

This document describes the firmware update procedure for MRCC. The latest firmware file can be found at <u>http://mesytec.com/downloads/firmware updates/MRCC/</u>

Requirements

- Lattice Programming Cables
- Lattice Diamond Programmer
- The latest MRCC CPLD firmware file
- USB Cable Type $A \rightarrow B$
- Microchip Flip Programmer
- The latest MRCC CPU firmware file
- These steps are for Windows

Table of Contents

CPLD Firmware Update <u>Download Lattice Diamond Programmer</u> <u>Connection of Cables</u> <u>Start the Lattice Diamond Programmer</u> <u>Programming</u>

Project saving

CPU Firmware Update <u>Download Microchip Flip Programmer</u> <u>Connection and configuration</u> <u>Programming</u>

Download Lattice Diamond Programmer

• Download the "Lattice Diamond Programmer" from the following link. http://www.latticesemi.com/en/Products/DesignSoftwareAndIP/FPGAandLDS/LatticeDiamond.aspx

- In order to download the software, it is necessary to register on the Lattice homepage.
- Scroll down to the table and chose the "Programmer Standalone".
- Be sure to download the 32 bit or 64 bit version depending on the operating system version you are using.
- After the download is complete, unzip the zip-file.
- Start the "Programmer.exe" and follow the setup assistant.



Connection of Cables

- Connect the **"Lattice Prgramming Cable"** with the USB-Cable to your PC.
- The USB driver is automatically installed by Windows. Wait until the installation is complete.
- Connect the coloured cables to the mesytec adapter plate.
- And connect the adapter plate to the MRCC.
- Be sure to observe polarity.
- In order to supply the MRCC with power, connect the MRCC via USB cable to your PC.



Start the Lattice Diamond Programmer

- Start the programmer from the start menu.
- Click on "Detect Cable" and after detection click "OK".

 Non- territorialization and Data 		
📗 Lattice Diamond Programmer 3.8 (64-bi		Diamond Programmer - Getting Started
Deployment Tool	Dokumente	
Diamond Programmer		Select an Action
Download Debugger	Bilder	Create a new project from a JTAG scan
Install&Uninstall Cable Drivers	1998 - 24	
Search Model 300 Programmer	Musik	Cable: HW-USBN-2A Port: EzUSB-0 Detect Cable
Programming File Utility		
· institution	Zuletzt verwendet 🕨	Create a new blank project
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· · ·····	Systemsteuerung	
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a timenar untitimat a figar	Standardprogramme	
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1 Zurück		
Programme/Dateien durchsuchen 🔎	Herunterfahren 🕨	

• The Lattice Diamond Programmer scan automatically the Lattice Component.



MRCC

V1.0

- In the green coloured area you can see the scanned Lattice Component.
- Click on the red coloured button to add the ".jed file."

💭 Diamond Programmer - Untitled *													
File Edit	t View	Design H	Help										
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Programming

- In the green coloured area you can see the loaded firmware file.
- Click on the red coloured button to programm the Lattice Component.

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Ready											

• The Lattice Diamond Programmer is programming the Component.



• In the "Status" column



appears the Info "PASS" and is highlighted in green.

• At the bottom of the Output window, you can also see that the programming was successful.

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The MRCC CPLD Firmware is now updated

Project saving

• All settings can be stored to update other MCFD-16 at a later time.

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Download Microchip Flip Programmer

• Download the "Microchip Flip Programmer" from the following link. <u>https://www.microchip.com/developmenttools/productdetails.aspx?partno=flip</u>

- To download the software, it is not necessary to register.
- After the download is completed, click on the **"Flip Installer.exe"** and follow the setup assistant.

Connection and configuration of the Microchip Flip Programmer

- Before you connect the MRCC to your PC via the USB cable Type A \rightarrow B, you must press and hold down the reset button and then plug the USB cable into the MRCC.
- Then the button can be released.
- The USB driver is automatically installed by Windows. Wait until the installation is complete.



- Start the Microchip Flip Programmer.
- Click on the red coloured button on the upper left, choose the AT89C51ED2 Device, click "OK"

🔬 Atmel Flip		
File Buffer Device Sett	ings Help	
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Operations Flow	FLASH Buffer Information Device	
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	Ra Select a device	
	AT89C51CC01	
Blank Check	AT89C51CC03	
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	AT89C51ID2	
Program	HE AT89C51E2	
	AT89C51RC2	
Verify		
	OK Abbrechen	
Run		
	Communica	ation OFF

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• Load the .hex file.



MRCC

V1.0

• Click on the usb cable button and open the RS232 connection.

🚾 Atmel Flip				
File Buffer Device	Settings H	Help		
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Blank Check	Ch	necksum 0xFF		Hardware Byte 🔲 🔲 BLJB 🗌 X2
	Re	eset Before Loading		Bootloader Ver.
Program	HE	EX File:		BSB / SBV
Verify		AIME		Security Level
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Run		Select EEPROM		Start Application Reset
				Communication OFF

• Choose your Com Port, select Baudrate 9600 and click Connect.





Programming

- Check the green areas again to make sure that all settings have been accepted.
- If the settings correct, click on the **"Run"** button.



• If all the lamps light up green, programming is complete.



The MRCC CPU Firmware is now updated