PredictPulse™ Setup for an Eaton® Gigabit Network (Network-M2) Card

Introduction

This document provides instructions on setting up Predict*Pulse* with an Eaton Gigabit Network (Network-M2) card (see <u>Figure 1</u>).

Figure 1. Network-M2 Card





Eaton 9E and 93E UPS models must be at a minimum firmware version of 1.30.0004 (CSB) and 1.30.0000 (UPM) to be compatible with the Network-M2 card.

Network-M2 Card Installation

To install the Network-M2 card:

- 1. Install the Network-M2 card into the UPS and wait approximately three minutes for the card to become operational.
 - The red BOOT status LED blinks while the card is booting.
 - When the card is operational, the green BOOT status LED illuminates and begins to blink (see <u>Figure 2</u>).

Figure 2. Network-M2 Card Green BOOT Status LED



2. Connect the USB configuration cable from your laptop to the Network-M2 card and allow Windows to detect the device.

- 3. Navigate to the **Search** window on your laptop, type *ncpa.cpl*, and then press **Enter** (see Figure 3).
 - If Network Connections is not found in your Search window, type in *control panel*, select *Network and Sharing Center*, and then select *Change adapter settings*.

Figure 3. Run Windows Search for Ncpa.cpl

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		ncpa.cpl Control panel item		\rightarrow	0.		
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					□* Open		
					Run as administrator		
					Copy full path		
۲							
	Рn	cpa.cpl					

• The Network Connections window displays (see Figure 4).

Figure 4. Network Connections Window



- 4. Verify that there is a Remote NDIS (RNDIS) network device shown.
 - If an RNDIS network device is not shown, call the Brightlayer Data Center at 800-356-5737, option 2, option 2 for assistance.
- 5. If Windows fails to find the driver automatically, it may because Windows detects the Eaton USB service port as a serial COM port. To resolve this issue:
 - a. Navigate to the Eaton Gigabit Network Card Web page.
 - b. Expand the Software, firmware, and applications section and download the RNDIS driver file.
 - c. Manually install the device driver.
 - d. With the USB cable connected to the card, open the **Device Manager** and expand the *Network adapters* and *Ports (COM and LPT)* sections (see Figure 5).

Figure 5. Windows Device Manager

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- e. Find the suspected Eaton USB device in **Device Manager**.
 - In this example, it is USB Serial Device (COM4). Unplug and re-plug the USB cable to verify the correct device.
- f. Browse to the location where the RNDIS was downloaded and the zipped files were extracted. Select **OK** and **Next** and the driver will be installed. This procedure takes approximately 30 seconds.
- g. After the driver update is complete, verify that the COM port is gone and a USB Ethernet/RNDIS Gadget is in the Network adapters section of the **Device Manager**.
- In the Network Connections window (see <u>Figure 4</u>), right-click the RNDIS network device and choose Status (see).

Figure 6. Select the RNDIS Network Device Status Display

- A	Ethernet 5 Unidentified network Linux USB Ethernet/RNDIS Gadge.
•	Disable
1	Status
	Diagnose
•	Bridge Connections
	Create Shortcut
•	Delete
•	Rename
•	Properties

7. The Ethernet X Status window displays (see Figure 7). Click Details.

Figure 7. Ethernet X Status Window

	JS					
General						
Connection						
IPv4 Connectiv	ity:	No network access				
IPv6 Connectiv	ity:	No network access				
Media State:		Enabled 00:04:31				
Duration:						
Speed:		425.9 Mbp				
Details						
Details	Sent	🔐 — Received				
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Activity ———	16	and the second s				

8. Click **Details**. The **Network Connection Details** window displays (see <u>Figure 8</u>). Verify that IPv4 address starts with *169.254* as highlighted in the figure.

Figure 8. Network Connection Details

Property	Value
Connection-specific DN	
Description	Linux USB Ethemet/RNDIS Gadget #2
Physical Address	42-61-64-55-53-42
DHCP Enabled	Yes
Autoconfiguration IPv4	169.254.93.159
IPv4 Subnet Mask	255.255.0.0
IPv4 Default Gateway	
IPv4 DNS Server	
IPv4 WINS Server	
NetBIOS over Tcpip En	Yes
Link-local IPv6 Address IPv6 Default Gateway	fe80::c087:24c8:325c:5d9f%58
IPv6 DNS Servers	fec0:0:0:ffff::1%1
	fec0:0:0:ffff::2%1
	fec0:0:0:ffff::3%1

9. Connect the site cable (RJ-45 / CAT 5 [internet]) to the Network-M2 card (see Figure 9).

Figure 9. Connect Site Cable to the Network-M2 Card



10. Open an internet browser. Enter the IP address https://169.254.0.1 and press Enter.



If a network proxy prevents from using APIPA IP address *169.254.0.1*, open the RNDIS driver file downloaded earlier and double-click the *setProxy.bat* file in order to allow *169.254.0.1* APIPA address access. Wait for instructions from the script.

a. The security certificate error warning in <u>Figure 10</u> displays. Click **Advanced** and then select **Continue** to **169.254.0.1** (unsafe).

Figure 10. Website Security Certificate Error

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	A						
	Your connection isn't private						
	Attackers might be trying to steal your information from 169.254.0.1 (for example, passwords, messages, or credit cards).						
	NEESER_CERT_AUTHORITY_INVALID						
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	Advanced Go back						

 b. The login window shown in <u>Figure 11</u> displays. Enter the following login information and press **Enter**. Username: *admin* Password: *admin*

Figure 11. Login Window

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- c. The change password window shown in <u>Figure 12</u> displays.
 - In the *Current password* field, enter *admin*.
 - In the New password field, enter Eaton123!
 - In the *Confirm new password* field, re-enter *Eaton123!*



Entering a password other than Eaton123! may cause the PredictPulse activation to fail.

Network-M2 × +			-	ø ×
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	Welcome			
	weicome			
	Please change your password			
	Username *			
	Username -			
	Current password *			
	The field is required			
	New password *			
	Confirm new password			
	Password strength 🕐			
	Cancel > Submit			
	F-T-N			

Figure 12. Change Password Window

- Click Submit. A Password changed window displays requesting the username and new password. Enter the following login information and press Enter. Username: *admin* Password: *Eaton123*!
- e. A **Read license agreement** window displays. Read the license agreement, check the **I accept the license agreement** checkbox, and click **Continue**.
- 11. The Network-M2 home page displays, indicating communication with the UPS (see Figure 13).

Figure 13. Network-M2 Card Home Page

Nework-M2 x +	- 0 ×
\leftarrow \rightarrow \circlearrowright \land Not secure https://169.254.0.1/home	☆ 🔍 🏚 🕲 …
Gepter Heavord Card 9PXM 8K Small Systems Lab (Eaton Technology Center)	01/20/2021 Swearstar: Sentor Octors 10/2021 • Online mode
© ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	🖡 OUTLET STATUS
Spreme start France	Primary 0.17 ON (Prosecut)
Messares 💭	
ACTIVE ALARMS ([2])	
G111/2021 Communication lost with agent Communication lost with agent	EMPDT1H1C2@30
extorbase 155/17 IPF / USRALWHP5100274 - Communication lost with agent	Current temperature 75°F
Upper Verware Ex.N	Current humidity

12. Click on the **Maintenance** icon to verify that the Network-M2 card firmware is the most recent. The **Firmware** tab shown in <u>Figure 14</u> displays.

Figure 14. Network-M2 Card Firmware Tab

abyw sk small S	ystems Lab (Eat	on Technology Co	enter)			01/20/2021 Device status: 00000 10:41:18 • Online mode 15.42
Firmware	Services	Resources	System logs System i	nformation		
UPDATE FIRMWARE						
Upload						
	Status	Version	Sha	Generated on	Installed on	Activated on
Ø	Active	2.0.5	4e30480	10/23/2020	11/12/2020	11/12/2020
	Invalid	1.7.7	4a5e686	02/18/2020	06/05/2020	06/05/2020

- 13. The *Version* column shows the firmware version of the card. To be compatible with Predict*Pulse*, verify that firmware level is at the latest revision. Check the latest revision of the firmware on the <u>Eaton Gigabit Network Card Web page</u>. To update the firmware:
 - a. Expand the Software, firmware, and applications section and download the current firmware.
 - b. On the Firmware tab, click +Upload to upload the firmware to the card (see Figure 14).
 - If you have any difficulty updating the firmware, call the Brightlayer Data Center at 800-356-5737, option 2, option 2 for assistance.
 - c. When the firmware update is complete, allow the card to restart and become operational.
 - d. Log in to the card and return to the **Firmware** tab (see <u>Figure 14</u>) to confirm that the firmware update was successful.
- 14. Configure the Eaton Environmental Monitoring Probe (EMP):
 - a. Remove the EMP and cable from the box.
 - b. Refer to the EMP Installation Instructions (located in the bottom of the EMP box).
 - c. Set the EMP DIP switches (see Figure 15) to the appropriate settings for your application:
 - For a single-EMP system, set the **1** and **TER** switches to the *1* position.
 - For a multiple-EMP system, set the **MODBUS ADDRESS** (1 16) switches to a different address for each EMP in the daisy-chain. Set the **TER** switch to the *1* position on the last EMP in the daisy-chain; set it to 0 on all the other EMPs.

Figure 15. EMP DIP Switches



- d. Connect the USB end of cable to the Network-M2 card and the RJ-45 end of the cable to the **From Device** port on EMP.
- 15. Select the **Environment** icon on the left side of the menu and select the **Commissioning/Status** tab (see <u>Figure 16</u>). Click **Discover**.
 - The EMP device should be discovered.
 - If the device is not found, verify the EMP settings and connections and then click **Discover** again.

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1 1		card configu	ration settir	ngs. If cor	nnecting via	а а Sierra И	/ireless LX40) LTE router, re

Figure 16. Network-M2 Card Commissioning/Status Tab

- Configure the SMTP Server IP/Hostname with the customer e-mail server address (for example, *mail.company.com*; note that the *mail.etn.com* in Figure 17 is only an example). Include the recipient's e-mail address in the *Default sender address* field (for example, *John.Doe@company.com*).
- Click **Save** after any changes.

igabit Network Car PXM 8K Sn		ems Lab (Eaton 1	Technology C	enter)				01/25/2021 Device statut: 3000 01 10:45:25 - Online mode 35:42
General		Local users	Remote users	Network & Protocol	SNMP	Certificate		
MAIL NOT	TIFICATION	SETTINGS						SMTP SETTINGS
• New	1							Server IP / Hostname * mail.etn.com
		Custom name 1	2	Email		Notification updates	Status	mail.etn.com
	1	PredictPulse		monitor/Bv2.pwmonitor.com		El Marca	Active	Port * 25
	1	Richard Quinlan		richbquinian@eaton.com		All Andrews	Active	Default sender address *
	1	Secure email		martinblack@eaton.com			inactive	ups@networkcard.com
	1	test		beverlyapoweli@eaton.com		Alexand and a second se	Active	Hide the IP address from the email body
								Security Start TLS
								Verify certificate authority
								SMTP server authentication
								Username *
								Password

Figure 17. Network-M2 Card General Tab – SMTP Settings

17. Select the Network & Protocol tab (see Figure 18).

- If the site is using DHCP, the IP addresses are automatically assigned. All the network information should be automatically populated; no other settings need to be configured on this screen.
- If the site is not using DHCP, click Edit in the IPV4 section to display the IPV4 settings window (see Figure 19). Change the IPV4 mode to Manual; enter the IP Address, Netmask, and Gateway; and click Save. Similarly, change the DNS/DHCP mode to Manual and enter the Primary and Secondary DNS server addresses. For assistance, call the Brightlayer Data Center at 800-356-5737, option 2, option 2.

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Network		<u>.</u>					
IPV4		IPV6		DNS / DHCP		ETHERNET	
Status	In service	Enable	⊘ Active	Mode	Manual	Link status	100Mbps - Full dupl
Mode	Manual	Status	In service	FQDN	ups-00-20-85-E9-88- 0A.ch.etn.com	MAC address	00:20:85:E9:88:
Address	169.254.0.1	Mode	Router	Primary DNS	151.110.50.27	Configuration Auto negotiation	1
Netmask	255.255.255.0	Address	fe80::220:85ff:fee9:8802	Secondary DNS	151.110.50.28	* Modifications will ta	ive effect at the next restart
Gateway	169.254.0.11						
	Edit		Edit		Edit		Save
Protocol							
HTTPS		SYSLOG					
Port * 443		Inactive 🌗 🖉	Active Name Address	Security	Port	Protocol	Status
			Primary	TLS - Syslog certificate	6514	TCP	⊖ Inactive
		1		TLS - Syslog certificate	6514	TCP	

Figure 18. Network-M2 Card Network & Protocol Tab

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Status In serve Mode Manual Address 102,554,01 Memark 255,255,55 Gateway 169,254,01 Mark 169,254,011 Mark	Network															
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Address 169,254,01 Manual Optimumor Netmask 255,255,255 Address* 0,50,27 Address* Gateway 169,254,011 Manual 0,50,27 Address* Image: Manual Address* 0,50,27 Manual Address* 0,50,27 Address* Protocol Manual Address* 0,50,27 Manual Address* Manual Address Part* Manual Address Security Manual Address Manual Address Manual Address	Mode		Manual	Sta Mo	e *							MAC address		00:3	20:85:E9:8	8:0
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Primary TLS - Syslog certificate 6514 TCP \ominus inactive	++3				1	Name	Addres	8	Security		Port	Protocol	Status			
				1	1	Primary			TLS - Syslog certificate		6514	TCP	() Inac	tive		

Figure 19. Network M2 Card IPV4 Settings Window

- 18. Verify that the IP address conforms to the site's internet protocols. If not:
 - Verify the network cable is securely connected to the correct port on the Network-M2 card, then press the **Restart** button for at least six seconds.
 - After the card has rebooted and is back online (approximately three minutes), return to the Network
 & Protocol tab to verify the IP address.
 - If the address is still incorrect, call the Brightlayer Data Center at 800-356-5737, option 2, option 2.
- 19. Select the General tab (see Figure 20).
 - a. Select the correct Time zone.
 - b. If a Network Time Protocol server is available, select the **Dynamic (NTP)** radio button and enter the server information in the *NTP Server* field.
 - c. If NTP is not available, select the **Manual** radio button and select the *Date* field to update the date and time.

Network		× +	ecure https://169.254.0.1/setting:	in and				☆ ♀ ヶ 宿 ● …
	Gigabit Network Car	d	ms Lab (Eaton Technology	-				01/20//0211 Device seture: 10:51:58 • Online mode
C) Mariana	General	- L	ocal users Remote users	Network & Protocol	SNMP	Certificate		
State of the second	📄 SYSTEM DE	ETAILS						
	Location Eaton Techn Contact Bev Powell	nology Cent	er	Time & date settings O Dynamic (NTP) Time zone America/New_York	Manual			
Maintenance	System name 9PXM 8K Sr	nall System	slah	Current date & time * 01/20/2021 10:51:38		0 2		
	EMAIL NOT	TIFICATION S	ETTINGS					SMIP SETTINGS
	🕀 New	Del	ete Test	Email		Notification updates	Status	Server IP / Hottneme * mail.etn.com
		1	PredictPulse	monitor@v2.pwmonitor.com		Enterland Alexand	Active	Port A 25
		1	Richard Quinian	richbquinlan@eaton.com		Autorea -	Active	Default sender address *
		1	Secure email	martinblack@eaton.com				ups@networkcard.com
0		1	test	beveriyapowell@eaton.com		Alerea .	Active	Hide the IP address from the email body
E:T-N								Security Start TLS

Figure 20. Network-M2 Card General Tab

PredictPulse Activation

NOTE You must be connected to the site's network to run the PredictPulse wizard.

Before proceeding, ensure that an account was first created at <u>https://predictpulseapp.eaton.com</u> or that your site administrator has invited you to your already-created account so your organization code can be obtained.

To activate PredictPulse:

1. Run the PredictPulse Wizard (<u>ActivatePredictPulse.exe</u>). The Eaton PredictPulse window displays (see Figure 21).

Figure 21. PredictPulse Wizard Initial Display

F∴T • N Predict <i>Pulse</i> [™]
Activation Wizard v1.46
Enter the following information to begin registration. The Organization Code has been e-mailed to you.
Organization Code
E-Mail Address
Begin Registration Cancel
Need help? Get the PredictPulse [™] Quick Start Guide. <u>Download Quick Start Guide</u> ©Eaton. Al Rights Reserved.

2. Enter the *Organization Code* and customer *E-Mail Address* and click **Begin Registration**. The **PredictPulse Device Activation** window displays (see <u>Figure 22</u>).

Enter the IP Address(es) of your co	ompatible Eaton UPS(s) below to add them to PredictPulse. You may	also enter an IP Range to
scan, or upload a CSV of UPS IP :	addresses to continue.	
IP Address	Serial Number	
	Enter IP Address to find	

Figure 22. PredictPulse Device Activation Window

3. Enter the IP address or a range of IP addresses to continue. The wizard attempts to connect to a UPS at that address.

i	NOTE	If the wizard displays the configuration error message shown in Figure 23, enter the
U		card's username and password and click OK .

Figure 23. PredictPulse Wizard Card Configuration Error

The wizard was unable to configu using the default credentials.	ire your card
Verify the credentials to log onto your Pred device's connectivity card	ictPulse™
192.168.1.144 ()	
Login	
admin	
Password	
•••••	Show Password
OK	Cancel

4. The PredictPulse wizard activates each card. Upon completion, the wizard displays a confirmation message (see Figure 24).

i	NOTE	If the user is running Microsoft Outlook and it is open, an activation email is sent automatically to Eaton's PredictPulse servers. If the user does not have Outlook installed, the email components are saved in the user's <i>My Documents</i> folder and
		instructions are provided for sending the activation email manually.



Figure 24. Activation Complete Window



The registration process to activate the unit for PredictPulse may take 15 minutes or more. To ensure the PredictPulse activation was successful, call the Brightlayer Data Center at 800-356-5737, option 2, option 2 for assistance.

PredictPulse Remote Monitoring Activation Completion Checklist

- <u>https://PredictPulseapp.eaton.com</u> account enrollment complete
- PredictPulse compatible network connectivity card installed
- Connectivity card upgraded to latest firmware
- Environmental Monitoring Probe connected
- PredictPulse activation wizard run from https://PredictPulseapp.eaton.com account
- Call placed to Brightlayer Data Center at 800-356-5737, option 2, option 2 to confirm portal activation and communication receipt

Modem Use Only

- Network switch installed (if multiple UPS are connected to the same modem) (see <u>Connecting a NetComm Wireless Router to an Eaton Network Card</u>)
- Modem NTP configured (see Connecting a NetComm Wireless Router to an Eaton Network Card)
- PredictPulse activation wizard run from modem connection (see <u>Connecting a NetComm Wireless Router to an Eaton Network Card</u>)
- For an Eaton 9E or 93E UPS model only, a Universal Accessory Power (UAP) kit is required if no UPSprotected electrical outlet is available to power the modem and/or network switch. The UAP must be installed by an Eaton technician. Contact your Eaton service representative for a quote.

