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Motorola	GmbH, CSS Center Fl

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Debug - Guide





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1 Preambel

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.

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3 Top ten defective parts

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

Radio Type:	MPX220	•	Defect Part:		•	
Customer		•	[_	
Root Cause Co	: ode:		Ē			
Benair Level:			Category	F		
перан сетек.	1	1	Category.	l.	1	Sear
28				NFF	î	
26				SERVICE TR		
16		_		BE-FLASH FLEX		
9				SOFTWARE		
6				SERVICE TR		
5	-			CN1103		
4				FUSE 0402		
3				DISPLAY		
2				FLEX ASSY		
2				SPEAKER		Clea
			T a	T 10 D (10 D)		F

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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.



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

<u>`RF validation'</u>



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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 PreTest Config File CableLoss Config File

DrtfmMds8922Ca.xml DrtfmMds8922Pt.xml DrtfmMds8922Offset.xml

<u>'Cable loss'</u>

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.

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<u>`Download'</u>

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

File Model Setup Help	_ / ×
Mobile Service Tools Mo	torola
Mobile Information	
Model: MDS Software Version: 1.150	etect
IMEI: 35491200009724/ Repair Status: 00 Serial No:	
Setup	
Team Downlo Team RF Valic RF Validation E2P Config Cable Loss	
Ship AF Sign	ader.I
MIS- Misc Fu Flash Loader: EtproductsIGSMIMPx SeriesIMPX220tSoft Browse	-4-136
Eimmare: EimoductoIGSMIMPy SeriesIMPY2200Soft Browse	
265	5 sec
	Start
OK Cancer	
USB Index: 1 Current Total Block Block	
Wait Download	
S	ec
	Start
For Help, press F1 Model/MPx220	18:55

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.



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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# SEND	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# SEND	Erase data from the file system (as done at master clear)
*#**778337# SEND	Erase data from E2P like phonebook (as done at master clear)
*#**372# SEND	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.

MST

Model Setup Help

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4.3 Read data of mobile



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

MST			_8>	
e Model Setup Help Mobile Service Mobile Information Model: MDS	Software Version: 1	150	Motorola	
INEE: 46019197507	7995 Repair Status: C: Misc Functions Blue Toolh 0022013F4A5 Load BT Address Store BT Address 0TP Synchronizaton	00 Serial No: Hister Dear Set Repair Status 0TP: Smulterion (Module Only)	7_	
Halp rease F1			ModeMPv220 11-17	

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!

Mobile Information		
Model: MDS IMEI: 46019197507	Software Version: 1.150 595 Repair Status: 00	Serial No:
Download BF Validation BF Signal E2PConfig St SIM Matematic Lock	USB Index 11 Change	Service Password Change Primary Password
Misc Functions	IMEI IMEI Save IMEI Save IMEI	Status Save
	Network Lock Status Load Num, NL Save MCC MNC	Lock Range of IMSI Status <u>Load</u> No: <u>Save</u>
	First SIM Lock Status Load Reset First SIM Lock Save	Range (Dipts)

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4.4 Software upgrade procedure

Step 1:



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<u>Step 2:</u>

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



File Model Setup Help		_8×
Mobile Service	Tools	Motorola
Mobile Information Model: MDS IMEI: 3549120002163	Software Version: 1.150 97. Repair Status: 00 Serial No:	Detect
Go Downlad	Pownload Flath Loade: Exproducts/GSM/MPX Series/MP/220/Software MP/220/Software MP/22	Flashoader 10000-001V 4 sec Stop
	Pot 2 USB Indec. 1 Durrent Total Block. Wait Download	Sec Start
For Help, press F1	Model MPr	220 10:43

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

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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:

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6 Debug guides

6.1 No charging

Customer complaint: No charging, no turn on

- 1. Visual inspection
 - Check contacts of CE-connector and clean them if necessary
 - Check soldering of CE-connector and resolder it if necessary (Field Service Bulletin LVCCFSB2005-64)



- Check Fuse 0402. (Field Service Bulletins LVCCFSB2005-141 and LVCCFSB2005-107)

- 2. Control by the following steps if failure is fixed
 - Reassemble PCB and connect phone with a charger (charging OK?)
 - Start up phone and initialize the CIT, here you can check the voltage of the battery and the charge-function

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