CONTROL MODULE SERIES · MS-GW08

GW8 — IR/RF Control Module

Network-controlled module that converts HTTP/IP commands into Infrared and 433 MHz Radio Frequency control — 8 wired IR ports plus a 360° IR blaster, RF learning for rolling and fixed-code remotes, 100% web-based configuration.

MS-GW08

DOCUMENT
User Manual — English

APPLIES TO FIRMWARE
V3.7.x

WEB INTERFACE
Chrome / Firefox (Internet Explorer not supported)

STATUS
Draft — pending user review, not yet approved for distribution

REVISION
v0.6 (draft) — 2026-11-08

AUTHOR
Hernan Horigian

1.1 / Overview

Product Overview

The MolSmart GW8 is an IR/RF control module that gives any automation controller, hub or custom script IP-based control over Infrared and 433 MHz Radio-Frequency devices — air conditioners, TVs and other IR-remote equipment, plus RF-controlled curtains, gates and tubular motors (including Somfy RTS and TUBE).

Configuration is 100% web-based — no mobile app is required. The module provides 8 wired IR emitter ports plus a 360° IR blaster (which shares port 1 with the wired emitters), and a single external RF antenna for the 433 MHz radio.

> **IMPORTANT**
> The GW8 supports a maximum of **24 registered remote controls** (RF and IR combined).

The module can be installed loose, in an equipment rack, or inside a metal enclosure/ panel. When enclosed in metal, MolSmart recommends removing the stock antenna and fitting an external antenna instead, to avoid RF shielding/interference from the enclosure.

> **NOTE**
> This equipment is not entitled to protection against harmful interference and must not cause interference to duly authorized systems.

Technical Specifications

FIELD	DESCRIPTION
Model	MS-GW08 (marked on the enclosure and in the web interface as “GW8”)
RF range	Up to 150 m, line of sight
RF type	Open / fixed-code 433.92 MHz, OOK or ASK modulation — no encryption, no rolling code required to capture a remote
RF-tested motor brands	Somfy · TUBE · Amorim Ambiente G3 · Emteco · AOK · Udinese
IR ports	8 × wired IR emitter ports + 1 × 360° IR blaster (blaster shares port 1 with the wired emitters)
Learning	IR codes and RF codes
Max. registered remotes	24 (RF and IR combined)
Network	10/100 Ethernet (RJ45) and Wi-Fi
Power	DC 5 V / 2 A, USB-C connector

> **NOTE**
> The module does not ship with a bundled USB-C power adapter/cable in every kit — use a 5 V/2 A (or better) USB-C power source.

Model & Physical Reference

The GW8 ships in a single configuration — model `MS-GW08` — with a front panel carrying the status LED and two hardware buttons, and a rear panel carrying the RF antenna connector, the 8 IR emitter ports, the Ethernet port and the USB-C power input.



Front panel — STATUS LED, Restart and SET buttons



Rear panel — RF antenna, IR ports 1-8, LAN, 5V (USB-C)





CONTROL / PORT	FUNCTION
`STATUS (front)`	Blinks during boot/pairing; solid once the module has joined the network
`Restart (front)`	Press to reboot the module
`SET (front)`	Hold for 5 seconds to enter Wi-Fi pairing mode — see Method 2 — Wi-Fi Pairing
`RF (rear)`	External antenna connector for the 433 MHz radio

CONTROL / PORT	FUNCTION
`IR 1-8 (rear)`	Wired IR emitter ports — port 1 is shared with the built-in 360° IR blaster
`LAN (rear)`	10/100 Ethernet port
`5V (rear)`	USB-C power input, 5 V / 2 A

1.4 / Overview

Safety Warnings & Precautions

These points apply to the MS-GW08, in addition to all national and local regulations.

WARNING

Power the module only from a 5 V / 2 A (or better) USB-C source. Using an undersized or damaged power adapter/cable can cause instability or damage the unit.

NOTE

The GW8 itself only handles low-voltage IR/RF/USB-C wiring — it does not switch line-voltage loads. Any equipment it controls (air conditioners, motorized curtains, gates, etc.) should still be installed and wired following that equipment's own manual and all applicable electrical codes.

NOTE

This equipment is not entitled to protection against harmful interference and must not cause interference to duly authorized systems.

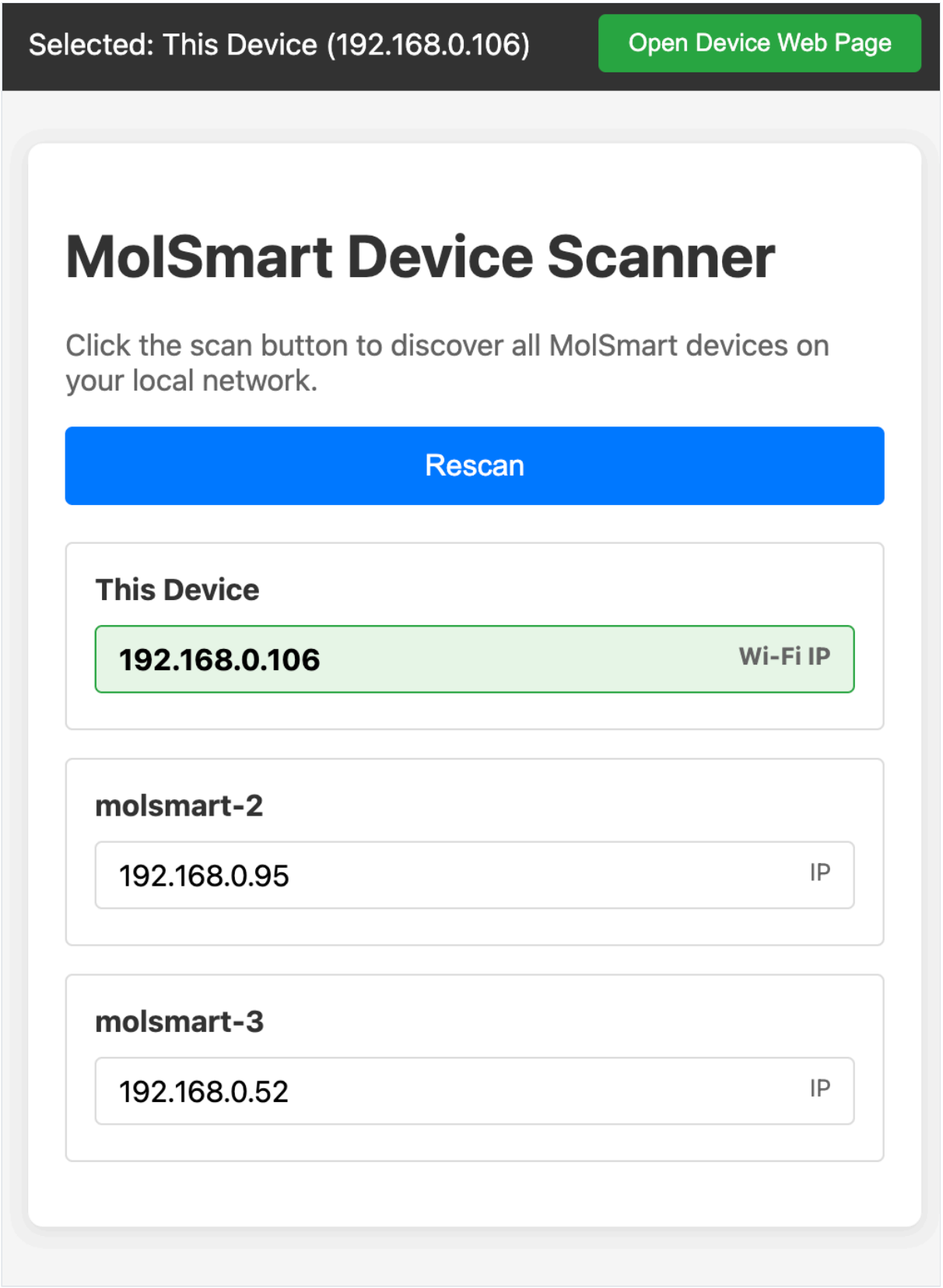
NOTE

Using this product other than as described in this manual may void the warranty; MoISmart is not liable for damage resulting from misuse. Changes or modifications not approved by MoISmart could void the user's authority to operate the equipment.

Method 1 — Ethernet

The simplest way to bring a GW8 onto the network:

1. Connect the module to a switch/router port with a standard Ethernet cable — the STATUS LED blinks while it boots.
2. From a computer on the same network, open a browser and visit `http://molsmart.local/scan`.
3. The MolSmart Device Scanner lists every MolSmart device found on the network, including this module's Wi-Fi and Ethernet IPs.
4. Click `Open Device Web Page` next to the module to jump straight into its web interface.



MolSmart Device Scanner — http://molsmart.local/scan

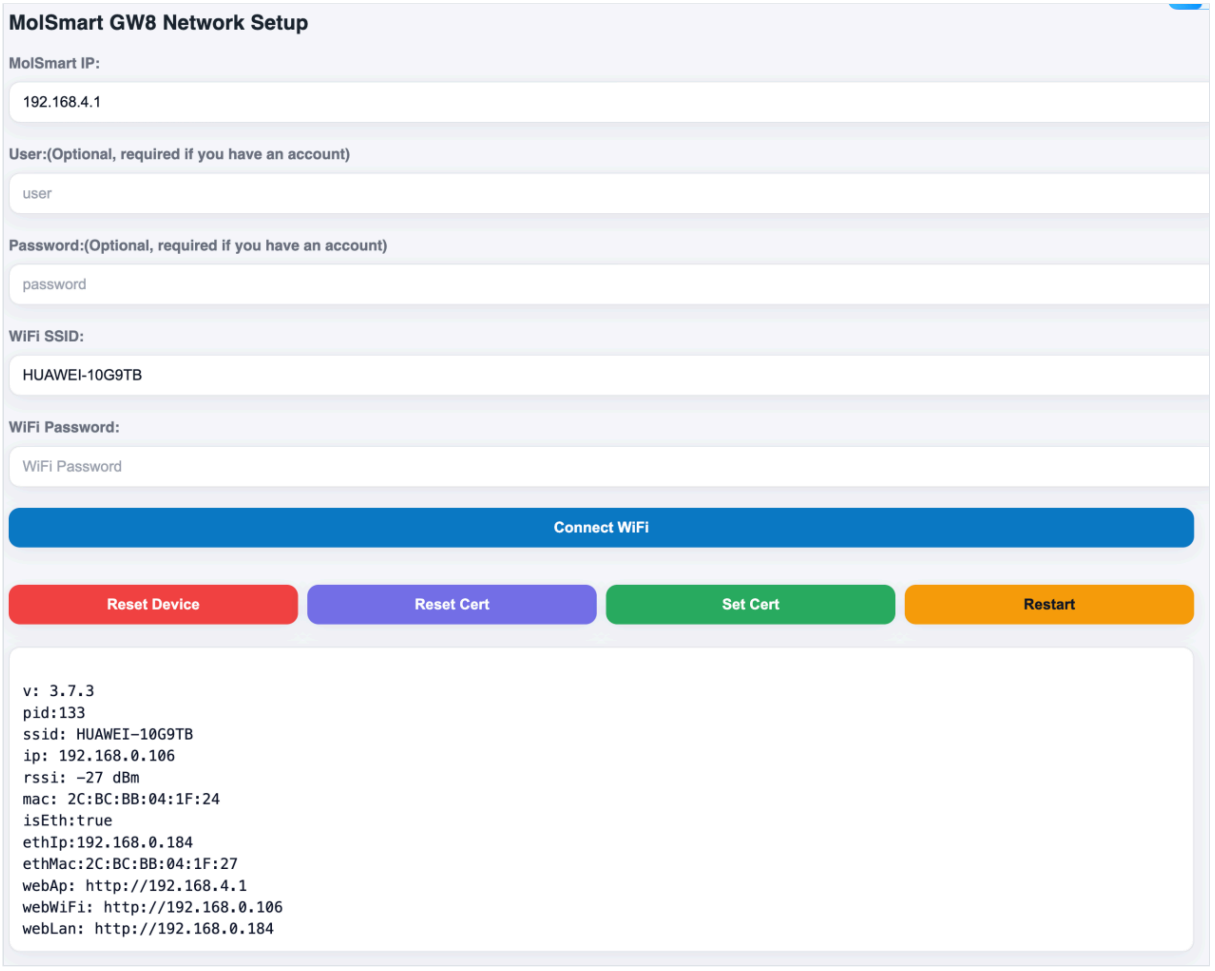
NOTE

If more than one MolSmart device is on the same network, the scanner page is also reachable at `http://molsmart-2.local/scan`, `http://molsmart-3.local/scan`, and so on.

Method 2 — Wi-Fi Pairing

Use this method to join the module to a Wi-Fi network instead of Ethernet, or any time the module's network settings need to change — no previously-registered remote is lost by repeating this procedure.

1. Power the module via USB-C and wait for it to finish booting.
2. Press and hold the `SET` button on the front panel for 5 seconds, until the STATUS LED starts blinking to indicate pairing mode.
3. On a phone or computer, look for a new Wi-Fi network named `MolSmart-XXXXXXX` (the suffix is the module's MAC address) and connect to it — no password required.
4. Open a browser and visit `http://192.168.4.1/init`.
5. On the setup page, fill in the Wi-Fi network the module should join (SSID/password), or configure the Ethernet side instead (DHCP or a static IP).
6. Submit and wait for confirmation — the module joins the configured network and can be disconnected from; reconnect your phone/computer to your normal network.
7. Reach the module's web interface at the LAN/Wi-Fi IP shown on the setup page, or find it again via `http://molsmart.local/scan` (computer and module must be on the same network).



MolSmart GW8 Network Setup — reached at 192.168.4.1/init while in pairing mode

> **NOTE**
>
> The `User` and `Password` fields on this page are optional — the page itself labels them “required if you have an account”. Leave them blank for a standard installation.

System Details

Opening the module's IP in a browser shows the `System Details` page — an at-a-glance status/config panel, the same style used across MolSmart modules.



System Details — status and configuration overview

FIELD	DESCRIPTION
Product ID	Internal firmware product identifier
Version	Firmware version currently running
WiFi SSID / WiFi Password	Network the module is joined to over Wi-Fi — edit via the pencil icon (see Network & System Settings)
Signal	Wi-Fi signal strength (dBm) and a plain-language rating (e.g. Good, Excellent)
LAN IP / LAN MAC	Current Ethernet IP address and hardware MAC address
WiFi IP / WiFi MAC	Current Wi-Fi IP address and hardware MAC address
Firmware	`Upgrade` link — see Firmware Update
MQTT Settings	Connection status to the configured MQTT broker, with the client ID
CORS Allow List	Cross-origin domains allowed to call the module's HTTP API — see Network & System Settings
LED Status	Front-panel LED behaviour — see Network & System Settings
Storage	Internal storage used/total, with a `Clear` button

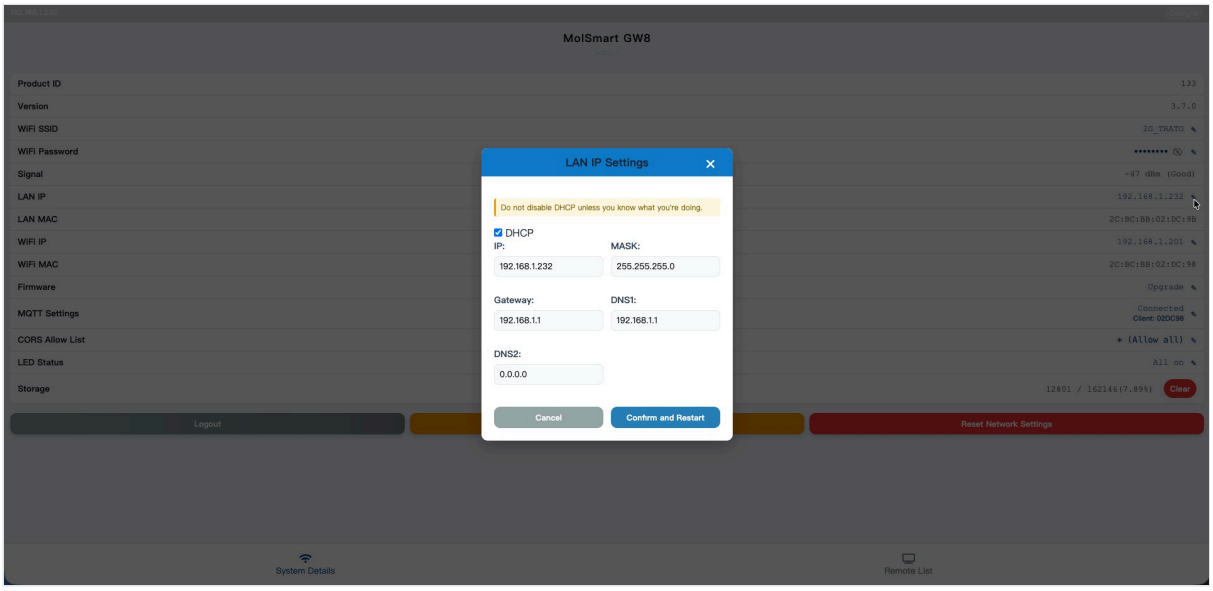
Below the field list, three buttons are always available: `Logout`, `Restart` (software reboot) and `Reset Network Settings` (clears Wi-Fi/Ethernet configuration only — registered remotes are kept).

Network & System Settings

Every editable field on System Details opens a small dialog when its pencil icon is clicked. The most-used ones:

LAN LAN IP Settings

Toggle `DHCP` on for an automatically-assigned Ethernet address, or switch it off to set a static `IP`, `Mask`, `Gateway`, `DNS1` and `DNS2` by hand.

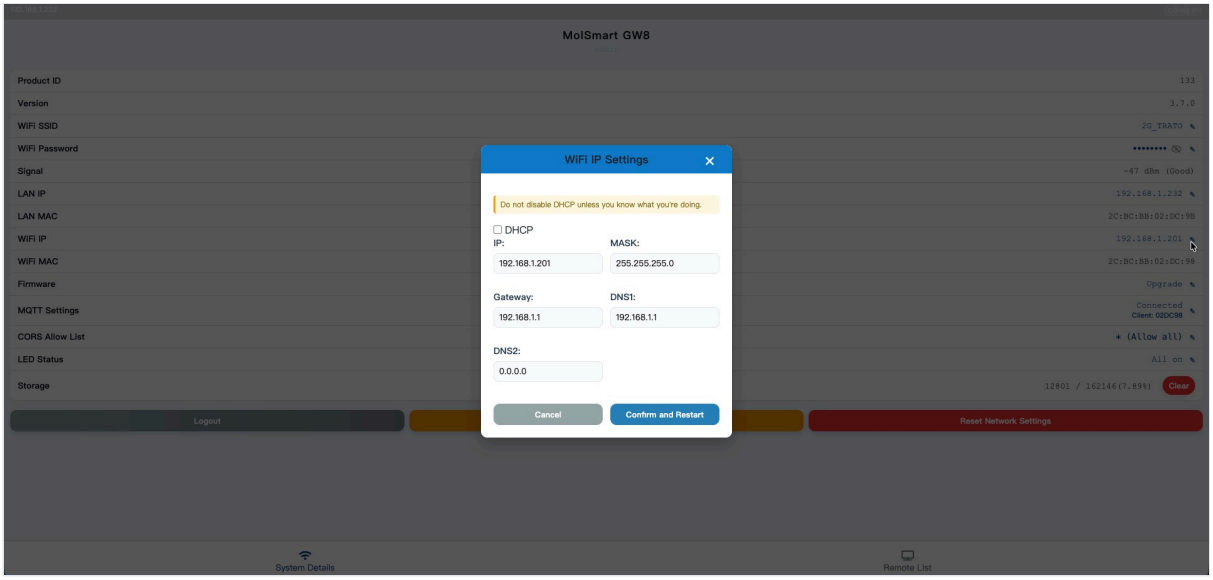


LAN IP Settings

> **IMPORTANT**
>
> Leave DHCP enabled unless you specifically need a fixed Ethernet address — an incorrect static configuration can make the module unreachable until it is factory reset.

WIFI WiFi IP Settings

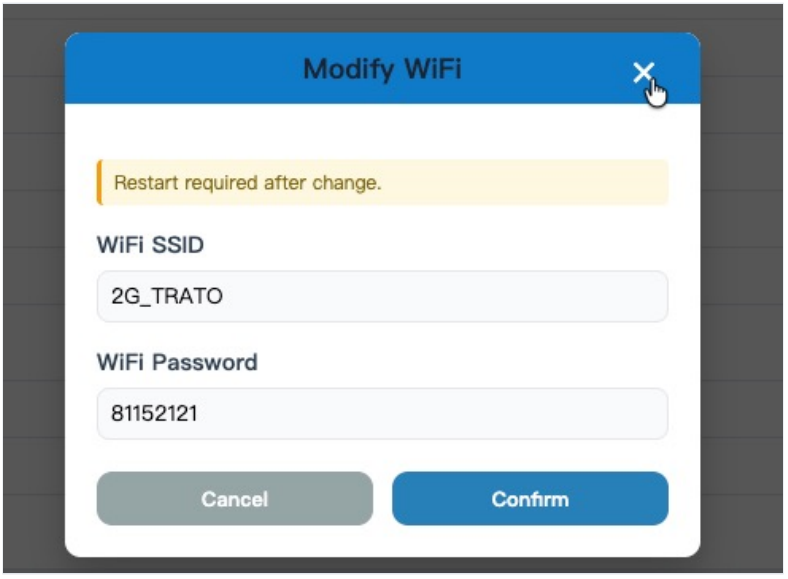
Same layout and same DHCP/static choice as LAN IP Settings, applied to the Wi-Fi interface instead.



WiFi IP Settings

SSID Modify WiFi

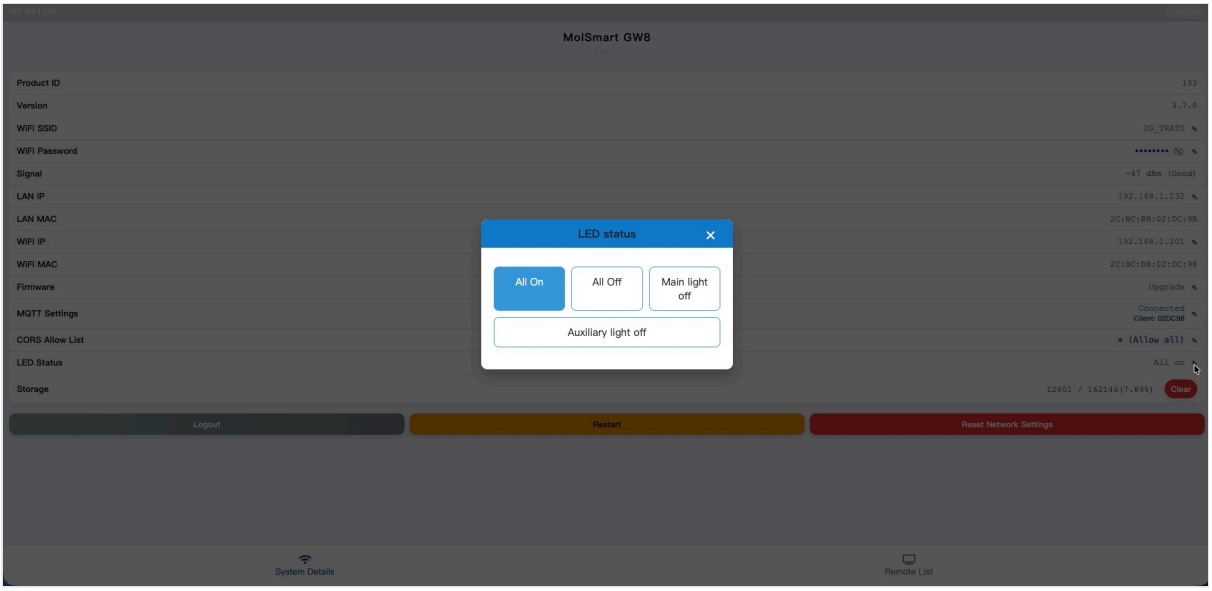
Change the Wi-Fi network (SSID/password) the module connects to, without repeating the full pairing procedure. A restart is required after saving.



Modify WiFi

LED LED status

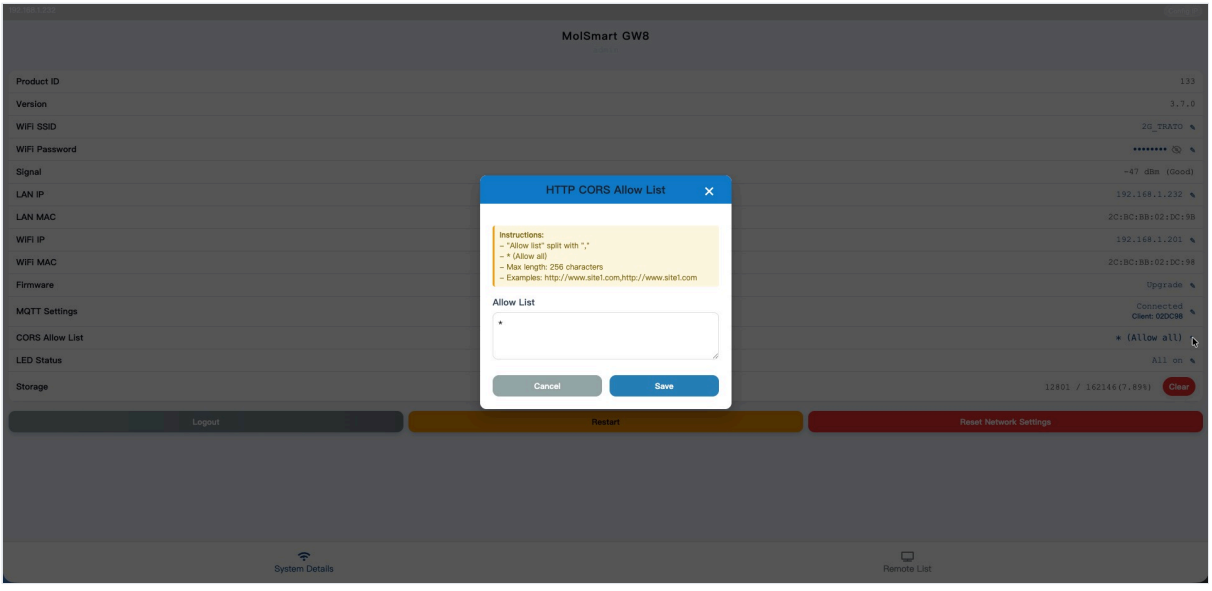
Controls the front-panel LED behaviour: `All On`, `All Off`, `Main light off` (keeps the status indicator dim/off while retaining pairing-mode blinking) or `Auxiliary light off`.



LED status

CORS HTTP CORS Allow List

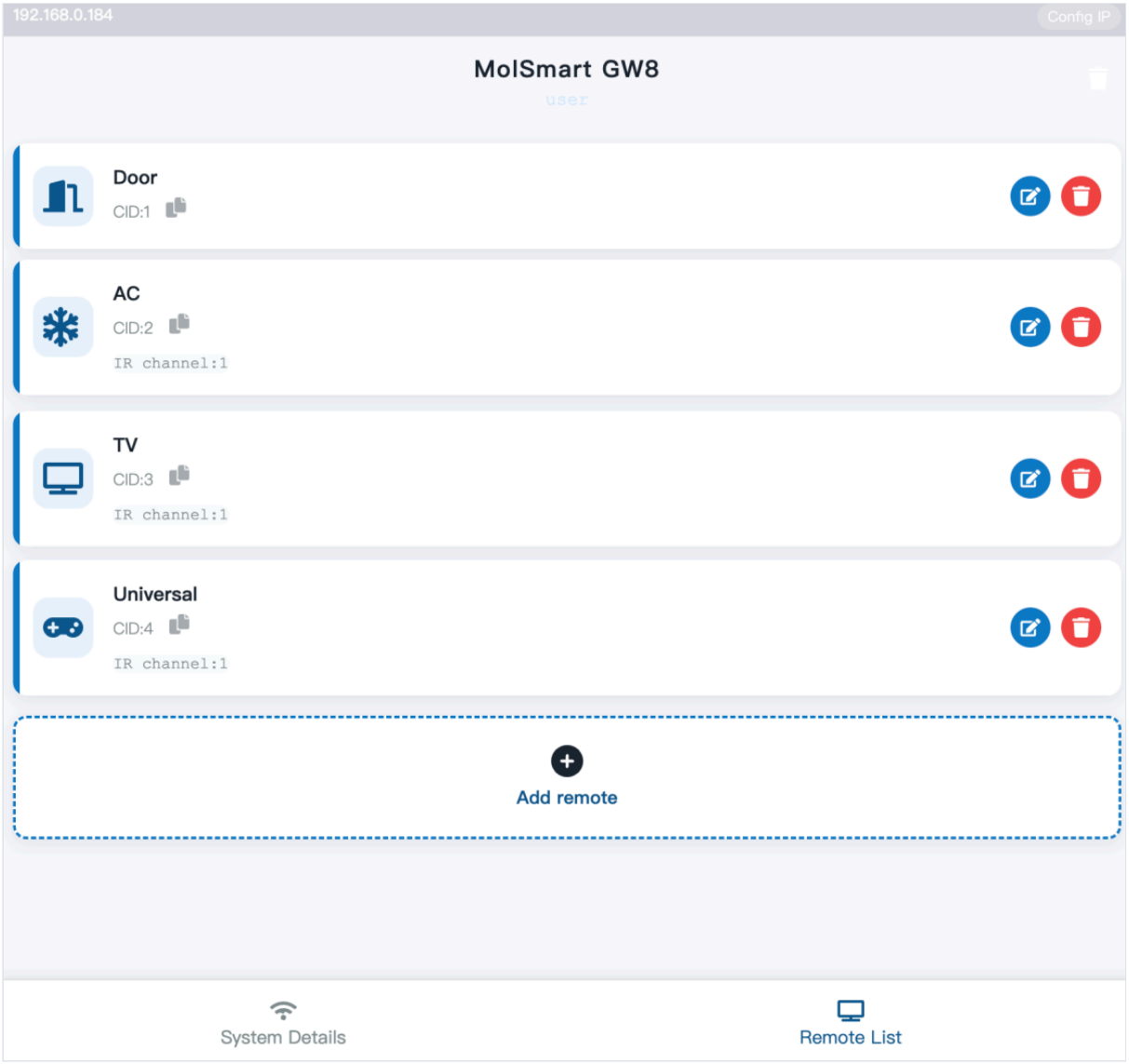
Restricts which web origins may call the module's HTTP API directly from a browser. Enter a comma-separated list of allowed origins, or `*` to allow all (the factory default). Max length 256 characters.



HTTP CORS Allow List

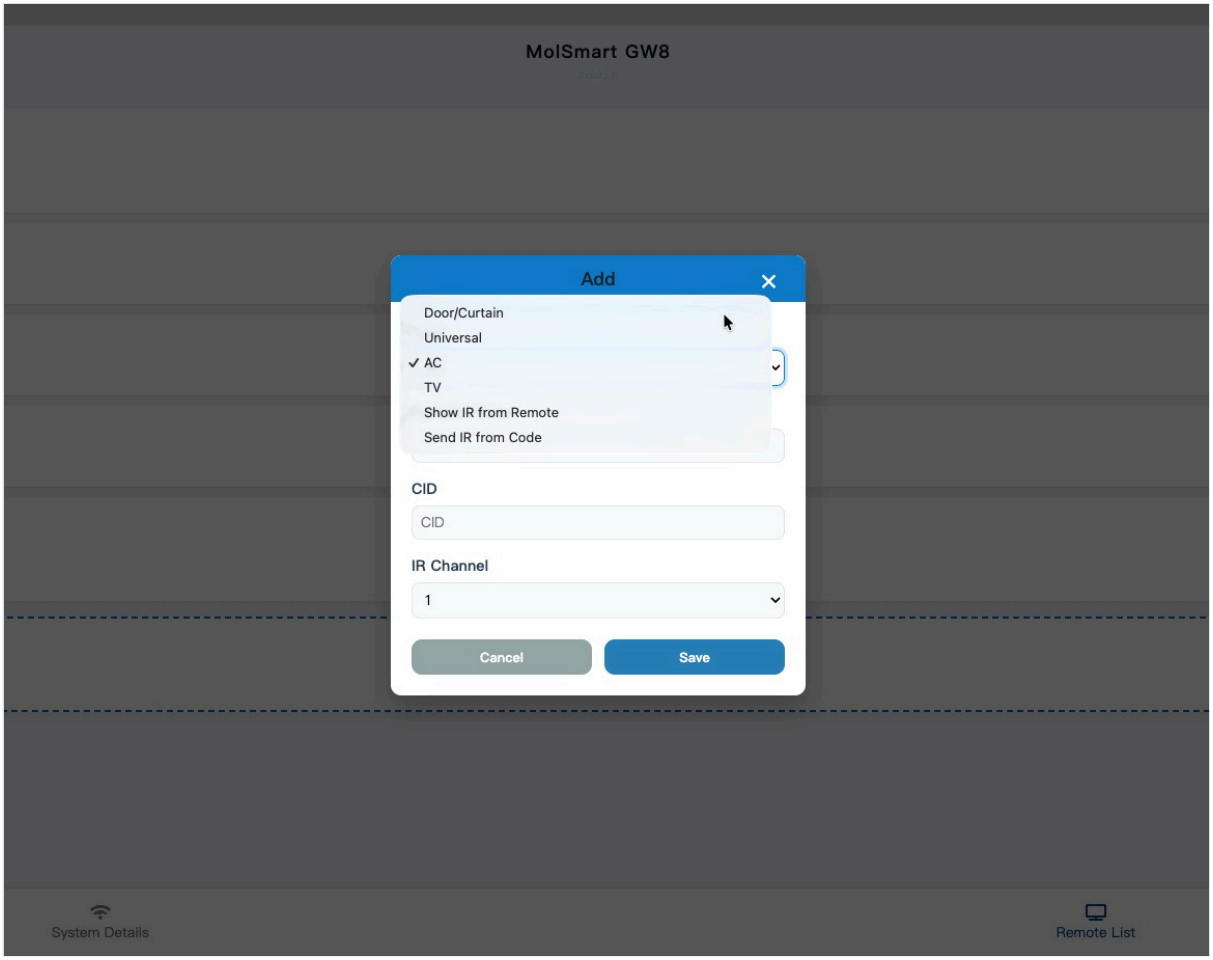
Remote List & Adding a Remote

The `Remote List` page (bottom navigation bar) shows every remote control registered on the module — name, type icon, `CID` and, for IR types, the `IR Channel` it uses — with edit and delete actions on each row.



Remote List — registered remotes, with Add remote at the bottom

Tap `Add remote` to register a new one:



Add — choose a remote type, then set its Name/CID/IR Channel

FIELD	DESCRIPTION
Type	`Door/Curtain` or `Universal` (RF) · `AC` or `TV` (IR, with a control-panel layout) · `Show IR from Remote` / `Send IR from Code` (IR read/send utilities)
Name	Label shown in the Remote List and on the control screen
CID	A unique identifier you choose for this remote
IR Channel	Which of the 8 wired IR ports (or the blaster on port 1) this remote transmits on — IR types only

NOTE

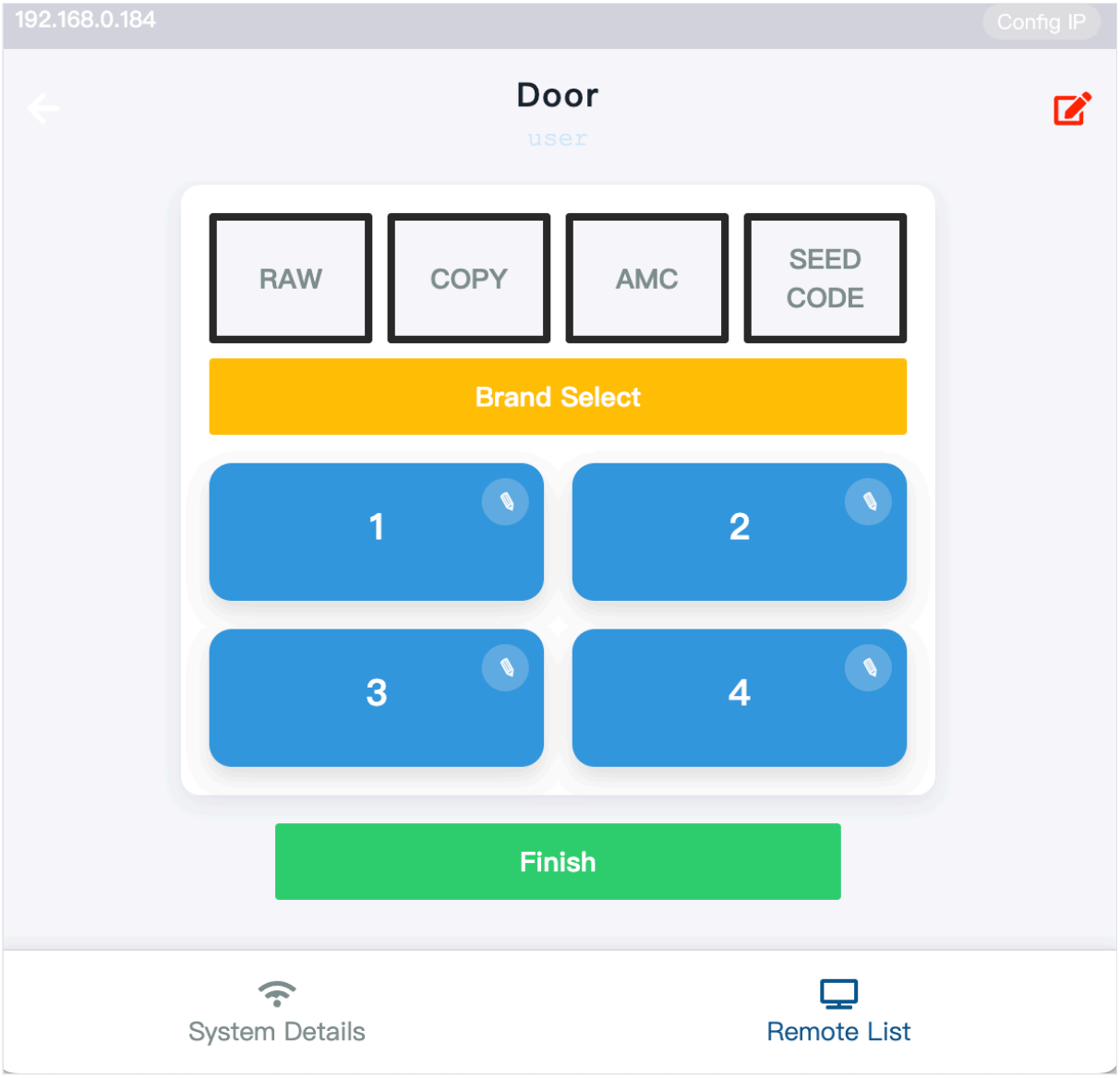
Always choose `Door/Curtain` for any RF-controlled curtain, blind or gate motor — see RF Remotes.

NOTE

Register IR remotes first, then RF remotes, for a smoother setup overall.

Copying an RF Remote (RAW / COPY)

Open the newly-added `Door/Curtain` remote from the Remote List and tap its edit icon to reach the learning screen, with four buttons to program (1-4), a `Brand Select` bar, and the `RAW` / `COPY` / `AMC` / `SEED CODE` capture modes.



Learning screen for a Door/Curtain remote

RECOMMENDED ORDER

Start every RF capture with `RAW` — it stores a raw copy of the signal and is the most reliable mode. Only fall back to `COPY` if RAW does not work for a particular remote.

1. Tap `RAW` (or `COPY`).
2. Tap the number of the button you want to program (1-4).
3. Hold the original remote 2-10 cm from the module and press the corresponding button on it.
4. The interface confirms the code was captured successfully.

5 Repeat for each remaining button.

MODE	WHEN TO USE IT
RAW	Captures a raw copy of the RF signal — the most reliable, and the recommended first attempt for any remote.
COPY	Standard capture mode — try this if RAW does not produce a working copy.

> **NOTE**
> For RF to be capturable at all, the transmitter must be 433.92 MHz, OOK or ASK modulated, with no encryption and no rolling code. Some remotes need the same button pressed several times before the module learns it.

SOMFY RTS & TUBE Pairing

Somfy RTS and TUBE tubular-motor remotes use a brand-specific pairing flow instead of a plain RAW/COPY capture — the module briefly joins the motor's own RTS pairing sequence.



Brand Select — Somfy, Somfy5_PLUS, TUBE

BRAND	WHEN TO USE IT
SOMFY	Standard Somfy RTS remote — single channel.
Somfy5_PLUS	Somfy RTS remote with more than one channel — use this option instead of `SOMFY` when learning codes from a multi-channel Somfy remote.
TUBE	TUBE-branded tubular-motor remote.

1. Add a `Door/Curtain` remote — name and CID as usual.
2. Open `Brand Select` and choose `Somfy` (or `Somfy5_PLUS` for a multi-channel Somfy remote, or `TUBE`, for a TUBE-branded motor).
3. Hold the original Somfy/TUBE remote 2-10 cm from the module.
4. On the **back** of the Somfy/TUBE remote, press and hold the programming button until the curtain/motor jogs briefly — this confirms the motor has entered pairing mode.
5. In the web interface, tap button `04`.

6 Wait — the motor may jog 2-3 more times during this step. Once it settles, pairing is complete.

6.1 / IR Remotes

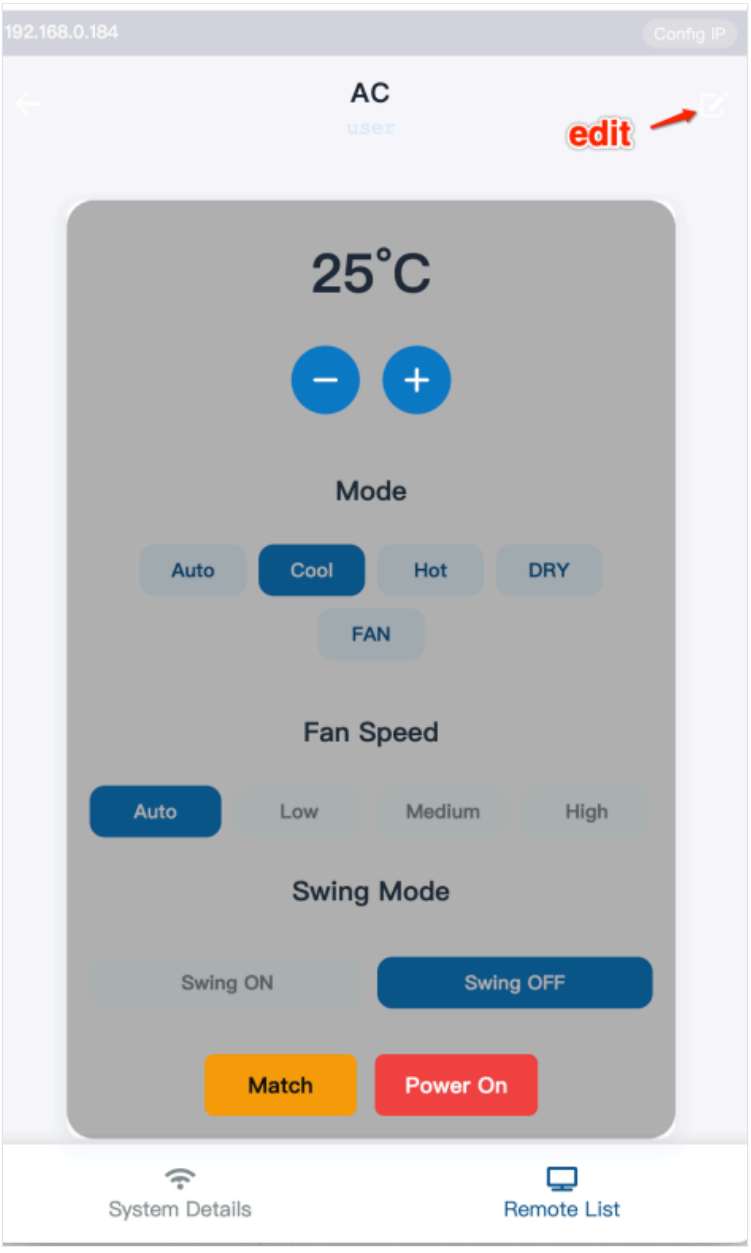
IR Overview

The module has 8 wired IR emitter ports and one 360° IR blaster, which shares port 1 with the wired emitters. Air conditioners have a built-in code library that can often be matched directly; TVs and most other IR equipment need each button learned individually from the original remote.

> **NOTE**
> Register IR remotes before RF remotes for a smoother overall setup.

Air Conditioner Control

1. Add a remote of type `Air Conditioner` — name, CID, and the IR port the AC's IR receiver is wired to (or the blaster).
2. Try `Match` first — the module tests known library codes against the AC.
3. If no library match works, learn the buttons individually instead: open the edit/gear icon and press each control on the panel, copying the matching button from the AC's original remote.



AC control panel — temperature, Mode, Fan Speed, Swing Mode, Match / Power On

CONTROL	FUNCTION
Temperature +/-	Adjusts the setpoint shown in the center of the panel
Mode	Auto / Cool / Hot / Dry / Fan

CONTROL	FUNCTION
`Fan Speed`	Auto / Low / Medium / High
`Swing Mode`	Swing ON / Swing OFF
`Match`	Tests the built-in AC code library against this unit
`Power On`	Sends a dedicated power-on command

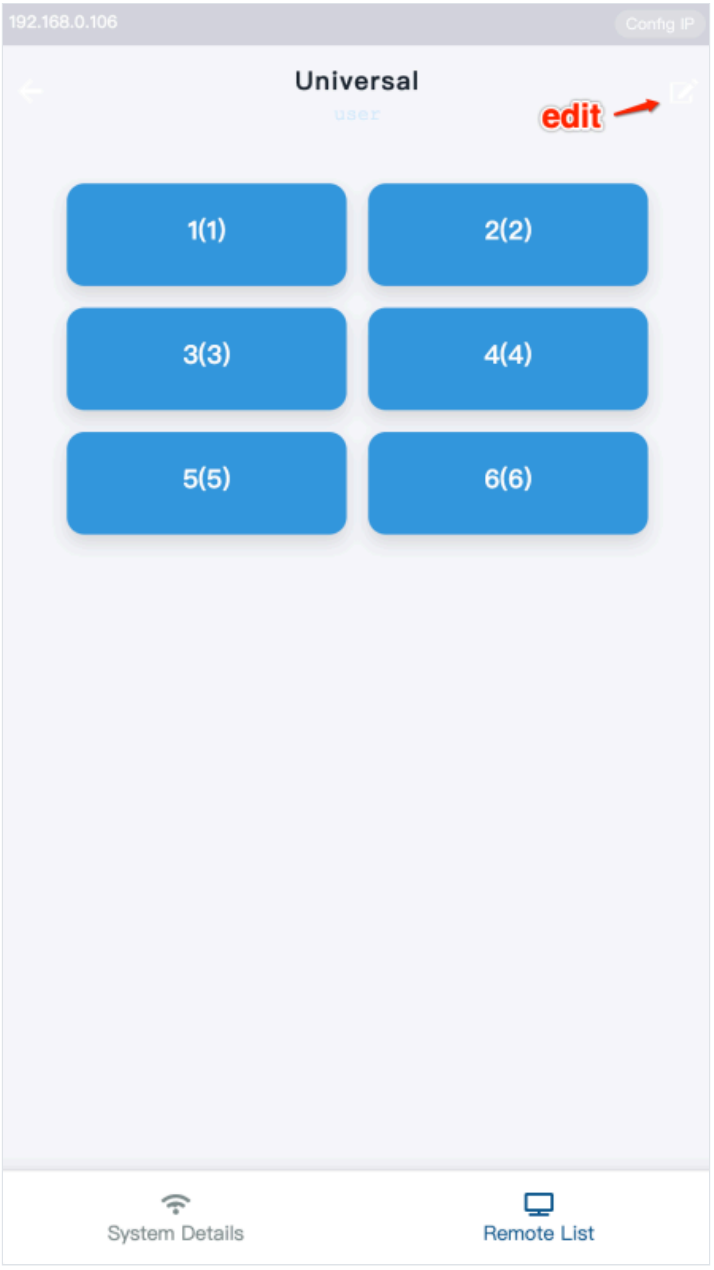
TV & Universal/Learning Control

TVs and other equipment without a matching library use the same per-button learning approach — open the remote's edit/gear icon, then press each button on screen while pointing the original remote at the module and pressing the matching button on it.



TV control panel — standard remote layout

For anything that does not fit a TV or AC control layout, use type `Universal` instead — a plain numbered button grid, learned the same way, one button at a time.

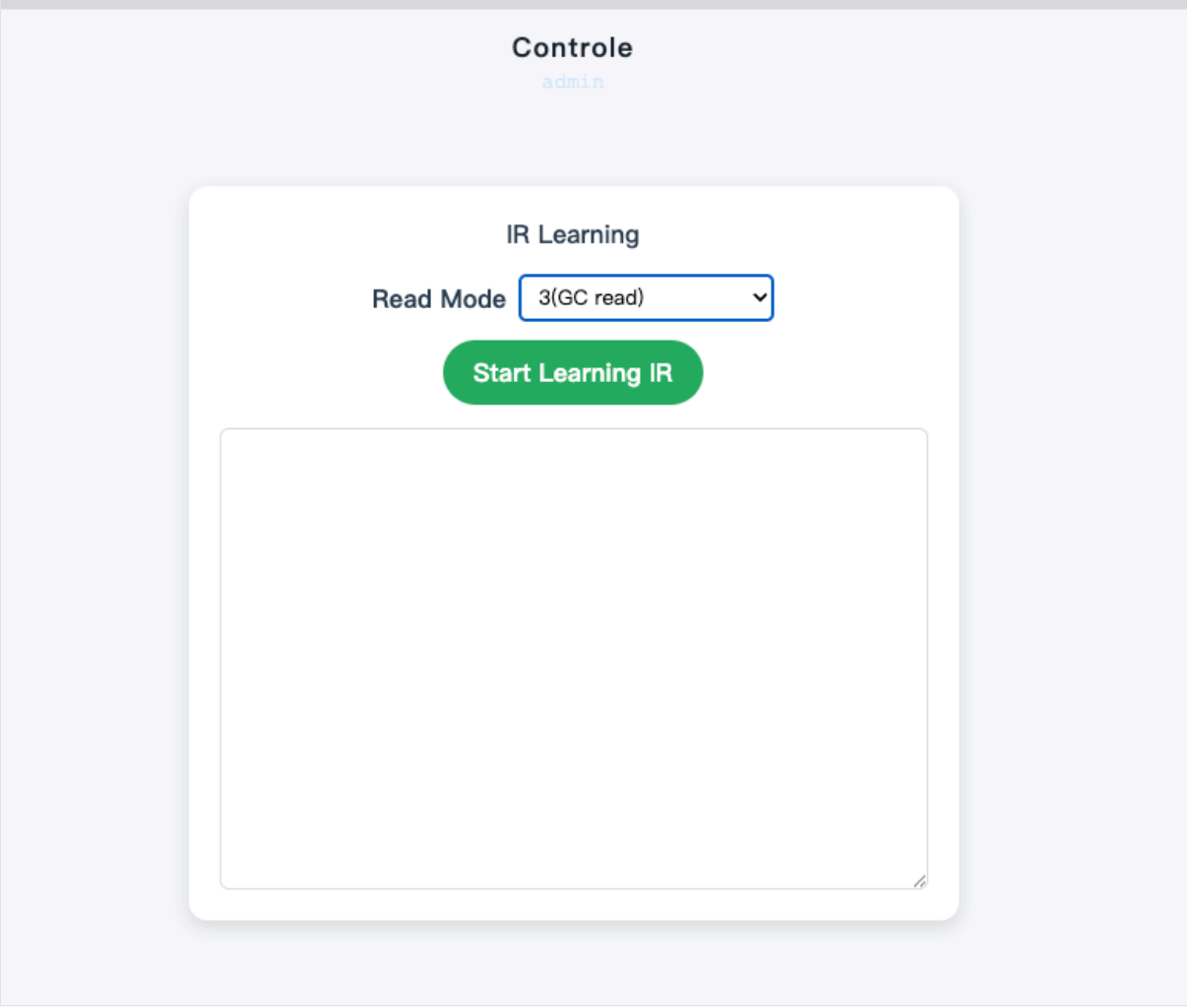


Universal — numbered button grid

Reading IR Codes

The module can display the IR code of any button it receives, in Global Caché (Sendir) or HEX format — useful for building an external code library or sending codes directly through another system.

1. Add a remote of type `Show IR from Remote` (Universal/Learning) — name and CID.
2. Choose the `Read Mode` (e.g. GC read) and tap `Start Learning IR`.
3. Point the original remote at the module and press the button to read.
4. The captured code appears in the text box, ready to copy.



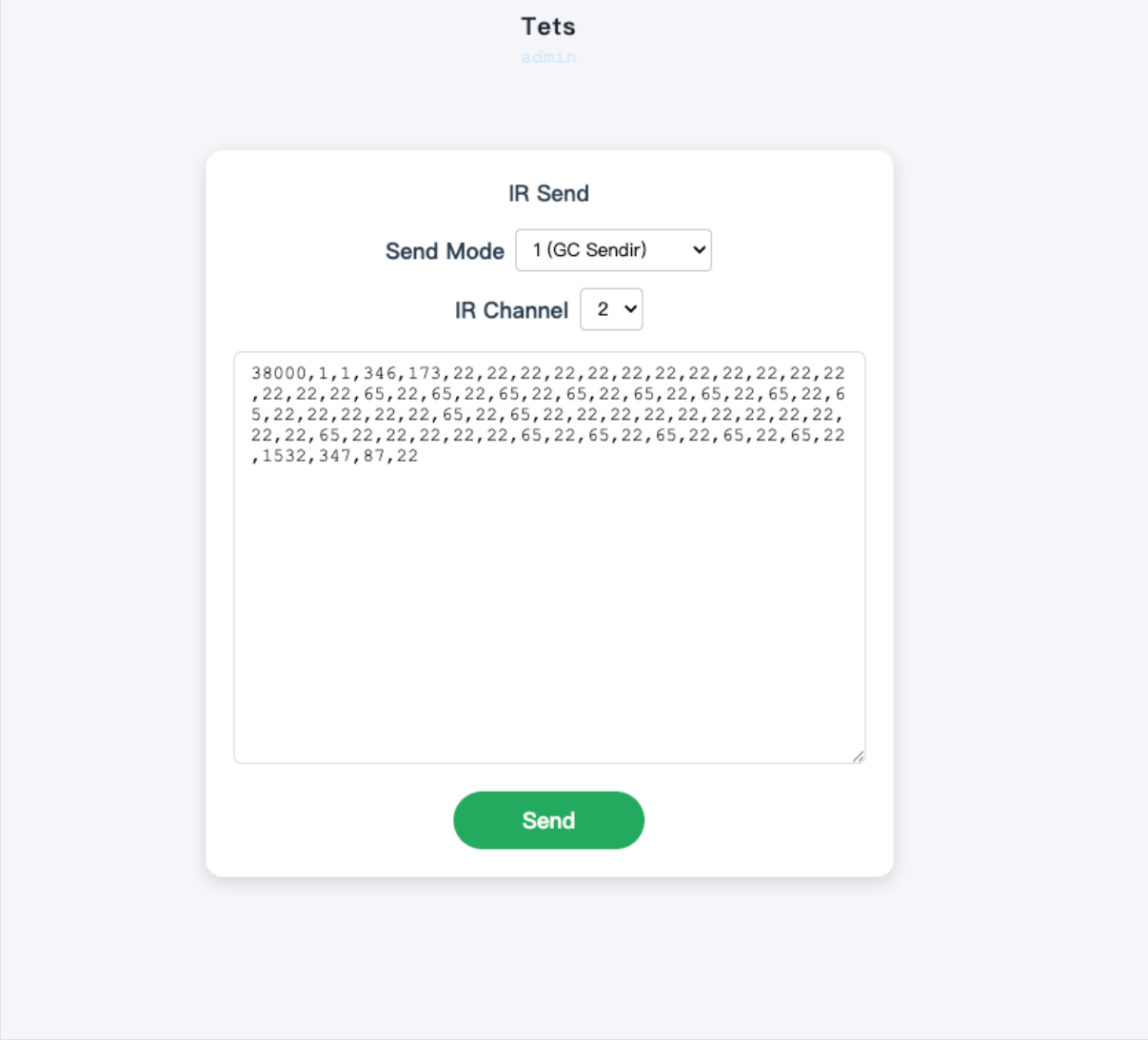
IR Learning — Read Mode, Start Learning IR, captured code output

> **NOTE**
>
> `LOOP` mode keeps the reader open so multiple codes can be read one after another without reopening the screen.

Sending IR Codes

To test a code before wiring it into a scene, driver or external library, paste it directly into the module and send it out over a chosen IR channel.

1. Add a remote of type `Send IR from Code`.
2. Choose the `Send Mode` matching the code's format (GC Sendir or HEX) and the `IR Channel` to transmit on.
3. Paste the code into the text box and tap `Send`.



IR Send — Send Mode, IR Channel, code, Send

Open API

The GW8 exposes an HTTP API so any hub, driver or custom script can list, control and learn RF/IR remotes without a MoISmart cloud account — the same functionality available through the web interface.

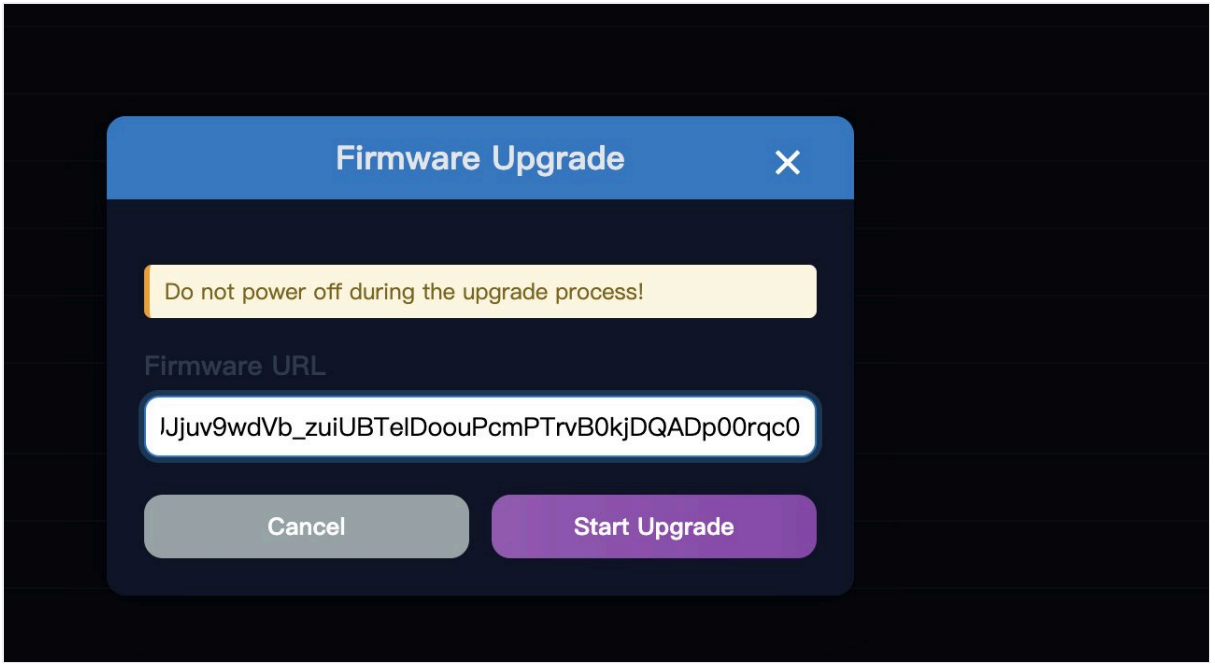
> **NOTE**
>
> Full API reference (endpoints, payloads, examples): api.molmart.com.

Firmware Update

IMPORTANT

Only update the firmware if MolSmart support asks you to — staying on an older version is fine otherwise.

1. Connect the module via **Ethernet** — firmware updates must not be done over Wi-Fi.
2. Open the module's web interface and go to System Details.
3. Request the firmware code/URL from MolSmart Support.
4. Tap the `Upgrade` link next to `Firmware` to open the `Firmware Upgrade` dialog, paste the code into `Firmware URL`, and tap `Start Upgrade`.



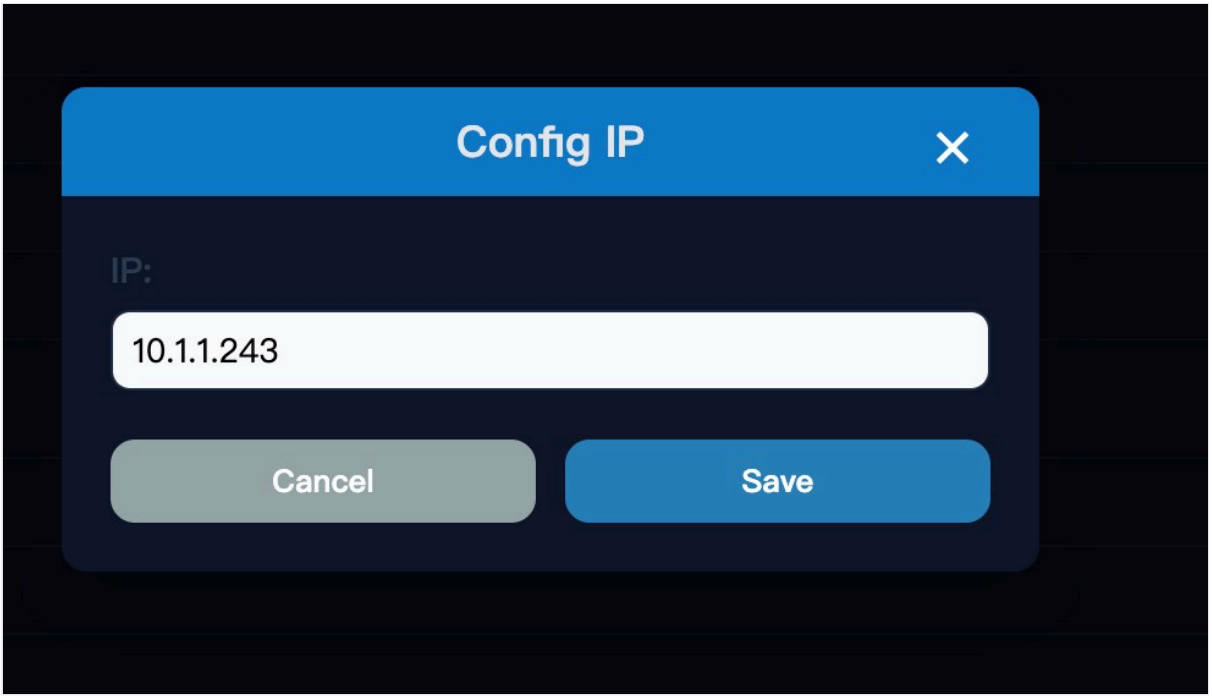
Firmware Upgrade — paste the code from MolSmart Support, then Start Upgrade

CRITICAL

Do not power off the module during the upgrade. The front-panel LEDs blink throughout the process, which takes about 4-5 minutes.

Troubleshooting

SYMPTOM	POSSIBLE CAUSE / SOLUTION
Module does not power on	Confirm the USB-C power source supplies 5 V / 2 A. Try a different cable/adapter.
Module unreachable on the network	Verify the Ethernet link, or re-pair Wi-Fi via Method 2 — Wi-Fi Pairing. As a fallback, rescan with `http://molsmart.local/scan` from a computer on the same network.
Web interface shows an error, top-left corner reads `127.0.0.1`	The module's IP is misconfigured in the interface. Click `Config IP` (top-right corner), enter the module's correct IP address in the popup, and save — the module reboots and the interface becomes reachable at that address.
RF remote fails to copy	Try `RAW` before `COPY` — see Copying an RF Remote. Confirm the remote is 433.92 MHz, OOK/ASK, without rolling code.
Somfy/TUBE motor does not pair	Confirm the motor jogged when the remote's rear programming button was pressed (pairing-mode entry) before tapping button 04 — see SOMFY RTS & TUBE Pairing.
AC does not respond to Match	Fall back to learning each button individually from the AC's original remote — see Air Conditioner Control.
IR command not received by the equipment	Confirm the remote's `IR Channel` matches the physical port the emitter/blaster is wired to.
“24 remotes” limit reached	Delete an unused remote from Remote List before adding a new one.



Config IP — reachable from the top-right corner of the web interface

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure Statement
To maintain compliance with FCC'S RF Exposure guidelines, This equipment should be installed and operated with minimum 20cm between the radiator and your body. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.