

RFXCOM

RFX User Guide

RFX-433 • RFX-433EMC • RFX-868

Modern installation, configuration and troubleshooting guide for the current RFXCOM ESP32-S3 generation.

Version 3.1 - August 2026

About this guide

This guide covers the current ESP32-S3 generation: RFX-433 and RFX-433EMC (download type 6) and RFX-868 (download type 7). Always check the type label on the bottom of the enclosure before downloading software. Firmware for older RFXtrx, RFX433XL and RFX868XL products is not interchangeable with these models.

Important: Firmware, software and compatibility may change. Always check the Downloads and Updates pages on [rfxcom.com](https://www.rfxcom.com) before installation. The versions listed here were verified on 20 August 2026.

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1. Product overview and selection

RFX transceivers bridge wireless devices and home-automation software. They receive signals from sensors, switches and remote controls and can transmit commands to supported lighting, ventilation and motor systems.

Enable only the protocols you actually need to receive. Fewer active receive decoders normally improve sensitivity and reduce false detections. Supported transmit protocols do not need to be enabled separately.

Model	Frequency	Interfaces	Download type
RFX-433	433.92 MHz	USB, WiFi	Type 6
RFX-433EMC	433.92 MHz	USB, WiFi, W5500 LAN, MQTT	Type 6
RFX-868	868 MHz	USB, WiFi, W5500 LAN, MQTT	Type 7

2. Safety, power and placement

Use a stable 5 V USB-C supply. A minimum of 2 A is required for WiFi/MQTT/LAN; 5 V / 3 A is recommended for new installations.

Use a USB-C cable that supports data, not a charge-only cable. Keep the antenna upright and away from metal cabinets, high-power adapters and other RF transmitters.

Disconnect power before opening the enclosure or fitting an option board. The RFX is not a certified safety, fire, medical or alarm controller.

3. Quick start

USB: download the correct Type 6 or Type 7 package, connect the RFX with a data-capable USB-C cable, install the CP210x or FTDI VCP driver if required, start RFXmngr and select the correct COM port.

WiFi/LAN: load the correct network software, use the USB debug port at 115200 8N1, configure the network, then connect your application to TCP port 10001.

MQTT: use MQTT firmware only on RFX-433EMC or RFX-868, configure the broker, enable only required RF protocols and use Auto Discovery temporarily while adding devices.

4. LED status and connections

Red continuously: startup, WiFi access point active, or the configured WiFi network cannot be reached.

Red flashing: no W5500 LAN link. Blue: transceiver initialization. Red + blue for about three seconds: EMC initialization. Blue flashing: transceiver-module problem. Green flashing: a message is transmitted over USB, WiFi or LAN.

USB protocol software uses 38400 baud, 8N1. WiFi/LAN/MQTT debug and Restore use 115200 baud, 8N1. Network protocol software uses TCP port 10001 and supports up to two simultaneous connections.

5. Firmware update

Current RFX devices use the ESP web flasher over USB. Do not use RFXflash for RFX-433, RFX-433EMC or the new RFX-868.

Use all four binary files from the same firmware folder/ZIP. Verify the model and interface variant before programming. If the flasher cannot connect, hold RESET, start Program and release RESET when the connection attempt begins.

File	Flash address
RFXS3.ino.bootloader.bin	0x0000
RFXS3.ino.partitions.bin	0x8000
boot_app0.bin	0xE000
RFXS3.ino.bin	0x10000

6. Using RFXmngr

RFXmngr is the Windows utility for configuration, receive diagnostics and test transmissions. On connection it sends Reset and Get Status automatically.

On the Main tab select only the protocols required for receiving, click Set Mode and then Save Settings. The selection is stored in non-volatile memory.

With WiFi or W5500 software, connect RFXmngr to the local IP address on TCP port 10001. RFXmngr cannot be used while MQTT firmware is installed.

7. USB configuration

If no COM port appears, try another data cable, connect directly to the PC and install the official Silicon Labs CP210x or FTDI VCP driver, depending on the USB interface fitted.

Do not allow two applications to open the same COM port. For permanent installations, avoid unstable passive hubs and USB power-saving settings.

8. WiFi configuration

To restore settings on current boards: hold RESTORE, briefly press RESET, release RESTORE, then power-cycle the RFX. Alternatively send Restore followed by Enter over USB at 115200 8N1.

To configure WiFi, connect to the RFXCOM setup access point, use the default password 12345678, browse to 192.168.4.1 and enter SSID, WiFi password and hostname.

Use DHCP with a router reservation or a unique static address. Never expose TCP port 10001 directly to the public internet. Prefer WPA2/WPA3 and an isolated IoT network where practical.

9. W5500 LAN configuration

W5500 LAN is supported on suitable RFX-433EMC and RFX-868 hardware. Check the PCB/hardware version before fitting the module.

With LAN disconnected, connect USB and open a terminal at 115200 8N1. Connect LAN, read the DHCP address from the terminal, open that address in a browser and configure hostname/IP/subnet/gateway.

W5500	RFX pin
3.3V	3V3
GND	GND
MISO	IO37
MOSI	IO35
SCLK	IO36
SCS	IO39
RST	IO40
INT	IO41

10. MQTT and Home Assistant

RFX-433EMC and RFX-868 can communicate directly with an MQTT broker over WiFi or W5500 LAN. MQTT Auto Discovery can create supported devices automatically in Home Assistant.

Create a dedicated MQTT user, use a unique client name and restrict broker permissions to the required topics. Enable Auto Discovery while adding devices, then disable it to prevent unrelated nearby RF devices from being added.

After firmware changes that alter entity types or IDs, remove the old device if necessary, use Auto Discovery & Clear IDs, save, and learn the device again. Consult the separate RFX MQTT User Guide and RFX MQTT in Home Assistant guide for all fields.

11. RFX-P1 smart-meter interface

The RFX can read supported P1 smart-meter telegrams through the RFX-P1 option board or a correctly wired RJ12 cable.

RJ12 pin 2 is RTS/DR to IO7 (or +5 V where required), pin 3 is GND and pin 5 is RxD to IO5. If the RFX shares the P1 port with another device, do not connect RTS/DR and do not use the 3.3 k Ω pull-up on IO5.

Connect the P1 interface before configuring the asynchronous port in RFXmngr. With USB software use an interval of at least 30 seconds.

12. Motors and special devices

Somfy RTS, ASA, Simu and supported TUBE motors use RFY commands. Add the RFX as an additional remote according to the motor manufacturer's learning procedure.

Brel/Dooya one-way motors commonly use BlindsT6. Bidirectional Brel/Dooya/Motionblinds/Yooda functions require the EMC capability and use the appropriate bidirectional protocol.

Cherubini and Ozroll also require EMC functionality. Keep a record of remote IDs before migration and avoid duplicate IDs.

Selected ventilation and fan protocols include Orcon and Itho on RFX-868 and Novy/Falmec and others on RFX-433. Always test moving or heating equipment while it is supervised.

13. RAW data and diagnostics

RAW/undecoded mode is intended for protocol research and support. It produces much more traffic and can reduce normal reception quality.

Enable RAW only temporarily. Record the device model, frequency, distance, exact command, RFX hardware/software version and several captures of each command. Disable RAW again after testing.

14. Compatibility

Compatibility changes with firmware. The current compatibility and protocol pages on rfxcom.com are the leading source. Always check the exact device model, frequency, protocol and whether receive (R), transmit (T) or both (RT) are supported.

Typical Type 6 categories include KlikAanKlikUit/CoCo, Chacon, Intertechno, Nexa, X10, Oregon, FineOffset, Somfy RTS, Brel, Dooya and Cherubini. Type 7 includes selected 868 MHz protocols such as Orcon, Itho, Edisio, FS20 and FineOffset.

15. Troubleshooting

No USB port: verify a data-capable cable, driver and direct PC connection. RFXmngnr cannot connect: verify COM/IP, TCP 10001 and that another application is not using the port.

Red LED stays on: verify SSID/password and read the 115200 8N1 debug log. Unknown LAN address: check the USB debug output or the router DHCP lease table.

WiFi form appears not to save: first install the latest software, test with a Chromium-based browser, inspect the USB debug log and use Restore if necessary before configuring again.

Poor range or many false packets: disable unused receive protocols and RAW/undecoded mode, reposition the antenna and test another power supply.

No MQTT device: verify broker credentials, unique client ID, Auto Discovery and the required RF protocol. After an entity-changing update, clear/relearn IDs if required.

16. Safety, conformity and support

Use the product only within its specified electrical and environmental conditions. Do not modify RF output, antenna arrangements or transmission settings outside the permitted configuration.

The applicable EU Declaration of Conformity and product documentation are available from RFXCOM. Use the declaration that matches the exact model and hardware revision.

When contacting support, include product and PCB version, firmware variant/version, connection method, active protocol, exact device model and relevant startup/packet logs.

Current downloads: RFX433 software 4050 for Type 6 and RFX868 software 8026 for Type 7. Always verify the Downloads and Updates pages before flashing.

Product	Current firmware	Release
RFX-433 / RFX-433EMC	4050	16 May 2026
RFX-868	8026	7 July 2026

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