**eWON Application User Guide** AUG 044 / Rev 1.1



# Access Mistubishi PLCs through an existing Talk2M connection





This short guide explains how to access an Mistubishi PLC remotely through Talk2M and a pre-configured eWON. Applications include remote servicing of PLC-controlled equipment.



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# 1. Objective

The objective of this document is to access remotely an Mitsubishi PLC assuming that configuration tasks have been done (\*).

Accessing an existing setup remotely implies the following steps :

- 1. Opening the VPN tunnel
- 2. Mapping the PLC with your Mitsubishi MelSoft GX<sup>i</sup> software
- 3. Accessing your PLC through the Internet

(\*) as per AUG-043-0-EN (Remote Access for Mitsubishi PLCs) http://support.ewon.biz/docs/AUG-043.htm

## 2. Hardware and software requirements

## 2.1 Hardware requirements

In order to follow this guide you'll need:

- PC suitable to connect to the Internet
- Internet connection
- Configured remote setup including eWON and Mitsubishi PLC (FX or Q Series).

## 2.2 Software requirements

- eCatcher VPN tunneling utility <u>http://support.ewon.biz/softwares.htm</u>
- Talk2M have a valid user account at disposal
- eVCOM Virtual com port driver (for serial link only) <u>http://support.ewon.biz/softwares.htm</u>
- MelSoft GX software Mitsubishi PLC programming console

# 3. Network diagram



- 1. From a computer running your PLC programming software you will interact with a PLC in the field just as if you were using a point-to-point connection
- 2. Using the local gateway to Internet and the eCatcher software, you will "see" the eWON as part of your local network
- 3. You will create your VPN tunnel on the Internet using your Talk2M account
- 4. This will allow you to seamlessly pass the remote firewall and safely reach the eWON using the local LAN
- 5. The eWON will allow you to access the PLC transparently, indifferently whether it is hooked using the serial or the Ethernet link
- 6. You take control over the remote PLC

# 4. Opening the VPN tunnel

- 1. Make sure you have installed the eCatcher application from <u>http://support.ewon.biz/softwares.htm</u>.
- 2. Start your eCatcher application, login using the credentials of the Talk2M account in which the eWON was created:

🙎 eCatch	er (3.0.2 build 7394)			
Devices				
Users	Login			
F.	Usernan	ie :	pbt	Use the credentials
Account	Passwor	d: :	ewon_sales	of the Talk2M account in which the eWON was created
Settings	<b>√</b> Reme	mber me	Create a Free+ account	erron was created
	Conn	ect Automatically	Login	
i				
C				
Exit	🕎 my.talk2m.com	n Credit :	Idle	0 🕡 Talk2M

3. The application shows the eWON available for tunneling (\*). At this point you only "see" the ones available on your account but you do not yet have the VPN connection required to access the PLC.

(\*) Only eWON that are "online" (green icon) are "ready" for tunneling. An eWON with no icon or with red icon is not online. It can be either a GPRS/EDGE device that first needs to be waked up or a device that is simply not available for the moment.

4. Make sure your eWON is "online", select it and click *Connect* to create the VPN tunnel:

🛋 eCatcher	(3.0.0 build 7195)						
e	Active Connection						
Devices	\$						
*	Name	IP	Des	cription	U	ser(s) connected	Pool
Users		No VPN connected		🚨 Vpn	Connection		
Æ	eWON list	eWON yet		3	VPN Tunnel	: Establishing Vpn	Tunnel
Pool	🗄 🔊 🔍 🖩 <u>Ø</u>	Connect 💽		Ľ.	<b>.</b>		
	▼		~	*	Y	×	✓
Account	Actio Name 📌 Sta	tus Description	Jse	r(s) connect	Pool	PLC type	emote access m
*	💉 Mitsubishi Online	eWON + IP camera			eV	VON "seen" b Talk2M	Y
Settings	Mar marken and	سوسور السو			pro stra		

...wait a couple of seconds for Talk2M to create the route. As soon as the route is created, the connected eWON appears in the upper part of the window:

#### 4. Opening the VPN tunnel

🛋 eCatch	er (3.0.0 build 7195)	)							- C
e	Active Connectio	n							1
Devices	<u></u>								
*	Name Mitsubishi	<u>10.8.128.2</u>	IP 2:81_	D eWON + IP came	escription ra	User unknown u	r(s) connected iser	P Demo	
	eWON list								4
Pool		Disconne	et 💽						3
	Rockwel V	💉 Status	Descrip	tion.	ser(s) connect	Pool	PLC type	emote acce	v 🗸
Account	Mitsubishi	Connected eW	/ON + IP camera		unknown user D	lemo	PECtype	LAN	19.
parts of	have a series	ير بالمنظ		and pr		سند المنو	p. Sm		- J

5. You are now connected to the eWON through the VPN tunnel.

# 5. PLC software mapping configuration

## 5.1 Serial connection

The serial connection with a Mitsubishi PLC requires the creation of a virtual port on your PC. To create this virtual port you need to install the eVCom application. You can download this application from <u>http://support.ewon.biz/softwares.htm</u>.

#### 5.1.1 Creating a virtual serial port on your PC

Start eVCOM on your PC and create a new virtual port, by clicking Add Port:

e¥COM	X
<u>F</u> ile <u>H</u> elp	
Virtual Ports	
Port Name Port Type	
Add Port Delete Port	

Create new port	
Port Name:	COM4
Port Type:	STANDARD VCOM
OK (hy	Cancel

A dialog box invites you to choose the COM Name and the Port Type.In the Port Name dropdown, eVCOM shows only ports that are available on your machine. In our example, we selected **COM4** (to keep away from the normal ports of the machine).

select **STANDARD VCOM** as Port Type and click **OK**.

eVCOM	X
File Help	
Virtual Ports	COM4
Port Name Port Type	Config Status
	Port Name: COM4
	Port Type: STANDARD VCOM
	Auto create at startup
	Gateway address: 192.168.0.53
	Gateway port: 23
	disabled
	DSR emulation: Juisableu
	DCD emulation: disabled
	CTS emulation: disabled
	Communication mode: RAWTCP
	0
	Sent To Network Delay: U
	Specific settings: fix melsoft gx developer -4
	Write Log To File
	Update 5 Cancel
	J Enable P 6 J Disable Port
Add Port Delete Port	
	, 

Configure the virtual port parameters as follows:

1. The *Gateway address* is the IP address where you can reach the eWON (through Talk2M). If your eWON is on your LAN network, you will use its LAN address, in our example it is 192.168.0.53.

- 2. Set Gateway port to 23.
- 3. The Communication mode to RAWTCP.
- 4. Set Specific settings to fx melsoft gx developer
- 5. Click Update.
- 6. Click Enable Port.

 EVECOM
 Key to status icons (left from com port name):

 Fle
 Help

 Virtual Ports
 Port Type

 Port Name
 Port Type

 Port Name
 STANDARD VCOM

 Virtual STANDARD VCOM
 Isabled

 Communication OK
 Communication with errors

Once enabled, eVCOM will show your new virtual COM port like following:

7. Leave eVCOM open, port enabled until you don't need the communication anymore.

Note: If you try to close eVCOM while the virtual port is still enabled, the program asks you if you want to minimize it (all functions active) or if you want to really quit it. If you click on *Really Quit* the software closes the port, retains the existing parameters until you reopen a new session.

#### 5.1.2 Mitsubishi MelSoft GX configuration

1. Open Melsoft GX and open your project.

🏶 MELSOFT series GX Developer	
Project 1)it Find/Replace View Online Diagr	nostics Tools Window Help
New project 2 Ctrl+N Open project 2 Ctrl+O Close project Save Ctrl+S Save as	
Delete project	
Verify Copy	0
Edit Data 🕨	
Change PLC type	
Import file  Export file	
Macro  Function Block	
Printer setup Print Ctrl+P	1
1 C:\MELSEC\GPPW\JCN1_FX3U 2 C:\MELSEC\GPPW\T2M_DemoPanel 3 DavidCastelin-PRJ 4 C:\MELSEC\GPPW\JCN1	
Start new GX Developer session Exit GX Developer	5
he man and the second s	have a service of the second and



2. Click Online > Transfer Setup from the menu bar

3. Set the serial parameters as shown below and click **OK**.

Transfer Se	tup		×
PC side I/F	Seria NET/10(H) NET(II) CC-Link E board board board	thernet PLC AF board board board	SSC net
	COM  COM 6 Transmission speed  115.2Kbps		· · · · ·
PLC side I/F	PLC MNET/10(H) MNET(II) CC-Link module modul	Ethemet C24 G4	Bus
	(include FX-USB-AW / FX	BU-USB-BD)	
Other station	No specification Ott	e)	Connection channel list PLC direct coupled setting
	Time out (Sec.) 10 Transmission speed 9.6Kbp	-4	Connection test
Network route			PLC type
	C24 NET/10(H) NET(II) CC-Link Eth	ernet ernet	PLC No.
		- Multiple Cr O setting	System image
Co-existence network route		1 2 3 4	TEL (FXCPU)
	C24 NET/10(H) NET(II) CC-Link Eth	ernet	ОК
	Accessing nost station		Close

#### > In Transmission speed (4) put 9.6Kbps

4. Test the connection by clicking *Connection test*.

and the					
	Connection channel list				
network)	PLC direct coupled setting				
	PLC type				
PLC No.					
MELSO	FT series GX Developer 🛛 🛛 🔀				
(į)	Successfully connected with the FX3U(C)CPU.				
	ОК				

**Note**: To test the communication remotely, you need to establish the Talk2M VPN bridge first (as explained in <u>Step 6</u>).

5. End of software mapping in serial connection.

## 5.2 Ethernet connection

#### - Tips -

As of firmware v12, there is a PLC Discovery feature inside the eWON. This allows the automatic discovery of PLC (linked to the eWON) on the network while you are connected through Talk2M. No need to set the IP of the PLC in the same range than the IP of the eWON.

For more information, please refer to AUG-070: PLC Discovery through Talk2M

#### 5.2.1 Mitsubishi MelSoft GX configuration

1. Open Melsoft GX and open your project (as decsribed in § 5.1.2 Mitsubishi MelSoft GX configuration)

- 2. Click **Online > Transfer Setup** from the menu bar.
- 3. Set the Ethernet parameters like shown below and click OK



#### Applicable parameters are:

#### PC side I/F = just select Ethernet board,

**Note**: on some Mitsubishi software versions (like GX IEC), an interface is asking you to define a station number, which is the the station number of the PC that has to be different from the PLC station number.

PLC side I/F = Click on *Ethernet module* and configure as shown above:

**PLC** > type of the Ethernet module (normally part of your project)

IP Address > IP address of the PLC (in our case 192.168.0.61).

#### 4. Test the connection by clicking Connection test.

**Note**: To test the communication remotely, you need to establish the Talk2M VPN bridge first (as explained in <u>Step 6</u>).

5. End of software mapping in Ethernet connection.

# 6. Accessing your PLC through MelSoft GX

- 1. Establish the remote connection to the eWON as explained in <u>Step 6</u> of the eWON configuration part.
- 2. Once the Talk2M VPN tunnel towards the eWON is established by eCatcher, start the MelSoft GX software.
- 3. In MelSoft GX select Online > Remote operation
- 4. Allow enough time for the connection to actually take place, especially when using a modem connection since the throughput may be relatively slow.
- 5. As soon as the connection is working, it appears in the status bar of MelSoft GX.
- You can now work in remote programming mode. Once you finished your work with MelSof GX:
   Go Offline and close
- 7. Once you finished your work with 6. MelSoft GX:
  - Select "Work Offline" and close 6. MelSoft GX
  - Close the Talk2M connection (VPN tunnel) by clicking *Disconnect* in eCatcher.

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Note: If the eWON is connected to the Internet using a GPRS/Edge modem, you
may want to disconnect it to save connection costs. To close the line, you have to
use the Go offline button which is displayed on the context menu when you rightclick the eWON in the eWON list.



• End of Accessing your PLC through MelSoft GX.

Revision history		
<b>Revision Level</b>	Date	Description
1.0	02/12/11	First issue
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