PARADOX

IPC10

IP to CMS Converter

INSTALLATION MANUAL

V1.02.002 (HW ECO: Z030)

For the latest and previous version manual updates, please refer to paradox.com/Manuals/IPC10.pdf.

New in this version:

- Fixed 1024 account limitations (5000 accounts can be used).
- Removed firmware upgrade button for master users (only an owner can upgrade the firmware).
- Additional improvements.

Introduction

The IPC10 receives signals from Paradox systems/accounts encoded with Paradox IP protocol, records, converts them to known formats, and sends them to the central monitoring station (CMS) software. If the CMS is down, a built-in 20,000 event buffer is available for temporary use until the CMS is back online. The IPC10, based on MQTT technology, is continuously supervised, reliable, and fast. Reporting from the head unit to the CMS cycle is usually completed in less than 100ms. The IPC10 is designed with a very small 1U rack enclosure footprint, high account monitoring capacity of up to 5,000, single and only ethernet cable connection, very low power consumption of 6W, reliability, and redundancy with less than five minutes replacement time if needed to full operation. The IPC10 includes backup batteries for up to 20 hours of operation and will work in a closed network without internet with supported versions of reporting devices (IP180, IP150+MQ).

Main Features

- Up to 5,000 supervised accounts (20,10-, or 5-minutes supervision), 3,500 accounts at **90 seconds**.
- 100ms reporting cycle from the head unit to the CMS or from M wireless devices to the CMS.
- Supports closed network operation (supporting devices: IP180 V1.00.015, IP150+MQ V6.15.00 and above, BabyWare V5.06.44 and above).
- Fully encrypted communications with AES 128-bit certificates.
- Fully supervised connection to accounts.
- Simple and fast uptime with minimal programming (input network configuration), auto, and seamless registration from Paradox M devices and legacy MQTT reporting devices.
- One single-wire Ethernet connection to IPC10, for data and PoE; no other connections available or needed.
- Support all legacy Paradox systems with IP180 or upgraded IP150+MQ (version 6.0 and higher) or PCS265V8 (version 8.0 and higher).
- Five minutes up and full monitoring running replacement. Only network configuration is needed for the replaced receiver.
- Connect to CMS software via local Ethernet, supports Sur-Gard MLR2-DG, Ademco 685, or Ademco CID-TCP formats.
- Support for many customizable report codes.
- 20,000 event internal buffer.
- Simple and minimal UI for programming or use when the CMS is down.
- Low footprint (rack mount 1U) and low power consumption.
- CMS receives offline and online status regardless of events.
- Fully remotely upgradable via local Ethernet.

Was introduced in version 1.01.000 (HW ECO Z030)

- New hardware with built-in Lithium-Ion battery backup for up to 20 hours of operation and battery shutdown illuminated switch if IPC10 needs to be shut down.
- Internal clock battery.
- Support for closed networks operation (supporting devices: IP180 V1.10.00, IP150+MQ V6.10.00 and above, BabyWare V5.06.40 and above).
- Events are always sorted by order received with receiver time.
- UI improvements and additional custom codes.
- Hardware ECO Z030 (first released hardware) will run V1.01.000 except for keeping time in closed networks after complete power down and no backup batteries.

Connection With Internet

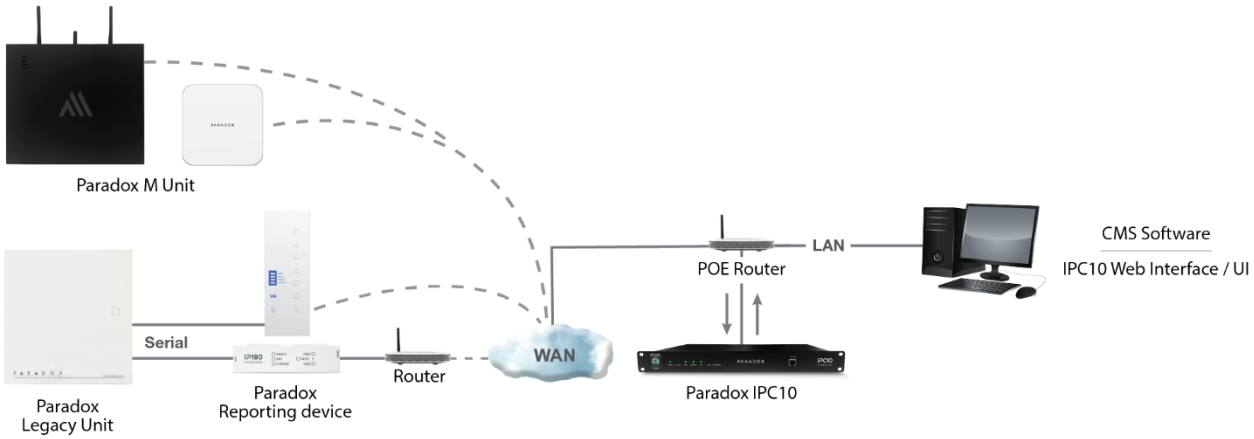


Figure 1

Connection in Closed Network

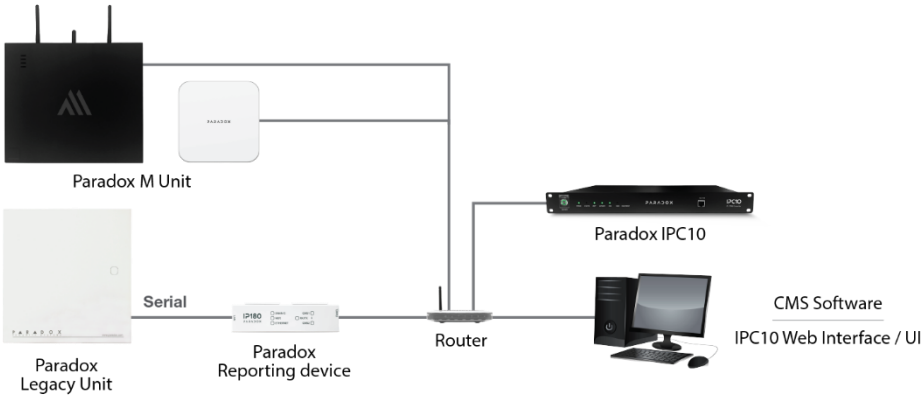


Figure 2

IPC10 Overview

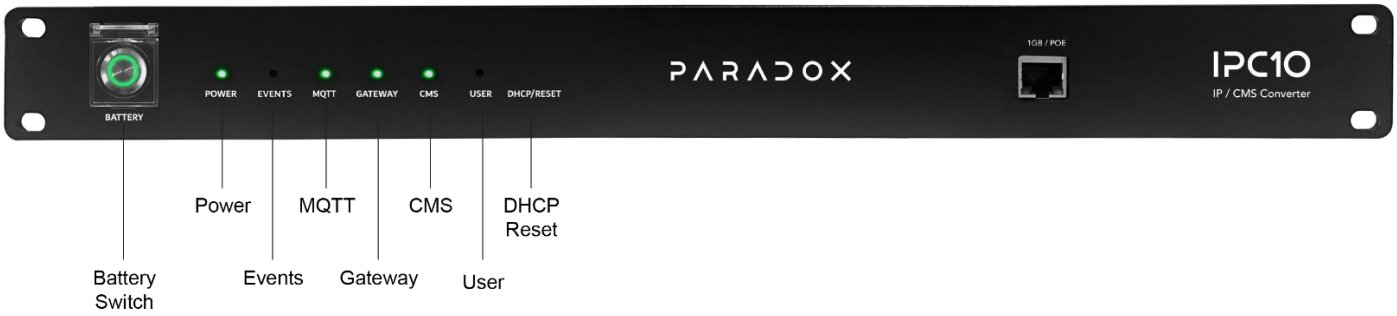


Figure 3

LED Indicators

Button/LED	Description
Battery Switch	The battery switch must always be pressed (ON) when the IPC10 operates. The switch is used only to power down the IPC10 in case of storage or transport. To power down, depress the switch and remove RJ45 (PoE). **Note**: The Battery Switch LED is always ON, as long as the switch is pressed, and the battery is not depleted.
Power	Green – Power ON (PoE or battery)
Events	Green blinking – Events are being received from reporting devices
MQTT	Green – MQTT broker running
Gateway	Green – Valid gateway
CMS	Green – Connected to the CMS Amber blinking – Transmitting data to the CMS
User	Green – User connected to the IPC10 UI
DHCP/Factory default Reset	Used to restore DHCP connection or reset to factory default. Use a pin to gently press the reset button. For **DHCP restore**: Momentary press up to three seconds. The DHCP status will be indicated by three flashes of all LEDs. This will clear the fixed IP address and the restore factory network default settings. **Reset to Factory default** - Press for at least 10 seconds until all LEDs start flashing and then depress. LEDs will shut down and the IPC10 will restart; all values will be set to factory default, and **all data (including events) will be erased and DHCP will be activated**.

Location and Mounting

The IPC10 can be mounted on a 19” (48.3 cm) rack. Use appropriate mounting hardware to secure the unit to the rack.

Hardware Installation

Connect the Ethernet cable from the router with PoE (max 8W consumption) to the Ethernet port located in the front of the IPC10, refer to Figure 3.

Configuration

Note 1: In Legacy panel programming, only IP address, port, and supervision are needed, there is no need to enter the receiver password, it is not used.

Note 2: Please do not attempt to open the IPC10. Only distributors should open the IPC10. Damaged protection stickers will void service and warranty.

Note 3: IPC10 events will always be displayed in the order received, please set up the IPC10 time zone in Configuration > Other > Date Time > Time zone.

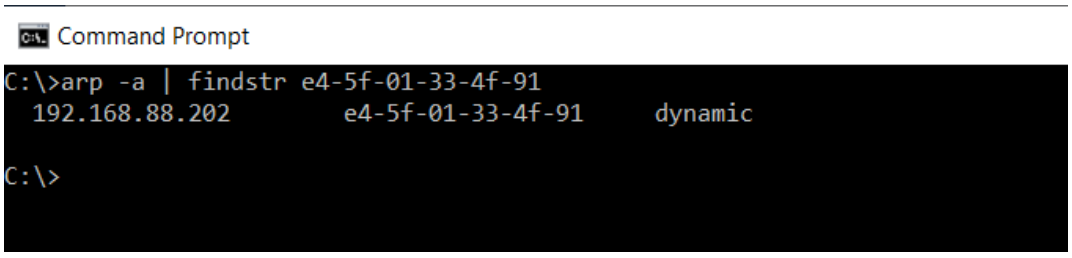
Locate the IPC10 on the network using an IP scanner or using the CMD command**.**

How to Locate the Receiver’s IP address using an IP scanner:
Search for the IP address of the IPC10 using a standard IP scanner. It will appear as IPC10-SERIALNUMBER. The serial number will be printed on the label located on the back of the IPC10.

How to Locate the Receiver’s IP address using the command prompt:
Open Command Prompt (CMD) on a Windows PC in the same network as the IPC10. Enter the following command: arp -a | findstr receiver's Mac address (printed on the label located on the back of the IPC10).

Example: arp -a | findstr e4-5f-01-33-4f-91

The IP of the IPC10 receiver should be shown, see below.



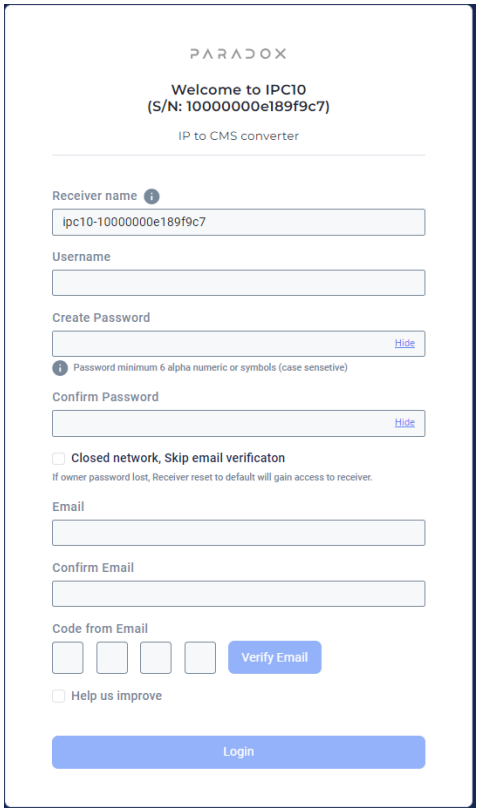
1. Enter the IPC10 IP address you found in a web browser, followed by port 8080 to access the web user interface (e.g., http://192.168.88.202:8080). The UI page will appear on your browser. The USER LED on the receiver will light up.

2. The IPC default name is IPC10-Serial number. This will be used to identify the IPC10 physically in case you have more than one IPC10 on the network. We suggest printing the name and sticking it on the front of the receiver. When multiple IPC10s are installed, you can also locate it with the user LED that will be ON when logged in.

3. Create a username. Create a password of a minimum of six alphanumeric (case-sensitive) or special characters. Confirm password. Enter your email address. Confirm email address. Press the Verify Email button. A confirmation email with a code will be sent. Enter the code from the email. Press Login.

4. If you forget your password, click the Forgot Password link on the Login screen, and enter the owner's email, a verification code will be sent. Enter the code from the email. Create a new password. Confirm password. Click Reset Password.

5. If you are on a closed network, skip the email verification by clicking on the checkbox.



User Management:

The IPC10 offers three levels of users:

Owner: The owner has full rights in the receiver and can create or delete masters and users. Only the owner has an email address to be used as a forgot password restore email address.
On first power up or after reset to default, (or if you upgrade from previous versions), the owner is required to enter a username, email address, and confirm email address. A verification email will be sent with the verification code, once the code is entered, this email will be used to recover the owner's password. To log in, the owner needs their username and password.

Master: A master has the same rights as an owner except with the ability to delete or upgrade the receiver firmware.

User: Users have view rights only for the event lists and accounts.

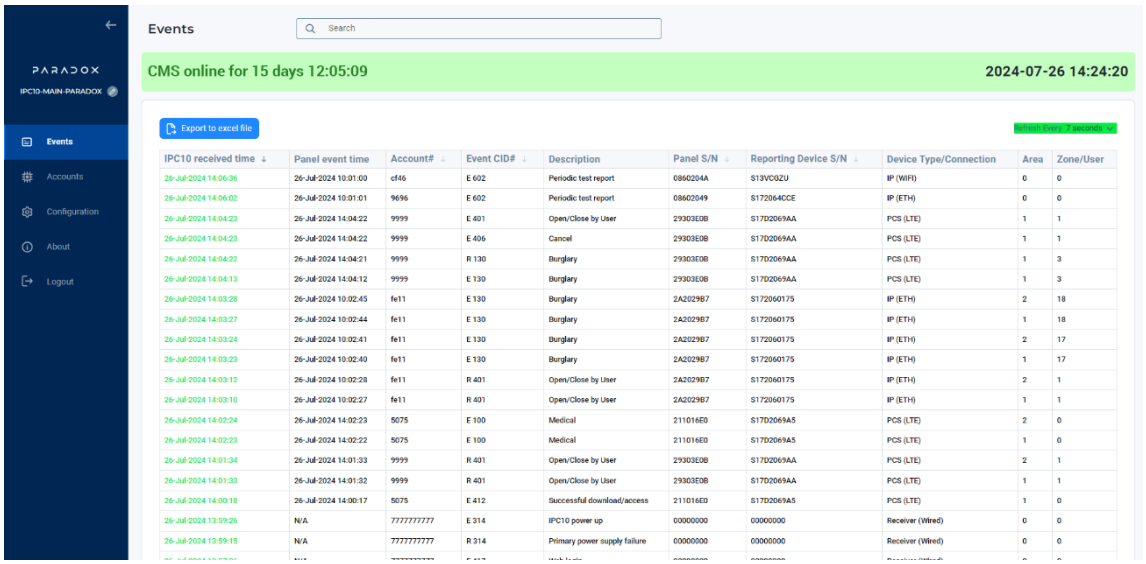
Manage users: This allows you to manage users on the Configuration page and is available for owner and masters.

Help us to improve: The owner can select this option upon first-time login or in the About page by owner or masters. Only statistics like the number of accounts, processor load pics, and average load are sent periodically no specific data of any kind is sent. This will help us to monitor the performance and capabilities of the IPC10 in the future.

Main menu options:

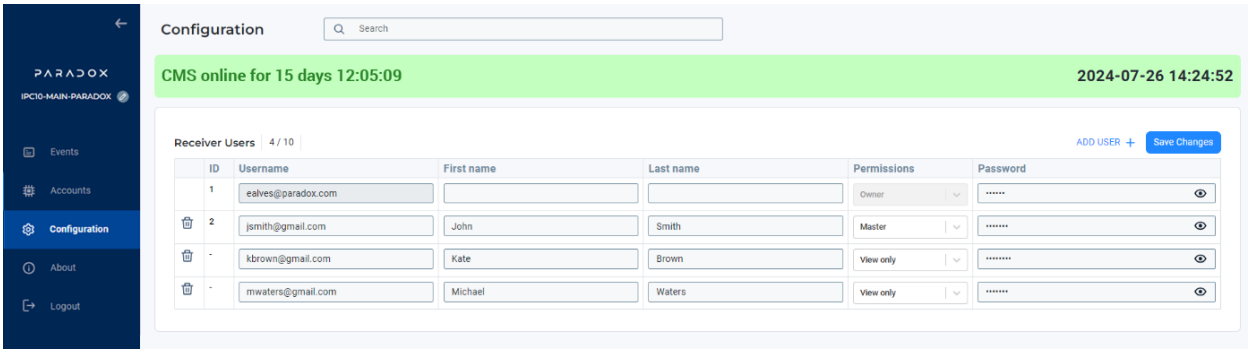
Events	Reported to CMS events time received are displayed in green, and non-reported yet are displayed in black. Priority alarm events (CID 1XX) will be reported with high priority. Up to 20,000 events will be buffered on a first-in, first-out basis.
Accounts	View or suspend from CMS reporting accounts. **Note**: The account will be reported to CMS based on a panel account code length of 4 or 10 digits.
Configuration	Configuring network and necessary fields (IP, port, time, etc...)
About	Provides IPC10 information and security profiles.
Logout	Allows you to log out of the application.

Search: Enter panel serial number, device serial number, or account number in the search field.

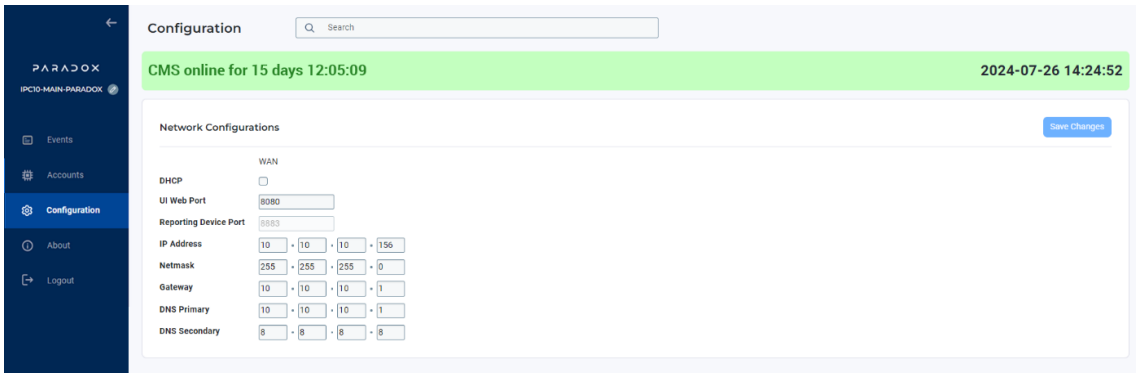


The **Configuration** tab is used to program the IPC10, refer to the table *on page 6*.

User Configuration:
Available for the owner, up to 25 users may be added to the IPC10. The owner is the only one that can add/delete and modify users in the IPC10. The Master will be able to view all the users except for the Owner information.

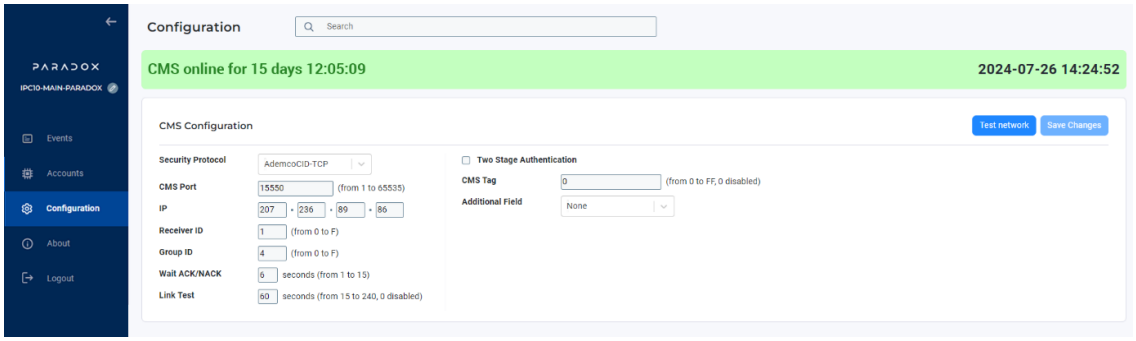


Network Configuration:



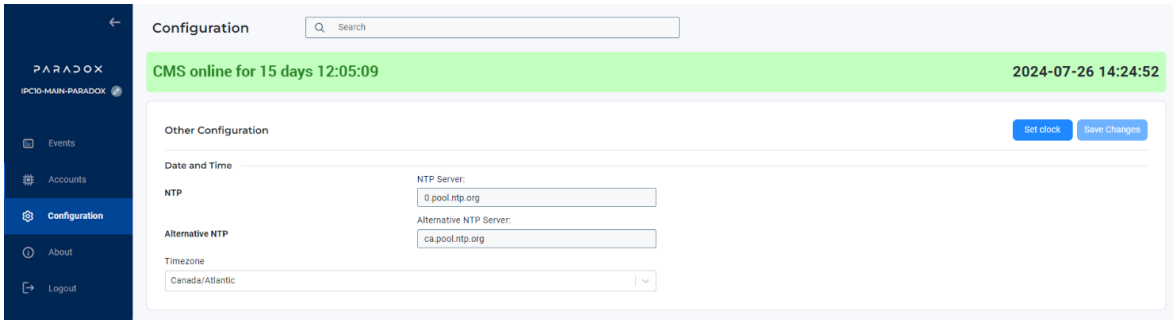
DHCP	DHCP is selected by default. The IP address will be assigned by the router. STATIC IP ADDRESS must be programmed at the CMS router by the IT manager based on the MAC address of the IPC10 that can be found on the About page. **NOTE:** If a wrong IP address is saved, you can restore the DHCP status by pressing momentarily on the DHCP/Reset button.
UI Web Port	The default port is set to 8080 and can be changed if needed. Defines the port number assigned for Web User Interface access. Port numbers can be between 1 to 65535.
Reporting Devices Port	Default MQTT access is 8883 – it MUST be open.
IP Address	Defines the local converter network address set up by the CMS IT manager. The IP address programmed at the reporting device's end is forwarded internally at the CMS to the local IP address of the receiver. The remaining fields should be assigned by the DHCP (network, gateway, DNS primary and secondary) or programmed manually if the DHCP is off.
Netmask	To be assigned by the CMS IT manager or by the DHCP service.
Gateway	To be assigned by the CMS IT manager or by the DHCP service.
DNS Primary	To be assigned by the CMS IT manager or by the DHCP service.
DNS Secondary	To be assigned by the CMS IT manager or by the DHCP service.

CMS Output Configuration:



CMS Output Protocol	Configure the output protocol used by the IPC10 Converter to the CMS software. Supported protocols are Sur-Gard MLR2-DG (default), Ademco CID-TCP, and Ademco 685.
IP	Defines the IP address assigned to the CMS software.
Port	Defines the port number assigned to CMS software. Port numbers can be between 1 to 65535.
Receiver ID	Defines the unique ID assigned to the IPC10. The Receiver ID can be between 0 and FF Sur-Gard MLR2 and 0 to F for Ademco 685 and Ademco CID-TCP.
Group ID	Allows to assign the converter to a group ID in the central station setup. Can be between 0 to FFF Sur-Gard MLR2 and 0 to F for Ademco 685 and Ademco CID-TCP.
Wait ACK/NACK	Defines the interval in seconds (1 to 15 seconds, default 3 seconds) which the IPC10 will wait for an acknowledgment from the CMS software, before sending the next event. If no ACK/NACK is received the IPC10 will retry sending the same event.
Link Test	Defines the interval in seconds (15 to 240 seconds, default is 30 seconds) at which the link test is sent tothe CMS software (0= disable).
Test Network	Allows you to test the communication between the IPC10 receiver and the CMS software. Once the test is complete, a Testing CMS Network window will be displayed indicating the results of the test.

Two Stage Authentication	Defines if two-stage authentication is Enabled or Disabled.
CMS Tag	The default is set to 0. Add custom CMS tag if needed (1 or 2 Hex characters).
Additional Field	Additional information can be added to the event transmitted to the CMS like panel SN, device SN or MAC address (default is set to none).

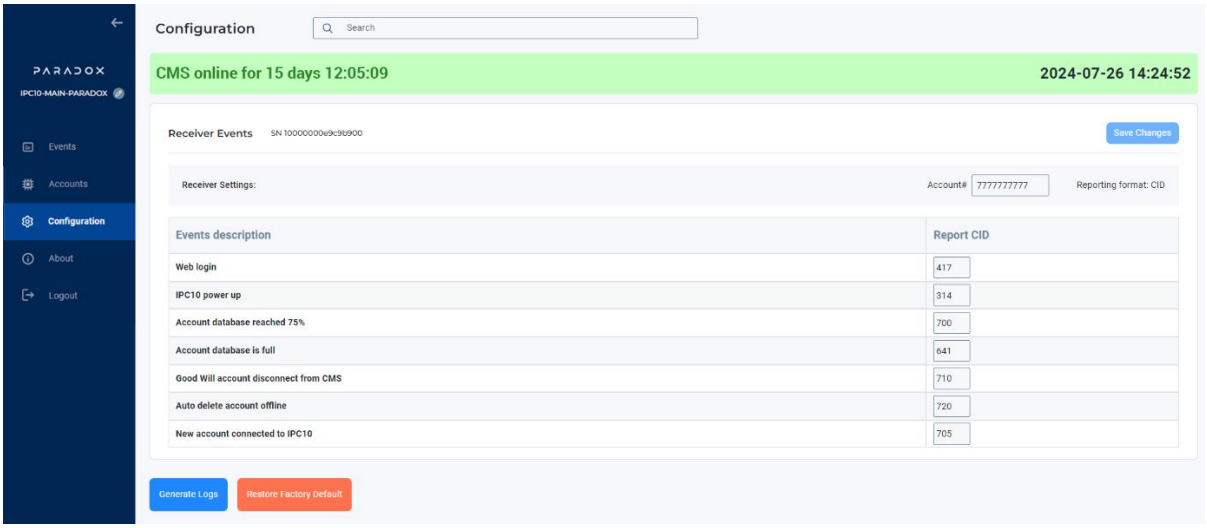


Other Configuration:

Primary NTP	Main NTP server to use for the IPC10 database and time (functions only with the internet).
Alternate NTP	Alternative NTP as a backup of the primary NTP server (functions only with the internet).
Time Zone	Select the time zone to match the IPC10 location.
Set Clock	In closed networks, in rare cases, the clock might need adjustments with the set time button. When the internet is available, time will be adjusted automatically and there is no point in setting the clock as it will be overridden by the auto-update.

IPC10 Events:

Internal events of IPC10 reported to CMS, can be customized by CMS.



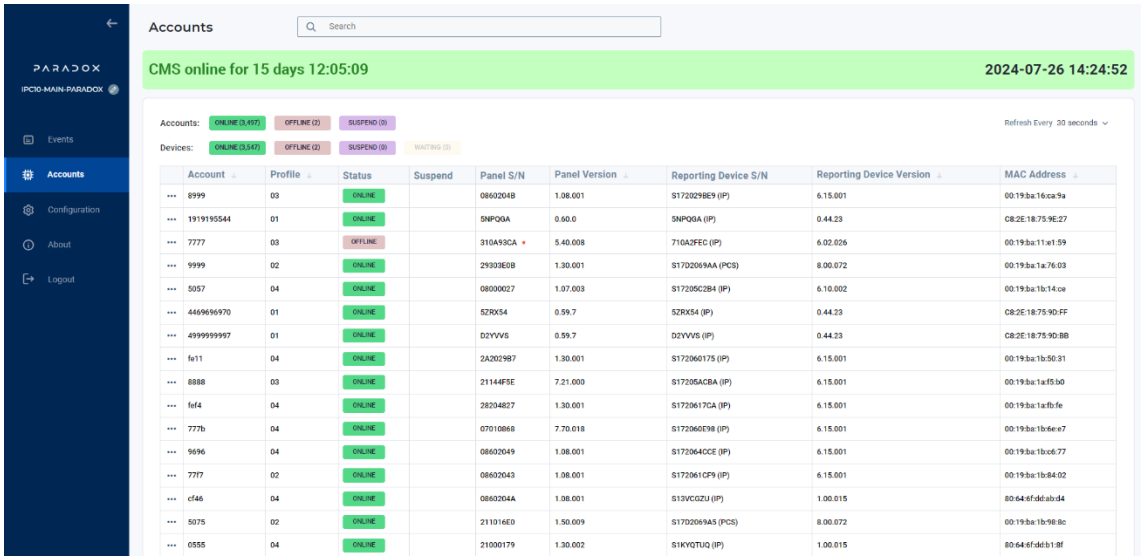
Account	Recommended to use the receiver serial number, this is the Account number that will identify the receiver to the CMS for web login, power-up, and database status.
Web login	Sends a customized event to the CMS when a web login is attempted. The default value is 000.
IPC10 power up	Sends a customized event to the CMS when the IPC10 powers up. The default value is 000.
700: Account database reached 75% (4000 accounts), (700 default code)	Sends an event to the monitoring station's automation software when the account database account capacity has reached 75%. The default value is 700, can be modified by CMS.
Database is full	Sends an event to the CMS when the database is full (5000 accounts) when an attempt is made to register a new account. The default value is 000.
710: Good Will account disconnect from CMS (710)	This code will be sent indicating that reporting to this receiver was terminated at the panel programming meaning the dealer chooses not to report to this receiver. The account will also be shown offline, reported with the default code 710, code can be modified by CMS.
720: Auto delete account offline (720)	Offline accounts for more than 30 days will be deleted and reported with default code 720, code can be modified by CMS. If the account resumes online, it will be restored.
552: Lost panel/ Restore panel (552)	If the panel is not communicating with the IP device, it will be displayed as Panel Lost in the Suspend column, and code E552 will be reported to the CMS. When restored, code R552 will be reported. This event cannot be modified.
IP unit lost (E551) / IP unit online restore (R551)	If the IP Communicator is not polling to the IPC10, it will be displayed as OFFLINE in the Status column and code E551 will be reported to CMS. When restored, code R551 will be reported. This event cannot be modified.
554: PCS offline/ Restore code 554	PCS offline and restore code (554). This event cannot be modified.
Time /Local time zone change (625)	Select the time zone of the receiver. This event cannot be modified.
New account registered to IPC10 (705)	When a new account reports for the first time to the IPC10, a code 705 (default value) will be sent to CMS.
314: Power outage	This code will be sent indicating a power outage.

Note: All changes will be defaulted in reset to default.

Generate Logs button	Will generate and save a file **IPC10mainlogs(ser#)(Date).zip** on the PC in the downloads folder. Please email the file to support@paradox.com upon request.

6. Click **Save** changes. The IPC10 is ready for use at this stage.

Accounts



The **Accounts** tab allows you to view the status of the system's accounts and also provides the possibility to suspend accounts from reporting to CMS (if unpaid as an example). Offline accounts over 30 days will be deleted from the account list automatically. They will register if they become online. The IPC10 supports up to 10-digit accounts with future products.

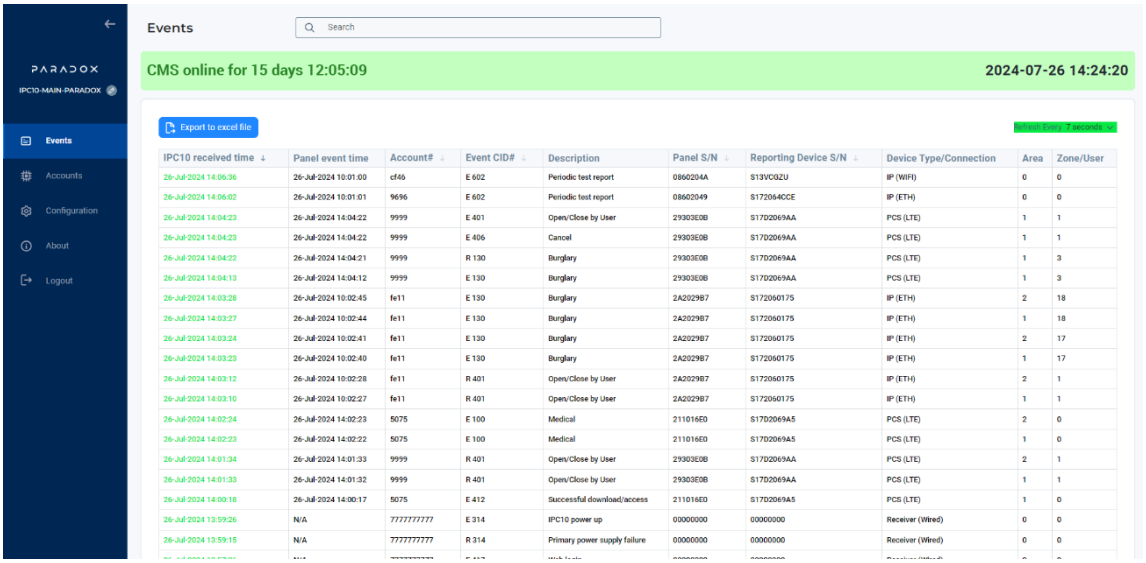
To suspend Account: Click on the 3-dot menu option (left of account) and select suspend account if desired. Suspended accounts will no longer send events to CMS, to unsuspend. Click again on the 3-dots and select unsuspend.

Online	Number of accounts or devices online.
Offline	Number of accounts or devices offline.
Suspend	Number of accounts or devices suspended. Press on the 3 dots on the left of the account to suspend. Repeat to restore.
Waiting	This status will be displayed within five minutes after a reboot of the receiver displaying the accounts/devices waiting for a restore connection. After five minutes, all should be ONLINE and all devices/accounts that have not been restored will have an OFFLINE status and reported to CMS as OFFLINE and the button will be grayed out.

Events

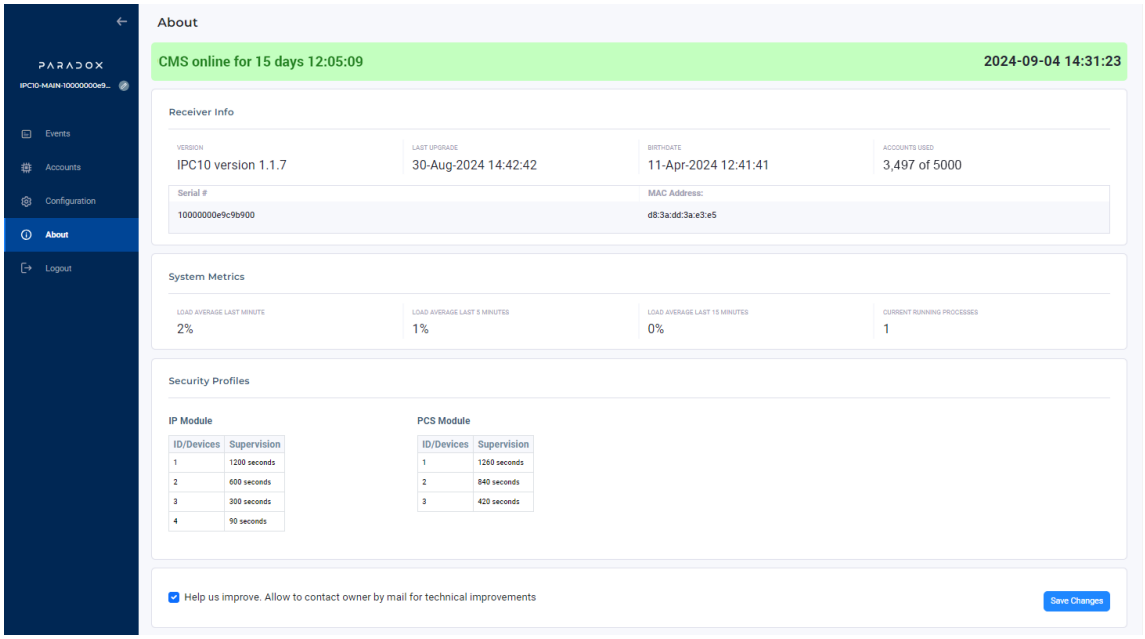
The **Events** tab displays the information related to events received from the accounts, such as date and time, account number, event CID number, description, panel serial numbers, reporting device, device type/connection, and zone/user. This page includes an option to export the event data to an Excel file.

Note1: "Events time received" in green means that they are already sent to the CMS. Events in black are not reported yet to CMS.
Note 2: Events will be erased on the power cycle, events are kept during firmware upgrade.



About

The About tab allows you to view the IPC10 converter system information including firmware versions and upgrade the IPC10's firmware. It also displays the Security Profiles that provide the supervised time of the monitored accounts. The IPC10 will report a supervision loss of the monitoring station's automation software after this time. The IPC10 can handle up to 5,000 accounts using profile 01, and up to 3500 accounts using profile 04 or any combination. System Metrics are also provided on the About page to help identify the performance of the system over a period of time.



Help us to improve: The owner can select this option upon first-time login or in the about page by owner or masters. Only statistics like the number of accounts, processor load, and average load are sent periodically. No specific data of any kind is sent about the device. This will help us to monitor the performance and capabilities of the IPC10 in the future.

Upgrade the IPC10 (Owner only)

1. Once logged in as the owner, click on the **Upgrade** icon.
2. Browse for the upgrade firmware file that was downloaded from the Paradox website and saved to your PC/Network location.
3. Click **Upgrade**. The upgrade process will then begin.

Reset IPC10 to DHCP (Fig. 3)

1. Insert a pin in the Reset switch.
2. Press and release the reset button momentarily (less than three seconds). It will ignore the IP address and switch to DHCP and restore factory network settings Including port 8080. DHCP status will be indicated by three flashes of LEDs.

Reset IPC10 to Factory Defaults

1. Insert a pin in the Reset switch.
2. Press and hold the reset switch for more than 10 seconds until the LEDs start flashing and depress. LEDs will shut down and the IPC10 will restart.
3. Connect the IPC10 web page and configure the converter (page 3).

IPC10 Replacement

If an IPC10 module needs to be replaced, configure the new IPC10 by following steps 1-6 (pages 3-6).

Note: The network configuration and output protocol configuration of the replaced IPC10 should be the same as the replaced IPC10 that was removed.

Once configured, all accounts will appear and report with the new IPC10.

Specifications

Compatibility	M head units, legacy panels manufactured after 2012 using IP180, PCS265V8 (LTE), IP150+MQ FW 6.0 or higher.
Input Voltage	Power over Ethernet (PoE): 44-57 VDC, 8W, max, Class 2 device
Account Capacity	5,000 for normal or long supervision, 3,000 for high supervision
Supervision	Long: 20 minutes, 10 minutes, Default: 5 minutes, Short: 90 seconds
Supervision Message	Account Offline online status reported to CMS.
Internal battery backup	Up to 20 hours backup, Lithium-Ion
Operating Temperature	0°C to +40°C (+32°F to +104°F)
Replacement Recovery time	Auto recovery IPC10 replacement within five minutes. All accounts should be restored.
Encryption Type	AES 128-bit
Communication Protocol	CID via Sur-Gard MLR2-DG or Ademco
Certifications	CE
Warranty	5 years from production date
Dimensions	Fits 19” rack 1U, 48.26 x 20.3 x 4.2 cm (19 x 8 x 1.65 in)