Connecting a NetComm Wireless Router to an Eaton Network Card

Introduction

This document provides instructions for connecting a NetComm Wireless NTC-220 or NTC-140W Series wireless router to one of the following Eaton connectivity cards:

- Industrial Gateway Card (INDGW-M2)
- Gigabit Industrial Gateway X2 Card (INDGW-X2)
- Power Xpert Gateway UPS (PXGX-UPS)
- Power Xpert Gateway Minislot UPS (PXGMS)
- Gigabit Network (Network-M2)

I NOTE The Network-M2 card has now reached end-of-life (EOL) status.

Prerequisites

- Eaton UPS with a INDGW-M2, INDGW-X2, PXGX-UPS, PXGMS, or Network-M2 card
- USB-to-USB (Type B) cable for PXGX-UPS
- USB-to-USB (MiniTypeB) for PXGMS
- USB-to-USB (MicroUSB B) for INDGW-M2, INDGW-X2, or Network-M2
- Serial COM port or USB-to-serial 9-pin male adapter
- An existing PredictPulse account (refer to the <u>PredictPulse Quick Start Guide</u>)
- Download the latest card firmware and RNDIS driver from the Eaton product site:
 - For the INDGW-M2 card, go to <u>https://www.eaton.com/us/en-us/catalog/backup-power-ups-surge-it-power-distribution/eaton-industrial-gateway-card.resources.html</u>
 - For the INDGW-X2 card, go to <u>https://www.eaton.com/us/en-us/catalog/backup-power-ups-surge-it-power-distribution/eaton-gigabit-industrial-gateway-card.html.</u>

Go to the **Resources** page and scroll down to the **Software, firmware, and applications** section. Click the links to download the firmware and RNDIS driver files.

NOTE The Netcomm Wireless router must be powered by a 120V electrical outlet powered by the UPS. This ensures that the router is protected during a power outage. If no UPS-protected outlet is available, a Universal Accessory Power (UAP) kit is required. The UAP must be installed by an Eaton technician. Contact your Eaton service representative for a quote.

NetComm Wireless Router Installation Guidelines

1)

Refer to the *Quick Start Guide* provided with the NetComm Wireless router for instructions on mounting the router and connecting power.

	NOTE	The router must be powered by a 120V electrical outlet powered by the UPS. This
		ensures that the router is protected during a power outage. If no UPS-protected outlet is
U		available, a Universal Accessory Power (UAP) kit is required. The UAP must be installed
		by an Eaton technician. Contact your Eaton service representative for a quote.

INDGW-M2 or INDGW-X2 Card Installation

The hot-swappable INDGW-M2 and INDGW-X2 cards (see <u>Figure 1</u> and <u>Figure 2</u>) can be installed without turning off the UPS or disconnecting the load. To install the card:

- 1. Ensure that the UPS has logic power.
- 2. Remove the two screws securing the Minislot or X-slot cover and remove the cover from the UPS. Retain the screws.
- 3. Remove the INDGW-M2 or INDGW-X2 card from its shipping package.
- 4. Slide the card into the open slot. Secure with the screws removed in <u>Step 2</u>.
- 5. Wait for the Warning LED (see <u>Figure 1</u> or <u>Figure 2</u>) to flash only green to indicate that the card is operational. The **ON** LED also flashes green when the card is ready.
- 6. Connect a USB cable from the **SETTINGS** port of the INDGW-M2 or INDGW-X2 card to a USB port on the laptop.
 - Windows will automatically detect the INDGW-M2 or INDGW-X2 card connection
- 7. Open a web browser and enter https://169.254.0.1. You are prompted to log in.



Figure 1. INDGW-M2 Card





- 8. Log in using the username **admin** and password **admin**.
- 9. You are prompted to change your password.

10. Enter the new password *Eaton123!*, re-enter the new password, and press **Submit**.



If the green **ON** LED is not flashing, the INDGW-M2 card may need to be reset. Remove the card to reset it, wait 10 seconds, plug it back in, and wait 3 minutes. If the LED still does not flash, contact the Brightlayer Data Center at 800-356-5737, option 2, option 2 to troubleshoot.

Figure 3. INDGW-M2 or INDGW-X2 Home Page

	🔤 Eaton_9PXM 8KVA X +			- 0	×
\leftarrow	C 🗟 🔺 Not secure https://10.222.4.74/home		A* ★ (r 3 12 🕀 🔮	
=	Eaton_9PXM 8KVA Industrial Gateway Card		Device status: Online mode 55:62	Output ? • • •	٩
A	ENERGY FLOW	0	VOUTLET STATUS	Z	+ 0
Ø	System status		Primary	0 mW ON Protected 🥝	o,
	Online mode Matternatignet				+
0					
٥	Main Killing Practifier Dearbert Garpaie				
۵					
073		Measures			
2					
	2 ACTIVE ALARMS	Z	8 ENVIRONMENT		
	No alarms to display		UPS		
			Current Temperature	91.2°F	
			ç	>	
3.0.6					
20:50:04		View more	•		Ð
					562

INDGW-M2 or INDGW-X2 Card Firmware Update

- 1. As noted in the <u>Prerequisites</u> section, the installation requires the latest card firmware. To view the firmware installed on the INDGW-M2 or INDGW-X2 card, click the **Maintenance** (wrench) icon on the card home page (see <u>Figure 3</u>). The **Firmware** tab shown in <u>Figure 4</u> displays.
- 2. The *Version* column shows the firmware version of the card. To check the latest firmware for the network card:
 - For an INDGW-M2 card, go to <u>https://www.eaton.com/us/en-us/catalog/backup-power-ups-surge-it-power-distribution/eaton-industrial-gateway-card.html</u>

- For an INDGW-X2 card, go to <u>https://www.eaton.com/us/en-us/catalog/backup-power-ups-surge-it-power-distribution/eaton-gigabit-industrial-gateway-card.html</u>
- 3. Click Resources, then scroll down and expand the Software, firmware, and applications section.

Figure 4. INDGW-M2 or INDGW-X2 Card Firmware Tab

≡	93PM 50K (93PI Industrial Gateway Card	M HUB)				De	vice status: Battery Output Online mode	0 A 🖲
÷	Firmware	Services	Resources	System logs	System information			
Ø	UPDATE NETWORK	CARD FIRMWARE						
0								
۵		Status	Version	Sha	Generated on	Installed on	Activated on	
۵	٠	Valid	2.1.5	e0788a5	06/16/2021		04/12/2022	
()))	\otimes	Active	3.0.6	05fd19e	09/15/2022		10/11/2022	
٩								

- 4. Note the latest available firmware version. If that version is later than the one on the network card, update the card firmware:
 - a. Click the link to download and save that file to a known location.
 - b. Remain connected to the card via the USB cable using the redirected IP address http://169.254.0.1.
 - c. Select **Maintenance** from the left-hand menu and select **Firmware** at the top to display the **UPDATE FIRMWARE** page (see <u>Figure 4</u>).
 - d. Click **Upload** to load the latest firmware to the card. Click **Choose File** to navigate to the firmware file saved in Step 4.b.
 - e. Select the firmware file and click Upload.
 - f. When the firmware update is completed, a prompt is displayed. Allow the card to reboot and wait 2–4 minutes for completion.
 - g. Log in to the card, return to the Firmware tab, and confirm that the firmware updated was successful.

Environmental Monitoring Probe (EMP) Gen 2 Installation

- 1. Remove the EMP and cable from the packaging.
- 2. Install the EMP as directed in the Environmental Monitoring Probe Gen2 EMPDT1H1C2 Installation Instructions.
 - Set the **MODBUS ADDRESS** switches on each EMP as appropriate for your application (see <u>Figure 5</u>). For example, for an application with one EMP, set the switches as shown in <u>Figure 5</u>, with switch **1** and **TER** (termination) in the **1** position. For a multiple-EMP application, at least one switch must be set on each EMP in the daisy-chain and the **TER** switch set on the last EMP in the daisy-chain.

Figure 5. EMP MODBUS ADDRESS Switches



- Connect the USB end of the cable to the AUX port on the INDGW-M2 or INDGW-X2 card and the RJ45 end to the FROM DEVICE port on the EMP. If possible, route the cable into the battery cabinet and place the EMP in the battery cabinet.
- 4. On the INDGW-M2 or INDGW-X2 home page (see Figure 3), select **Environment** from the left-hand menu to display the **SENSOR COMMISSIONING** page (see Figure 6).

Figure 6. Sensor Commissioning Page

ft Home	X-Slot Industrial Gateway Card UPS 1 (STC)				i Firmware v	version 2.2.3 03/08/2022 14:45:40	Device status: Battery Output Offline mode	4 ⁰ 8 📀
S) Mesars	Commissioning/Status	Alarm configuration	Information					
급 Controls	SENSOR COMMISSIONIN	G						
Prosection	🕀 Discover 📋	Delete Define offsets						
Environment	Name	Location	Temperature	Humidin	Dov contact #1	Dry contact #2	Communication	
¢ Secret		Locator	remperature	Humady	bry contact #1	Dry contact #2	communication	
A.				No sensor di	scovered.			
i) Legal Info E-T-N								

- 5. As shown in Figure 6, no sensors have yet been discovered in the system. Click **Discover** to identify the EMP sensor(s). When discovered, the EMP is displayed as shown in Figure 7.
 - If no device is found, verify the EMP connections and settings and click **Discover** again.

Figure 7. EMP Sensor Discovered

ft.	X-Slot Industrial Gateway Card UPS 1 (STC)				i Firmware version 2	2.3 03/08/2022 Device status: 15:03:45 Offline mo	Battery Output 0% 0%	🍄 0 🤨
Mesars	Commissioning/Status	Alarm configuration	Information					
: Controls	Commissioning/Status Aurin configuration Image: Sensor Commissioning/Status Download sensors measures Image: Sensor Commissioning/Status Define offsets Image: Sensor Commissioning/Status Name Location Image: Sensor Commissioning/Status Define offsets Image: Sensor Sensor Commissioning/Status Name Location Image: Sensor Se							
Prosection	Discover	Delete Define offsets						
		Name 🕈 Locat	ion Temperature	Humidity	Dry contact #1	Dry contact #2	Communication	
Secrept		EMPDT1H1C2@1	71.42°F	32 %	Open Normally open	Open Normally open	Connected 03/08/2022 15:03:35	
Maintenance	1	O Destre Destre Offsets Name ↑ Location Temperature Humidity Dry contact #1 Dry contact #2 Communication ■ EMPOTHIC2.81 74.427 32 %						
F:T·N								

Connecting the Router to an INDGW-M2 or INDGW-X2 Card

To connect the NTC-220 or NTC-140W Series router to an INDGW-M2 or INDGW-X2 card:

- Connect the Ethernet cable from the LAN port on the router to the Network connector on the INDGW-M2 or INDGW-X2 card (see Figure 1 or Figure 2).
- If the INDGW-M2 or INDGW-X2 card is located inside the UPS chassis, route the cable out of the chassis via a conduit hole that is protected by a rubber grommet

Once connected, the LEDs on the INDGW-M2 or INDGW-X2 card's Network port should light and the green LED at the top left of the **SETTINGS** port should blink.

Configuring an INDGW-M2 or INDGW-X2 Card

To troubleshoot or set up the INDGW-M2 or INDGW-X2 card, refer to the <u>INDGW-M2 User's Guide</u> or <u>INDGW-X2 User's Guide</u>.

The INDGW-M2 or INDGW-X2 card's default configuration includes a DHCP network configuration. To configure the INDGW-M2 or INDGW-X2 card, connect to the card's **SETTINGS** port with USB-to-USB (MicroUSB B) cable. Once connected, open an internet browser and navigate to *169.254.0.1* to display the Network M2 home page (see Figure 3).

Log in using the default credentials:

Username: *admin* Password: *admin*

You are prompted to change your password. Enter a new password of at least eight characters, including one lowercase letter, one uppercase letter, one numeric character, and one special character. Record the new password.

The INDGW-M2 or INDGW-X2 card will reboot and ask for the new password. Enter the web GUI and click **Settings** on the left sidebar menu. Click the **Network & Protocol** tab (see <u>Figure 8</u>). Verify the IPv4 Mode is set to DHCP and record the IP address to be used later when configuring the PredictPulse Wizard.

A Home	X-Slot Industrial Gateway Card UPS 1 (STC)				•		03/07/2022 13:34:44	Device status: Offline mode	0% 0%	🥐 C	0
e) Meters	General	Local users	Remote users	Network & Protocol	SNMP Industr	ial protocols	Certificate	2			ŕ
: Controls	Network										
Protection	IPV4		IPV6		DNS / DHCP			ETHERNET			
Environment	Status	In service 🧭	Enable	Active 🚫	Mode		DHCP	Link status		100Mbps - Fu duple	ill ex
Sectings	Mode	DHCP	Status	In service 🥥	FQDN	ups-00-20-8	35-D6- 9A-	MAC addres	is 00):20:85:D6:9A:E	a –
Maintenance	Address	10.222.4.89	Mode	Router		E1.napa.ad.et	n.com	Configuration			_
	Netmask	255.255.255.0	Address	fe80::220:85ff:fed6:9ae1	Primary DNS	151.110	.50.27	Auto negotia	ation		
	Gateway	10.222.4.1		_	Secondary DNS	151.110	.50.28	* Modifications v	vill take effect a	t the next restart	
(i) Legal info		Edit		Edit			Edit				
F.T.N	Protocol										

Figure 8. INDGW-M2 or INDGW-X2 Card Network & Protocol Tab

Click the General tab (see Figure 9). In the SMTP SETTINGS section:

- Enter mail.eaton.com in the Server IP/Hostname field
- To ensure that e-mails are not marked as spam, enter *ups.networkcard@eaton.com* in the **Default sender** address field

Scroll down and click **Save** in the bottom right.

Figure 9. INDGW-M2 or INDGW-X2 Card General Tab

A Horne	X-Slot Industrial Gateway C UPS 1 (STC)	lard				i Firmware version 2.2.3	03/07/2022 Device status: Battery Output 13:46:36 • Offline mode 9 9 9
Meters	General	Local users	Remote users	Network & Protocol	SNMP	Industrial protocols	Certificate
: Controls	MAIL NOTIFICA	TION SETTINGS					SMTP SETTINGS
Protection	() New	Delete Test					Server IP / Hostname * mail.eaton.com
Environment	Cust	om name 🕈	Email	Notification updates		Status	Dort B
¢ Settings			ħ	lo email notification.			25
A.							Default sender address * ups.networkcard@eaton.com
							Hide the IP address from the email body
							Security Start TLS
(i)							Verify certificate authority
Lagal info							SMTP server authentication
F:T•N							licername *

In the **SYSTEM DETAILS** section, select the appropriate time zone and select the **Dynamic (NTP)** radio button. Enter *192.168.1.1* in the **NTP server** field. For instructions on configuring NTP in the modem, see the *Configuring a PXGX-UPS or PXGMS Card* section.

Also enter the Location, Contact, and System Name. Click Save.

Proceed to the *Run the PredictPulse Wizard* section.

PXGX-UPS or PXGMS Installation

Connecting the Router to a PXGX-UPS or PXGMS Card

Connect the NTC-220 or NTC-140W Series router and Eaton network card. Use the included Ethernet cable or equivalent.

- For a *PXGX-UPS* card, connect the Ethernet cable from the **LAN** port on the router to the **Upstream** port on the card (see Figure 10):
- For a *PXGMS* card, connect the Ethernet cable from the **LAN** part on the router to the **Ethernet 10/100** port on the card (see Figure 11)

Route the Ethernet cable into the UPS via the appropriate conduit holes. Once connected, the LEDs on the active Ethernet port, as well as the green Power LED and Status LEDs should light.

Figure 10. Power Xpert Gateway UPS (PXGX-UPS) Card



Figure 11. Power Xpert Gateway Minislot UPS (PXGMS) Card



Configuring a PXGX-UPS or PXGMS Card

To troubleshoot or set up the PXGX-UPS or PXGMS card, refer to Sections 3 – 5 of the <u>PXGX-UPS Quick Start Instructions</u> or <u>PXGMS Quick Start Instructions</u> for instructions on connecting a Windows-based computer to the card's **Setup** port using a USB cable.

To configure the PXGX-UPS or PXGMS card, connect to the card's **Setup** port using a USB cable. Once connected, open an internet browser and navigate to *169.254.0.101*. Log in using the default credentials:

Username: *admin* Password: *admin*



The PXGX-UPS password may be the MAC address of the card. The PXGMS password may be the card serial number.

If installing on an existing PXGX-UPS or PXGMS card, reset the card to factory default settings as follows:

Locate the onboard DIP switch and set switch 6 to ON

- Reboot the card to restore the factory defaults
- Return switch 6 to OFF and reboot the card

For more information on restoring the factory default settings, refer to the <u>PXGX-UPS Card User's Guide</u> or <u>PXGMS Card User's Guide</u>.

For a new installation, the PXGX-UPS or PXGMS card will use the factory default settings.

From the Configuration menu (see Figure 12), select E-mail to display the E-mail tab (see Figure 13).

Figure 12. Configuration Menu

Configuration	
Section Tasks	
Access Control	\sim
B Network	
Connections	
Jate/Time	
PredictPulse	
- 🖾 E-Mail	
Benvironmental Monitoring Prol	ж
- CP Modbus TCP	
- Modbus Serial	
SNMP	
BACnet/IP	
🗉 🧰 UPS	~

Ensure that the SMTP server/IP hostname is *mail.eaton.com* and the recipient checkboxes are setup as shown in Figure 13, with *monitor@v2.pwmonitor.com* as the only e-mail recipient.

mail.eaton.com	Test SMTP server connection	Advanced SMTP configuration
Configure		
01: monitor@v2.pwmonitor. 👻		
V		
1		
8 2 1 2		
monitor@v2.pwmonitor.com		
•		
	mail.eaton.com Configure 01: monitor@v2.pwmonitor. v V V V V V V I V I V S S S I I S M I I S M I M M M M M M M M	mail.eaton.com Test SMTP server connection Configure 01: monitor@v2.pwmonitor. 01 01 02 01 03 01 04 01 05 01 05 01 05 01 05 01 05 01 05 01

On the **E-mail** tab, click **Configure** to display the **E-mail Event Trigger Configuration** page (see <u>Figure 14</u>). Verify that all or some alarms are checked. Scroll to the bottom of the page and click **Apply** after making any changes.

Figure 13. E-mail Tab

Figure 14. E-Mail Event Trigger Configuration Page

── E-mail Event Trigger Configuration			~
Select All De-select All Test Event E-Mail			
EATON 93PM/Abnormal Output Voltage At Startup	EATON 93PM/Battery Disconnected	EATON 93PM/Battery Test in Progress	
EATON 93PM/Battery Voltage Extremely Low	EATON 93PM/Building Alarm 1	EATON 93PM/Building Alarm 2	
EATON 93PM/Building Alarm 3	EATON 93PM/Building Alarm 4	EATON 93PM/Building Alarm 5	
EATON 93PM/Building Alarm 6	EATON 93PM/Building Alarm 7	EATON 93PM/Building Alarm 8	
EATON 93PM/Building Alarm 9	EATON 93PM/Bypass AC Over Voltage	EATON 93PM/Bypass AC Under Voltage	
EATON 93PM/Bypass Phase Rotation	EATON 93PM/Bypass Sync Out Of Range	EATON 93PM/Bypass Under Or Over Frequency	
EATON 93PM/Check Backfeed Contactor	EATON 93PM/Check Backfeed Switchgear	EATON 93PM/Check Battery	
EATON 93PM/Check CSB	EATON 93PM/Check Pull Chain	EATON 93PM/Check Static Switch	
EATON 93PM/Configuration Error	EATON 93PM/Emergency Transfer To Bypass	EATON 93PM/Input Sync Out Of Range	
EATON 93PM/Internal Communication Failure	EATON 93PM/Major Alarm	EATON 93PM/Manual Bypass Switch On	
EATON 93PM/Non-Volatile Memory Failure	EATON 93PM/Not Enough Bypass Capacity	EATON 93PM/Not Enough UPMs Ready	
EATON 93PM/Output AC Over Voltage	EATON 93PM/Output AC Under Voltage	EATON 93PM/Output Overload	
EATON 93PM/Output Phase Rotation	EATON 93PM/Output Sync Out Of Range	EATON 93PM/Output Under Or Over Frequency	
EATON 93PM/Parallel Can Error	EATON 93PM/Parallel Meters Can Bus Fail	EATON 93PM/Parallel Setup Fail	
EATON 93PM/Phase A Overload	EATON 93PM/Phase A Overload (Extreme Level/Level 3)	EATON 93PM/Phase A Overload (High Level/Level 2)	
EATON 93PM/Phase A Overload (Level 4)	EATON 93PM/Phase B Overload	EATON 93PM/Phase B Overload (Extreme Level/Level 3)	
EATON 93PM/Phase B Overload (High Level/Level 2)	EATON 93PM/Phase B Overload (Level 4)	EATON 93PM/Phase C Overload	~

From the **Configuration** menu (see Figure 12), select **Date/Time** to display the **Date/Time** tab (see Figure 15). Select the **Synchronize with NTP server(s)** radio button and enter *192.168.1.1* for the NTP server IP address. Ensure that the correct time zone is selected for the **Time zone for logs, e-mail, and connected device**. Click **Apply** after making any changes.

Figure 15. Date/Time Tab

Synchronize with NTP server(s)		
If DHCP is enabled, this checkbox allows the NTP	servers to be retrieved via DHCP:	
NTP server IP address #1:	192.168.1.1	
NTP server IP address #2:		
NTP server IP address #3:		
Set date/time from PC clock (will convert to UTC):	2020-07-02 11:33:48	
Set date/time manually (will convert to UTC):	2020-07-02 11:32:33	
Locale Date format for logs:	mm/dd/yyyy	
Time zone for logs, e-mail, and connected device:	[GMT -05:00] Eastern Time (US & Canada)	
Temperature unit for web page display:	Celsius	
_ocale:	Browser Default	

Login to the modem graphical user interface (GUI) by connecting to the modem Wi-Fi, *NetComm XXXX*, using the network key printed on the back of the modem. Once connected, open an internet browser:

- For an NTC-140W router, navigate to 192.168.1.1
- For an NTC-220 router, navigate to https://192.168.1.1

Log in using the default credentials (see Figure 16):

Username: *admin* Password: *admin*

虂 NetComn	n Wireless	Status	Networking	Services	System	Hel
					2	
Log in						
	Usern	ame (
	Passv	vord (
		Log i	n			

Figure 16. NetComm Wireless Log-In Page

Navigate to the **Services** tab and select **Network Time (NTP)**. Ensure the correct time zone is selected and the remaining settings are as shown in Figure 17, with 151.110.127.39 listed for NTP service. Click **Save** if any changes were made.



Figure 17. NetComm Wireless Services Tab

Proceed to the *<u>Run the PredictPulse Wizard</u>* section.

Network-M2 Card Installation

For instructions on installing a Network-M2 card, refer to the document Predict*Pulse*[™] Setup for an Eaton® Gigabit Network (Network-M2) Card.

Connecting the Router to a Network-M2 Card

To connect the NTC-220 or NTC-140W Series router to a Network-M2 card:

- Connect the Ethernet cable from the LAN port on the router to the Ethernet port on the Network-M2 card (see Figure 18).
- If the Network-M2 card is located inside the UPS chassis, route the cable out of the chassis via a conduit hole that is protected by a rubber grommet

Once connected, the LEDs on the Network-M2 card's Ethernet port should light and the green LED at the top left of the **SETTINGS** port should blink.

Figure 18. Network-M2 Card



Configuring a Network-M2 Card

To troubleshoot or set up the Network-M2 card, refer to the Network-M2 User's Guide.

The Network-M2 default configuration includes a DHCP network configuration. To configure the Network-M2 card, connect to the card's **SETTINGS** port with USB-to-USB (MicroUSB B) cable. Once connected, open an internet browser and navigate to *169.254.0.1* to display the Network M2 home page (see Figure 19).

Log in using the default credentials:

Username: *admin* Password: *admin*

You are prompted to change your password. Enter the new password *Eaton123!*, re-enter the new password, and press **Submit**.

NOTICE

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



Figure 19. Network-M2 Card Home Page

The Network-M2 card will reboot and ask for the new password. Enter the web GUI and click **Settings** on the left sidebar menu. Click the **Network & Protocol** tab (see <u>Figure 20</u>). Verify the IPv4 Mode is set to DHCP and record the IP address to be used later when configuring the PredictPulse Wizard.

in Ne	twork-M2	× +						- ø ×
\leftarrow	⇒ O © .	▲ Not secure https://10.222.4.81/settings	network-protocol					☆ ♀ ☆ @ இ …
	Gigabit Network Card 9PXM 8K Smal	ll Systems Lab (Eaton Technology C	enter)				01/21/2021 0 10:21:28 •	eske status: Bataley Output Online mode 19342
Meners			Network & Protoc					A
H는 Controls	Network		_					
Protection	IPV4		IPV6		DNS / DHCP		ETHERNET	
	Status	In service	Enable	⊘ Active	Mode	Manual	Link status	100Mbps - Full duplex
Settings	Mode	Manual	Status	In service	FQDN	ups-00-20-85-E9-88- 0A.ch.etn.com	MAC addre	ss 00:20:85:E9:88:02
Mantenance	Address	10.222.4.81	Mode	Router	Primary DNS	151.110.50.27	Configuration Auto negoti	ation
	Netmask	255.255.255.0	Address	fe80::220:85ff:fee9:8802	Secondary DNS	151.110.50.28	* Modifications	will take effect at the next restart
	Gateway	10.222.4.1			,			
		[cst		Edit		Edit		Seve
	Protocol							
	HTTPS		SYSLOG					
	Port * 443		Inactive D	Active Name Address	Security	Port	Protocol	Status
			1	Primary	TLS - Syslog certificate	6514	TCP	Inactive
() Legal info			1		TLS - Syslog certificate	6514	TCP	Inactive
F:T·N								

Figure 20. Network-M2 Card Network & Protocol Tab

Click the **General** tab (see Figure 21). In the SMTP SETTINGS section:

- Enter mail.eaton.com in the Server IP/Hostname field
- To ensure that e-mails are not marked as spam, enter *ups.networkcard@eaton.com* in the **Default sender** address field

XIVE8K S	ard mall Syster	ms Lab (Eator	n Technology (Center)				01/21/2021 Device status: Battary Output 16/26:09 • Online mode
General	L							
SYSTEM (DETAILS							
Location Eaton Tech	hnology Cent	er		Time & date settings Dynamic (NTP) Time zone America/New_York	Manual			
System name 9PXM 8K 5	ll Small System:	s Lab		Current date & time * 01/21/2021 10:26:08		0 8		
						Save		
EMAIL N	DTIFICATION SI	ETTINGS				Save		SMTP SETTINGS
EMAIL N		ETTINGS ete Test Custom name	e 🕈	Email		Stre	Status	E SMTP SCTINUS Sove 77 //Holoma* mail.etn.com
EMAIL No		ETTINGS etc. Tost Custom name Predicibulae	c †	Email montar@v2.pumontar.com		Sort	Status © Actore	5 MTP SETTINGS Saver 77 Hastrame * mail.etn.com Por.* 25
		ETTINGS etc. Test Custom name PredictPulse Richard Quirien	e †	Email mahlar@r2.pumositar.com rsitiopyrsien@ration.com		See Notification updates Dear Particular Par	Status Active Active	Sour P SETTINGS Sour P / Reprover * mail.etr.com Port * 25 Datasi sector actions *
EMAIL NO Nov		ETTINGS eta Tost Custom name PredicsPuise Richard Quinten Secure email	c†	Email manitar@v2.pwmaritar.com ratifugurian@katon.com martifolaci@katon.com		See Notification updates Electric factor Factor	Status Active Status Active Active Active Active Active Active Active	Server # 7 Heattowne * mail.eth.com Port * 25 Defent weder address * upsnetworkkard@eaton.com

Figure 21. Network-M2 Card General Tab

Scroll down and click Save in the bottom right.

In the **SYSTEM DETAILS** section, select the appropriate time zone and select the **Dynamic (NTP)** radio button. Enter *192.168.1.1* in the **NTP server** field. For instructions on configuring NTP in the modem, see the *Configuring a PXGX-UPS or PXGMS Card* section.

Also enter the Location, Contact, and System Name. Click Save.

Proceed to the *Run the PredictPulse Wizard* section.

Connecting a Power Xpert Ethernet Switch

Some installations have multiple UPSs with network cards that must be connected. In these cases, install a four- or six-port Power Xpert Ethernet Switch (see Figure 22). Install an Eaton Power Xpert Ethernet Switch to the DIN rail and apply power. Connect a straight-through Ethernet CAT5 cable between the **WAN** port on the wireless router and port 1 on the Power Xpert Ethernet Switch. Connect another straight-through Ethernet cable from the **Upstream** port on the PXGX-UPS or **Ethernet** port on the PXGMS or Network-M2 to any open port other than 1 on the Power Xpert Ethernet Switch.

Image: Sector Sector

Figure 22. Power Xpert Ethernet Switches

Run the PredictPulse Wizard

To run the PredictPulse Wizard (<u>ActivatePredictPulse.exe</u>), connect a laptop or personal computer as follows.

For a *PXGX-UPS* card, using an RJ-45 Ethernet cable, connect the laptop or personal computer to the card's **Downstream** port.

For a *PXGMS*, *Network-M2*, *INDGW-M2* or *INDGW-X2* card, using an RJ-45 Ethernet cable, connect the laptop or personal computer to the **LAN/WAN** port on the router.

You can also run the PredictPulse wizard while connected to the modern Wi-Fi. For instructions on connecting to the modern Wi-Fi, see the <u>Configuring an INDGW-M2 or INDGW-X2 Card</u>, <u>Configuring a PXGX-UPS or PXGMS Card</u>, or <u>Configuring a Network-M2 Card</u> section.

Run the PredictPulse Wizard (<u>ActivatePredictPulse.exe</u>). The Eaton PredictPulse window displays (see Figure 23).

Figure 23. 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
Begin Registration Cancel
Download Quick Start Guide © Eaton. All Rights Reserved.

Enter the Organization Code and customer E-Mail Address and click **Begin Registration**. The **PredictPulse Device Activation** window displays (see Figure 24).

increase Device Activation		>
PredictPulse™	Upload CSV Q Search IP Range	Organization Cod EATO-44761: arthurrmuligan@gmail.com (United States
Enter the IP Address(es) of your cor scan, or upload a CSV of UPS IP ac	npatible Eaton UPS(s) below to add them to PredictPulse. You Idresses to continue.	may also enter an IP Range to
IP Address	Serial Number	
	Enter IP Address to find	
		≡ ₊ Add UPS

Figure 24. PredictPulse Device Activation Window

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



For a PXGX-UPS or PXGMS card, the IP address assigned by the modem can be found on the **Configuration** menu. Select **Network**, verify that **DHCP Enabled** is checked (see <u>Figure 25</u>), and the IP address is listed. If DHCP was not enabled initially, you may need to reboot the card to have the modem assign an IP address.

Figure 25. DHCP Enabled

AC: IPv4	00:20:85:F1:83:D4
Automatic Configuration:	DHCP Enabled:
IP Address:	
Netmask:	
Gateway	

The IP address can also be found from the modem GUI. Navigate to the **Networking** tab, select **LAN** on the sidebar and **DHCP** under the drop-down menu (see Figure 26). Scroll down to the **Dynamic DHCP client list** (see Figure 27) to find the connected devices. The web card IP will have an asterisk as the Computer name.

Figure	26.	NetComm	Wireless	DHCP	Tab
--------	-----	---------	----------	------	-----

🚖 NetCommV	Vireless Status Networking Services System Help
Wireless WAN	DHCP relay configuration
LAN	DHCP relay ON OFF
LAN	DHCP configuration
DHCP	DHCP ON OFF
Wireless settings 🛛 👻	DHCP start range 192 · 168 · 1 · 100
Ethernet LAN/WAN 🛛 👻	DHCP end range 192 · 168 · 1 · 199
рррое	DHCP lease time(seconds) (86400

Figure 27. Dynamic DHCP Client List

i

Dynamic DH	ICP client list			
Computer name	MAC address	IP address	Expiry time	
*	00:27:10:52:89:ec	192.168.1.192	6/18/2020 3:09:38 PM	Clor
ups-00-20-85-DE- AD-0C	00:20:85:de:ad:0c	192.168.1.108	6/18/2020 3:05:46 PM	Clor

NOTE If the wizard displays the configuration error message shown in <u>Figure 28</u>, enter the card's username and password and click **OK**.

Figure 28. PredictPulse Wizard Card Configuration Error

The wizard was unable to configu using the default credentials.	re your card
Verify the credentials to log onto your Predi device's connectivity card	ctPulse™
192.168.1.144 ()	
Login	
admin]
Password	
•••••	Show Password
ОК	Cancel

The PredictPulse wizard activates each card. Upon completion, the wizard displays a confirmation message (see Figure 29).



Figure 29. Activation Complete Window

The following serial numbers have been successfully activated in PredictPulse: FF524UXX03



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
- Universal Accessory Power kit installed (if no UPS protected outlet is available for the modem and/or network switch to plug into. Must be installed by an Eaton technician, contact your Eaton service representative for a quote.)
- Network switch installed (if multiple UPS are connected to the same modem)
- PredictPulse-compatible network connectivity card installed
- Connectivity card upgraded to latest firmware
- Connectivity card configured for PredictPulse
- Modem NTP configured
- Environmental Monitoring Probe connected
- PredictPulse activation wizard run from modem connection
- Call placed to the Brightlayer Data Center at 800-356-5737, option 2, option 2 to confirm portal activation and communication receipt

Troubleshooting

Signal Strength

The biggest risk for the router is low signal quality. As an initial test, observe AT&T cell phone signal strength in the area of installation.

To quantify the signal, connect an Ethernet cable to the router. Once connected, open an internet browser and navigate to 192.168.1.1.

Log into the router's Status page (see Figure 30) using the credentials:

Username: *admin* Password: *admin*

On the Status page, observe the Signal strength (dBm) and position the router to maximize the value.

If the signal is weak, an external antenna may be required. The external antenna replaces the 3G antennas provided with the router. Once connected, position the external antenna to maximize the signal strength.

Figure 30. NetComm Wireless Status Page



Incorrect Profile

The wireless router can only use the profile stored on the SIM. On the router's **Networking** page (see <u>Figure 31</u>), verify that *Profile1* is selected and that the APN is *eatonpredictpulse01.com.attz*, as shown.

Figure 31. NetComm Wireless Networking Page

🚔 NetComm	Wireless Status Networking Services System Help	
Wireless WAN Data connection Connect on demand Operator settings	Data connection Transparent bridge (PPPoE) OFF Profile name	
SIM security settings	Default Status APN Username	
Routing	Profile1 ON convigtureduseds.	

Rebooting the Router

If the wireless router loses connection to the connectivity card, the router can be rebooted from the router's **System** page (see Figure 32). The connection will be interrupted momentarily while the SIM data loads.

Figure 32. NetComm Wireless System Page



Remote Reboot Function

Although not required, Eaton recommends enabling the remote reboot function of your router to assist Eaton specialists in remotely troubleshooting. To do so, navigate to the router's **Services** page (see Figure 33).

秦 NetComm	Vireless Status Networking Services System Help
	admin 💽
Dynamic DNS	DDNS configuration
Network time (NTP)	DDNS configuration ON OFF
Data stream manager 🗸	Save
PADD	
SNMP	
TR-069	
GPS ~	
10 configuration	
Event notification 🔹	
Email settings	

Figure 33. NetComm Wireless Services Page

Scroll down and click **SMS Messaging**. From the **SMS Messaging** drop-down menu, select **Diagnostics** (see Figure 34).





Ensure that the selections are set as shown in Figure 35, with:

- Enable remote diagnostics and command execution **ON**
- Only accept authenticated SMS messages **OFF**
- Send Set command acknowledgement replies OFF
- Access advanced RDB variables OFF
- Allow execution of advanced commands **ON**
- Send acknowledgement replies the sender's number
- Send command error replies OFF
- Send error replies to the sender's number
- Send a maximum number of **100** replies per **day**
- White list should be empty

Click Save.

Figure 35. NetComm Wireless SMS Diagnostics Settings

Dynamic DNS	SMS diagnostics and	command execution configuration
Network time (NTP)	Enable remote diagnostics and command execution	ON OFF
Data stream manager 👻	Only accept authenticated SMS	ON OFF
PADD	Send Set command	ON OFF
SNMP	acknowledgement replies	
TR-069	Access advanced RDB variables	
GPS 👻	Allow execution of advanced commands	ON OFF
IO configuration	Send acknowledgement replies to	 a fixed number the sender's number
Event notification	Send command error replies	ON OFF
Email settings	Send error replies to	 a fixed number the sender's number
	Send a maximum number of	100 replies per day
SMS messaging 🛛 🔺		1 / 100 messages sent
Setup		Limit the number of diagnostic text messages that can be sent in a designated time period. Currently, the "messages sent' count automatically resets at the end
New message		of the designated time period. For example, it will reset to zero at 01:00, 02:00, 03:00 etc for 'hour'.
Inbox		00:00 for 'day', 00:00 on Monday for 'week' and the first day of the month for 'month', or at anytime the
Sent items		unit reboots.
Diagnostics	White list for diagnostic or execution SMS	
	All incoming diagnostic or execution text messages are checked against this white list. If the message sender and password don't match any destination numbers and passwords in this white list, the message is ignored and an	

Additional Information and Support

For additional information about PredictPulse, visit Eaton.com/PredictPulse.

For specific questions, call the Brightlayer Data Center at 800-356-5737, option 2, option 2.

