

RFX User Guide



1. Table of Contents

1. Table of Contents	2
2. Introduction	3
2.1. RFX433 software	3
2.2. RFX transceiver option boards	3
2.3. LED meaning	3
2.4. RFX433 software for USB	4
2.5. RFX433 software for WiFi	4
3. Flash update RFX433 software	4
4. RFX433 software supported protocols.....	5
5. RFX868 software supported protocols.....	17
6. Power requirement	18
7. USB.....	18
7.1. Second USB.....	18
8. ESP32-S3 pin connections.....	18
8.1. ESP32-S3 free pins connections table	20
9. WiFi.....	20
9.1. Restore Wifi settings inside the RFX transceiver	20
9.2. Restore Wifi settings with an USB command.....	20
9.3. Configure the RFX transceiver WiFi.	21
9.4. Show WiFi debug messages	21
10. Option boards	22
10.1. RFX-EMC	22
10.2. RFX-P1.....	23
10.3. RFX-MODBUS.....	24
11. ASK/FSK transceiver	25
12. LoRa option	26
13. Eport LAN option	27
13.1. Configure the Eport TCP IP port	28
13.2. Configure the serial port.....	30
13.3. Configure the TCP communication	31
14. Move RFY devices to the RFX-433.....	32
15. EC Declaration of Conformity.....	33
16. Warning:	34
17. License	34
18. Copyright notice.....	34
19. Revision history	35

2. Introduction

The RFX-433 is equipped with a 433MHz transceiver. This device can be used with open-source software or the free RFX433 software.

The RFX has the ESP32-S3 N8 installed and can also be used for user written software. It can also have the RFM95 (433, 868 or 915MHz) installed for LoRa and used with open-source software.

2.1. RFX433 software.

IMPORTANT: RFX433 software for the RFX-433 transceiver is totally different from the firmware of the older RFXtrx and RFX433XL transceivers!

The RFX transceiver with RFX433 software has the same functionality as the RFX433XL, and in addition, it has WIFI capability and is built for future extensions.

For the list of supported protocols see chapter RFX433 software supported protocols.

The RFX-EMC (**E**xtended **M**otor **C**ontrol) option board is necessary for Brel/Dooya bi-directional, Cherubini and OzRoll.

For the optimum receive sensitivity enable only protocols you need to receive.

No protocol enabling is necessary for transmit.

Do not use “undec on” unless requested by RFXCOM.

Four types of “RFX433” software for the RFX transceiver are available for free:

USB with support for the RFX-P1 board,

USB with support for the RFX-EMC board.

WiFi with support for the RFX-P1 board,

WiFi with support for the RFX-EMC board.

The RFX433 software for MODBUS and the RFX868 software will become available later.

2.2. RFX transceiver option boards

The RFX transceiver has a connection for 1 optional extension board:

- RFX-EMC extension board, for Brel/Dooya bi-directional, Cherubini and OzRoll. The RFX-433EMC has this option built-in.
- Or RFX-P1 extension board for a P1 connection.
- Or RFX-MODBUS extension board for a Modbus connection.

Use the P1 software version, if no option board connected.

2.3. LED meaning

RED led: At start-up the LED is RED.

It stays RED if the access point 192.168.4.1 is active for configuring the ssid, password for station mode or if the configured station cannot connect the WiFi network.

Connect a terminal to the USB port (38400N81) to see status messages about the WiFi connection.

BLUE led: during initialization of the transceiver module.

RED-BLUE: 3 seconds on during Init of the PIC-EMC option

BLUE led blinking: transceiver module problem.

GREEN led: the LED blinks green if a message is transmitted to WiFi or USB.

2.4. RFX433 software for USB

RFX-433 USB is using 38400baud, no parity, 8 bits, 1 stop bit.
The interface protocol is compatible with the RFXtrx and RFX433 units.

2.5. RFX433 software for WiFi

RFX-433 WiFi supports 2 connections at the same time and is using port 10001.

3. Flash update RFX433 software

Binary software files are available for:

USB: RFXESP433USB_P1 and RFXESP433USB_RFXEMC,

WiFi: RFXESP433WiFi_P1 and RFXESP433WiFi_RFXEMC.

You can use a web tool to flash the RFX433 connected to USB and use these parameters:

0x0 = RFXESP32S3.ino.bootloader.bin

0x8000 = RFXESP32S3.ino.partitions.bin

0xe000 = boot_app0.bin

0x10000 = RFXESP32S3.ino.bin

Use for example the solution as described here:

<https://blog.spacehuhn.com/espwebtool>



<https://esp.huhn.me/>

- Click Connect and select the correct USB COM port
- Select files (**note: enter 0 at RFXESP32S3.ino.bootloader.bin**)
- Click Program

If connection reports a problem with the Program command:

Keep the RESET button pressed, click PROGRAM, release the RESET button.

<input type="text" value="0x0"/>	RFXESP32S3.ino.bootloader.bin	<input type="button" value="✕"/>
<input type="text" value="0x8000"/>	RFXESP32S3.ino.partitions.bin	<input type="button" value="✕"/>
<input type="text" value="0xE000"/>	boot_app0.bin	<input type="button" value="✕"/>
<input type="text" value="0x10000"/>	RFXESP32S3.ino.bin	<input type="button" value="✕"/>

RESET  ADD 

4. RFX433 software supported protocols

Device	RFX433	Protocol
1byOne Driveway Alarm http://www.1byone.co.uk/Home-Security/Alarms/O00QH-0511	RT	ByronSX
1byOne Easy Chime	RT	ByronSX
1byOne QH A19 rev10 Chime	RT	ByronSX
A-OK blind motors RF01 http://www.motorisationplus.com/	RT	BlindsT2
A-OK blind motors AC114,AC123,AC127,AC129, ZC11 - http://www.motorisationplus.com/	RT	BlindsT3
Aidebao security	R	Meiantech
Aldomo – http://www.aldomo.de/	RT	BlindsT6
Alecto – SA30, SA33 smoke detector	RT	Oregon
Alecto – WS1100 (needs correction -40°C)	R	FineOffset
Alecto – WS1200	R	*LaCrosse Pro = FineOffset
Alecto – WS1700 and compatibles, WS3500, WS4500	R	Rubicson
Alecto – WSD10	R	Rubicson
Alfawise – https://www.gearbest.com/ip-cameras/pp_1693842.html?wid=1214279		ByronSX
Ambient Weather F007TH, WS14 pool sensor	R	Oregon
ANSLUT (learning mode)		AC
Aoke relay http://www.aliexpress.com/store/product/whose-sale-prices-DC12V10A-Learning-Code-Wireless-Remote-Control-Switch-System-1-Receiver-and-1-Transmitter/1211856_1774391429.html	RT	Lighting5 Aoke or Lighting1 ARC
ASA ETR blind motors - http://www.asa-mingardi.org/en/home.php	T	RFY
ASP blind motors http://www.asp-distribution.com/site%20volet/voletrenovation.aspx	RT	BlindsT11
ATI Remote Wonder		ATI
ATI Remote Wonder Plus		ATI
ATI Remote Wonder II (only available in hardware version 1.0)		ATI
Atlantic security	RT	Meiantech
Auriol H13726	R	Rubicson

Device	RFX433	Protocol
Auriol Z31055B-TX	R	Rubicson
Avantek * receive Lighting4	RT	Lighting5 *Lighting4
Banggood – SKU174397	R	Rubicson
Banggood DANIU		Rubicson
Blyss lighting http://www.castorama.fr/store/Prise-telecommandee-et-telecommande-BLYSS---Interieur-prod4470026.html	RT	AE
Blyss temperature/humidity 630467		AE
BOFU EYB25 EY1612 blind motors - http://www.bofumotor.com/ * = receive in Type2 only used to get the remote ID.	RT	BlindsT0
Brennenstuhl RCS2044N	RT	Lighting4
Brennenstuhl RC2044	RT	Lighting4 + AC Pro = AC
Brel blind motors http://www.brel-motors.nl/webshop/motoren/	RT	BlindsT6
Brel bi-directional (needs RFX-EMC option)	T	DDxxx
Bresser Temeo Hygro, 7009981, 7009994, 7009997	R	Rubicson
BTX blind motors, remote, part# 490.2076 http://www.btxinc.com	T	BlindsT9
ByeByeStandBy	RT	ARC
Byron BY chime	RT	ByronSX
Byron DBY22321/23510	R	ByronSX
Byron DBY23711B/23712	RT	ByronSX
Byron SX chime http://www.chbyron.eu/Byron/ByronSXRange/68/89/	RT	ByronSX
Byron MP001 chime		Chime Byron MP001
Cartelectronic TIC, Encoder, Linky https://www.cartelectronic.fr/index.php?id_product=124&controller=product		ATI/cartelectronic
Casafan	T	Fan Casafan
CasaFan Eco Aviatos RH787T	T	Fan LucciAir DCII
cent-a-meter		Oregon
Chacon (learning mode) http://www.chacon.be/	RT	AC
Chacon (with address code wheels)	RT	ARC

Device	RFX433	Protocol
Chacon EMW200	T	Lighting1 EMW200
Chacon 54660 (equal COCO GDR2)	T	Lighting1 COCO GDR2
Chacon KD101 smoke detector	RT	always on
Chamberlain CS4330CN http://www.chamberlain24.de/epages/es122868.sf/en_GB/?ObjectPath=/Shops/es122868/Products/RA4336	T	BlindsT8
Cherubini ID can be 10 30 00 to 10 3F FF	RT	BlindsT18 (receive =BlindsTx + Keeloq)
Chuango * decoded as X10	R*	Lighting4
CoCo (learning mode) http://www.coco-technology.com/en/home/	RT	AC
CoCo (with address code wheels)	RT	ARC
CoCo GDR2 (equal Chacon 54660)	T	Lighting1 COCO GDR2
Confexx CNF24-2435	T	BlindsT12
Conrad RSL2 http://www.conrad.com/ce/en/product/640466/FUNK-STECKDOSENSCHALTER-RSLR2	RT	RSL
Conrad RSL sensors	R	RSL
Conrad RSL2 motion/door-window sensors	R	RSL
Cotech Smarthome	RT	Lighting4 + AC,
Cotech weather sensor https://www.clasohlson.com/no/Ekstra-temperaturgiver-hygrometer/36-6726	R	Rubicson
Cranenbroek	T	Lighting1 Impuls
Cresta - TX-320, TS34C, anemometer, UV sensor, rain sensor	R	Hideki
Cuveo https://shop-m-e.de/produkte/cuveo-funk-system/?p=1	RT	AE
dBell – https://www.webstore4ipcmeras.nl/dbell_DB-HD-LIVE-B	RT	ByronSX
DEA receivers (unencrypted) http://www.deasystem.com/en/accessory/7/receivers	RT	KeeLoq
Digimax	R	X10
Digoo DG-R8H, DG-R8S https://www.banggood.com/Digoo-DG-R8H-433MHz-Wireless-Digital-Hygrometer-Thermometer-Weather-Station-Sensor-for-TH11300-8380-p-1178108.html		Rubicson
Digoo DG-SD10 self-powered doorbell	R	Lighting4
Digoo		Lighting4 + Meiantech

Device	RFX433	Protocol
https://www.aliexpress.com/item/DIGOO-433MHz-New-Door-Window-Alarm-Sensor-for-HOSA-HAMA-Smart-Home-Security-System-Suit-Kit/32957905665.html		
DI.O (learning mode) http://www.di-o.be/	RT	AC
DI.O (with address code wheels)	RT	ARC
Dolat DLM-1 controlled motors http://www.dolat.com.cn/product1.asp?id=538	T	BlindsT10
DomiaLite (with address code wheels)	RT	ARC
Dooya blind motors, emulate remotes: DC305, DC306, DC307, DC313, DC1602, DC1650, DC1651, DC2700	RT	BlindsT6
Dooya bi-directional (needs RFX-EMC option)	T	DDxxxx
Ebode	RT	X10
Electrisave		Oregon
ELRO AB400 http://www.elro.eu/en/products/cat/home-automation/home-control1	RT	Lighting4
ELRO AB600	RT	ARC
Ematronic RF01 http://www.ematronic.com/moteurs-volet-roulant/	RT	BlindsT2
Ematronic AC114, AC123 http://www.ematronic.com/moteurs-volet-roulant/	RT	BlindsT3
Eminent * decoded as X10 in ext firmware	RT	Lighting4
Energenie https://energenie4u.co.uk/ - ENER010 – 429.935, 5-gang 429.950	T	Lighting1 Energenie Energenie5
Envivo – Chime ENV1348		Chime + Lighting4
ESMO blind motors	RT	BlindsT6
Etekcycity – http://etekcity.com/p-300-5-pack-wireless-remote-control-outlet-switch-set-with-2-remote-controls-zap-5lx.aspx	T	Lighting1 Energenie5
Eurodomest (NL – Action) * ARC only	T	Lighting1 – ARC Or Lighting5 Eurodomest
Everflourish EMW100	T	Lighting5 EMW100
Falmecc fan	T	Fan Falmecc
Faro Barcelona fan – http://www.faro.es/	T	Fan LucciAir
Faro Barcelona DC fan For example : Airfusion Climate II 50 DC	T	Fan LucciAir DC

Device	RFX433	Protocol
Faro Barcelona DCII fan For example : Airfusion Climate II 50 DC	T	Fan LucciAir DCII
Faher blinds motor	RT	BlindsT6
FineOffset – WH1285 (needs correction -40°C)	R	FineOffset
Flamingo	RT	Lighting4
Flamingo FA500D FA500DSS	T	IT
Flamingo KD101 smoke detector FA20RF, FA21RF, FA22RF	RT	always on
Flamingo Smartwares SF501	R	AC
Focus	RT	Meiantech
Forest blind/curtain motors http://www.forestgroup.nl/index_nl.html	T	BlindsT7
Froggit – F007TH	R	Oregon
FT1211R fan controller	T	Fan FT1211R
FunkBus ID: 3F CC (Gira, Jung, Insta, Berker)	T	Funkbus
Gaposa ER motors 434.15MHz	RT	BlindsT17
Gaviota	RT	BlindsT6
Gaviota Elite bi-directional (needs RFX-EMC option)	T	DDxxxx
Gazco heater RF290A	RT	Mertik
HAMA EWS1500	R	Rubicson
Harrison curtain http://www.harrison.nl/home2.htm	T	Curtain Harrison
Hasta new blind motors http://www.hasta.se/ * = receive in Type2 only used to get the remote ID.	RT	BlindsT0
Hasta old blind motors	RT	BlindsT1
Hideki weather sensors	R	Hideki
Home Confort lighting http://www.home-confort.net/en	RT	HomeConfort
HomeEasy EU (learning mode) http://www.elro.eu/en/products/cat/home-automation/	RT	HE EU
HomeEasy UK – HE105 - http://www.homeeasy.eu/	T	Thermostat2 HE105
HomeEasy UK (learning mode)	RT	AC
HomeEasy UK (with address code wheels)	RT	ARC
Honeywell	R	Hideki

Device	RFX433	Protocol
- TF-ATS34C		
Housegard Origo smoke detector	RT	ARC
HQ COCO-20	T	Lighting1 HQ COCO20
Hualite blinds	T	BlindsT14
Hunter TX36 fan https://www.hunterfan.com/	RT	Fan
Ikea Koppla		Lighting3
Impuls (NL – Action)	T	Lighting1 Impuls
inblindz – https://www.inblindz.nl/	T	BlindsT13
Inovalley SM80 with plant probes http://www.inovalley.com/detail.php?item_id=289	R	Rubicson
Intertechno (learning mode) http://www.intertechno.at/	RT	AC
Intertechno (with address code wheels)	RT	ARC
JVS screens http://www.screen-discount.nl/	RT	BlindsT6
Jysk HUGLO	RT	BlindsT6
Kambrook RF3672 – http://www.bunnings.com.au/kambrook-4-piece-indoor-powerpoint-kit-with-remote-control_p7030054		Lighting2 Kambrook
Keeloq (unencrypted)	RT	KeeLoq
Kerui security * decoded as X10 in Ext2 and Pro firmware https://www.aliexpress.com/item/433-MHz-Wireless-Door-Windows-Sensors-for-KERUI-Alarm-System-Magnetic-Door-Sensor-Door-Open-reminder/32590916896.html	R*	Lighting4 + X10*
Kerui siren xx xx x8 = on, xx xx x2 = off	T	Lighting4
Kimex projection screen https://www.kimexinternational.com/A-9162-ecran-de-projection-electrique-encastrable-3-00-x-1-69m-format-16-9.aspx	RT	BlindsT3
Kingpin KP100 projection screen	T	Lighting4
KlikAanKlikUit (learning mode) http://www.klikaanklikuit.nl/home/	RT	AC
KlikAanKlikUit (with address code wheels)	RT	ARC
La Crosse - TX2, TX3, TX3P, TX4, TX7, TX17, WS2300	R	LaCrosse
La Crosse - rain sensor TX145R	R	Hideki
La Crosse - weather WS1652	R	LaCrosse

Device	RFX433	Protocol
- temp/hum TX141TH-Bv2, TX141W		
Legrand CAD radio	RT	Lighting5 LeGrand CAD
Lexibook - SM883	R	Hideki
LightwaveRF - http://www.lightwaverf.co.uk/	RT	AD
Livolo - http://www.livolonederland.nl/ - http://www.livolo-France.com/fr/ - http://nl.aliexpress.com/w/wholesale-livolo-touch-switch.html	T	Lighting5 Livolo
Louvolite one touch motorised blinds * = receive in Type2 only used to get the remote ID.	RT	BlindsT0
Louvolite one touch Vogue vertical blinds * = receive only used to get the remote ID.	RT	BlindsT0
Lucci Air fan https://www.beaconlighting-europe.com/product-category/lucci-air-deckenventilatoren/	T	Fan LucciAir
Lucci Air DC fan For example : Airfusion Climate II 50 DC	T	Fan LucciAir DC
Lucci Air DCII fan For example : Airfusion Climate II 50 DC	T	Fan LucciAir DCII
Luxaflex – http://www.luxaflex.se/produkter/luxaflex/rullgardiner/	T	RFY
Maplin http://www.maplin.co.uk/p/remote-controlled-mains-socket-set-single-n78ka	T	Lighting1 COCO GDR2
Marquant 943134		X10
Maverick ET-732/733 BBQ/Smoke temperature		Hideki
MCZ pellet stove	RT	Thermostat4
Mdremote LED dimmer v106 www.ultraleds.co.uk		Lighting5 MDRemote V106
Mdremote LED dimmer v107 www.ultraleds.co.uk		Lighting5 MDRemote V107
Mdremote LED dimmer v108, EKAB-10KRF http://www.ledstripkoning.nl/accessoires/dimmers-wit/draadloze-dimmer-10-knops-rf/		Lighting5 MDRemote V108
Meade – TS33F-M, TS34C-M http://www.meade.com/products/weatherstations/sensors.html	R	Hideki
Media Mount Projector screen		Lighting4
Meiantech security	RT	Meiantech
Mercury appliance modules http://mercury.avsl.com/product?range=ME5124	T	Lighting1 Energenie5
Mertik Maxitrol Fire Place controllers	RT	Mertik

Device	RFX433	Protocol
- G6R-H4T1, G6R-H4T5, G6R-H4TD, G6R-H4T16, G6R-H4TB, G6R-H4T21-Z22		
Mertik Maxitrol Fire Place controller – G6R-H3T1	RT	Mertik
Mertik Maxitrol Fire Place controller – G6R-H4S	T	Mertik
Meteoscan W155,W160	R	Rubicson
mhz.de bi-directional (needs RFX-EMC option)	T	DDxxxx
Monaco – https://www.airam.fi/en/product/v8305-2988/7020500/monaco-wireless-doorbell-230v/140/1	RT	Chime + Lighting4
Motionblinds bi-directional (needs RFX-EMC option)	T	DDxxxx
Motiva blinds, remote BY-305 * = receive in Type2 only used to get the remote ID.	RT	BlindsT0
Motolux blinds motor	T	BlindsT3
Motostar blinds	T	BlindsT15
mi.sol WH2 http://www.ebay.com/itm/Transmitter-for-Wireless-Weather-Station-wireless-temperature-sensor-/121664060899	R	FineOffset
NEXA (learning mode) - http://www.nexa.se/	RT	AC
NEXA (with address code wheels)	RT	ARC
NEXA KD101/LM101LC smoke detector	RT	always on
Nexa NBA-001 temperature sensor	R	Hideki
NEXUS - I008T	R	Hideki
Nobily rolladenmotor http://www.nobily.de/rolladenmotor/funk-elektronisch/40mm-achtkantwelle/170/nobily-rolladenmotor-pre4?c=5	RT	BlindsT6
Novy extractor hood https://www.novynederland.nl/	RT	Fan
Oase Inscenio FM Master	T	Lighting1 Oase
Omnia Go blinds https://omniablinds.com/	RT	BlindsT6
Opus XT300 /Imagintronix Soil sensor http://www.plantcaretools.com/en/webshop/wireless-moisture-sensor-en-detail http://www.ebay.co.uk/itm/Wireless-Soil-Moisture-Sensor-/251380900939?pt=UK_Home_Garden_Garden_Plants_Fertiliser_CV&hash=item3a8778244b	R	Imagintronix* Pro = Fineoffset
ORNO	RT	AC
Oregon Scientific / Huger BBQ and weather sensors - AW129, AW131, BTHGN129, BTHR918, BTHR918N, BTHR968, EW109, PCR800, RGR126, RGR682, RGR918, RGR928, RTGN318, RTGR328N, RTGR328N, RTGR368N, RTGR383, RTHN318, STR918, STR928, ,THGN800, THGN801, THC138, THC238, THC268, THGN122NX, THGN123N, THGN132ES, THGN132N, THGN500, THGR122(N/NX), THGR228(N/NF), THGR238, THGR268, THGR328N, THGR810, THGR918, THGR928, THGRN228NX, THN122N, THN129, THN132N, THR128, THR138, THR288(N/NF), THRN122N, THWR288A, THWR800, UV138, UVN128, UVN800, UVR128, WGR800, WGR918, WTGR800, WTGR800	R	Oregon

Device	RFX433	Protocol
Oregon Scientific weighting scales - BWR101		Oregon
Oregon Scientific weighting scale BWR102	R	Oregon
Oregon MSR939 https://www.redealer.de/multimedia/home-living/wetterstationen/bewegungssensor-msr939/a-200667/	R	Oregon
OTIO EHS5050	R	RSL
OTIO Lighting	RT	RSL
Outlook Motion Blinds https://www.spotlightstores.com/curtains-blinds/indoor-blinds/roller-blinds/project-outlook-motion-motorised-roller-blind/p/BP80360543	RT	BlindsT4
OWL – CM113	R	Oregon
OWL – CM119, CM160, CM180, CM180i http://www.theowl.com/	R	Oregon
Ozroll E-Trans	RT	BlindsTx
Pearl NC-7159 http://www.pearl.de/a-NC7159-3041.shtml	R	Rubicson
Phenix	RT	Lighting4
Philips SBC SP370 series	T	Lighting1 Philips SBC
Prego P-8426 http://www.sunmarket.fi/tuote.asp?TID=11990		X10 Pro1/ProXL1 = Rubicson
Profile Qnect 423000040,423000042	RT	Lighting4 + AC Pro = AC
Profiles PAC-326R Belcanto	RT	ByronSX
Profitec KD310T https://akkuplus.de/profitec-KD-310-T-Energiekosten-Messgeraet-Sender	R	RSL
Proluxx projection screen	T	Lighting4
PROmax	T	IT
Proove –TSS320 & TSS330 fridge/freezer thermometer & outdoor sensors 311346,311501	R	FineOffset
Quigg RC DS5 4001-A DE 3726	RT	Lighting4 + AC Pro = AC
Quinetic	RT	Quinetic
Quotidom – http://www.quotidom.com/moteur-tubulaire-radio-quotidom-10-ou-20-nm-volet-roulant-ou-store-banne.html (not the Solutio version)	RT	BlindsT6
RAEX blind motor (YR1326 or YRL2016 controlled)		BlindsT4
Rain sensor - https://nl.aliexpress.com/item/4000761757290.html	RT	BlindsT3
RAW data	RT	undec on
Renkforce RF101 smoke detector	RT	always on
Revolt NC5461		RSL

Device	RFX433	Protocol
http://www.pearl.de/a-NC5462-5452.shtml		
RFXSensor	R	X10
RFXMeter	R	X10
RGB LED strip driver dx.com - http://www.dx.com/ order nbr: 130913, (new TRC02 NOT supported) - http://www.dx.com/ order nbr: 67412 * = receive only in Type2 used to get the RGB remote ID.		AD
RGB432W LED controller		Lighting5 RGB432W
RisingSun		Lighting4
RUBiCSON - stektermometer 48659, 48695 -pool sensor p48019	R	Rubicson
RohrMotor24 RMF blind motors http://www.rohrmotor24.eu/rohrmotor24	RT	BlindsT6
RollerTrol R-series blind motors - http://rollertrol.com/ * = receive in Type2 only used to get the remote ID.	RT	BlindsT0
Rollertrol G-series blind motors	RT	BlindsT6
Sartano	RT	Lighting4
SAS SA-200 smoke detector	RT	always on
Screenline motors - http://www.screenline.cz/en/ Remote- SL2392S159 - Pellini	T	BlindsT13
SEAV TXS4		FAN SEAV TXS4
SelectPlus200689101 & SelectPlus200689103 (Action NL)	RT	ByronSX
Siemens SF01 LF959RA50/LF259RB50/LF959RB50 extractor hood	RT	Homeconfort,Fan SF01
Siemens (UK)	RT	AD
SilverCrest 91089	RT	Lighting4
SilverCrest 60494, 284705	RT	Lighting4 + AC Pro = AC
Silverline Premium - http://www.aluparts.nl	RT	BlindsT6
Simu Hz / RTS - http://www.simu.com/	T	RFY
Siro	RT	BlindsT6
Smartwares radiator valve http://www.homewizard.nl/smartwares-draadloze-radiatorkraan.html		Radiator1 Smartwares
Smartwares RM174RF, RM175RF, SA41	RT	Ext2 = ARC else = Lighting4
Somfy / RTS http://www.somfy.co.uk/	T	RFY

Device	RFX433	Protocol
To control Somfy Centralis use RFX2 commands.		
Sonoff RF	RT	Lighting4
Sunpery blind motors	T	BlindsT9
Sunvic TLX1206	RT	X10
Sunvic TLX7506	R	X10
TechnoLine/Proficell http://www.elv.de/output/controller.aspx?cid=74&detail=10&detail2=27621 - TX95-TH, WS9180-TX104	R	Rubicson
Telldus 312716,313159,313160 https://www.lohelectronics.se/hemautomation/433mhz/sensorer-1110/smart-inne-och-uteternometer-med-hygrometer-10396	R	FineOffset
TFA - TS15C, TS34C, 30.3245.02, 30.3139 external temperature / humiditysensor 30.3133, anemometer 30.3149, UV sensor, rain sensor 30.3148, pool sensor 30.3160	R	Hideki
TFA - pool sensor 30.3056.10, 30.3216.20 - external temperature sensor 30.3208.02 - temperature sensor 30.504554	R	Oregon
TFA - rain sensor 30.3233	R	Hideki
TFA - weather Pro 35.1161.01 - temp/hum 30.3249.02, 30.3221.02 - anemometer 30.3222.02, 30.3251.10	R	LaCrosse
TFA - temp/hum 30.3247.02	R	Rubicson
UPM/Esic (very short receiving range) WT260,WT260H,WT440H,WT450,WT450H,WDS500, RG700	R	Hideki
Unitec 48110 EIM 826	RT	Lighting4 + AC Pro = AC
Ventus WS155	R	Rubicson
Viking - 02035, 02038, 02811	R	FineOffset
Visonic CodeSecure	R	Visonic
Visonic PowerCode	R	Visonic
Wave Design extractor hood	T	Fan SF01
Waveman	T	Lighting1 Waveman

Device	RFX433	Protocol
Westinghouse fan 7226640	T	Fan
WT0122 pool sensor	R	FineOffset
YOODA blind motors http://www.sukcesgroup.pl	RT	BlindsT6
Yooda bi-directional (needs RFX-EMC option)	T	DDxxxx
X10 Ninja/Robocam		X10
X10 PC Remote		X10
X10 RTS10 / RFS10	RT	X10
X10 lighting	RT	X10
X10 security	RT	X10
Xdom	RT	X10
Xiron – EN6	R	Rubicson

5. RFX868 software supported protocols

Device	RFX433	Protocol
Alecto ACH2010	Alecto ACH2010	R
Alecto WS5500, FineOffset WH2900, Ventus W830	FineOffset	R
Davis Vantage Vue EU *	Davis EU	R
Ecowitt WH31,WN32,WH40,WH57,WS90,WH5360	FineOffset	R
Edisio	Edisio	RT
FS20	FS20	RT
Gaposa rollermotor	Gaposa	RT
Honeywell ActiveLink	Honeywell	RT
Itho CVE RFT	Itho CVE RFT	T
Itho CVE ECO RFT	Itho CVE ECO RFT	RT
Keeloq (unencrypted part only)	Keeloq	RT
Mi-Sol WH2900C	FineOffset	R
Orcon	Orcon	RT
Visonic CodeSecure (unencrypted part only)	Visonic	R
Visonic PowerCode	Visonic	R
Alecto ACH2010	Alecto ACH2010	R
Alecto WS5500, FineOffset WH2900, Ventus W830	FineOffset	R
Davis Vantage Vue EU *	Davis EU	R
Ecowitt WH31,WN32,WH40,WH57,WS90,WH5360	FineOffset	R
Edisio	Edisio	RT
FS20	FS20	RT
Gaposa rollermotor	Gaposa	RT
Honeywell ActiveLink	Honeywell	RT

6. Power requirement

The RFX transceiver is powered by the USB-C connection. When using WiFi it needs a good 5V DC power supply of at least 2A.

7. USB

The RFX transceiver has the CP2102N USB interface chip installed and is connected by an USB-C cable. The TX and RX serial port is used for this.

The USB VCP drivers are available at:

<https://www.silabs.com/developer-tools/usb-to-uart-bridge-vcp-drivers?tab=downloads>

7.1. *Second USB*

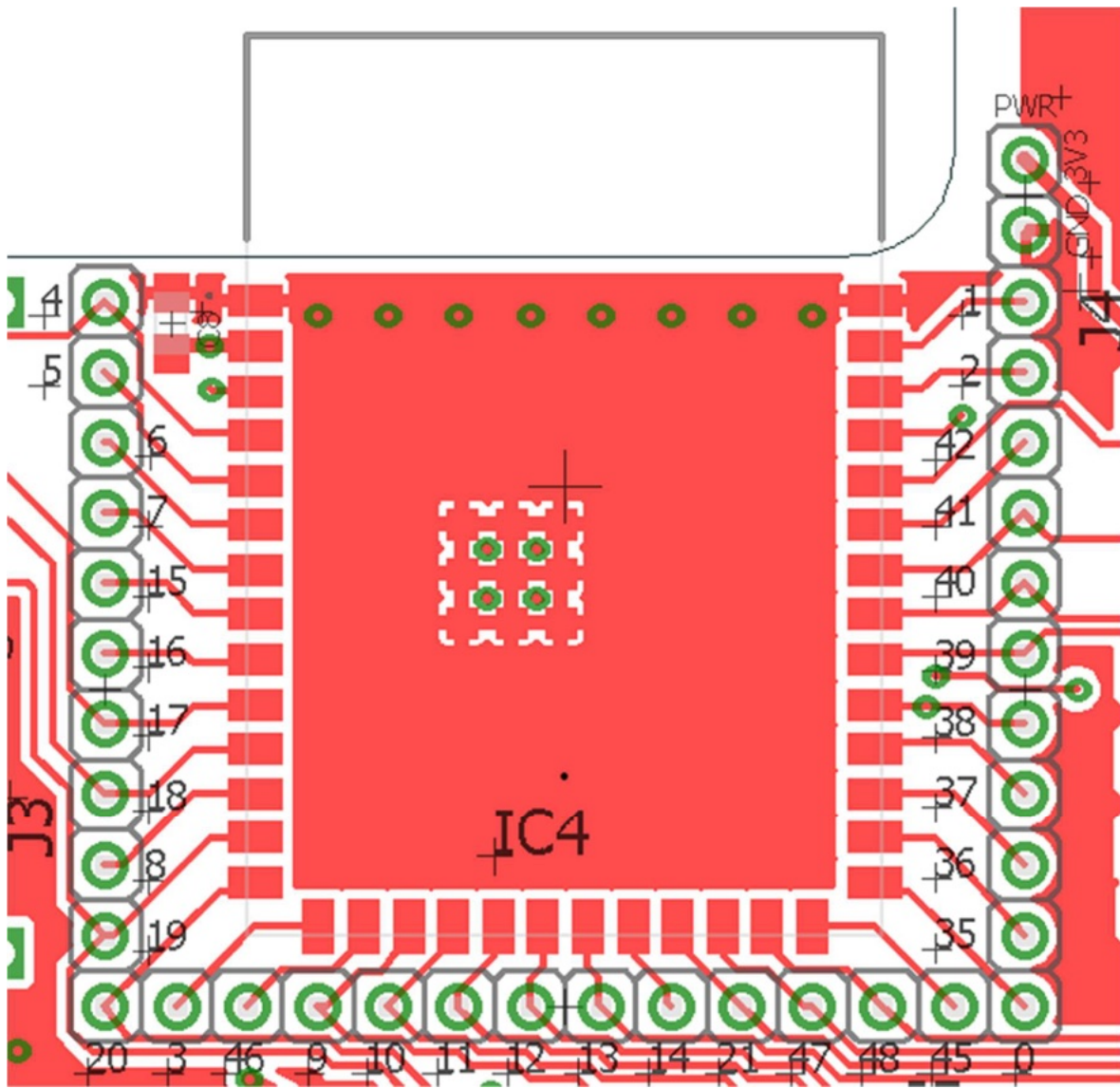
For an USB connection with IO19-IO20 add a second USB-C connector (GSB1C41110SSHR) at J2. Add two resistors R2 and R12 (5K1 1% 0603) Remove R5 and add D2 and D3 (1N5819HW). D2 is on backside of the PCB. These diodes are required if two USB connections are made at the same time!

Note: This USB connection is not used/supported by the RFX433 software.

8. ESP32-S3 pin connections

The three (2mm) connectors J3, J4 and J5 can be used for a connection with the ESP32 if you would like to use the RFX transceiver for some other solution.

See the next chapter for the free pins that can be used.



8.1. ESP32-S3 free pins connections table

Name	Type	ESP32-S3 free pins
IO4	I/O/T	
IO5	I/O/T	
IO6	I/O/T	
IO7	I/O/T	
IO15	I/O/T	
IO16	I/O/T	
IO17	I/O/T	
IO18	I/O/T	
IO8	I/O/T	
IO19	I/O/T	USB D-
IO20	I/O/T	USB D+ / reset WiFicredentials
IO3	I/O/T	
IO46	I/O/T	(strapping pin ROM messages printing)
IO45	I/O/T	(strapping pin VDD SPI voltage)
IO0	I/O/T	(strapping pin BOOT)
IO35	I/O/T	
IO36	I/O/T	
IO37	I/O/T	
IO38	I/O/T	RGB LED
IO42	I/O/T	Used by RFXmodbus
IO2	I/O/T	Used by all option boards
IO1	I/O/T	Used by RFX-EMC and RFXmodbus

9. WiFi

The red LED is always on if:
The RFX transceiver is in AP mode or the configured WiFi connection could not be made.

9.1. Restore Wifi settings inside the RFX transceiver

To reset the WiFi settings to factory settings:

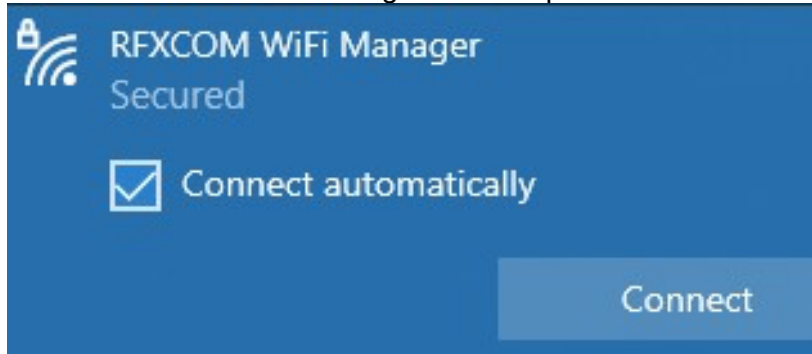
RFX transceiver32_S3	RFX transceiver32_S3 V1
Connect the IO20 pin to GND, Press the RESET button, Remove the connection IO20 – GND, Power cycle the RFX transceiver.	Press the RESTORE button, Press and release the RESET button, Release the RESTORE button, Power cycle the RFX transceiver.

9.2. Restore Wifi settings with an USB command

The RFX transceiver must have WiFi software loaded.
Connect a terminal, for example PuTTY, to the USB (serial 38400, 8N1)
Send the text **Restore** followed by an enter/transmit command.

9.3. Configure the RFX transceiver WiFi.

Connect the RFX transceiver to an USB or the external 5V 2A power supply.
Open the Wifi network settings on your PC or mobile.
Connect the access point 192.168.4.1
Enable RFXCOM WiFi Manager and use password: **12345678**



Open a browser and open 192.168.4.1
Enter your WiFi credentials, SSID and password of your WiFi network.
Optional enter a Hostname, Local IP with Subnet Mask and Gateway, for example:
RFX433
192.168.1.150
255.255.255.0
192.168.1.1
Note: DHCP is used if no Local IP, Subnet Mask and Gateway info is entered

Enter your WiFi credentials

for DHCP do not enter any value at Local IP, Subnet Mask and Gateway

SSID:	<input type="text"/>
Key:	<input type="text"/>
Hostname:	<input type="text"/>
Local IP:	<input type="text"/>
Subnet Mask:	<input type="text"/>
Gateway:	<input type="text"/>
<input type="button" value="Save"/>	

Click Save and the RFX transceiver will restart and connect your WiFi network.

9.4. Show WiFi debug messages

Connect a terminal program on the USB port, for example PuTTY
Select 38400 bd, 8 bits, no parity, 1 stop bit
Press RESET and debug messages are shown.

10. Option boards

There are 3 option boards available that can be installed on the RFX transceiver PCB – J4. Only one option board can be installed. The option boards are equipped with a PTF (Press-To-Fit) connector, and no soldering is necessary.



10.1. RFX-EMC



This optional board contains the code for encrypting the Brel bi-directional, Dooya, Cherubini and Ozroll protocols.

Use the RFX-EMC software version in the RFX433.

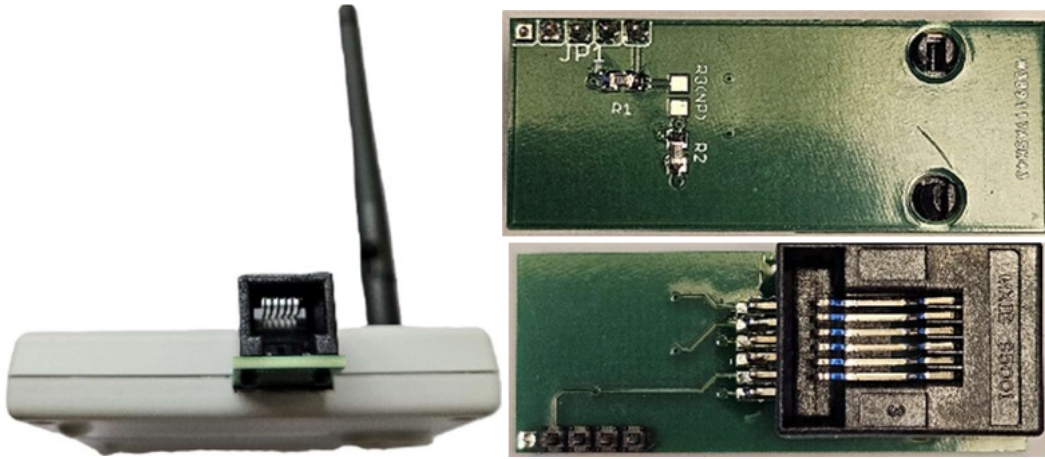
Insert the RFX-EMC option board to the 4 pins (3V3, GND, 1, 2)

Firmware updates are not planned for the RFX-EMC but in case there is an update necessary: Use RFXflash version 13.0.0.0 or higher to update the RFX-EMC.

Important: disconnect all other applications before and during the flash operation!

See the RFXtrx User Guide for the RFXflash procedure.

10.2. RFX-P1



With this option the RFX transceiver can be connection to the P1 bus of the smart meters.

Use the RFX transceiver P1 software version.

Insert the RFX-P1 option board to the 4 pins (3V3, GND, 1, 2)

For the RFX-P1 saw a 2mm small slot in the bottom part of the enclosure.

The RJ12 6P6C cable is used to connect the RFXP1 to the smart meter.

In case a RJ12 6P4C is used: remove R2 and solder a 3K3 resistor on the location R3(NP).

Configure P1

The connection can be tested in RFXmngn.

Select the correct parameters and click Set Async port.

Important: the P1 connection must be present!

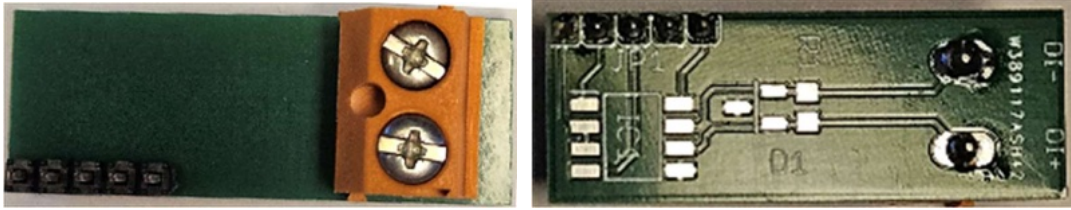
Chime	Fan	Curtain	Blinds1	RFY	Security1	Camera	Remote	Tstat1	Tstat2	Tstat3	Tstat4	Radiator1	Security2	Async
Command	Receive P1		Transmit Async Port command											
Baudrate	115200													
Bits	8													
Parity	No													
Stopbits	1													
Polarity	Inverted													

Select the correct parameters for your smart meter:

Meter Brand	DSMR version	ID	Baudrate	Bits	Parity
Iskra ME382, MT382	2.2	/ISK5	9600	7	E
Iskra AM550	5.0	/ISK5	115200	8	N
Kaifa E0003,E0025,MA105,MA304	4.0	/KFM5	115200	8	N
Kamstrup 162,351,382	2.2	/KMP5	9600	7	E
Landis+Gyr E350 ZCF100,ZCF110,ZFF100,ZMF100	4.0	/XMX5LG	115200	8	N
Sagemcom XT210	4.0		115200	8	N

Pin #	Signal name	Description
1	+ 5V power	Power supply (not used by the RFXtrx433XL)
2	RTS	Request to Send
3	GND	Data GND
4	NC	Not connected
5	RxD	Data output to the RFXtrx433XL
6	GND power	Power GND (not used by the RFXtrx433XL)

10.3. RFX-MODBUS

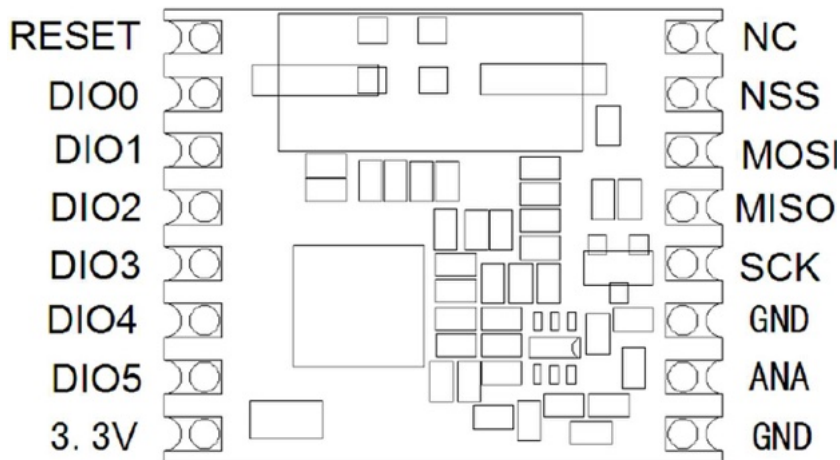


R1 is a termination resistor. A 120ohm resistor is installed but can be different depending on the configuration.

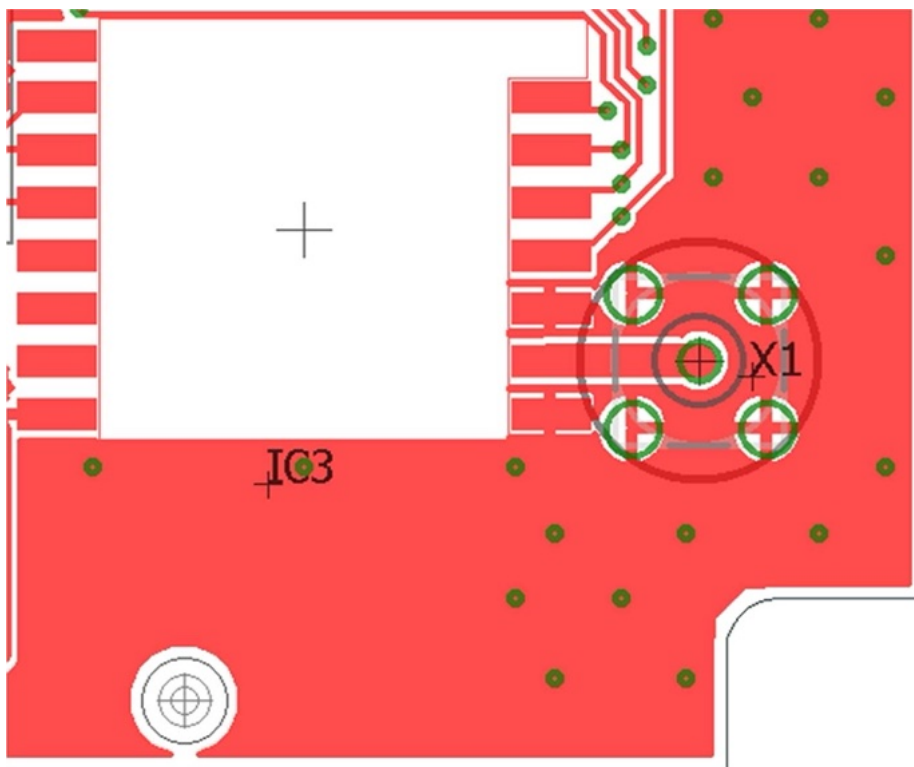
This board and RFX transceiver software is planned for later and not yet available.

11. ASK/FSK transceiver

For 433/868/915MHz ASK/FSK the RFM69HW module is soldered on the component side. With the 433MHz RFM69HW you can use the RFX433 software. With this software, the module is supported by all applications that support the RFXtrx433/RFX433. This solution can also be used with open-source software.

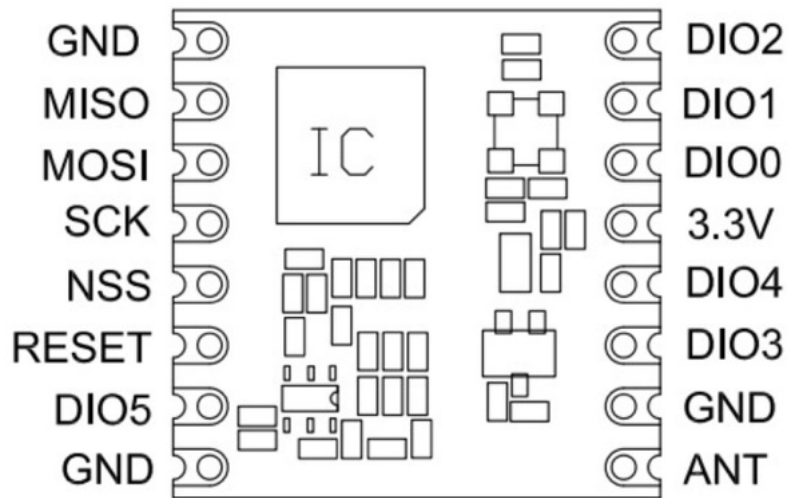


Solder the RFM69HW module correct with the ANA pin connected to the antenna connector. Solder the SMA antenna connector with the antenna connection on the backside!!! Measure the connections, to find the IO pins used on the ESP32-S3.
Note: DIO3, DIO4, DIO5 and RESET are not connected.



12. LoRa option

For LoRa you can solder the RFM95 module and SMA antenna connector on the PCB. This solution can be used with available open-source software. It does not operate together with RFXCOM RFX transceiver software!



Solder the RFM95 module correct with the ANT pin connected to the antenna connector. Solder the SMA antenna connector with the antenna connection on same side as the RFM95 module.

Measure the connections, to find the IO pins used on the ESP32-S3.

Note: DIO3, DIO4 and DIO5 are not connected.

