

COMMISSIONING GUIDELINE

# M4M Firmware update Getting started



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# 1 Material and tools needed

- Latest FW version of M4M downloaded automatically from Ekip Connect in C:\ProgramData\ABB\EkipConnect3\Firmware\M4M. Alternatively, available at this <u>link</u> (1SDC200011X0100)
- User manual of M4M 20 Network Analyzer available at this <u>link</u> (2CSG445032D0201)
- User manual of M4M 30 Network Analyzer available at this <u>link</u> (2CSG445042D0201)
- Ekip Connect 3 software, updated to the latest version, available at this link (ISDC20011X3000)

# 2 Initial settings on M4M device

- Steps described below shall be completed per each M4M before starting updating FW.
- In case of product communicating via Modbus RTU, please follow the dedicated section "M4M Modbus RTU" for both M4M 20 and M4M 30 versions
- In case of M4M product communicating via Modbus TCP/IP, please follow the dedicated section "M4M Ethernet" for both M4M 20 and M4M 30 versions

### 2.1 M4M Modbus RTU

(M4M 20 Modbus, M4M 20 I\O, M4M 20 Rogowski, M4M 30 Modbus, M4M 30 I\O, M4M 30 Rogowski)

A. Check that Modbus RTU cable connected to the ABB power meter is correctly connected, in particular make sure that

W1=A=+

W2=B=-

**TIP**: in case the device is not communicating, re-cable the device by switching terminals (hence: W1=B=-; W2=A=+)

B. Steps to set Modbus RTU communication parameters are described in section "Communication menu" of M4M 20 and M4M 30 user manual.

On the device, go to "HOME" $\rightarrow$ "Configuration" $\rightarrow$ "Communication" $\rightarrow$ "Modbus RTU".

In the "Address" section, select an address from 2 to 247.

In the "Baud rate" section, select the desired baud rate from the list (9600, 19200, 38400, 57600, 115200).

**TIP:** with a default baud rate of 19200 the FW update takes about 20 minutes. With 115200 it takes about 6 minutes.

In the "Parity" section, select the desired parity from the list (Even, Odd, None)

C. Follow the instructions in case M4M is a slave device in master/slave RS485 network or M4M is directly connected via serial port to PC:

**TIP**: In order to directly connect M4M to PC, a RS-485/USB converter is needed.

Verify that Modbus RTU communication settings of M4M are equal to Modbus RTU settings of the master device.

If the master device is an ABB cloud access point, default settings are reported below:

- Baud Rate = 19200
- Protocol = 8E1 (8 bit data, even parity and 1 bit stop)
- RTU address for Master Device = 1
- RTU address for M4M slave device: to be inserted starting from 2 to 247.

**TIP**: Each device shall be provided with a different slave address. Otherwise, only one of the devices with the same slave address can be recognized.

### 2.2 M4M Ethernet

#### (M4M 20 Ethernet, M4M 30 Ethernet)

A. Steps to set Modbus TCP/IP communication parameters are described in section "Communication" of M4M 20 and M4M 30 user manual.

To reach the settings section, on the device, go to "HOME"  $\rightarrow$  "Configuration"  $\rightarrow$  "Communication"  $\rightarrow$  "Modbus TCP/IP". Parameters that can be set are DHCP, IP address, Subnet mask, Gateway and TCP port.

In the "DHCP" section, select between Enable and Disable.

<u>In the "IP address" section, select the desired address of the device (in "Static Configuration" or read the current IP address if the DHCP support is enabled.</u>

**TIP**: In case of ABB cloud access point, DHCP on M4M should be disabled (as default) and its TCP port, which is already enabled, should be at the default value (502).

**TIP**: In case of ABB cloud access point, IP of M4M shall be in the range of the sub-network where the cloud access point is connected, which must be provided with access to the internet.

- B. According to the architecture, follow the instructions
  - 1. M4M directly connected to laptop via Ethernet port

Laptop shall be connected to same Ethernet network where the M4M is connected. To access IP settings in Windows, access laptop "Control Panel"  $\rightarrow$  "Network and Sharing Center"  $\rightarrow$  "Change adapter settings"  $\rightarrow$  right click on "Local Area Connection (LAN)"  $\rightarrow$  "Properties">"Internet Protocol Version" and "Properties".

2. <u>M4M connected in the local area network</u>

Laptop shall be connected to the same local area network as M4M.

# 3 Procedure via Ekip Connect desktop

A. Make sure you have a MyABB account. If not, it is recommended to register on MyABB to activate an account.

**TIP**: In case of Modbus master device in the RS-485 architecture (e.g. PLC), the master should be disabled in order to use Ekip Connect desktop and perform the FW update

- B. Open Ekip Connect desktop in the "Scan" tab
- C. Configure the scanning via communication protocol
  - 1. Via Modbus RTU (M4M Modbus)

Click on "Configure" under Serial port.

CONNECT WITH YOUR DEVICES							
Connect your device by selecting one of the below communication channel.							
Ŷ	T&P	SCAN					
	Serial port Configure	SCAN					
*	Bluetooth Configure	SCAN					
$\begin{pmatrix} c^{a} \end{pmatrix}$	Ethernet <u>Configure</u>	SCAN					

Select port name, baudrate, parity, slave addresses of all devices connected via Modbus RTU to be updated.

### Press "OK".

PORT NAMES						
COM3						
Show only ABB usb keys	Refresh ports					
CAN PARAMETERS						
Baudrates (bits/s):	19200, 115200] •					
Parities:	Even •					
Timeout [ms]:	100 💲					
LAVE ADDRESSES						
	1, 2, 3, 4, 247 •					
Scan reserved addresses	Select 131					
Scan reserved addresses						

#### 2. Via Modbus TCP/IP (M4M Ethernet)

### Click on "Configure" under Ethernet

CONNECT WITH YOUR DEVICES								
Connect your device by selecting one of the below communication channel.								
(ţ	SCAN							
	Serial port <u>Configure</u>	SCAN						
*	Bluetooth <u>Configure</u>	SCAN						
$\begin{pmatrix} c^{\mathbf{a}} \end{pmatrix}$	Ethernet Contigure	SCAN						

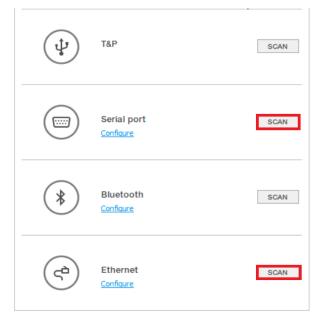
In the section "Sniffer", do not select the "Sniff gratuitous ARP packets" box if not needed.

In the section "IP addresses", insert the IP address of M4M Ethernet in the list of IP addresses to be scanned. It is possible to either add IP addresses one by one ("Use IP address list"), or input IP address range ("Use IP address range").

Press "Ok".

SNIFFER		
Sniff gratuit	tous ARP packets	
Network adapt	ters:	
	ernet Connection I219-LM	
ASIX AX881	179 USB 3.0 to Gigabit Ethernet Adapter	
	Refresh	
SCAN PARAMET		
SCAN FANAMEN	Eno	
Timeout [ms]:		300 🌻
IP ADDRESSES		
IF ADDRESSES		
🗸 Use IP addr	ess list	
IP address:		+ - 1
192.168.1.12		
192.168.1.13		
Use IP addr		
	-	
From:	To:	
SLAVE ADDRES	SES	
SLAVE ADDRES	SES	
SLAVE ADDRES	SES	1 -
SLAVE ADDRES	SES	1 -
SLAVE ADDRES	SES	1 •

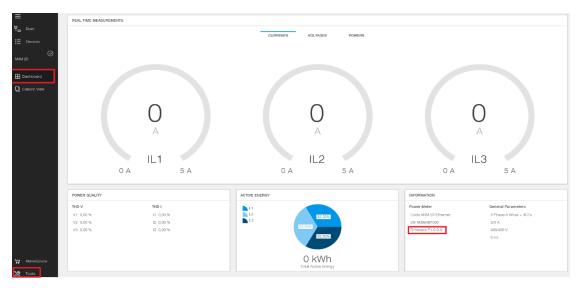
D. After the configuration is completed, click on "Scan"



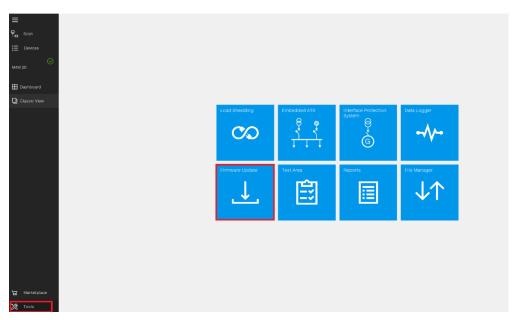
E. Ekip Connect desktop allows to visualize the product-related pages, including dashboard and Modbus map reading via Classic View.

In the Information section of the Dashboard it is possible to check what is the firmware version currently installed on M4M

F. Click on "Tools"



G. Click on "Firmware Update"



### 3.1 System update

A. Click on "System update" in order to upload the FW version. Ekip Connect automatically downloads from ABB Library the latest M4M FW version, stored in: C:\ProgramData\ABB\EkipConnect3\Firmware\M4M. Alternatively, download from the ABB Library here. Please extract the .enc file from the .zip.

≡			
Scan	FIRMWARE UPDATE	SYSTEM UPDATE	RECOVER MODULE
Devices	.↓ <sup>1</sup>	.↓	÷
WHW 20	Firmware Update	System Update	Recover Module
Dashboard Dashc View	Update firmware of a single module: mainboard, HMI or external module.	Update firmware of all system modules.	Recover firmware of a corrupted module.

## 3.2 FW update

A. Click on "Firmware update" in order to upload the FW version. Ekip Connect automatically downloads from ABB Library the latest M4M FW version, stored in: C:\ProgramData\ABB\EkipConnect3\Firmware\M4M. Alternatively, download from the ABB Library here. Please extract the .enc file from the .zip.

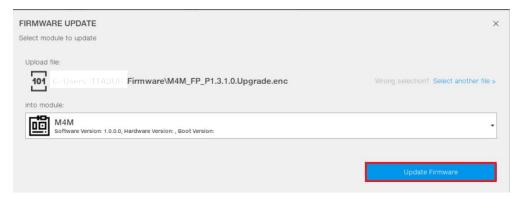
≡					
₽ Scan	FIRMWARE UPDATE		SYSTEM UPDATE		RECOVER MODULE
Devices	_ <b>↓</b> <sup>1</sup>		<b>.↓</b>		Ê.
M4M 20	Firmware Update		System Update		Recover Module
🗄 Dashboard	Update firmware of a single module: mainboard, HMI or		Update firmware of all system		Recover firmware of a
Classic View	external module.			corrupted module.	
				l	

B. Please click on the "Select file from Computer" option and select the .enc related to the latest FW version of M4M.

FIRMWARE UPDATE Select firmware file				×
	·			
	-*-			
	Select file from Computer	or	ABB Cloud	

C. Click on "Update Firmware" and later on "Yes" in order to start the update process.

**TIP**: Please ensure that no other software or devices are actively communicating with the M4M during the FW update process, in order to have a successful update.



FIRMWARE UPDATE Select module to update		×
Upload file: 101 TADUR\Desktop\F into module:	File name does not contain CRC value. Proceed anyway?	yselection? Select another file >
M4M Software Version: 1.0.0.0, Hardware Versio		No
		Update Firmware

D. A loading bar will inform regarding the status of the FW update. After reaching the 100%, M4M will start the rebooting process for few minutes while checking the new firmware. The screen will turn black and the red LED lights will be on. Please do not unplug the M4M's auxiliary power supply during this operation.

FIRMWARE UPDATE		×
	C: Users ITTADUR (\Desktop\Firmware\M4M_FP_P1.3.1.0.Upgrade.enc	
	60% Uploading firmware	
	Stop	
FIRMWARE UPDATE		×
	C:Users ITTADUR I/Desktop/Firmware/M4M_FP_P1.3.1.0.Upgrade.enc	
	M4M is checking new firmware	
	Stop	

E. As the FW update is completed successfully, a banner will appear on Ekip Connect to inform the user.

