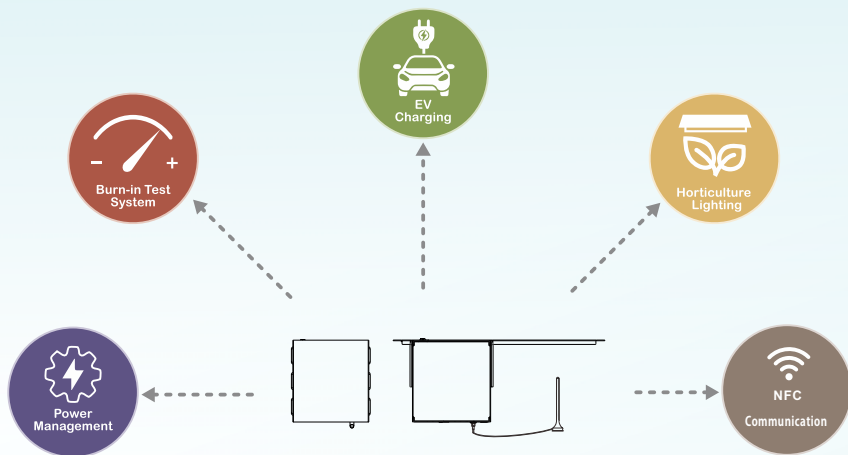




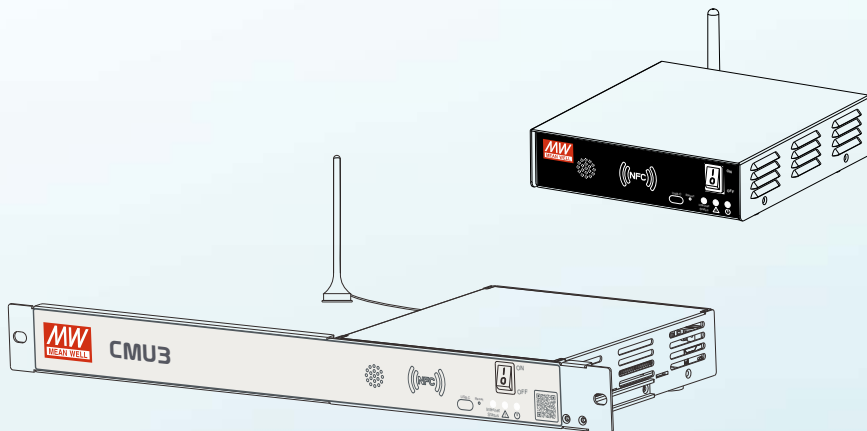
CMU3

User's Manual



Multi-Industry General Purpose Smart Controller

• Programable • Intelligent • Smart UI



Preliminary

CMU3 is an advanced industrial controller designed to integrate industrial, commercial, and residential systems, enhancing operational efficiency, energy management, and system reliability. It provides User-defined Automation Control for flexible and coordinated control of lighting, air conditioning, security, and other building systems. Powered by the NEXUS APP platform, CMU3 enables integrated management and monitoring of inverters, power supplies, PV systems, and third-party devices through a unified interface. Its comprehensive energy management capabilities support real-time monitoring of equipment power consumption, energy consumption reporting, and performance optimization to improve overall energy efficiency. CMU3 also supports fault diagnosis and system and device update notifications, helping users quickly identify system issues and stay informed of the latest updates. With flexible control, integrated management, and intelligent monitoring capabilities, CMU3 is an ideal solution for a wide range of industrial, commercial, and residential applications.

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1.Safety Guidelines

- Risk of electrical shock and energy hazard, all failure should be examined by a qualified technician. Please do not remove the case from the controller by yourself.
- Please do not install the controller in places with high moisture, high ambient temperature or under direct sunlight.
- The input range is 10Vdc – 28Vdc, please do not connect the unit to voltages out of the range.
- The safety protection level of this controller is Class I. The unit's frame ground (⏏) must be properly connected to PE (Protective Earth).

1.1 Safety Warnings and Cautions

- BSMI: For models certified as Class A equipment, should not be installed or used in a residential environment to avoid electromagnetic interference.

■ FCC Compliance Statement Compliance Notice:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with FCC Rules Part 15 rules.

Operation is subject to the following two conditions:

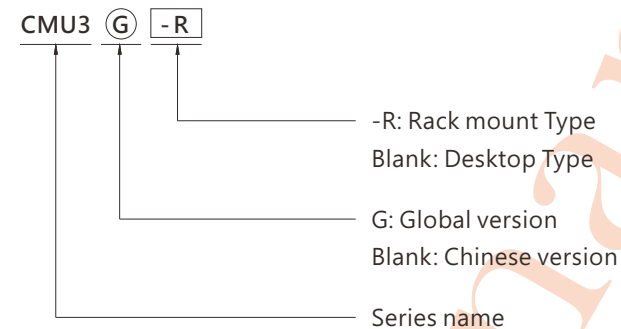
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications that are not expressly approved by the manufacturer could void the user's authority to operate the equipment.

To comply with FCC RF exposure compliance requirements, the device should be located at a distance of at least 20cm from all persons during normal operation. The antennas used for this product must not be co-located or operated in conjunction with any other antenna or transmitter.

2.Introduction

2.1 Model Encoding



2.2 Features

- Panel-free design with external display connectivity & smartphone APP control. (Download APP via QR code above.)
- MW NEXUS-driven APP platform for integrated management of inverters, power supplies, PV systems, and third-party devices
- **User-defined automation control** for voltage/current adjustment, power on/off control, and scheduled operations
- Built-in PMBus, CAN bus, RS-485 (Modbus), and Ethernet communication interfaces
- Compatible with multiple network protocols, including Modbus TCP and Web API
- 5 years warranty

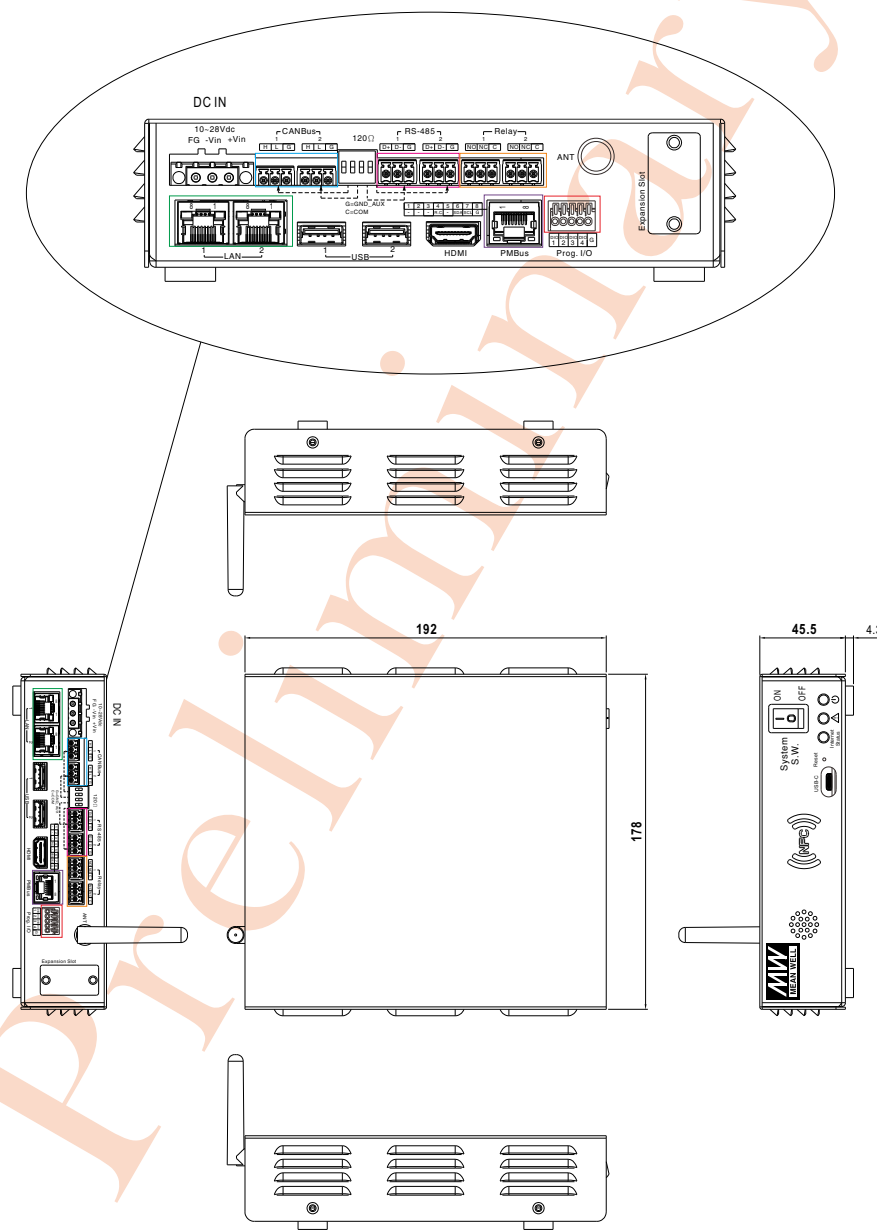
2.3 Specification

SPECIFICATION	CMU3	CMU3-R	CMU3G	CMU3G-R
HARDWARE				
PROCESSOR	Rockchip RK3568J		NXP i.MX 8M Plus Dual	
HDMI FOR MONITOR CONNECTION	HDMI 2.0 interface		HDMI 1.4 interface	
RELAY	2 Groups, Relay Contact Rating: 30 VDC / 1 A Programmable via User-defined Automation Control or the APP platform			
MEMORY & STORAGE	1. RAM: 2G(DDR4) 2. eMMC: 16G			
EXPANSION SLOT	Mini PCIe x 1 (Reserved; available upon request. Please refer to user manual and contact MEAN WELL for customization.)			
COMMUNICATION	1.RS-485(Modbus)*2 2.CANbus*2 3.PMBus*1 4.Ethernet*2 5.USB2.0: TYPE-C*1 - TYPE-A*2			
WIRELESS COMMUNICATION	1.Wi-Fi (802.11b/g/n) 2.4 GHz 2.NFC for MW App			
INPUT				
VOLTAGE RANGE	10 ~ 28Vdc			
CURRENT	1.5A / 24Vdc			
PROGRAMMABLE DIGITAL INPUT/OUTPUT	4 configurable digital I/O channels; digital outputs use open-collector architecture			
PUSH BUTTON	1. ON/OFF button : Enables or disables all connected devices (PSUs, chargers, and inverters) simultaneously 2. Reset button: Press to reboot CMU3 and restore all configurations to factory default settings. Refer to the user manual for details.			
FUNCTION				
THIRD-PARTY DEVICE SUPPORT	Note.1 Supports third-party device integration via compatible communication interfaces and protocols. Refer to the user manual for details			
MONITORING TELEMETRY	Customizable APP home page content and items. Refer to the user manual for details			
LANGUAGE	English, Traditional Chinese / Simplified Chinese / Japanese (Other languages are available upon request.)			
ETHERNET	Built-in web interface for system monitoring, configuration, and operation status			
NFC CONNECTIVITY	Supports NFC for reading device parameters using compatible NFC-enabled devices			
LOG	1.Data log (device status) 2.Event log (alarm, AC anomalies, etc.) 3.System log (system status, warnings, version information, etc.) 4.Log interval can be set from 1 minute to 60 minutes 5.Selectable log options (ALL, voltage, current, etc.)			
OTA (Over The Air)	Firmware updates via Ethernet for system firmware and application software			
COMMUNICATION PROTOCOLS				
PMBUS	PMBus v1.1			
CANBUS	CANbus 2.0B			
RS-485	Modbus RTU			
NETWORK	Support IEEE802.3, 10/100base network x 2			
ETHERNET SUPPORTED				
PROTOCOLS	TCP/IP, NTP, Modbus TCP			
WEB SERVER	Built-in MEAN WELL's NEXUS platform for displaying system status, parameters, and recorded or downloaded data For details of additional functions, refer to the user manual			
ENVIRONMENT				
WORKING TEMP.	-25 ~ +60℃			
WORKING HUMIDITY	20 ~ 90% RH non-condensing			
STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10~95% RH non-condensing			
VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes			
SAFETY & EMC (Note. 2)				
WIRELESS STANDARD	IEEE 802.11 b/g/n			
FREQUENCY BAND	2.4 GHz			
SAFETY STANDARDS	IEC62368-1 approved			
EMC EMISSION	Parameter	Standard	Test Level / Note	
	Conducted	BS EN/EN55032(CISPR32), CNS 15936, GB/T 9254.1, FCC	Class B	
	Radiated	BS EN/EN55032(CISPR32), CNS 15936, GB/T 9254.1, FCC	Class A	
EMC IMMUNITY	BS EN/EN55035(CISPR35)			
	Parameter	Standard	Test Level / Note	
	ESD	BS EN/EN61000-4-2	Level 3, 8KV air ; Level 2, 4KV contact	
	Radiated	BS EN/EN61000-4-3	Level 2, 3V/m	
	EFT / Burst	BS EN/EN61000-4-4	Level 1, 0.5KV	
	Surge	BS EN/EN61000-4-5	Level 1, 0.5KV/Line-Earth ; Level 2, 0.5KV/Line-Line	
	Conducted	BS EN/EN61000-4-6	Level 2, 3V	
	Magnetic Field	BS EN/EN61000-4-8	Level 1, 1A/m	
REGULATORY COMPLIANCE	CE (RED) / FCC / NCC / SRRC approved		CE (RED) / FCC / NCC approved	
OTHERS				
MTBF	CMU3G: 694.6K hrs min. Telcordia SR-332 (Bellcore) ; 85.45K hrs min. MIL-HDBK-217F (25℃) CMU3G-R: 694.6K hrs min. Telcordia SR-332 (Bellcore) ; 85.5K hrs min. MIL-HDBK-217F (25℃)			
DIMENSION	Desktop: 192*178*45.5mm (L*W*H) Rack mount: 482*186.6*44.5mm (L*W*H)			
PACKING	1.03Kg; 10pcs/11.3Kg/1.47CUFT		2.04Kg; 6pcs/13.2Kg/2.49CUFT	
NOTE				
1. Third-party device integration is supported when complete communication protocol specifications are provided by the device manufacturer. Available monitoring and control functions depend on the protocol specifications and device capabilities.				
2. The controller is considered a component which will be installed into a final equipment. EMC is tested by the controller unit, no control equipment is connected. The final equipment must re-confirmed that still meets EMC directives. For guidance on how to perform these EMC test, Please refer to "EMI testing of component power supplies" (as available on https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf)				
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx				

2.4 Mechanical specification

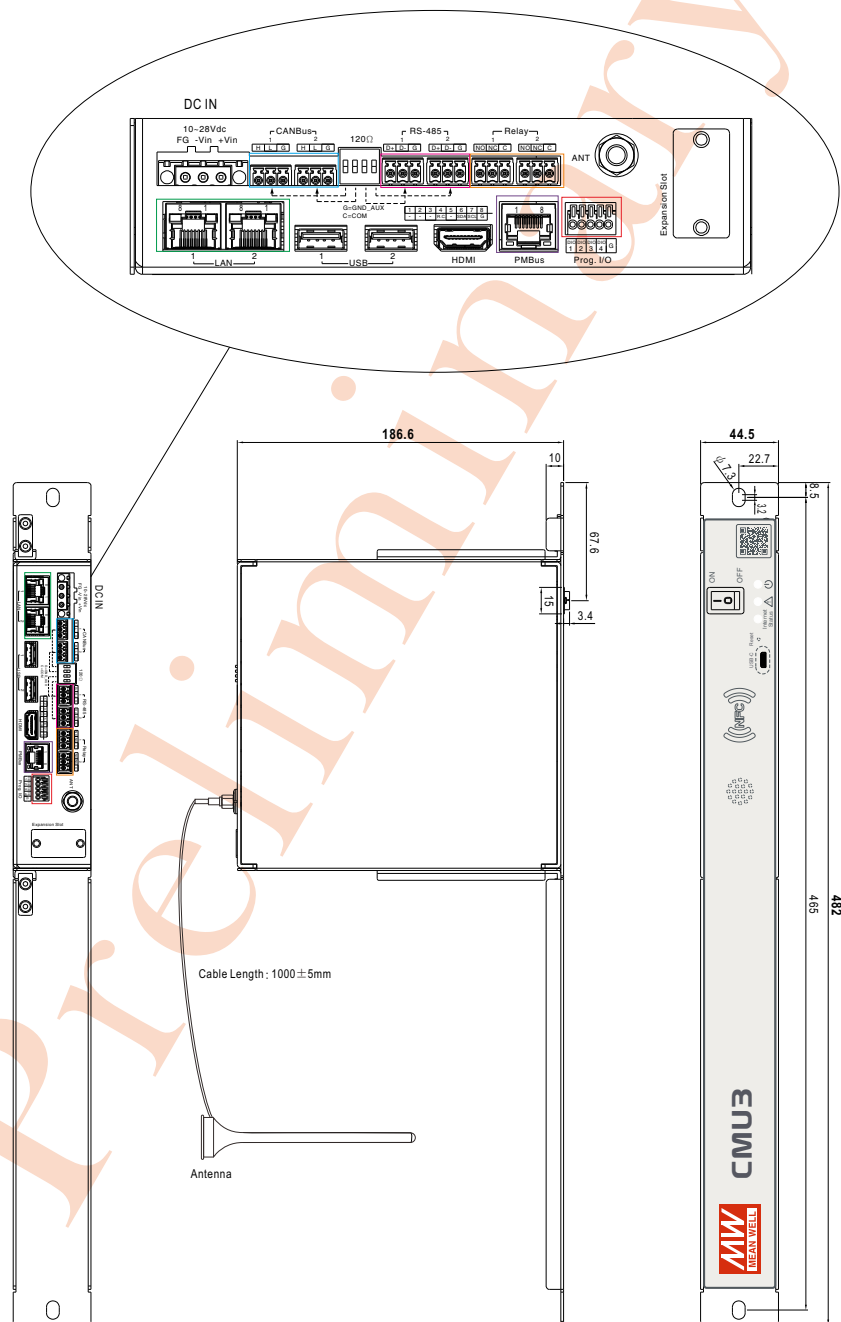
Desktop Type

Unit: mm



Rack mount Type

Unit: mm



Accessory List (Single Unit)

No.	Item	Quantity
1	Din Rail Plate For desktop version	1pcs/per model
2	DC IN Connector DINKLE 2ESDVM-03P	1pcs/per model
3	Communication Connector DECA MX422-25406	6pcs/per model

2.5 Supported models

App icon	Category	Supported Model	Status
	DC-AC Inverter	NTN-5K	Available
	AC ⇄ DC Inverter	BIC-5K, NTG-7K5, NTG-20K	Coming soon
	AC-DC Power Supply	BIC-2200, HEP-1000, HEP-2300, MSP-1600, NSP-1000, NSP-1600, NSP-2400, NSP-3200, PHP-3500, RCP-2000, RSP-1600, SHP-10K, SHP-30K, UHP-1500, UHP-2500	Coming soon

Note: For models not listed in above table, please contact MEAN WELL sales team.

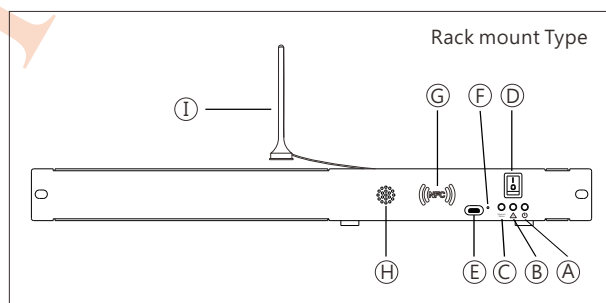
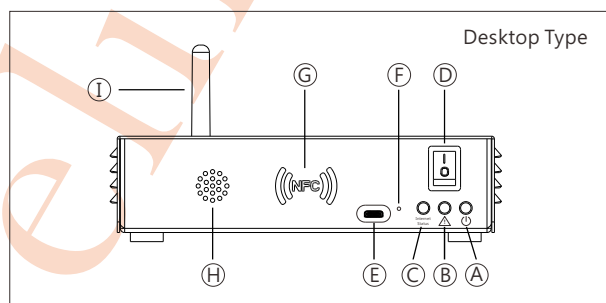
3. User Interface

3.1 Panel Description

3.1.1 Panel Description-Front

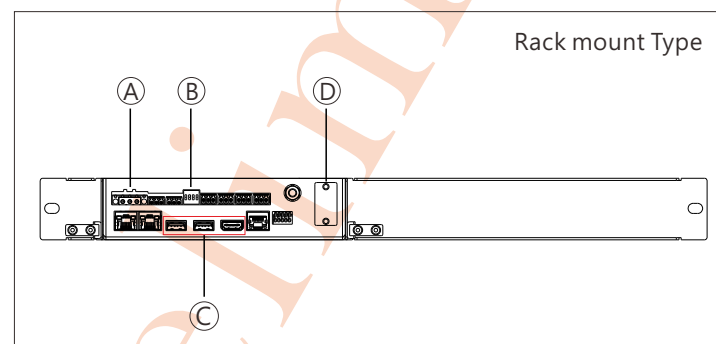
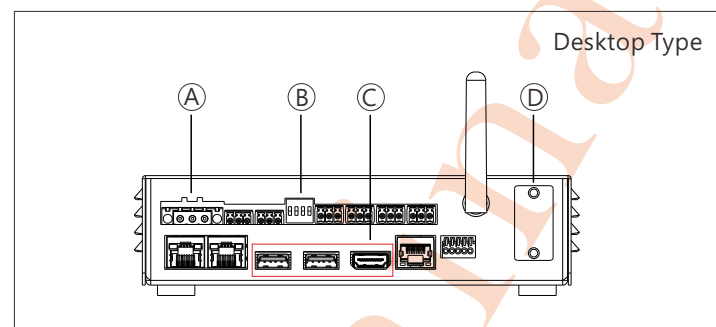
- (A) **Power Indicator:** Used to display whether the CMU3 is powered on.
- (B) **Alarm Indicator:** The indicator will light up when an abnormal condition occurs.
- (C) **Internet Status Indicator.**
- (D) **System Switch:** 0 (OFF): Disables the outputs of all connected products directly through the communication interface.
1 (ON): Output control is determined by the module page. The corresponding ON/OFF commands are then transmitted to the connected products through the communication interface.
- (E) **USB-C ports.**
- (F) **Reset Button.:** Press and hold the Reset Button for 10 seconds to restore the factory default settings.
 - Deletes all non-default communication protocols.
 - Deletes all user accounts and user settings.
 - Clears the Data Log and Event Log.
- (G) **NFC Detection Area.**
- (H) **Speaker.**
- (I) **Antenna.**

NOTE: The System Switch cannot be used to turn the controller off.



3.1.2 Panel Description-Back

- (A) **DIN (DC input):** DC input range: 10 – 28VDC.
- (B) **DIP Switch for the Termination Resistors:** Used to set the termination resistors for the CAN bus and Modbus interfaces.
- (C) **USB and HDMI:** Used to connect peripheral devices.
- (D) **Expansion Slot:** Used for functional expansion; supports mini PCIe.

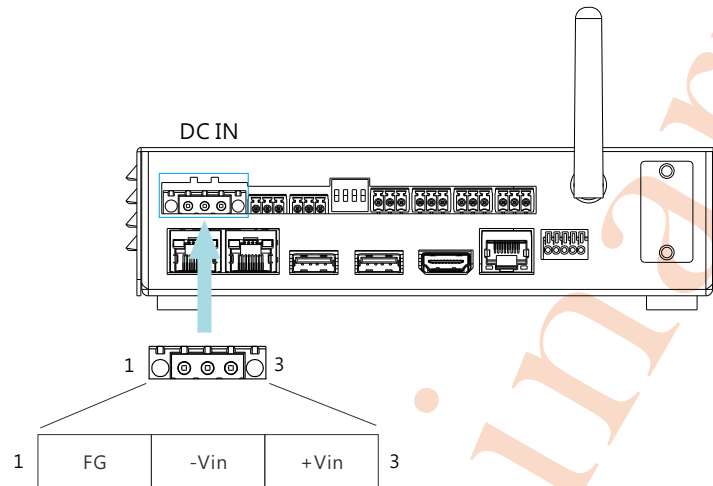


3.2 LED Indicator

LED	Status	Description
	= Power connected	The power indicator lights up orange when the system is first powered on. Once the system is ready and operating normally, the indicator turns steady green.
	= Booting	
	= No power connected	
	= Normal operating	CMU3 is in a normal condition.
	= Abnormal status	
Internet Status	= Internet unstable	Ethernet connection status.
	x 3 times repeatedly = AP Mode	
	= Internet stable	

● = steady = flashing

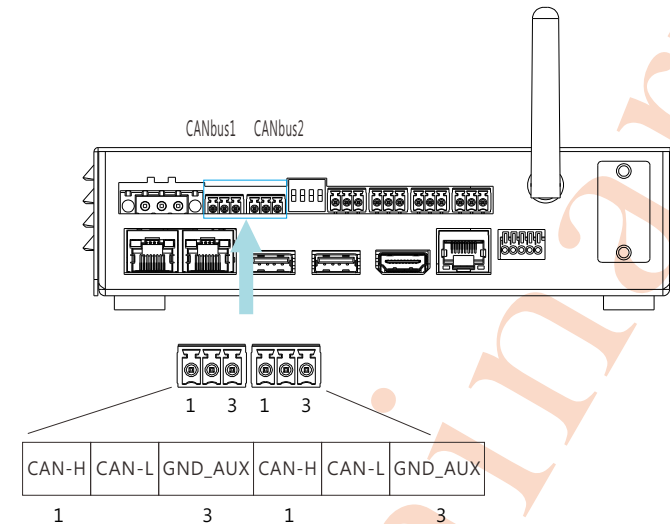
3.3 DC IN Connector Pin No. Assignment



Connect Pin No. Assignment: DINKLE 2ESDVM-03P or equivalent

Pin No.	Function	Description
1	FG	Frame Ground (Protective Earthing)
2	-Vin	DC power supply negative input
3	+Vin	DC power supply positive input

3.4 CANbus Connector Pin No. Assignment



Connect Pin No. Assignment: DECA MX422-25406 or equivalent
CANbus1

Pin No.	Function	Description
1	CAN-H	High-level CAN bus line (Note 1)
2	CAN-L	Low-level CAN bus line (Note 1)
3	GND_AUX	CMU3G Auxiliary Power Reference Ground (Note 2)

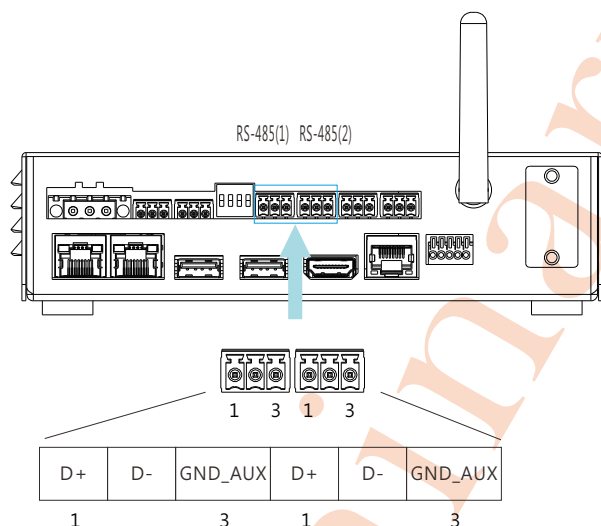
CANbus2

Pin No.	Function	Description
1	CAN-H	High-level CAN bus line (Note 1)
2	CAN-L	Low-level CAN bus line (Note 1)
3	GND_AUX	CMU3G Auxiliary Power Reference Ground (Note 2)

Note 1: Isolated signal, with GND_AUX as reference

Note 2: GND_AUX is the reference ground for the CMU3 auxiliary power supply and is isolated from the DC power supply (+Vin & -Vin).

3.5 RS-485 Connector Pin No. Assignment



Connect Pin No. Assignment: DECA MX422-25406 or equivalent RS-485(1)

Pin No.	Function	Description
1	D+	RS-485 Differential Signal Plus (Non-inverting)(Note 1)
2	D-	RS-485 Differential Signal Minus (Inverting)(Note 1)
3	GND_AUX	CMU3 Auxiliary Power Reference Ground(Note 2)

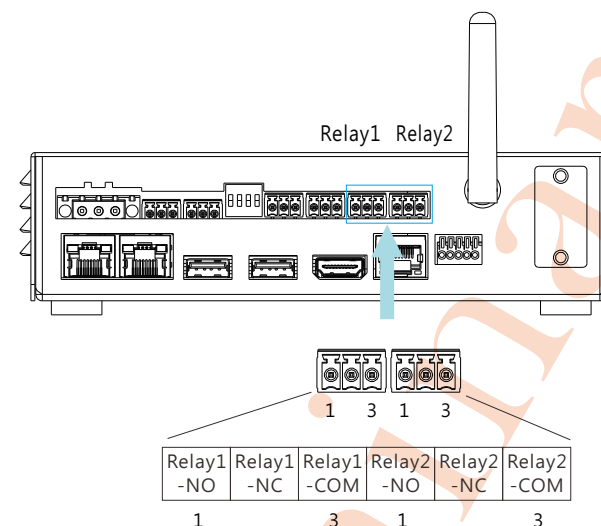
RS-485(2)

Pin No.	Function	Description
1	D+	RS-485 Differential Signal Plus (Non-inverting)(Note 1)
2	D-	RS-485 Differential Signal Minus (Inverting)(Note 1)
3	GND_AUX	CMU3 Auxiliary Power Reference Ground(Note 2)

Note 1: Isolated signal, with GND_AUX as reference

Note 2: GND_AUX is the reference ground for the CMU3 auxiliary power supply and is isolated from the DC power supply (+Vin & -Vin).

3.6 RELAY Connector Pin No. Assignment



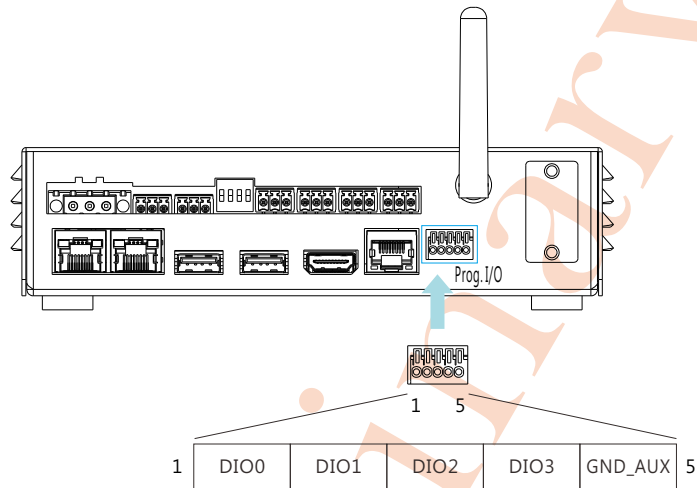
Connect Pin No. Assignment: DECA MX422-25406 or equivalent Relay1

Pin No.	Function	Description
1	Relay1-NO	Normal-open contact of programmable relay1
2	Relay1-NC	Normal-close contact of programmable relay1
3	Relay1-COM	Common for relay1 NO/NC contact

Relay2

Pin No.	Function	Description
1	Relay2-NO	Normal-open contact of programmable relay2
2	Relay2-NC	Normal-close contact of programmable relay2
3	Relay2-COM	Common for relay2 NO/NC contact

3.7 Prog. I/O Connector Pin No. Assignment



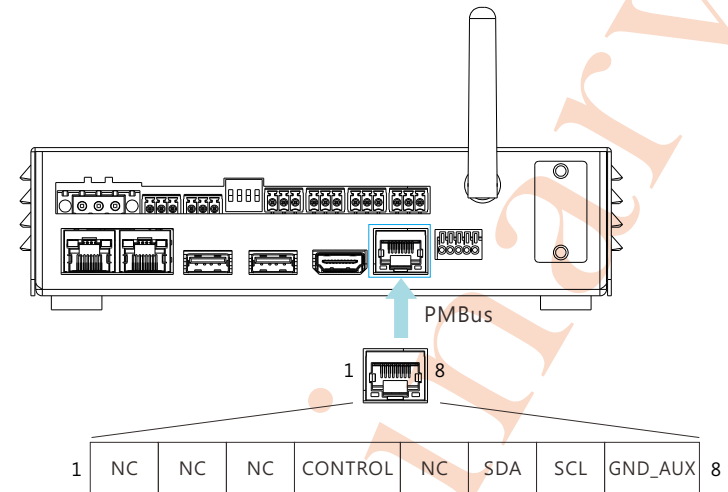
Connect Pin No. Assignment: DINKLE 141R-05 or equivalent

Pin No.	Function	Description
1	DIO0	Programmable digital input/output (Note 1)
2	DIO1	Programmable digital input/output (Note 1)
3	DIO2	Programmable digital input/output (Note 1)
4	DIO3	Programmable digital input/output (Note 1)
5	GND_AUX	CMU3G Auxiliary Power Reference Ground (Note 2)

Note 1: Isolated signal, with GND_AUX as reference

Note 2: GND_AUX is the reference ground for the CMU3 auxiliary power supply and is isolated from the DC power supply (+Vin & -Vin).

3.8 PMBus Connector Pin No. Assignment



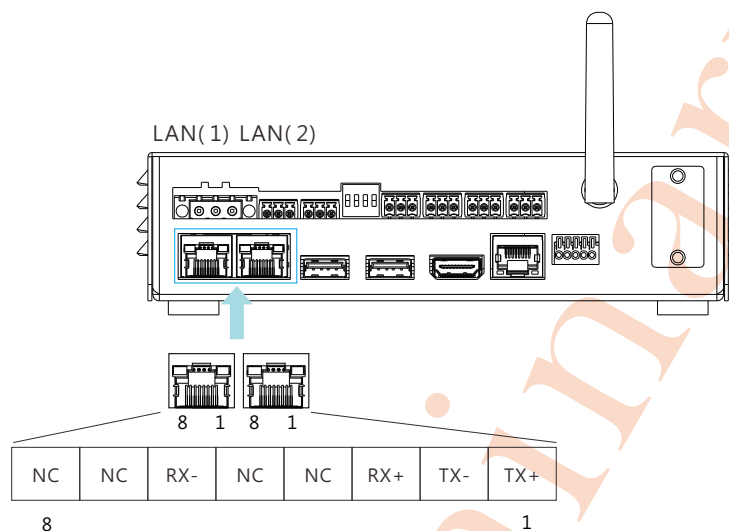
Connect Pin No. Assignment: RJ45 8 position

Pin No.	Function	Description
1,2,3,5	NC	Not use
4	CONTROL	Remote ON/OFF control pin (Note 1)
6	SDA	Serial Data used in the PMBus interface (Note 1)
7	SCL	Serial Clock used in the PMBus interface (Note 1)
8	GND_AUX	CMU3G Auxiliary Power Reference Ground (Note 2)

Note 1: Isolated signal, with GND_AUX as reference

Note 2: GND_AUX is the reference ground for the CMU3 auxiliary power supply and is isolated from the DC power supply (+Vin & -Vin).

3.9 LAN Connector Pin No. Assignment



Connect Pin No. Assignment: RJ45 8 position
LAN(1)

Pin No.	Function	Description
1	TX+	Transmit data used in the Ethernet interface
2	TX-	Transmit data used in the Ethernet interface
3	RX+	Receive data used in the Ethernet interface
4,5,7,8	NC	Not used
6	RX-	Receive data used in the Ethernet interface

Connect Pin No. Assignment: RJ45 8 position
LAN(2)

Pin No.	Function	Description
1	TX+	Transmit data used in the Ethernet interface
2	TX-	Transmit data used in the Ethernet interface
3	RX+	Receive data used in the Ethernet interface
4,5,7,8	NC	Not used
6	RX-	Receive data used in the Ethernet interface

3.10 Recommended Screwdriver, Wire and Torque Setting

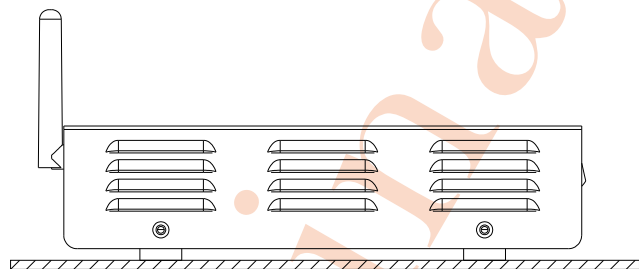
Type	The input connector	CANbus1/2 MODbus1/2 Relay1/2
AWG	12-20	14-28
Wire stripping length(mm)	7-8	6-7
Screwdriver	M2.5	M2
Recommended tightening torque(N.m)	0.4-0.5	0.2-0.25

4.Installation

4.1 Device Mounting

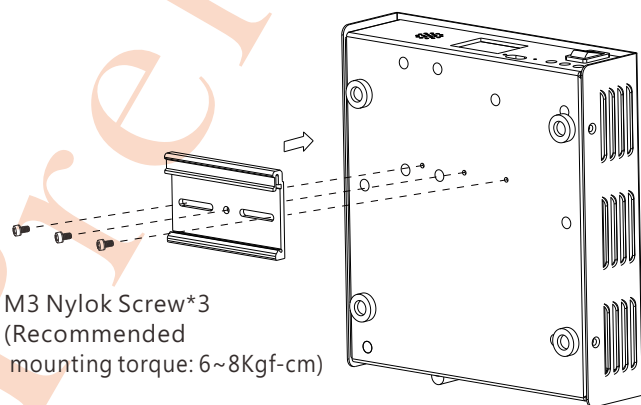
4.1.1 Desktop Type

4.1.1.1 Horizontal Mounting



Horizontal Mounting

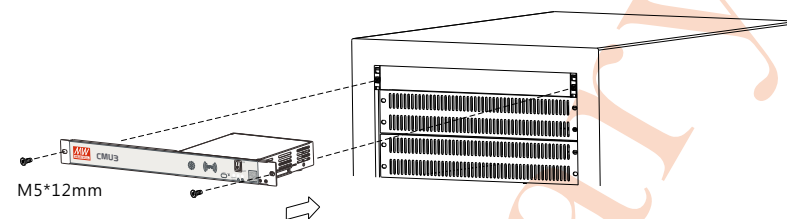
4.1.1.2 Din Rail Mounting



M3 Nylok Screw*3
(Recommended
mounting torque: 6~8Kgf-cm)

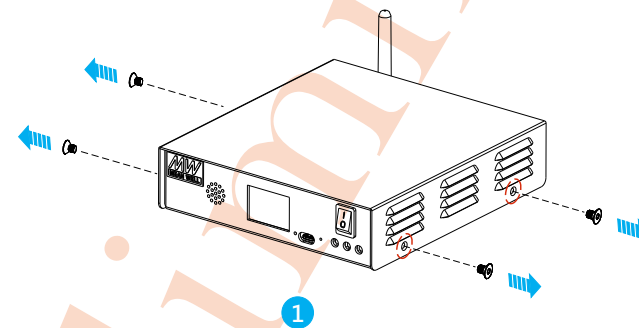
Din Rail Mounting

4.1.2 Rack mount Type

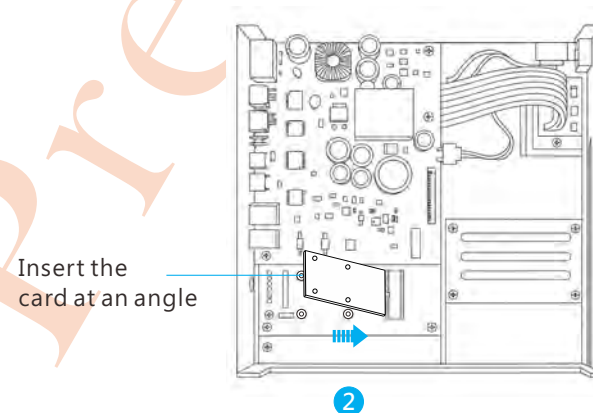


4.2 Mini PCIe Installation

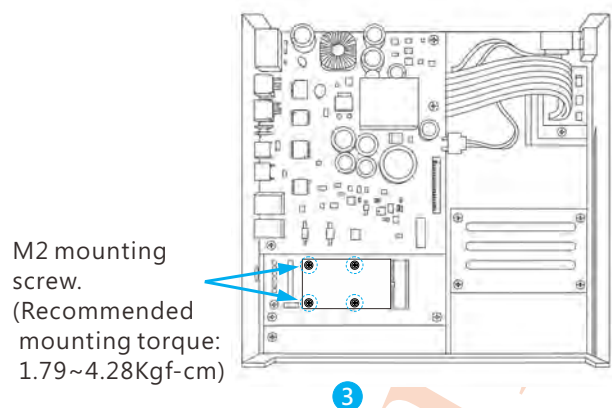
1.The Mini PCIe socket is located on the mainboard. Remove the cover first to access the socket.



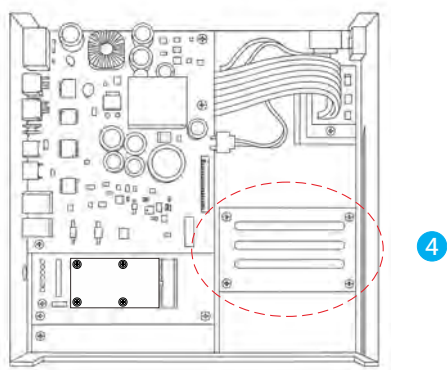
2.After the cover is removed, insert the Mini PCIe card into the connector.



3. Push down on the other end of the Mini PCIe card and secure the card on the mainboard with the provided mounting screw.

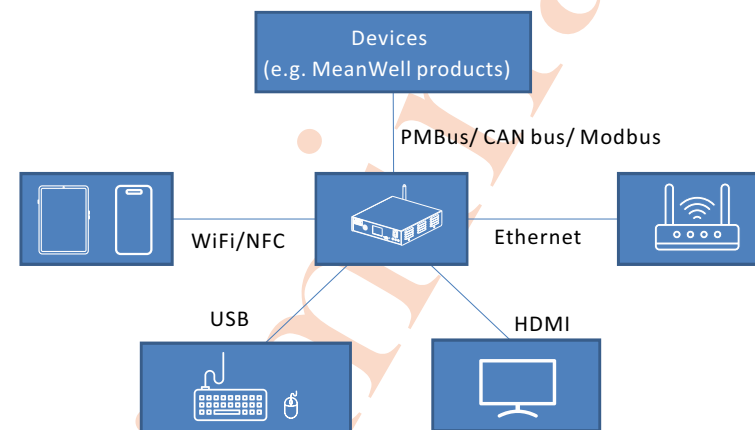


4. If the mini PCIe card comes with an additional accessory, secure it in the areas marked in red.
If not, simply reinstall the cover to complete the installation.
(Recommended mounting torque: 4~5.5Kgf-cm)

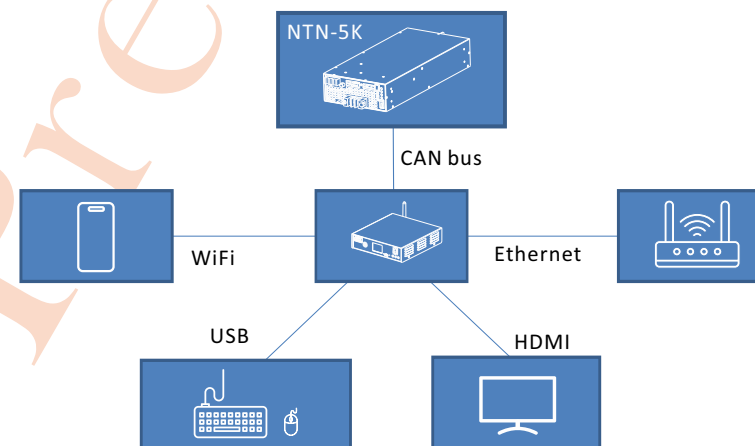


4.3 System Configuration

The CMU3 can be flexibly connected to corresponding devices to form a complete system. Its communication interfaces are highly versatile, supporting common protocols such as PMBus, CAN bus, and Modbus, for controlling and monitoring relevant equipment (for example, Mean Well power products). In addition, the CMU3 can connect to smartphones, tablets or computers via Ethernet, Wi-Fi, or NFC to enable remote monitoring, or use interfaces such as HDMI and USB to establish an on-site monitoring platform.



Using the NTN-5K Energy Monitoring System as an example, the CMU3 can control and monitor the NTN-5K via CAN bus, displaying relevant information on a mobile device. The following provides an example system description for this setup.



5. User Interface

5.1 Login Page

During initial power-up, the CMU3 requires IP address configuration to establish a network connection for remote monitoring and control. Two configuration methods are available:

Method 1: Direct configuration via a monitor and keyboard.

Method 2: Configuration using a mobile application, as described below. The CMU3 is a highly configurable controller that allows users to customize monitoring parameters and display pages. Once access to the CMU3 operating interface, please refer to the online user manual for completing the remaining setup for the required monitoring and control functions.

● Preparation

Your mobile device must support NFC and have the MEAN WELL APP installed. If the app is not yet installed on your device, please scan the following to download: iOS APP | Android APP | Android APP



● Compatible Mobile Devices

Android: Android OS 4.1 (API 16) or later.

iPhone: iOS 12 or later.

● Configuration Steps

1. Download the MEAN WELL APP on your mobile device and enable the NFC function.
2. Open the app and then tap "CMU3" button to start scanning for tags.
Location of "CMU3" button: tap the "manual icon" in the upper left corner on the main page of the app, tap "Installation Manual/APP" button you will see it just sits on the bottom.
3. Hold the device near (< 5cm) the NFC Tag of the controller. For iPhone, hold the top-center of your phone onto the tag. For Android, place backside-middle of the phone onto the Tag. If it doesn't work you may refer to its instruction manual.

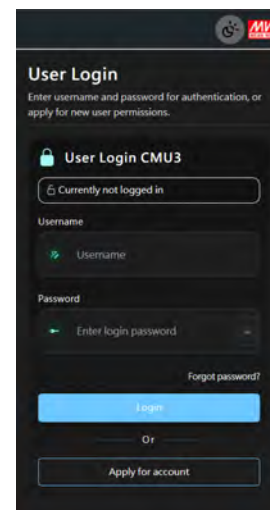




NOTE:

1. MW APP會記錄已設定的設備資訊，後續可以MW APP快速連接至已設定過的CMU3。
2. 「初次連線」適用於首次使用的CMU3。CMU3預設為AP模式，使用「初次連線」功能可讓MW APP與CMU3連線至同一網路。如果CMU3的網路設定已變更，請使用「快速連線」功能。若連線失敗，請確認使用的行動裝置是否與CMU3連線至同一網路。

- iOS devices: The NFC function is enabled by default, and no additional user settings are required. The NFC antenna is typically located at the top of the device.
- Android devices: The NFC function must be manually enabled in the system settings. As NFC antenna placement varies by brand and model, there is no standard location.
- If any NFC-related issues occur during operation, it is recommended to contact the device manufacturer or refer to the user manual for the specific model.
- Login Page
The login page will be displayed when accessing the CMU3 unit. First-time users are required to apply for an account.



NOTE:

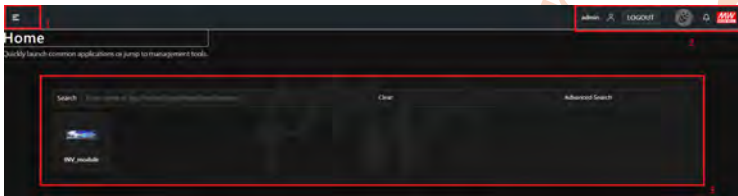
1. The CMU3 starts in AP Mode by default. Connect your mobile device to its Wi-Fi network to begin setup, the default WiFi name is: CMU3_AP_XXXX. The password is: 12345678. After connecting, the default homepage URL is: 192.168.4.1:5039.
2. If the default IP has been modified, the homepage URL must include the new IP followed by :5039. For example: if the IP is 192.168.200.105, then the homepage URL would be 192.168.200.105:5039.

Display Language

The CMU3 supports English, Traditional Chinese, and Simplified Chinese. The CMU3 will automatically adapt to the appropriate language based on the browser you are using. If the browser language is not supported, the CMU3 will default to English. On mobile devices, Android uses the browser's language settings, while iOS uses the system language or the browser's preferred language settings to determine the display language.

5.2 Home Page

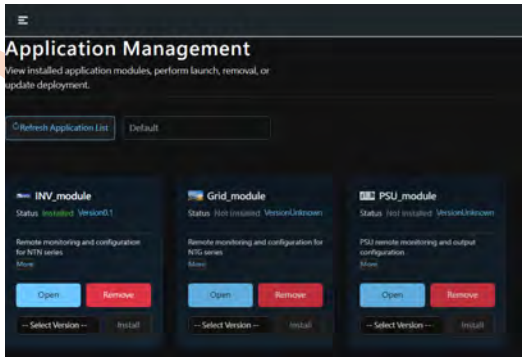
After logging in, users can access the home page. On the home page, users can perform functions such as app search, notification review, and mode switching.



Single-click (tap once) the app image to open.

No.	Description
1	App: This is the home page, where you can search for modules, view the event log, switch light/dark mode, and perform other related functions. Comm: Used to manage the CMU3 communication protocols, including importing and editing protocols. Refer to Section 5.4 for details. Manage: This page allows you to manage and configure user Management, System Logs, Application Management, Resource Management & Monitoring, LOG Management, System Update, Power Product Updates, and system image replacement, Audio Settings, Background System Settings and Custom Footer Links. Refer to Section 5.5 for details.
2	Member Center: Used to manage personal information, such as changing the password. Notifications: Event log that records the operating status of the app. Mode Switch: Toggle between light mode and dark mode. Logout Button: Logs out the current user.
3	App search. Supports both basic search and advanced search.

Apps or related applications can be installed through Application Management on the Manage page. For more details, please refer to Section 5.5.3.



5.3 Application Card Management

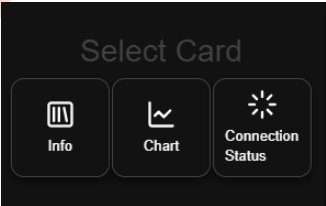
On the module pages, such as INV_module, users can freely customize information, charts, and connection status to create a personalized interface. The editing functions are located in the upper-right corner of the page.



Edit Cards:Used to enable/disable the editing mode. When Edit Cards is enabled, the Add Card, Restore Default Cards and Save Card Layout options will appear on the page. Cards on the page will display the icon, indicating these cards are allowed to be modified. Click the edit mode icon again to exit edit mode.

Restore Default Cards : Restore the default card configuration and overwrite all current card settings.

Add Card: Used to add new cards. Three types of cards are available: Information, Chart, and Connection Status.

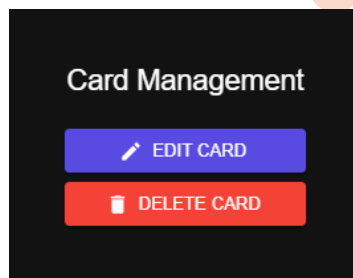
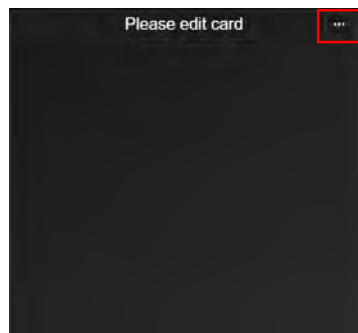


Save Card Layout: Used to save the edited page. After making changes, be sure to click this icon to avoid losing any modifications.

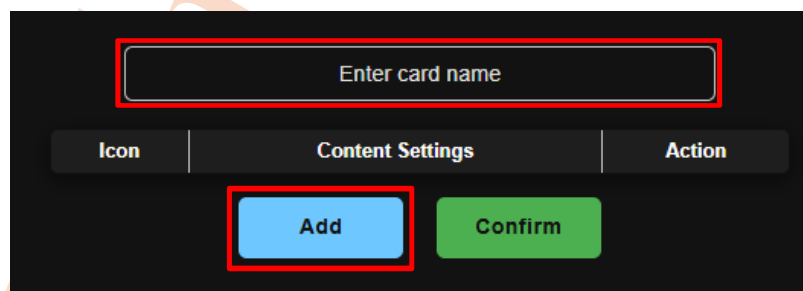
5.3.1 Information Card Editing

After adding an information card, the new card will appear on the page.

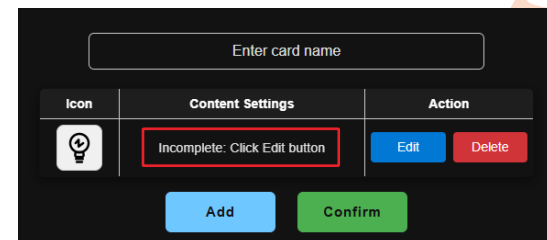
- ① Click the icon in the upper-right corner of the card to select "EDITCARD" or "DELETE CARD"



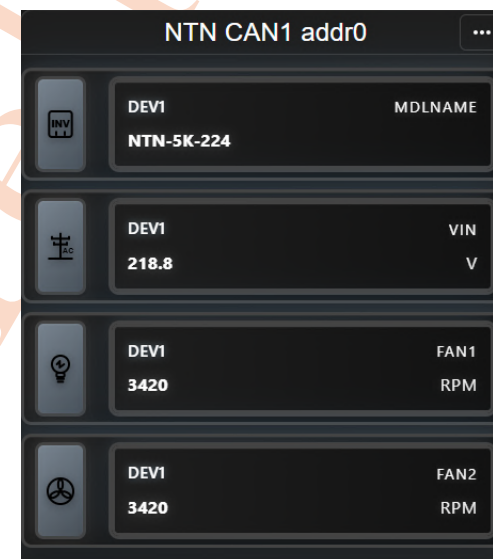
- ② After selecting EDIT CARD, you can name the card, add contents and change the icons.



- ③ After adding content, click Edit button to open the "Value and Command Settings" window.



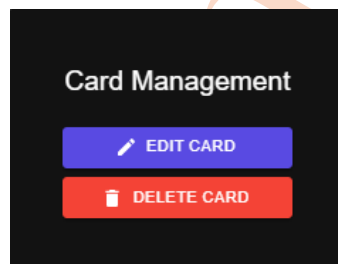
- ④ Repeat the ② - ③ steps to complete cards with specific functionality. Example: A card displaying the AC input/output voltage and frequency of an NTN-5K-224CAN (address 0).
Note: Up to 4 different items can be displayed simultaneously.



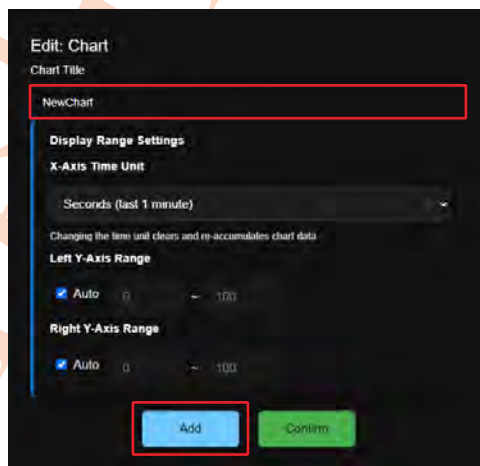
5.3.2 Chart Card Editing

After adding a chart card, the new card will appear on the page.

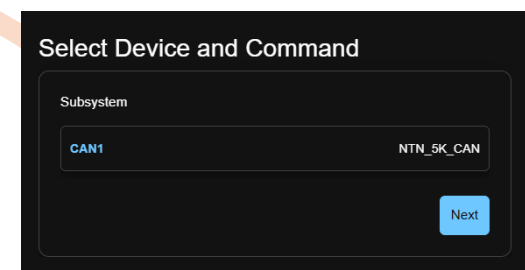
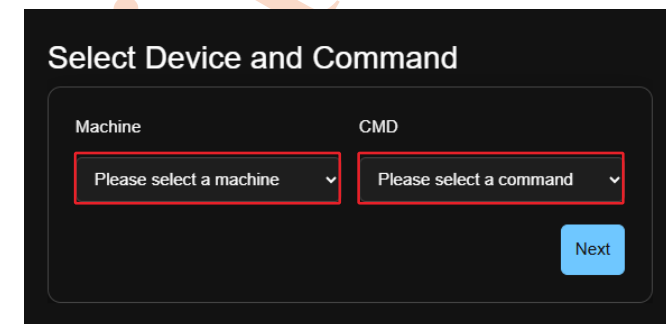
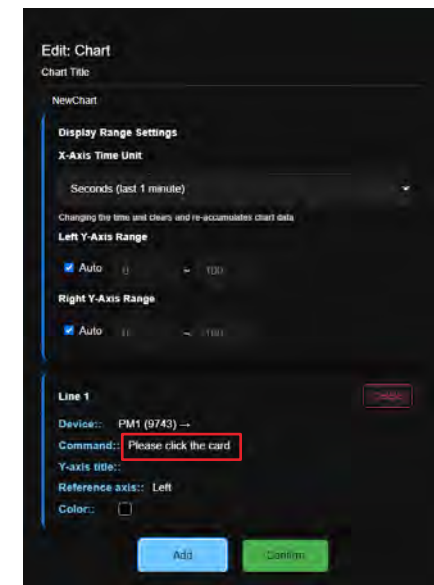
- ① Click the  icon in the upper-right corner of the card to select "EDITCARD" or "DELETE CARD".



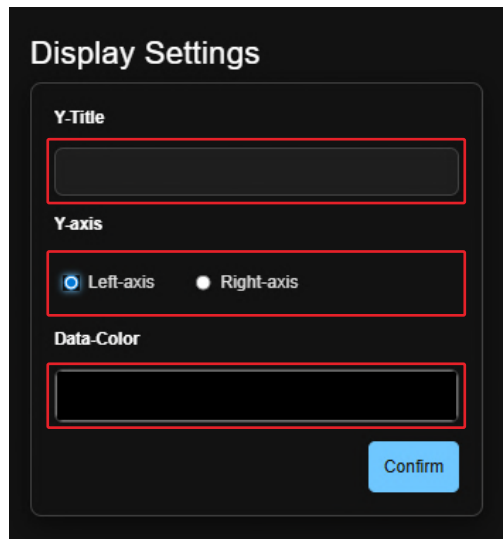
- ② After selecting EDIT CARD, you can name the card and add curve data.



- ③ To configure the chart curves, click the card to enter a Select Device and Command window and choose the desired device and parameters to display.



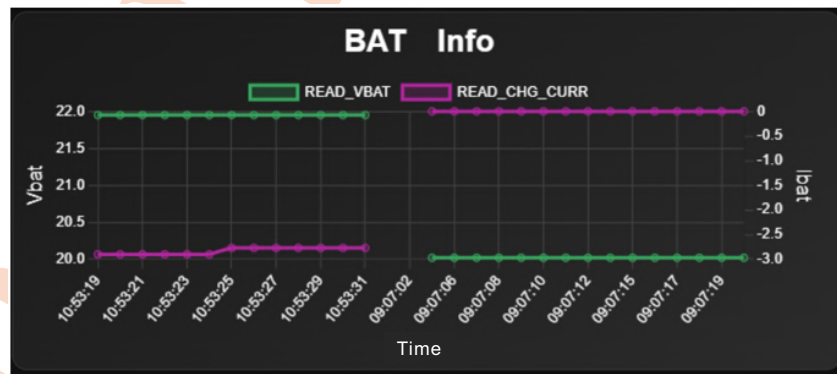
- ④ After selection, a Display Settings window will appear where you can edit the curve name, set displaying axis and select data-color.



The 'Display Settings' window is a dark-themed dialog box. It contains three main sections: 'Y-Title' with a text input field, 'Y-axis' with two radio buttons labeled 'Left-axis' (selected) and 'Right-axis', and 'Data-Color' with a color selection bar. A blue 'Confirm' button is located at the bottom right.

- ⑤ Repeat the ② - ④ steps to complete a card with specific functionality. Example: A chart displaying battery voltage and current curves of the NTN-5K.

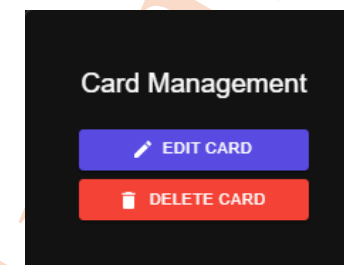
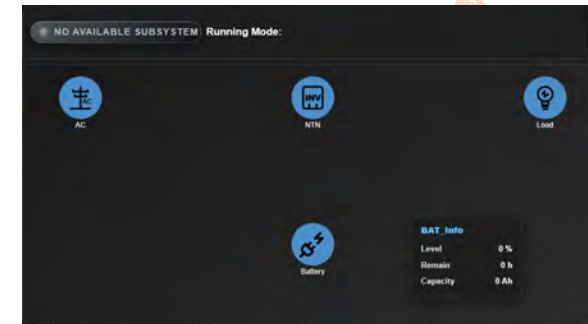
Note: Up to 2 curves can be displayed simultaneously.



5.3.3 Connection Status Card Editing

After adding a connection status card, the new card will appear on the page.

- ① Click the  icon in the upper-right corner of the card to select "EDITCARD" or "DELETE CARD".



- ② After selecting DELETE CARD, you can change the card icon and name the card.



The 'Edit: Connection Status' dialog box shows a 'Subsystem' dropdown menu set to 'CAN1 - NTN_5K_CAN'. Below is a table with four rows, each representing a connection status card. The columns are 'No.', 'Icon', and 'Text'.

No.	Icon	Text
1		AC
2		NTN
3		Load
4		Battery

A green 'Confirm' button is at the bottom.

- ③ Once completed, the card will display the connection status between the NTN-5K and other devices.



- ② Release the card when it reaches the desired position.

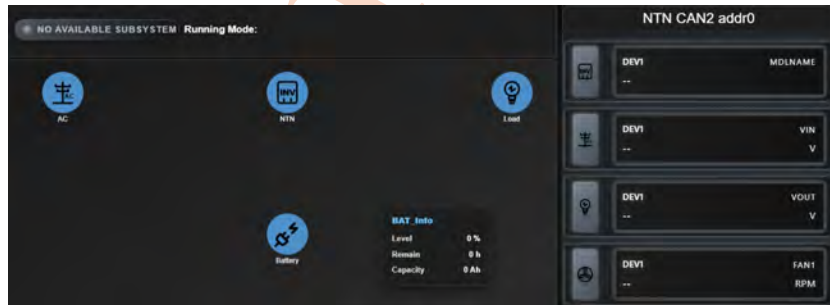


5.3.4 Card Movement

In the editing mode, application cards can be repositioned to suit your preferences.

Desktop Version:

- ① Click and drag the desired card.

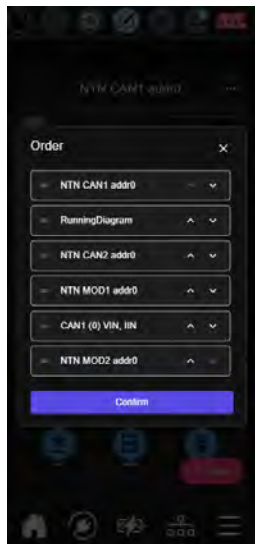


Mobile Version:

- ① Tap Order in the red box



- ② The page will display all editable cards. Then tap  to set the cards to the desired position.



5.4 Comm Page

The Comm page is used to configure the CMU3's communication protocols, channels, and thresholds with external devices to ensure smooth and secure data exchange.



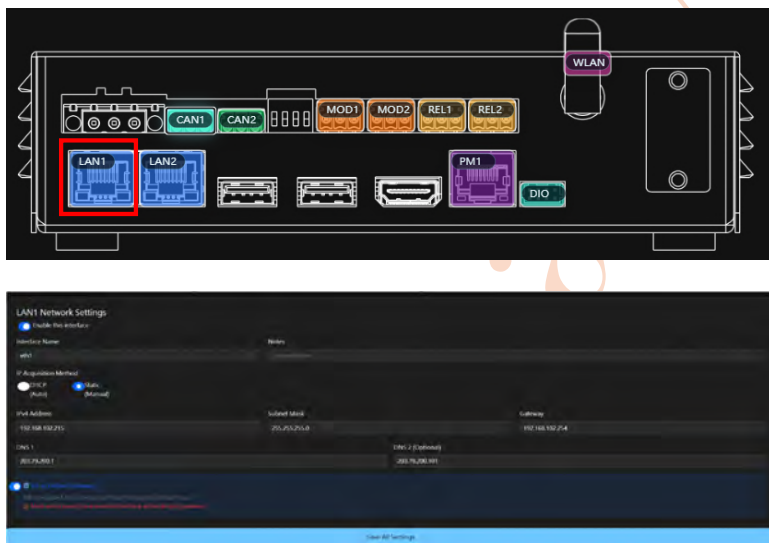
No.	Description
1	The CMU3 supports various communication interfaces (including CAN bus, RS-485, PMBus, Ethernet, etc.) and network protocols (e.g., Modbus TCP, Web API, Matter). The icons on this page correspond to the physical communication ports on the CMU3. Click an icon to configure the protocol settings for that port.
2	The Protocol Management page is used to edit and import communication protocols from third party's devices.

5.4.1 Comm Port Settings

Users can configure the communication port by selecting the corresponding port icon. Parameters such as the baud rate can be adjusted according to specific requirements. Please refer to the description of each port for detailed information.



5.4.1.1 LAN1/LAN2 (LAN Network) Settings



This page is used to configure the accessing parameters of LAN1/ LAN2, including IP address, DNS servers, and routing rules.

1. Interface Control

- **Enable this interface**
 - ON (): Enable LAN and start packet transmission
 - OFF (): Disable the port

2. Interface Name

- **Interface Name:** Read-only
- **Note:** For optional user-defined description (e.g., "Internal Network", "External Network")

3. IP Acquisition Method

- **DHCP (Auto)**
 - Suitable for environments connected to standard routers or switches. The system will automatically request an IP address from a DHCP server.
- **Static (Manual)**
 - Suitable for server environments or specific network segments that require a fixed IP address. When selected, the following fields must be configured:
 - **IPv4 Address:** Enter the assigned static IP address (e.g., 192.168.1.1)
 - **Subnet Mask:** Enter the subnet mask to define the network range (e.g., 255.255.255.0)

- **Gateway:** Enter the default gateway IP address, which is usually the router's IP (e.g., 192.168.1.54).

4. DNS Server Settings

Configure Domain Name System (DNS) servers to ensure the system can translate domain names (e.g., www.google.com) into IP addresses.

- **DNS 1:** Primary DNS server IP (e.g., 203.79.200.1).
- **DNS 2 (Optional):** Secondary DNS server, used when the primary server is unavailable.

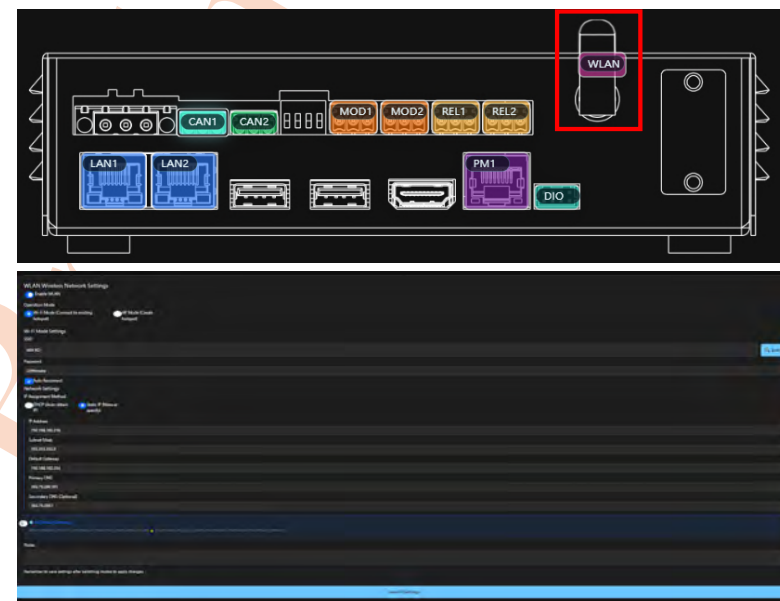
5. Routing Settings (Critical Setting)

- **Set as Default Gateway :**
 - **Function:** When enabled, all traffic outside the local network (i.e., Internet traffic) will be routed through this interface by default.
 - **Note:** Only one network interface can be set as the default gateway. If multiple interfaces are used (e.g., Ethernet 1, Ethernet 2, or Wi-Fi), ensure that this option is enabled only on the primary external connection interface. Otherwise, routing conflicts may occur, resulting in network connectivity issues.

6. Save All Settings

- After confirming that all configurations are correct, click this button to apply the changes. The network connection may briefly reconnect.

5.4.1.2 WLAN (Wireless Network) Settings



This page is used to configure the operating mode and connection parameters of the wireless network interface (Wi-Fi).

1. Interface Control

- **Enable WLAN:**
 - **ON** (): Enable WLAN and start packet transmission
 - **OFF** (): Disable the port

2. Operation Mode

- **Wi-Fi Mode (Connect to existing hotspot)**
 - **Function:** Connects to an existing Wi-Fi router or hotspot.
- **AP Mode (Create hotspot)**
 - **Function:** operates as an access point allowing wireless-capable devices (e.g., smartphones, tablets) to connect to the device.
 - **Use Case:** Suitable when no network is available on-site or for initial setup using the MW App.

3. Wi-Fi Mode Settings (Only available in Wi-Fi Mode)

- **SSID:** Enter the Wi-Fi network name to connect to
 - **Scan Button:** Click "Scan" to display a list of available nearby Wi-Fi networks
- **Password:** Enter the Wi-Fi password
- **Auto Reconnect:**
 - When enabled, the system will automatically attempt to reconnect if the connection is lost due to unstable signals

4. IP Assignment Method

Configure how the IP address is assigned after connecting to Wi-Fi:

- **DHCP (Auto obtain IP)**
 - The router automatically assigns an IP address
- **Static IP (Manual sepcify)**
 - Suitable for environments requiring a fixed IP
 - **IP Address:** Enter the assigned static IP (e.g., 192.168.1.1)
 - **Subnet Mask:** Define the network range (e.g., 255.255.255.0)
 - **Default Gateway:** Enter the router IP (e.g., 192.168.1.254)
 - **Primary / Secondary DNS:** Domain Name System (DNS) server

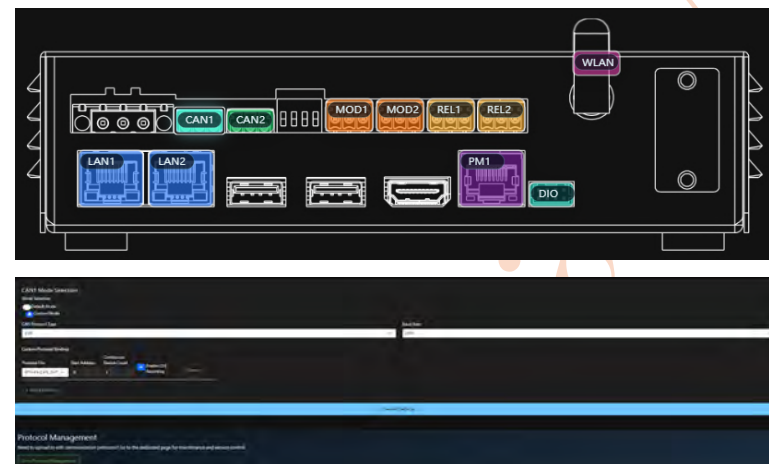
5. Routing Settings

- **As Default Gateway:**
 - **Function:** Determines the primary path for external network (Internet) access
 - **Configuration Rule:** Only one interface can be selected
- **If using wired network (LAN1) as the main connection → uncheck this option**
- **If using Wi-Fi as the main connection → enable this option**

6. Save All Settings

After confirming that all configurations are correct, click this button to apply the changes. The network connection may briefly reconnect.

5.4.1.3 CAN1/CAN2 (CAN Bus Interface) Settings



This page is used to configure the operating mode, communication parameters (such as Baud Rate and CAN Protocol Type), and protocol binding for devices connected to the CAN1/CAN2 port.

1. Mode Selection

- **Default Mode**
 - **Use Case:** Suitable for MW devices
 - **Fixed Parameters:**
 - CAN Protocol: 2.0B
 - Baud Rate: 250K
 - Transmission Interval: 50 ms
- **Custom Mode**
 - **Use Case:** Used when field devices require specific baud rates (e.g., 500K, 1M) or a different protocol type.
 - **Description:** When selected, detailed parameter settings (as described below) will be available for manual configuration

2. Communication Parameters (Only available in custom mode)

When **Custom Mode** is selected, configure the following parameters to ensure proper communication with connected devices

- **CAN Protocol Type:** Select the CAN protocol type, 2.0B or 2.0A.
- **Baud Rate:** Set the communication speed (e.g., 250K, 500K)

3. Custom Protocol Binding

This section is used to bind communication protocols to devices.

Protocol File: Select the corresponding device driver file (JSON format, e.g., PSU_CAN.json) from the dropdown list

- **Start Address:** Enter the starting CAN ID or Station ID of the device.
- **Continuous Device Count:** Specify the number of consecutive devices with sequential IDs.
 - **Example:** If the start address is set to 1 and the device count is 3, the system will automatically bind devices with ID 1, 2, and 3.
- **Enable Log Recording:**
 - When enabled, detailed communication data of the device will be recorded in the system log.
- **Action Buttons:**
 - **Add a binding:** Add a new device binding entry.
 - **Delete:** Remove the selected entry.

4. Save All Settings

Apply and save all configurations. The system will write the settings and reinitialize the CAN communication port.

5.4.1.4 RS-485(1)/RS-485(2) (Modbus Interface) Settings



This page is used to configure the transmission parameters of RS-485(1)/RS-485(2) typically for connecting Modbus RTU devices.

1. Mode Selection

Please select one of the following operating modes based on the hardware device specifications:

- **Default Mode**
 - **Use Case:** Suitable for devices using MW standard communication specifications.
 - **Description:** Communication parameters are fixed and cannot be modified.

- **Fixed Parameters:**
 - DataBits: 8 bit
 - StopBits: 1 bit
 - Parity: None
 - BaudRate: 115200
 - Interval: 50ms

● Custom Mode

- **Use Case:** Used when devices require non-default baud rates or parity settings.
- **Description:** Enables detailed parameter configuration for manual adjustment to match the device.

2. Communication Parameters (only available in custom mode)

- **Data Bits:** Defines the data length of each packet (typically 8 bits for Modbus RTU).
- **Stop Bits:** Defines the length of the stop bit (commonly 1 or 2 bits).
- **Parity:** Error-checking method.
 - None: No parity.
 - Even: Even parity.
 - Odd: Odd parity.
- **Baud Rate:** Communication speed (e.g., 9600, 19200, 38400, 115200).
- **Transmission Interval (ms):** Polling interval in milliseconds (default: 50 ms).

3. Custom Protocol Binding

This section is used to bind communication protocols to devices.

- **Protocol File:** Select the corresponding device driver file (JSON format, e.g., PSU_CAN.json) from the dropdown list.
- **Start Address:** Enter the starting Modbus ID or Station ID.
- **Device Count:** Specify the number of consecutive devices with sequential IDs.
 - **Example:** If the start address is set to 1 and the device count is 3, the system will automatically bind devices with ID 1, 2, and 3.

● Enable Logging:

- When enabled, detailed communication data will be recorded in the system log.
- **Action Buttons:**
 - **Add a binding:** Add a new device binding entry.
 - **Delete:** Remove the selected entry.

4. Save All Settings

Apply and save all configurations. The system will write the settings and reinitialize the RS-485(1) communication port.

5.4.1.5 REL1/REL2 (Relay Output) Settings



This page is used to configure the operating logic of REL1/REL2 (Relay 1/2).

1. Interface Control

- **Enable this relay:**
 - **ON** (): Enables REL1/REL2 operation.
 - **OFF** (): Disables the relay.

2. Event Scope (Trigger Conditions)

The system provides four trigger modes:

- **Exact (specify Port + Address + Command)**
 - **Use Case:** Trigger based on a specific event from a specific device.
 - **Configuration:** Specify Port + Address + Command.
 - **Example:** Trigger only when an INV_FAULT occurs on device address 0 on CAN1.
- **Same Port, Any Address (select Port + Command)**
 - **Use Case:** Trigger for any device on the same communication bus.
 - **Configuration:** Specify Port + Command (address not required).
 - **Example:** Trigger when any device on CAN1 reports INV_FAULT.

- **Global (select Command)**
 - **Use Case:** System-wide monitoring.
 - **Configuration:** Specify Command only (independent of port and device).
 - **Example:** Trigger when any device in the system reports INV_FAULT.
- **Digital Input (triggered based on DIN potential)**
 - **Configuration:**
 - **Digital In:** Select the input source (e.g., DIN1).
 - **Trigger Logic:**
 - **High:** Relay is activated when a high signal is detected.
 - **Low:** Relay is activated when a low signal is detected.

3. Output Logic

Defines the relay state before and after triggering:

- **NO (Normally Open)**
 - Not triggered: Open.
 - Triggered: Closed.
- **NC (Normally Closed)**
 - Not triggered: Closed.
 - Triggered: Open.

4. Save All Settings

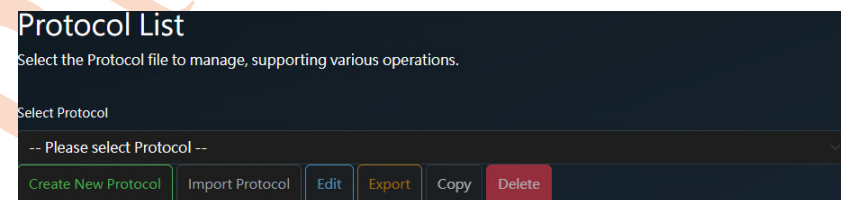
- Click this button to apply the changes.

5.4.2 Protocol Management

On the Protocol Management page, users can perform the following operations on existing protocol files:

- Edit
- Export
- Copy
- Delete

In addition, users can create new protocols or import existing protocol files for centralized management.



5.4.2.1 Protocol Creation Process

Users can create communication protocols required by devices through the "Create New Protocol" function.

Once created, CMU3 can use these protocols to communicate with connected devices for monitoring purposes. The data can also be displayed via status cards.

Step 1: Create a New Protocol

① Click "Create New Protocol".

② Select either a **Meanwell Product Selection** or a **Blank Template**

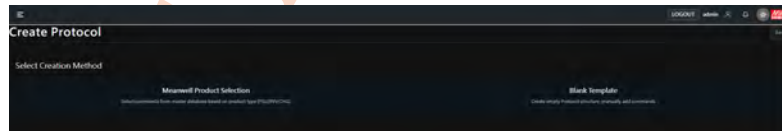
◦ If the device is not a Mean Well product, select **Blank Template**

- **Meanwell Product Selection:**

Based on predefined Mean Well product categories (e.g., PSU / INV / CHG), the system automatically generates a protocol structure with commonly used commands. This is suitable for quickly creating standard protocol files for company products.

- **Blank Template:**

Creates a protocol structure without any predefined commands. Users must define all command content manually. Suitable for customized devices or non-standard communication protocols.



③ Set up **Basic Information Settings**. This step is used to define the fundamental attributes of the protocol, including its name and communication type.

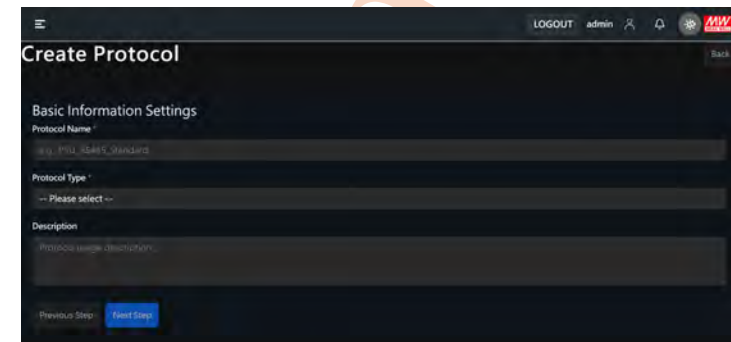
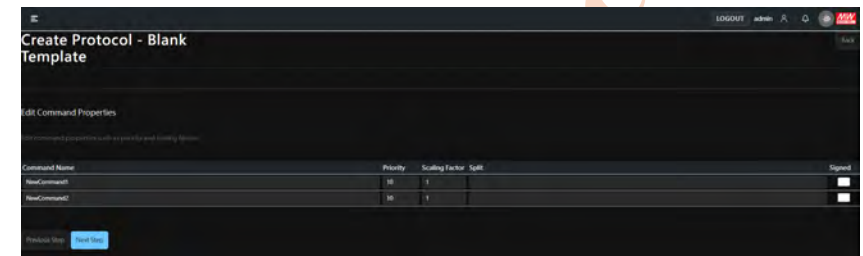
- **Protocol Name**

Enter a name that clearly identifies the device or its purpose. Including the product model or communication purpose is recommended for easier management and identification. Note: The name cannot contain the "/" character.

- **Protocol Type**

Select the communication interface used by the protocol. Currently supported:

- CAN (CAN bus)
- MOD (Modbus)
- PM (PMBus)



Step 2: Protocol Command Configuration

This step is used to create or select the commands included in the protocol.

The workflow varies depending on the selected creation method.

- **Quick Template Mode (Meanwell Product Selection)**

The system loads a predefined command list based on the selected product type. Users can use **Product Type** to quickly locate command categories and select the required commands (such as CHG(charger)/PSU(power supply unit), Bi-PSU(Bidirectional power supply, INV(inverter), etc.)

This mode significantly reduces manual configuration time and is suitable for standard products or existing models.

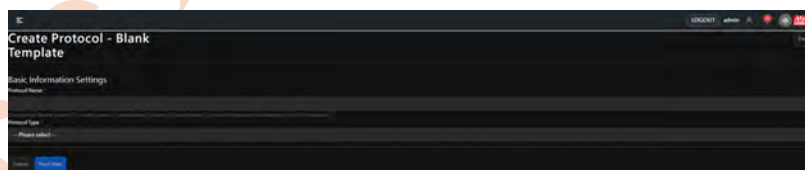
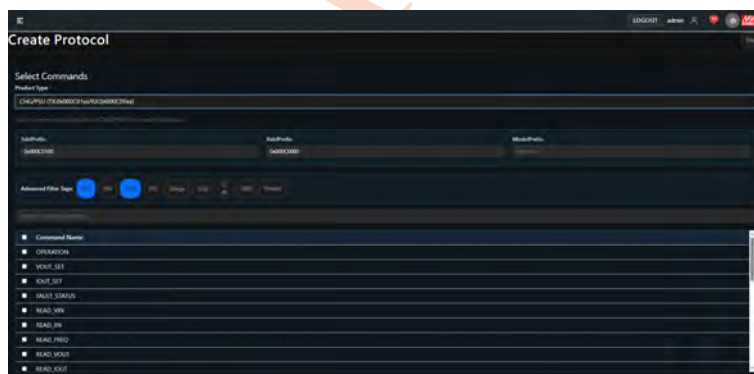
• Blank Template Mode

No predefined commands are loaded.

Users must manually add commands and configure each field individually, including:

- Command Name
- Command Code / RegAddress
- Byte Length
- Data Format
- Transaction Type / Function Code
- BaseUnit
- Shift(CAN)
- Bit Mapping or Data Mapping

This mode is suitable for highly customized devices or non-standard communication protocols.



Step 3: Command Property Configuration

After Select Commands, you can further adjust their properties on the Edit Command Properties page.

• Command Name

Affects only the UI display and does not impact the actual communication command code.

• Priority

A lower value indicates higher priority. Recommended guidelines:

- **Real-time event commands** (e.g., FAULT): priority can be set as high as 1.
- **Measurement commands** (e.g., voltage, current, power): priority can be set as low as 3.
- Other commands should be assigned higher values to reduce bus bandwidth usage

• Scaling Factor

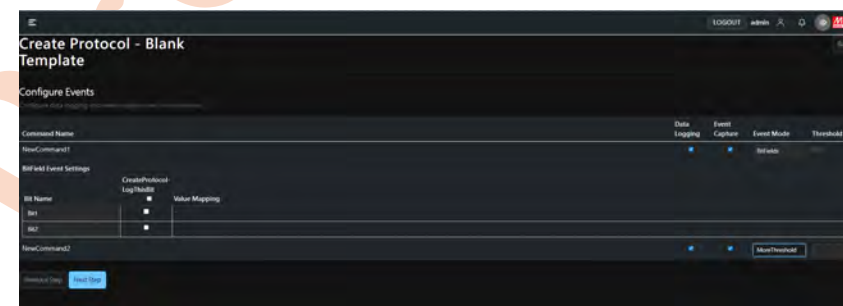
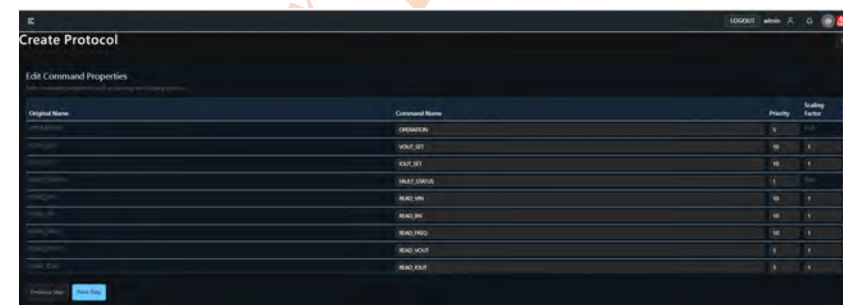
Used to convert raw communication data into actual physical values for display and calculation.

• Notes (System Default Commands)

In **Meanwell Product Selection**, the system automatically includes certain required commands.

These commands cannot be removed. Their purpose is to ensure full compatibility with supported products.

Even if they are not directly displayed in the UI, it is recommended to keep them.



Step 4: Event and Data Logging Settings

This step is used to configure data logging and event monitoring behavior on the **Configure Events** page.

- **Data Logging**

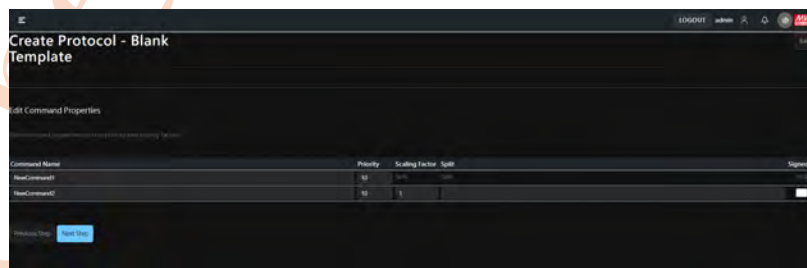
When enabled, the system periodically reads data at a fixed polling interval and stores it in the database. Suitable for long-term trend analysis (e.g., voltage, current, power).

- **Event Capture**

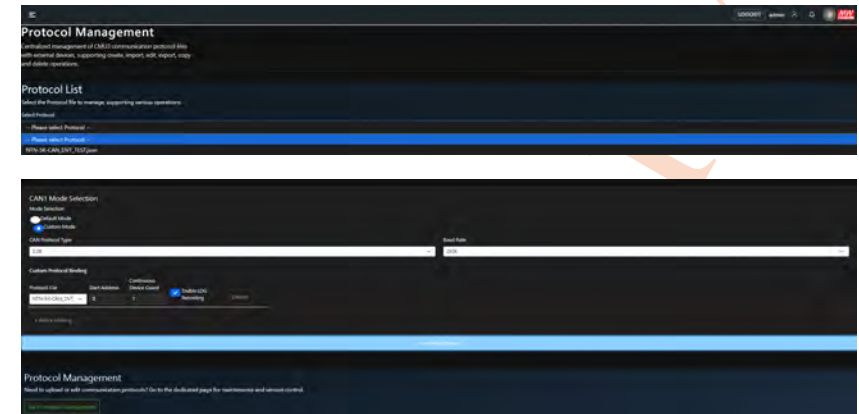
When enabled, the system monitors status changes in real time and triggers events when conditions are met.

- **Event Mode**

- Log when value exceeds threshold
- Log when value falls below threshold
- Log when Bit decoding is non-zero (applicable to BitField types)



Step 5: Review and Apply Protocols



After the process, the protocol will appear in the management list. Users can view, edit, export, or copy the protocol.

In the Communication Settings page, the protocol can be assigned to a specific port, along with configuration of baud rate, polling interval, address binding, and logging settings.

Step 6: Edit Individual Commands

Click "Edit" Protocol Management on the Protocol Management page to open the detailed configuration window for that command.

Commands Created via Meanwell Product Selection (Limited Editing)

Only the following fields can be modified:

- Display Name
- Unit
- Priority
- DataLog / EventLog enable settings
- BitField bit definitions

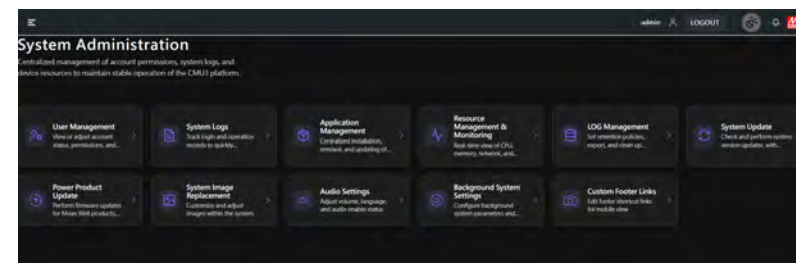
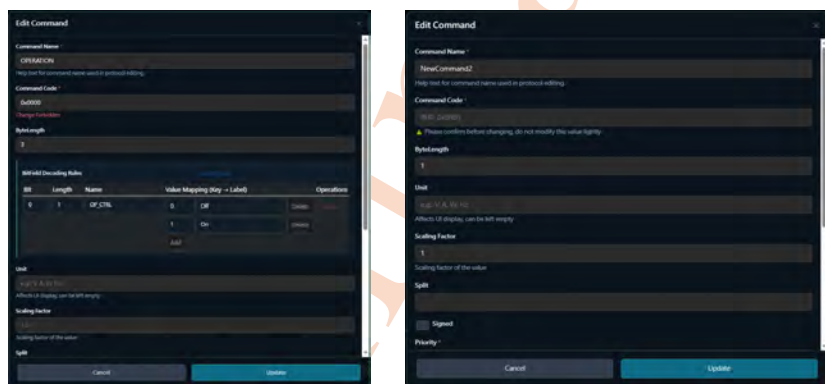
Other core communication fields cannot be modified to ensure compatibility.

Commands Created via Blank Template (Fully Editable)

All fields can be modified, including:

- Command Name
- Command Code
- Data format and structure
- Scaling factor or unit
- Priority and event settings

After making changes, click "Update" to save, or "Cancel" to discard changes.



5.5.1 User Management

The User Management interface allows administrators to maintain user status and control access permissions for each application.

- Administrators can review the status of user accounts and determine whether they can log in.

- Account Status:

Standard User: Users can log in but cannot access the Communication Settings

Advanced User: Users can log in and access the Communication Settings.

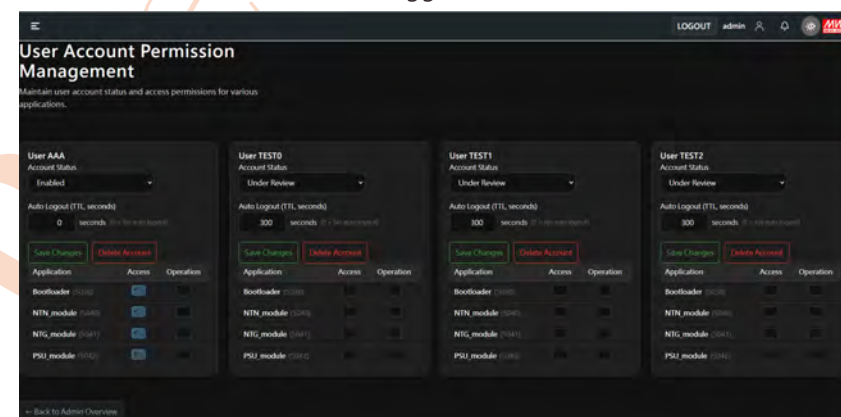
Disabled: Users cannot log in or use any system functions. User accounts can also be deleted.

- Administrators can control each user's permissions for individual apps (under development):

Access: Whether the user can use the app.

Operation: Whether the user can send commands through the app.

- Automatic logout can be configured per user. Once the set time is reached, the user will be logged out after their next action.



5.5 Manage Page

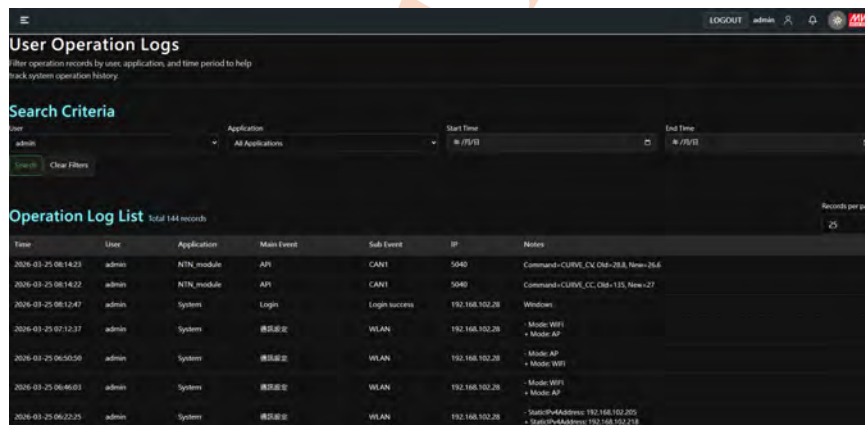
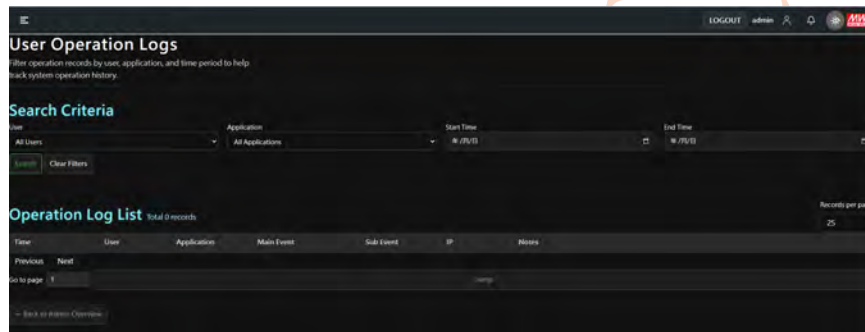
The Manage page provides system administration functions.

On this page, users can perform configuration and management of:

- User Management
- System Logs
- Application Management
- Resource Management & Monitoring
- LOG Management
- System Update
- Power Product Update
- System Image Replacement
- Audio Settings
- Background System Settings
- Custom Footer Links

5.5.2 System Log

The System Log allows users to review operation records filtered by application and time range, designed to track specific system activity events



User Operation Logs

This page provides a detailed record of all system operations, including logins/logouts, parameter changes, firmware updates, and network setting modifications. These logs cannot be modified or deleted to ensure audit integrity.

1. Search Criteria

If there are many records, the filters at the top can help locate specific events:

- **User:** Select a specific account (e.g., admin) from the dropdown to view that user's activity history. Default is **All Users**.
- **Application:** Filter by a specific application or module (e.g., only System-level operations).

- **Start Time / End Time:**
 - Specify the desired time range for your query.
 - **Query All Records:** Leaving both fields empty will display all historical records in the database.
- **Action Buttons:**
 - **Search:** Apply the selected filters and update the list.
 - **Clear Filters:** Reset all filters to their default values.

2. Operation Log List

The Operation Log List is displayed in reverse chronological order (latest entries at the top). Columns are defined as follows:

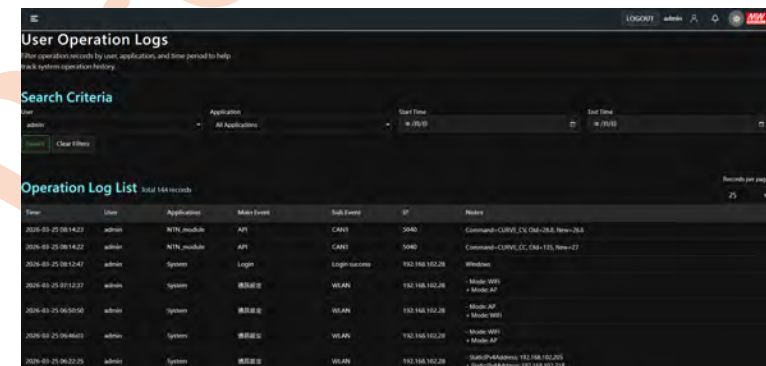
- **Time:** Timestamp of the event (yyyy-MM-dd HH:mm:ss).
- **User:** Account name of the operator.
- **Application / Main Event / Sub Event:**
 - Hierarchical structure for easier categorization.
 - Example: System (Application) > Communication Settings (Main Event) > CAN1 (Sub Event) indicates the record is related to changes in the CAN1 communication port.
- **IP:** The operator's source IP address at the time of the action, useful for distinguishing local versus remote operations.

3. List Controls

- **Records per page:** Default is 25 records. Use the menu at the top-right to adjust if you want to view more records at once.
- **Pagination:** Use the navigation buttons at the bottom to switch to desired pages.

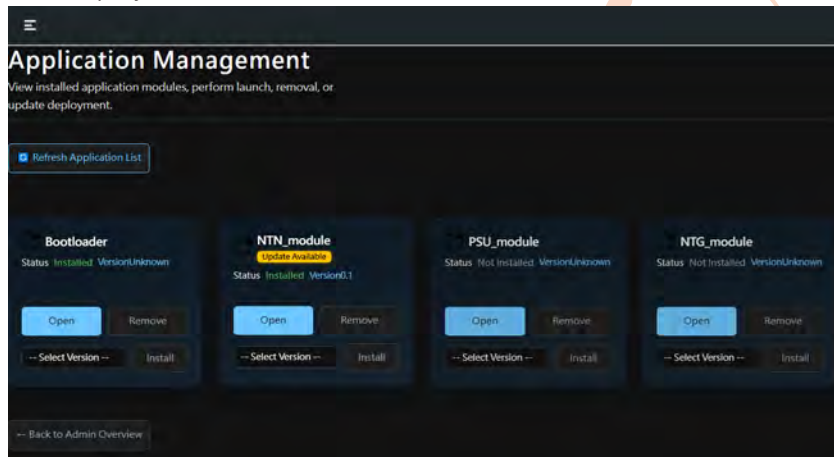
Example Use Case

1. **Troubleshooting:** If a device suddenly loses connection, check the WLAN or LAN "Communication Settings" logs to see if anyone recently changed the IP address or Wi-Fi password (e.g., a Mode change from AP to Wi-Fi, as shown in the screenshot).



5.5.3 Application Management

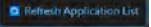
This page allows users to view installed application modules and perform actions such as opening, removing, or updating deployments.



5.5.3.1 Application Management Interface

This page provides an overview of all functional modules in the system. Users can view module status, perform version updates, install new features, or remove unused modules.

1. Global Functions

- **Refresh Application List** ():
 - Click this button to reload the status of modules from the server and the local device.

2. Module Card Information

Each functional module (e.g., INV_module) is displayed as an individual card containing the following information

- **Module Name:** Displays the module identifier (e.g., INV_module, PSU_module).
- **Status:**
 - **Installed** : Module is installed on the device.
 - **Not Installed** : Module is not yet installed and must be installed before use.
- **Version Info** () :
 - Shows the current version installed on the device (e.g., Version 1.0).
 - If the version is unknown, it usually indicates the module is not installed or version information failed to load.
- **Update Notice** () :
 - If a yellow "Update Available" label appears at the top-right, a newer version exists on the server.

3. Actions

For each module, the following actions are available:

- **Open:**
 - Click the blue open button to open the module interface.
- **Remove:**
 - Click the [Remove] button to delete the module from the device.

4. Installation and Version Deployment

To install a specific version or update a module, use the dropdown below the module card:

- **Version Input Field:**
 - Defaults to the latest version (e.g., 1.0).
 - To downgrade or install a specific version, select the desired version here.
- **Install:**
 - After confirming the version, click the [Install] button.
 - The system will download and install the selected module version.

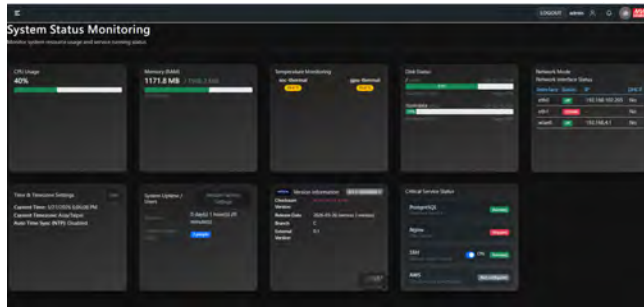
Example Use Cases

- **Scenario A: Update an Existing Module**
 1. The INV_module displays an "Update Available" label.
 2. Select the latest version from the dropdown menu.
 3. Click [Install] to perform an overwrite update.
- **Scenario B: Install a New Module**
 1. Locate a module with **Not Installed** status (e.g., PSU_module).
 2. Select the desired version (or keep the default).
 3. Click [Install]. Once the status changes to **Installed**, click open to activate the module.

5.5.4 Resource Management & Monitoring

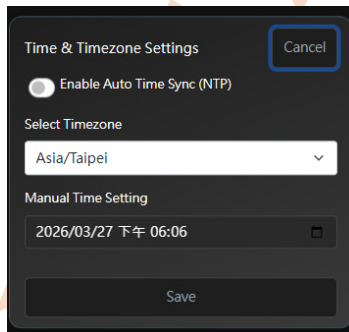
This page provides real-time monitoring of system resources and service statuses, including:

- CPU usage
- Memory (RAM) usage
- Temperature Monitoring
- Disk status
- Network Mode
- Time & Timezone Settings
- System Uptime
- Version Information



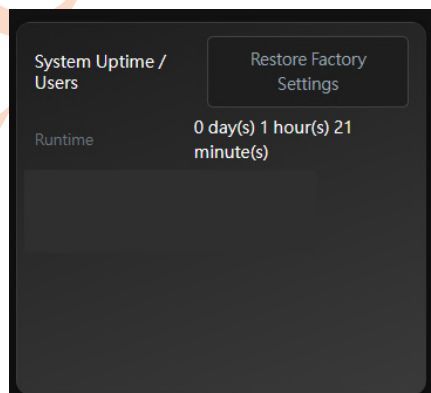
5.5.4.1 Time & Time Zone Settings

This section allows users to configure the system time and time zone. Users can set the time manually according to the local time or the system's location.



5.5.4.2 System Uptime

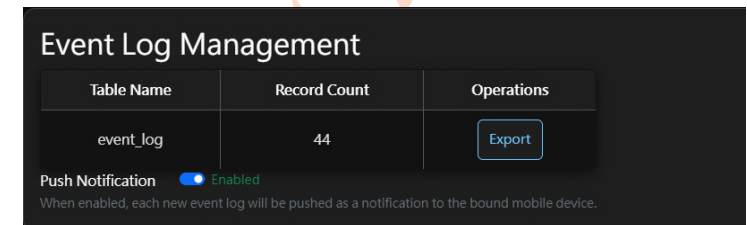
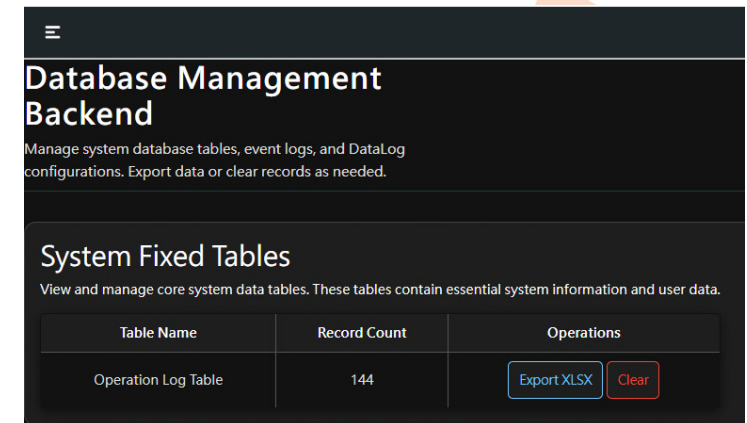
This section shows the device's uptime. It also provides the option to restore the system to factory default settings.



5.5.5 LOG Management

This page allows management of system database tables, event logs, and DataLog settings. Users can export or clear records as needed.

- **DataLog Interval:** Users can set the logging interval, with a minimum time step of 1 minute.

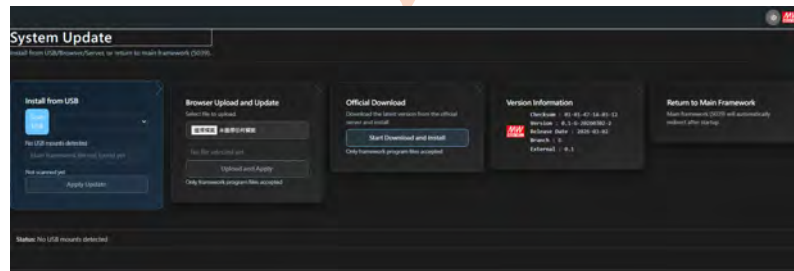


5.5.6 System Update

1. Place the CMU3 software file in the USB drive, as shown in the figure below, so that the USB drive can automatically detect the file. After scanned, click "Apply Update" to update.

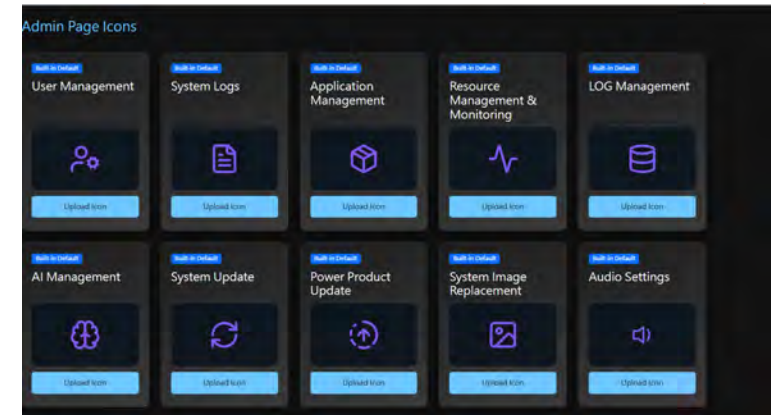
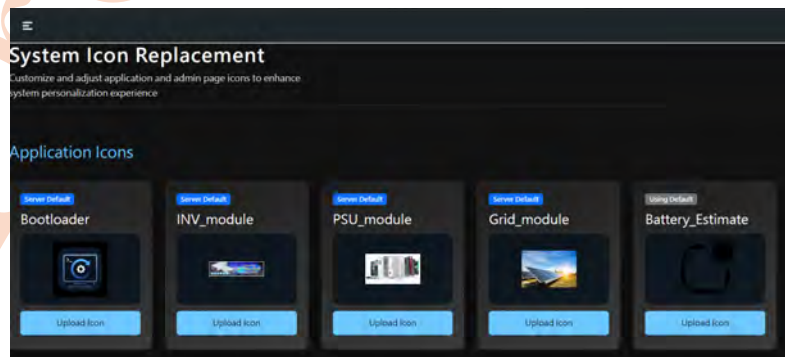


2. The CMU3 software file can be prepared on a computer. After connecting to the CMU3 page, select the file and click "Upload and Apply" to update.
3. The CMU3 software file can also be downloaded and installed from the MEAN WELL official server.



5.5.7 System Icon Replacement

Users can customize and adjust icons for both application modules and the management interface, enhancing system personalization and user experience.



6.Module

6.1 INV_Module (Inverter Module)

The INV_Module or inverter module is primarily designed to be used together with Mean Well inverter products, such as the NTN-5K series. This module can be used to remote on/off and configure the inverter's AC output voltage and frequency, adjust charging modes, and comprehensively monitor system operating status.

The inverter module consists of the following five core pages:

- NTN Home Page 
- System Settings: including the "Charger Settings"  page and the "Inverter Settings"  page
- Model Management: including the "Link Status"  page and the "Monitoring Report" page
- Shortcut Settings
Users can click the menu icon in  the upper-left corner of the page to switch to other function pages.

NOTE: After logging into the CMU3 monitoring unit, users can directly view the INV_module on the home page. If it is not displayed, the user may not have permission for this module, or it may need to be downloaded or updated via the "Application Management" section in the "Manage Page" (see Figure 1).

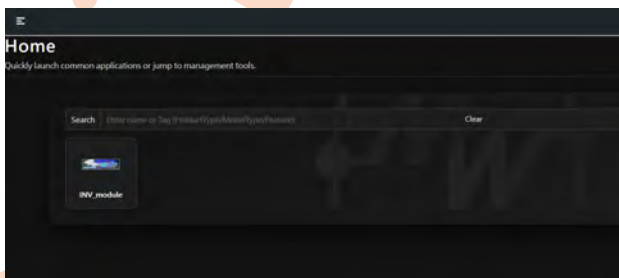


Figure 1

6.1.1 NTN home page

This page is primarily used for real-time monitoring of the inverter and displaying its operating status. It provides a high degree of customization and allows users to configure a personalized dashboard.

- High customization: All display elements on the page are presented in the form of cards.
- Customizable page: Users can refer to Section 5.3 "Application Card Management" to freely arrange and design a personalized management interface. (See Figure 2)



Figure 2 App card editing

6.1.2 System Settings: Charger Settings

This page provides complete adjustments for the charging curves and charge timeout.

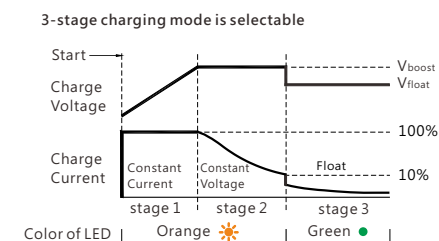
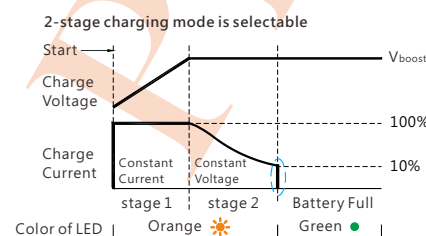


Figure 3: Charger Settings Page

1.Charging Curve Settings

- Constant Current (CC)
- Tapper current (TC)
- Constant Voltage (CV)
- Float Voltage (FV)

2. Charging Stage Configuration



3. Charging Timeout Settings

- Constant Current (CC) charging timeout: 60–64,800 minutes
- Constant Voltage (CV) charging timeout: 60–64,800 minutes
- Float Voltage (FV) timeout: 60–64,800 minutes

6.1.3 System Settings: Inverter Settings

This page provides configuration options for inverter remote control, AC output voltage and frequency, output/charging priority, and battery alarm thresholds.



Figure 4 Inverter Settings Page

1. Remote Switch : Remote ON/OFF control of the inverter.

2. AC Output Voltage and Frequency Adjustment:

- NTN-1xx series: 100/110/115/120 Vac, 50 Hz / 60 Hz
- NTN-2xx series: 200/220/230/240 Vac, 50 Hz / 60 Hz

3. AC Mode Charger: Enable or disable the AC charger.

4. Grid-tied feed-in: Disabled (not supported by NTN-5K series).

5. Output Priority:

Utility: When the utility power is available, the inverter operates in bypass mode, supplying power directly from the utility to the load.

Battery: When the battery power is available, the inverter operates in inverter mode, supplying power directly from the battery to the load.

6. Charging Priority: Fixed to Utility

7. Battery Alarm Voltage Settings:

- Battery Alarm: triggers a warning when battery voltage is below the threshold.
- Battery Shutdown: The inverter automatically shuts down for protection when voltage drops below the safe threshold.
- Battery Recharge: charging resumes when battery voltage recovers to this level.
- Battery OV Alarm: triggers a warning when battery voltage is above the threshold.

6.1.4 Model Management: Link Status

This page provides a visual dashboard for real-time monitoring of all connected devices, including the total number of devices and their operating status. Supported status indicators include error, saving, inverter, bypass, charger, standby and shutdown.

When a specific device (for example: ADDRESS: 0) is selected, a detailed information window will appear, displaying the following information:

■ Basic Information

- MODELNAME (e.g. NTN-5K-224)
- REVISION (e.g. 2.0,2.0,2.0)
- STATUS (e.g. Bypass)
- ERROR (e.g. blank = normally operating)

■ Electrical Data

- AC VOUT (A)
- LOAD CURRENT (A)
- LOAD POWER (W)
- DC CURRENT (A)
- BATTERY VOLTAGE (V)

■ Environmental and Hardware Monitoring

- TEMPERATURE (°C)
- FAN SPEED 1 (RPM)
- FAN SPEED 2 (RPM)

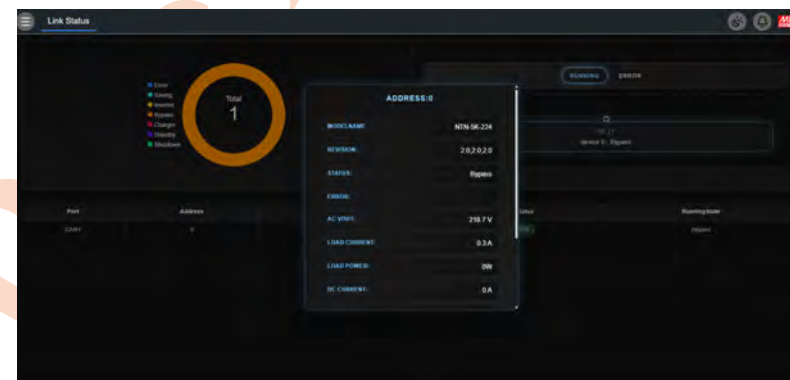


Figure 5 Link Status Page

6.1.5 Model Management: Monitoring Report

This page provides powerful historical data query and log management functions. The operating and filtering procedures are as follows:



Figure 6 Monitoring Report Page

- 1.LOG TYPE: Switch between viewing Event Log and Data Log.
- 2.Communication port(Only appear when Data log is selected):
Specify the communication port (e.g., CAN1, CAN2) to be queried.
- 3.DATE RANGE: Customize the start/end date and time, or use quick filters (e.g., 0.5 Year, 1 Month, 1 Week, 1 Day).
- 4.ACTION : Click the Search button to retrieve data, and click Export as needed.
- 5.Customize Display: Use the Show Columns to customize the data fields displayed in the report (e.g., ID, Timestamp, Port, Device Address, Model Name, etc.).

6.1.6 Shortcut Settings

This page allows users to customize the shortcuts in the bottom navigation bar to optimize daily operation workflows:

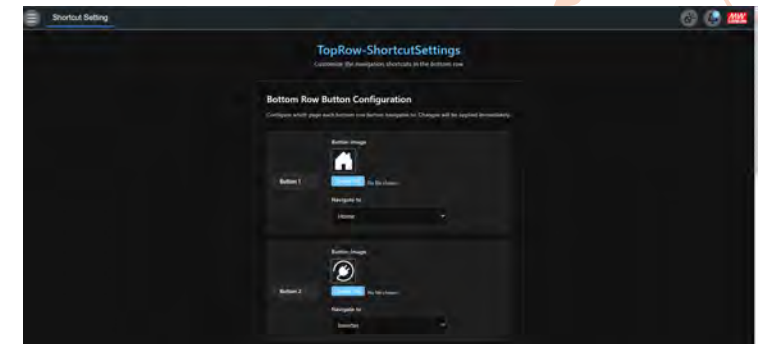


Figure 7 Shortcut Page

- 1.Configure the page associated with each bottom navigation button. Changes take effect immediately.
- 2.Customize the button icon and destination page.

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