtfmMds8960Pt.xml
CableLoss Config File	DrtfmMds8960Offset.xml

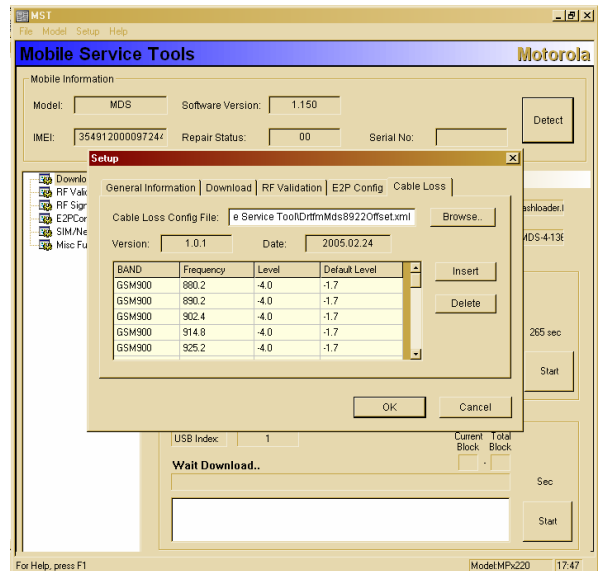
HP 8922:

Calibration Config File	DrtfmMds8922Ca.xml
PreTest Config File	DrtfmMds8922Pt.xml
CableLoss Config File	DrtfmMds8922Offset.xml

**'Cable loss'**

Additional to this configuration a config file for the RF cable loss is needed.

You have to choose it on the tab 'Cable Loss' in the setup menu. The needed file is the correct CableLoss config file for the used testset.

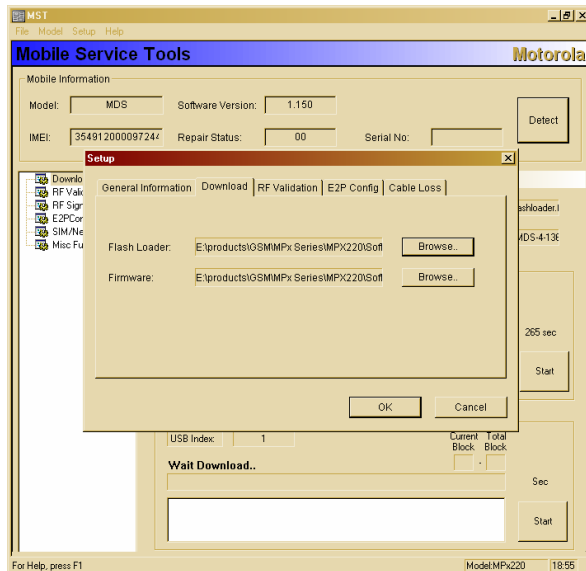


**These settings you have to do only once at the first use of MST.  
They will be saved.**



**'Download'**

On the tab 'Download' you have to select the flashloader file and the firmware file for the transceiver you want to flash.



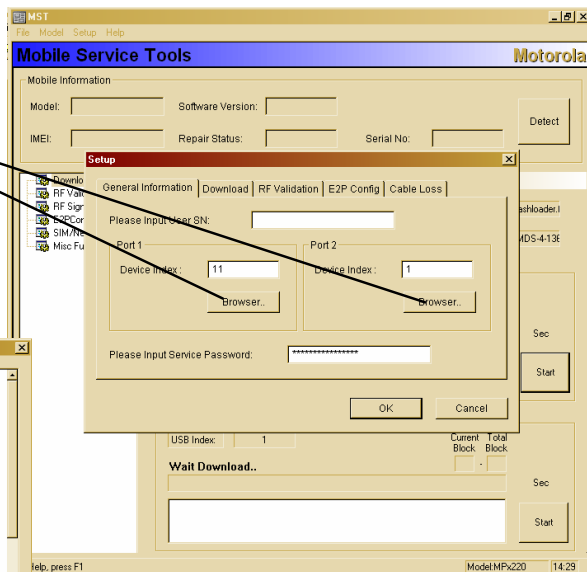
These files will remain selected until you choose other files.

**'General information'**

On the tab 'general information' you can browse the ports of your PC to check the connections.

Here you have to select the connected mobile you want to handle. (Normally Port 1 is in use)

After clicking one of the buttons a portbrowser opens:



Now select the connected mobile by doubleclicking on it.



### 4.2 Manual test commands

For troubleshooting the MPX220 are equipped with a manual test mode capability. You can perform the following test functions when the phone is switched on in use of a test SIM card:

Key sequence	Test function
*#06#	IMEI check
*#**837# <b>SEND</b>	Flex-version/SW-version/technology
*#**364#	Display engineering menu
*#**266*0#	Set as data COM port
*#**266*1#	Set as log COM port
*#**797#	Display time to failure timer & power down codes
*#**367628# <b>SEND</b>	Erase data from the file system (as done at master clear)
*#**778337# <b>SEND</b>	Erase data from E2P like phonebook (as done at master clear)
*#**372# <b>SEND</b>	CIT test (display, camera, keypad, audio,...)

#### Perform a masterclear:

Switch mobile on while pressing the blue action button and select 'Yes' when formatting prompt is shown on display. Select 'No' to abort action.

#### Start up mobile in boardtestmode:

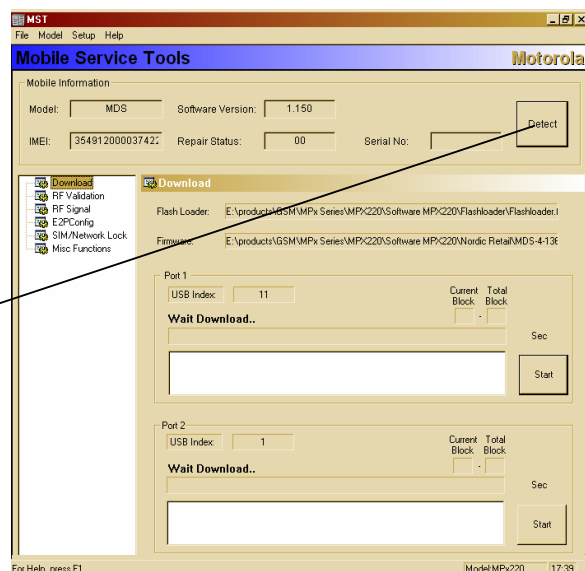
Connect mobile to the PC via CE-cable while pressing button '6'. Make sure that on the display 'boardtest mode' is declared.

### 4.3 Read data of mobile

Connect mobile to PC via CE-cable while pressing button '6'. After mobile has start up in boardtest mode select connected mobile in the setup menu -> 'general information' with the browser and close the setup menu.

Now you can read out the mobile information by clicking on the 'detect'-button.

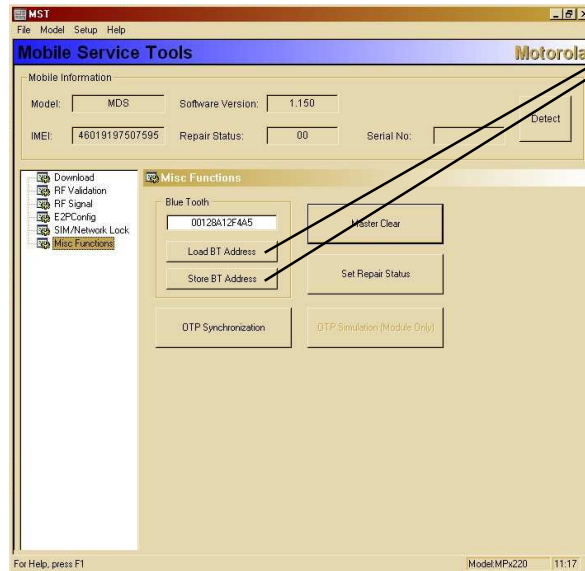
The 'mobile information' area is always on top while MST is running.





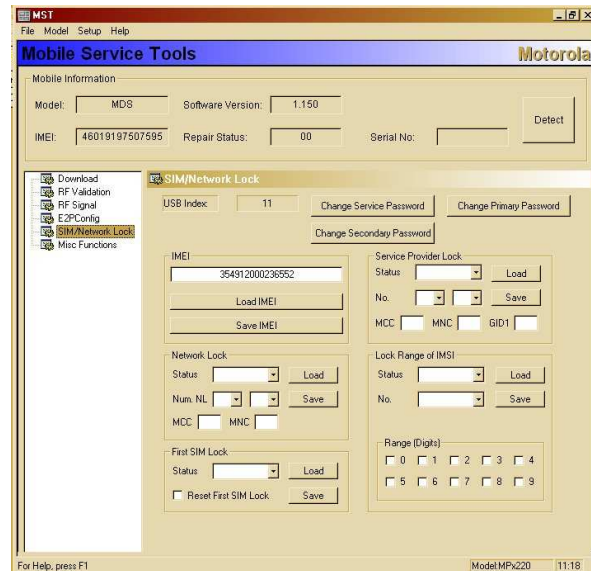


On the tab 'Misc Functions' you can read out and change the Bluetooth address.



On the tab 'SIM/Network Lock' you can read out the IMEI and the subsidys and the status of the network lock status. To change any of these issues you need the correct service password that fits to the IMEI in the connected phone.

**Notice:** Without a Rockey Key this tab is hidden!



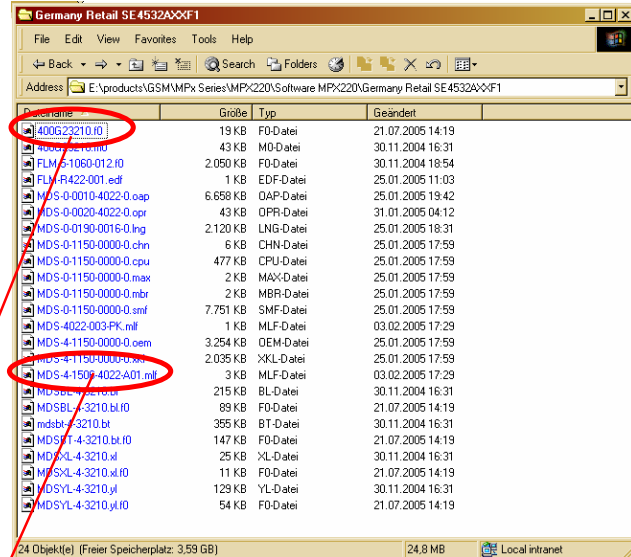


### 4.4 Software upgrade procedure

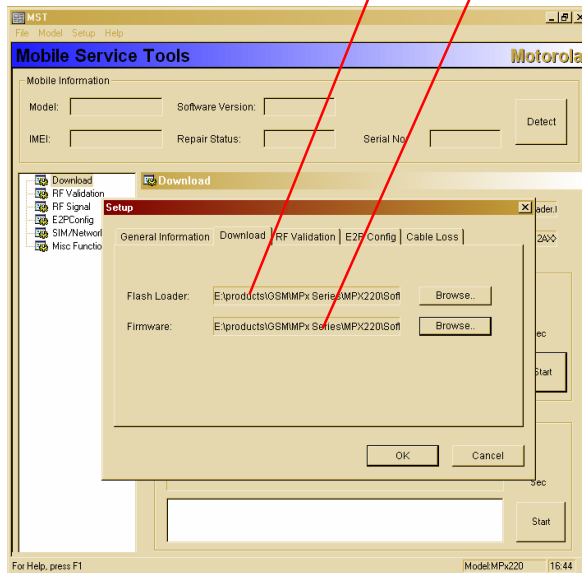
#### Step 1:

Choose the correct flashloader file and the correct firmware file in the setup-menu on the tab 'Download'. These files are included in the software-bundles for MPX220.

There is an actual flashloader file (\*.f0) included in every software-bundle. The firmware file (\*.mif) is like an Motorola-known 1FF file including flexing and languagepack.



Example of a softwarebundle for MPX220

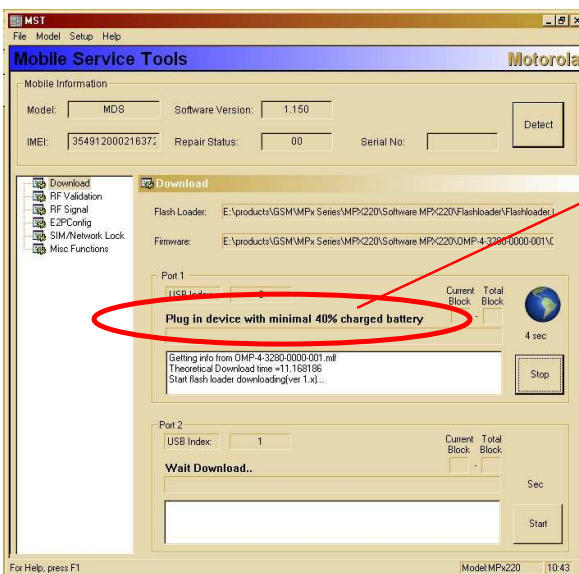
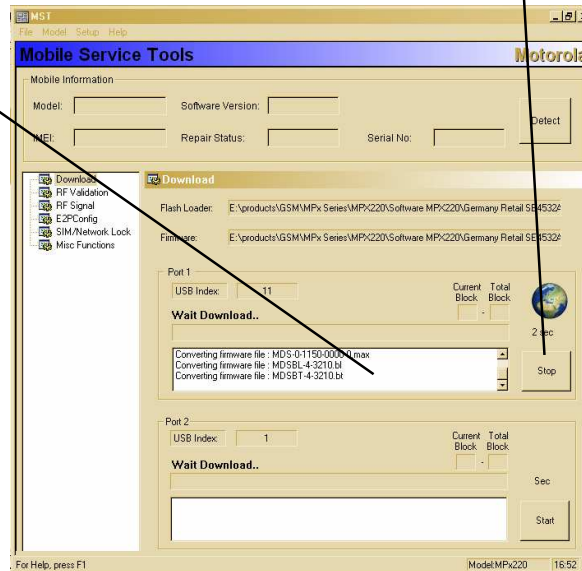


Proceed by clicking on OK.



Step 2:

Now switch to the tab 'Download' and start the procedure by clicking on 'Start'. Now MST starts with converting the chosen files.



When MST is ready to flash, connect the phone including a battery with the PC and the flash-procedure begins.



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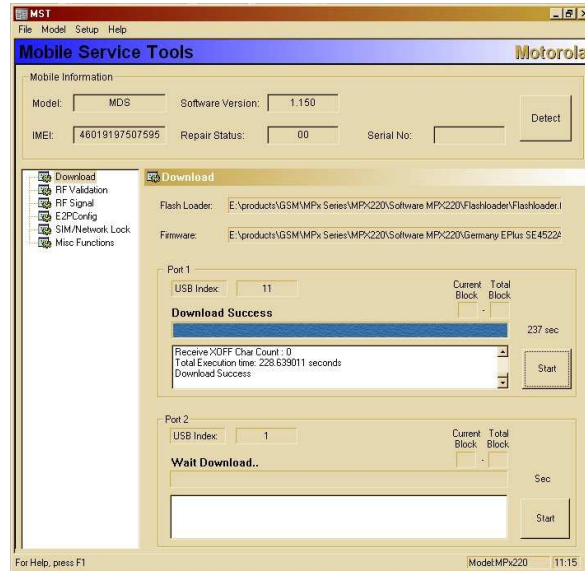
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When the flash-procedure is finished you can disconnect the phone. When you start up the phone the first time after flashing, automatically a masterreset will be done.



## **4.5 Phasing and calltest**

To make a phasing - and a calltest on MPX220 you have to connect the transceiver with the PC in boardtestmode!

Phasing:

