



Astra-WE 433

Wireless Extender 433 MHz

Operation Manual

The present Operation Manual is intended to provide guidance on operating principles; correct use, storage and maintenance of the Wireless Extender WE 433 MHz (see Figure 1).

The manufacturer reserves the right to make improvements in the design of the receiver without prior notice. The alternations shall be included into a new edition of the Operation Manual.

The technical features of the product not indicated in the passport in terms of design, software and circuit solutions are standard for the product, if they do not worsen the declared technical characteristics. The consumer, due to dissatisfaction with the technical features not indicated in the passport or the changes made, has the right to return the product to the seller while maintaining the presentation of the product and within the time limits established by law, with a full refund of the previously paid money.

List of Abbreviations:

Astra-421 ver. RF - Wireless smoke detector, optical-electronic, 3 V DC power (2x CR123 batteries), wireless coverage range 300 m;

Astra-431 ver. RF - Wireless heat detector, maximum-differential; 3 V DC power (2x CR123 batteries), wireless coverage range 300 m.

Astra-4511 - Wireless manual fire alarm call point, 3 V DC power (2x CR123 batteries), wireless coverage range 300m

Astra-3221 - Wireless panic button, noiseless, stationary use capability, wearing with a clamp or chain, 3 V BC power (2x CR2430 batteries) wireless coverage range 1000 m

Astra-3731 - Wireless temperature detector, supports connecting external wired temperature detector, temperature range -30 to +55 °C, or -50 to +125 °C with external wired detector, 3,6 V DC power (LS14500 battery), wireless coverage range 300m

Astra-3221 - Wireless siren, 3 V DC power (CR123 battery) or 12 V DC power, wireless coverage range 300 m

Astra-8231 - Wireless power relay module, power relay (5A, 250V), 3V DC power (CR123 battery) or 12 V DC power, wireless coverage range 300 m

Astra-8731 - Smart socket, powered from mains power 100-250 V, wireless coverage range 300 m

RPP2 - a wireless module built into WE 433;

Astra-RC – Wireless remote control and panic button, 3V DC power (CR2430 battery), wireless coverage range 1000 m;

CP - Control Panel;

Astra-WE 433 - Wireless Extender (WE) 433 MHz;

RTR - Wireless Extender WE 433 MHz operating in repeater (retransmitter) mode;

PKM Astra Pro - monitoring software package "Astra Pro" (available on the website www.teko.biz)

433 MHz System - wireless fire and security alarm system "Astra-433 MHz"

1 Function

1.1 The WE 433 is designed to receive and decode notifications from registered wireless devices of the Astra-433 MHz system operating at frequencies 433.42-434.42 MHz, and transmit notifications to built-in leds, built-in relay and open collector output, as well as via a two-wire RS-485 interface to connected devices:

- Control Panel (in system mode)
- indication units Astra-863 ver. A and relay units Astra-823, Astra-824 (in standalone mode)

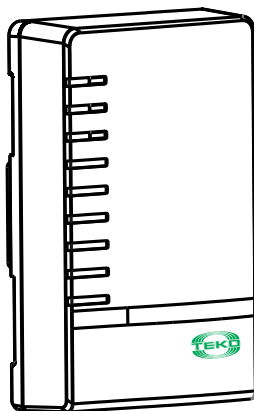


Figure 1

1.2 It cannot be used for fire systems and fire detectors like: Astra-4511, Astra-421 ver. RF, Astra-431 ver. RF can be used for security alarms of apartments and private houses.

2 Delivery Set

Wireless Extender Astra-WE 433.....	1 pcs.
Whip antenna.....	1 pcs.
Screw 2.9×25.....	4 pcs.
Dowel 5×25.....	4 pcs.

3 Specifications

Power supply voltage, V.....10 – 28
Average current consumption** in standby mode and "Alarm" mode at a voltage of 12 (24) V, mA, not more:

- without relay and open collector output	40 (23)
- when using one relay output ***	45 (25)

Current consumption, mA, max:

- 12 V	100
- 24 V	80
Boot time, sec, max	60

Wireless channel parameters:

Operating frequency range, MHz	433±0.2%
- frequency 1	433.42
- frequency 3	434.42
Wireless coverage range of Astra-RC, Astra-3221, m*	1000
Wireless coverage range of Astra-WE 433 as repeater, m*	1500
Wireless coverage range of other devices, m*	300

Parameters of relay outputs (RELAY1, RELAY2, RELAY3):

Maximum load voltage, V	100
Maximum load current, A	0.1

Parameters of OC output:

Maximum load voltage, V	27
Maximum load current, A	1.5
Maximum length of interface RS-485, m,	1000
Overall dimensions, mm.....	136 × 86 × 38
Weight, kg, maximum.....	0.14

Touch Memory output (terminals TM+, GND):

Maximum load voltage, V	5
Maximum load current, A	0.005

Operating conditions

Temperature range, °C.....	from -10 to + 55
Relative air humidity, %.....	up to 98 at +40°C without moisture condensation

** Excluding power supply to external units, relay output loads and "open collector"

*** Each activated relay increases the current consumption by 5 (3) mA

**** In line of sight. The operating range largely depends on the design features of the room, the interference environment. The maximum range is achieved when the wireless device and WE 433 are installed in the best possible conditions

4 Main information and features

4.1 WE 433 setup and maintenance is carried out with the help of materials (Instructions, PKM Astra Pro, etc.) posted on the website www.teko.biz.

4.2 WE 433 works only in 2* wireless

4.3 WE 433 can operate in the following modes:

- offline mode
- system mode (installed by changing the firmware using the FW update module of the PKM Astra Pro software)
- repeater (set via jumper in standalone or system mode)

4.4 Offline (with firmware version RRa-rim-av4_x and above) WE 433 provides:

- registration and processing of up to 48 wireless devices of the 433 MHz, including RTR with one relay level, of which:
 - * detectors - up to 48
 - * Temperature detectors Astra-3731 - up to 4
 - * Siren Astra-2331 - up to 4
 - * Relay unit Astra-8231 - up to 4
 - * Relay unit Astra-8731 - up to 4
- processing the status of the input BRR Astra-8231
- operation of the outputs of the Astra-2331, Astra-8231, Astra-8731, RTR as system ones, the total number of outputs is 16
- control of system outputs by pressing the buttons "Arm" ("disarm") on the registered WE 433
- control of the TM output (switch mode) or the issuance of a code in the format of a real identifier Touch Memory when the "Arm" ("Disarm") button is pressed on the registered WE 433

Notice:

RTR provides guaranteed operation on the TM line in the mode of issuing a Touch Memory code only with the Astra control panel.

- Alarm notifications and statuses from registered wireless devices to built-in indicators, built-in relays, an "open collector" type output and via the RS-485 interface to Astra-863 display units (up to 2 pcs.) and Astra-823/824 relay units (total number up to 6 pcs.)

4.5 In system mode (with firmware version sysRR-rim_av5_5 and higher), RTR provides:

- operation with Control Panel via RS-485 interface as a wireless zone extender

4.1 WE 433 represents a unit consisting of a base and a removable cover. Mounted inside the block is a printed circuit board (PCB) with wireless elements (Figure 2).

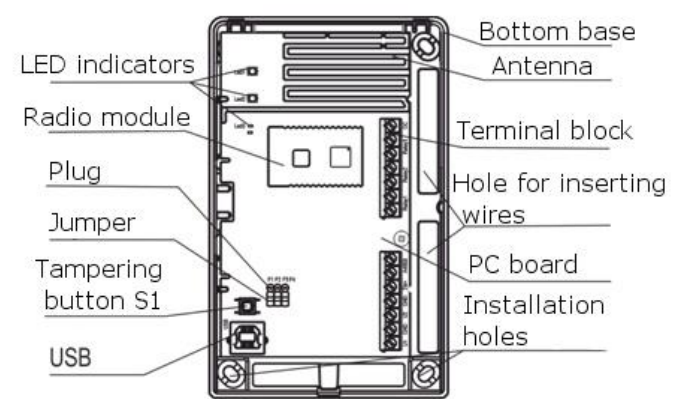


Figure 2

4.2 Mounted on PCB is a USB 2.0 connector for communication with PC.

4.3 Mounted on PCB is terminal block (Figure 3) described in Table 1.



Figure 3

Table 1

Terminals	Terminal function
U1(+), GND(-)	Input for connecting the main power supply unit 12V or 24V
U2(+), GND(-)	Input for connecting a backup power supply unit 12V or 24V
OC	Open collector type output.
TM+	Not applicable in present firmware version of WE 433
A 485 B	RS-485 interface for connection to CP
Relay1, Relay2, Relay3	Relay outputs

5 Operation Modes

5.1 Default Settings

- Firmware version RRa-rim-av4_1,
 - Standalone mode
 - Frequency 1,
 - RF supervision time - 10 minutes
 - Auto-assigning to relays:
 - Intrusion type detectors assign to **relay1**
 - Fire alarm type detector and panic buttons assign to **relay 2**
 - Connection failures – **relay 3**
 - Power failures – **OC**
- Relay mode: relay opens when such events are coming.

5.2 Operation modes of standalone receiver

Operation modes to be set up using F1, F2 plugs are described in Table 2.

NOTE

Operation modes of **extender mode** set by CP using Astra-L communication protocol.

Table 2

Plug	Jumper position	S1 button	Operation mode
F1	+	short pressing	select operation mode (Wireless extender / Repeater)
	+ before powering up	-	firmware update
F2	+	pressing (until the indicators turn off)	default settings restore
	+	short pressing	assigning wireless device
F3	+	short pressing	switching frequency
F4 is not applicable			

5.3 Selecting Standalone or RTR mode

- 1) Power the device on.
- 2) Install jumper on F1 plug,
- 3) Led1 and Led2 indicators start blink **synchronously green** in series of flashes.
Number of flashes in a series means:
 - 1 – Standalone mode (default),
 - 2 – RTR mode.
- 4) Press shortly **S1 button** to change the mode.
- 5) After the required mode has been set, remove the jumper from **F1** plug.

5.4 Selecting wireless frequency

- 1) Power the device on
 - 2) Install jumper on F3 plug
 - 3) Led1 and Led2 indicators start blink **synchronously green** in series of flashes.
- Number of flashes in a series means:
- 1 – Frequency 1 (default),
 - 2 – Frequency 3.
- 4) Press shortly **S1 button** to change the frequency.
 - 5) After the required mode has been set, remove the jumper from **F3** plug.

6 Assigning of the wireless devices

6.1 Assigning of the wireless devices

- 1) Power on the WE
- 2) Set standalone mode (see p. 5.3)
- 3) Close **F2** plug
- 4) Press **shortly** (for 0.5 - 2 sec) **S1** button, the **Led2** indicator turn on **yellow** for the 60 sec.
- 5) Install battery into wireless device
- 6) Successfully assigning: **Led2** starts flashing green

NOTE
Unsuccessfully assigning: **led2** starts flashing red.

6.2 Default Settings Restore

- 1) Close **F2** plug.
- 2) Press **S1 button** and hold it within 5-10 sec (until the indicators Led1 and Led2 turn off)
- 3) Then Led1 and Led2 indicators turn on **red**
- 4) After turn off of indicators – default settings restored (see p. 5.1)

NOTE
Complete configuration (add RS-485 extenders, relay mode configuring) of WE 433 as a standalone receiver available from software Pconf-RR.

7 Installation

7.1 Select Mounting Location

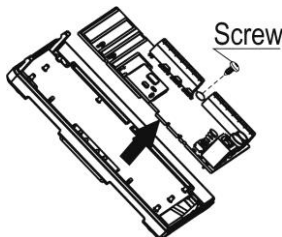
- 7.1.1 WE 433 performs best for maximum coverage when installed at a maximum height (not lower than 2m).
- 7.1.2 Avoid running power supply cables and RS-485 interface wires closer than 1 m to heavy duty power lines and high –frequency cables.
- 7.1.3 Avoid the following locations for WE 433:
 - massive metal constructions or closer than 1m from them;
 - closer than 1m from power mains and metal water or gas pipes which may cause wireless interference;
 - inside metal constructions.

7.2 Installation Procedure

Step-1
Push out base lock from cover slot. Remove the cover

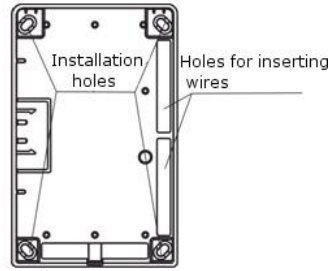


Step-2
Remove the PCB by unscrewing bottom screw.



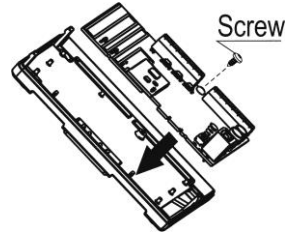
Step-3

- Mark mounting holes on a selected surface using bottom base of the WE 433 as a template.
- Insert power supply and RS-485 interface wires through the wire insertion hole.
- Mount the base of WE 433.



Step-4

Replace PCB, and fasten it with the screw.



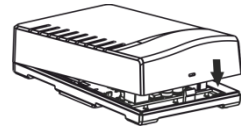
Step-5

Wiring to the WE 433 output terminals must be performed as shown in the Figure and considering Table 1.



Step-6

Close the cover until it clicks.



8 Warranty

The operation warranty period is 5 years from the date of manufacturing, which is indicated on housing and packing box of the device.

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