

Inova-bg Ltd.

Radina U2

Table of contents:

1.	Main features	3
2.	Start working with Radina U2	4
3.	Programming software: Programmer Radina P3	5
3.1.	General Settings	5
3.2.	Settings for the digital inputs	6
3.3.	Saving the new configuration	7
3.4.	Reading configuration from device	7
3.5.	Open/Save configuration	7
4.	Hardware reset	8
5.	How to determine the height of the antenna	8
6.	Hardware AC connection	9
7.	Mounting in the security panel box	10

1. Main features

Radina U2 is a communication device with the main purpose to transmit data from security panels and/or sensors through UHF radio channel. Using the advantages of the most advanced communication technologies Radina U2 provides the most secure connection with monitoring center, using various ways of transmission – 1 main and up to 4 back-up UHF radio frequencies.

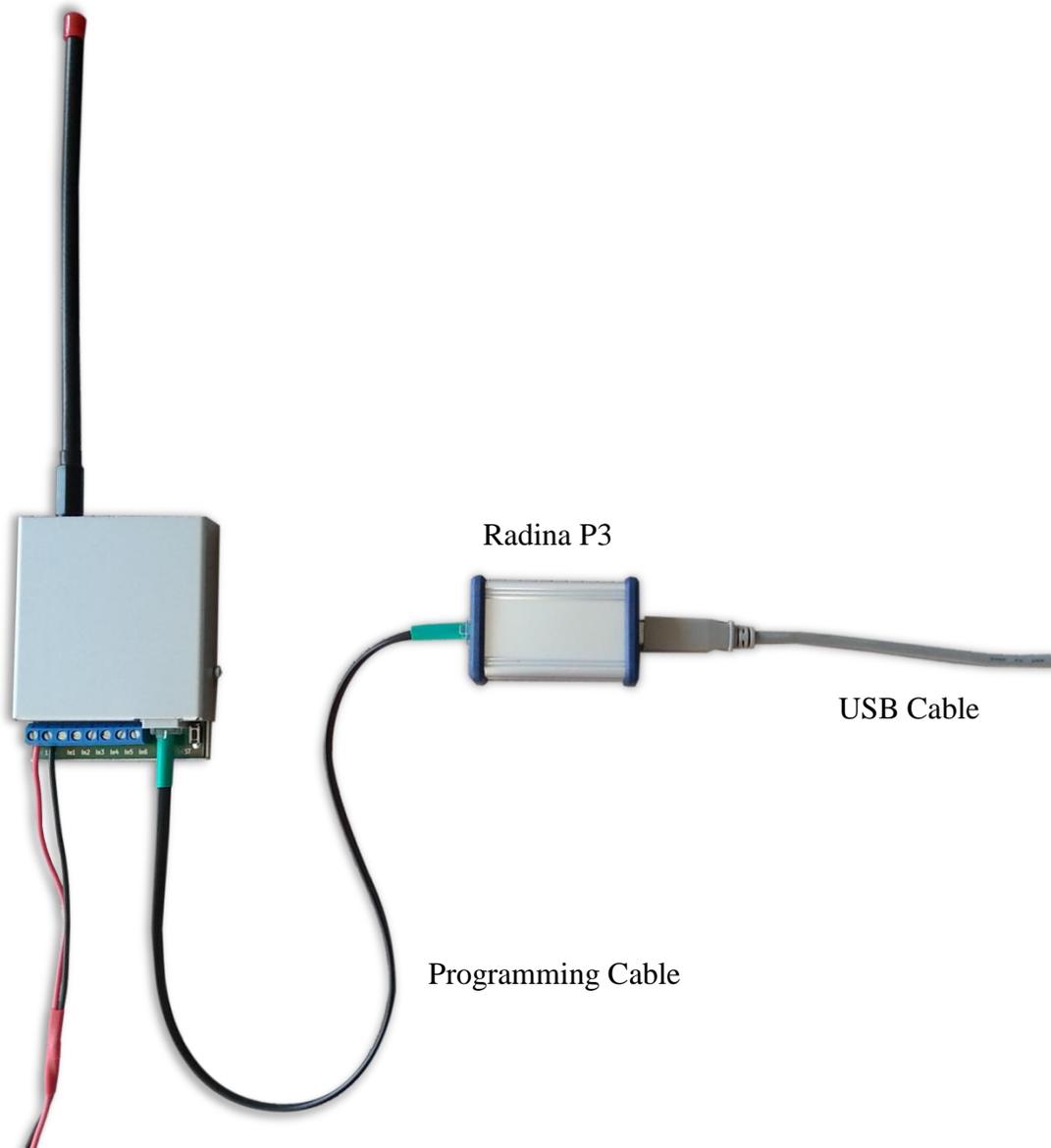


Features:

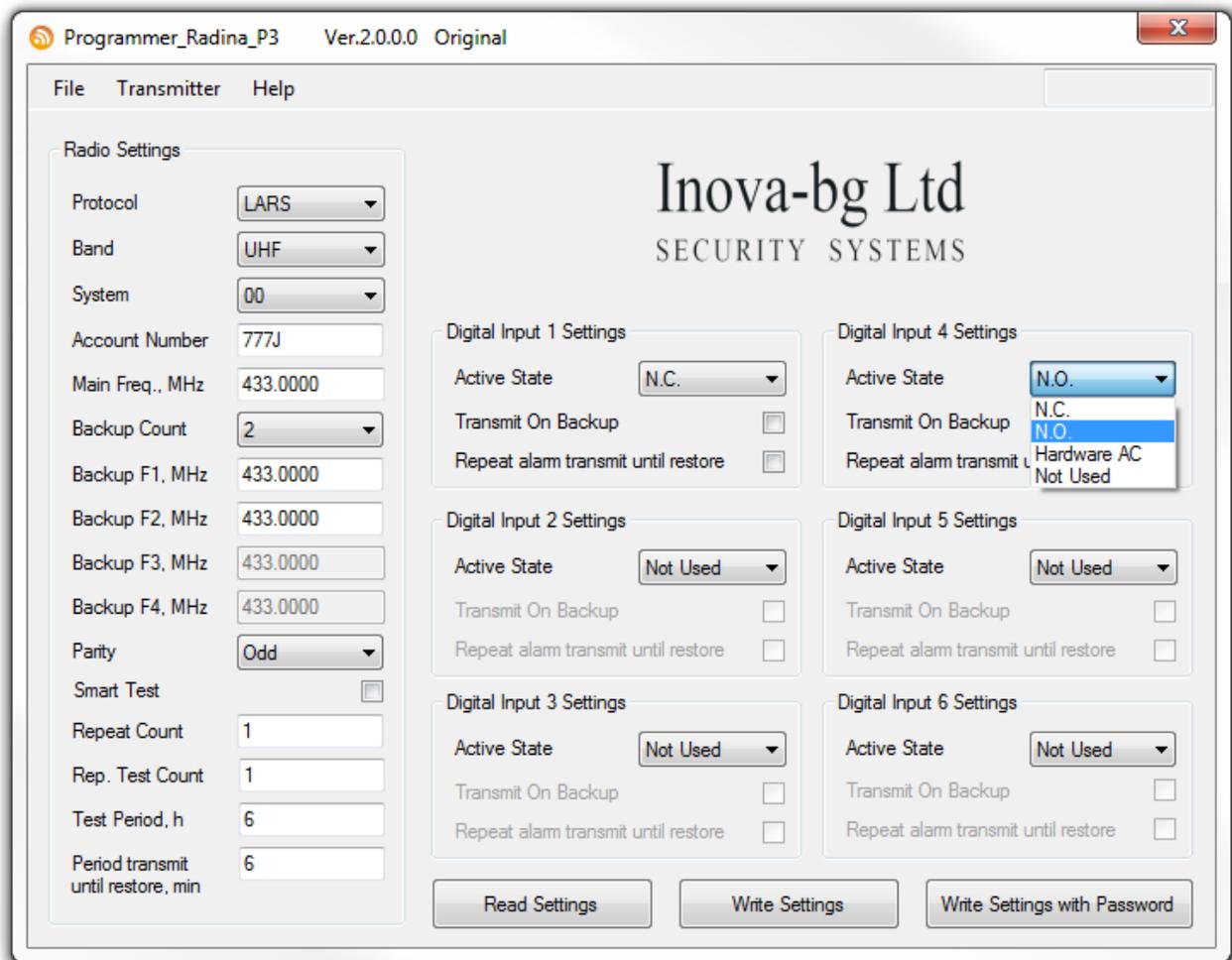
- Power supply 12VDC (8,5V to 16V)
- Low power consumption
- Frequency range – from 400MHz to 468MHz
- RF Output power – 5-6W in the whole RF range
- Bandwidth – 12,5KHz
- One main and up to four back-up frequencies
- Configurable parity check, RF messages repeat count, RF test repeat count, test period and “repeat until restore” period
- Usage of a Smart Test to reduce radio transmitting
- Six digital inputs working with the RF transmitter
- Capability every digital input separately to be set to transmit on backup RF frequency
- Capability every digital input separately to be set to re-transmit RF message over a period of time until it is in alarm state
- Configurable working mode for every digital input:
 - Normal Open
 - Normal Close
 - Check for AC voltage from 5V to 20V
 - Deactivated
- Easy configuration, protected with password

2. Start working with Radina U2

Connect the programmer Radina P3 to the USB port of your computer. If drivers are not installed, please download them from the download section on our web site <http://www.inova-bg.com/en/downloads.html>. After that start the programming software: **Programmer Radina P3**.



3. Programming software: Programmer Radina P3



3.1. General Settings

Protocol – Select Protocol – LARS, LARS II*, Electronics Line

Band – Programmer Radina P3 can work with both UHF and VHF transmitters. An appropriate band must be selected here, corresponding to the type of device which is connected.

System – System number.

Account Number – The first 3 symbols must be from 0 to 7. The last symbol must be from 0 to 9 or from A to J. In the monitoring software you can select how to use the last symbol – as a digit or as a letter.

Main Frequency – Main frequency for radio transmitting. Can be from 400 to 468 MHz with maximum of four symbols after the decimal point.

Backup Count – Number of used backups

Backup 1,2,3,4 – Backup frequencies for the radio transmitting. Can be from 400 to 468 MHz with maximum of four symbols after the decimal point. For each digital input you can choose whether to transmit or not on the backup frequencies.

Parity – Parity check – Odd or Even.

Use Smart Test – When activated test messages will be sent over a period of time, set by the field **Test Period**, and this time will be restarted after every transmitted message regardless if it's a test message or not. This option will reduce the number of test messages transmitted through the radio channel. **Use this option only if your monitoring software supports it.**

Repeat Count – Determines how many times the data message will be transmitted through the radio channel. Must be from 1 to 15. Default – 6.

Repeat Test Count – Determines how many times the test message will be transmitted through the radio channel. Must be from 1 to 15. Default – 1

Test Period – Determines the time period (in hours) between test messages. Must be from 1 to 255. Default – 5

Period transmit until restore, min – Determines how often (time period in minutes) to repeat the alarm message until the corresponding digital input is not restored. This option can be enabled separately for each digital input. Default – 5

3.2. Settings for the digital inputs

Digital inputs can be connected to PGM outputs of security panles or to any different kind of sensors – panic-buttons, tampers and etc. In the **Active State** field you can set the working mode of each input – normal close (N.O.) or normal open (N.C.) contact, check for AC on this input (Hardware AC) or you can disable the input (Not Used). When digital input is connected to PGM or dry contact, for '0' state is accepted value of the resistance to ground less than 300 Ω and for active '1' – value more than 1,4K Ω (or open circuit), the hysteresis is between 300 Ω and 1,4K Ω . If digital inputs are controlled by voltage for '0' state is accepted value of the voltage to ground less than 0,7V, and for active '1' – value more than 2,6V, the hysteresis is between 0,7V and 2,6V.

Radio messages are transmitted through radio channel for each input – **A1 to A6** for alarms on this input and **B1 to B6** for restore. For each input you can set the following parameters:

Transmit on backup – Determines whether to send messages for this input on back-up channel or not.

Repeat Alarm Transmit Until Restore – Determines whether to repeat messages for this input until it is in alarm state - using the **Period transmit until restore, min** field to make pauses between repeats.

3.3. Saving the new configuration

There is two ways to save the configuration on each device - with or without a password. This is done by the buttons - **Write Settings** and **Write Settings with Password**.

Write Settings - If this button is used the device configuration will be saved without a password.

Note: If previously a password is used, it must be entered before saving the new configuration.

Write Settings with Password – If this button is used the device configuration will be saved with a password. After that, every attempt to read or re-write the configuration will require a password.

Note: If previously a password is used, it must be entered before saving the new configuration.

If everything is OK, a confirmation window will be displayed.

3.4. Reading configuration from device

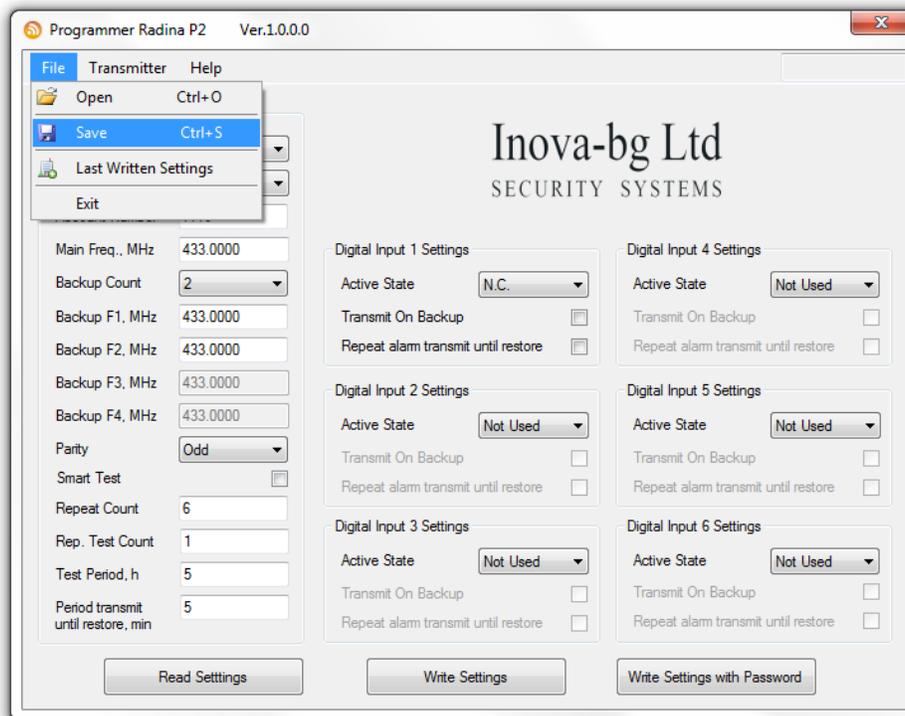
This can be done by pressing the button - **Read Settings**. If previously a password is used, it must be entered before reading the configuration.

3.5. Open/Save configuration

In the File menu, there is buttons **Open** and **Save**.

By pressing the **Save** button, current configuration can be saved and to be used again very easy.

With the **Open** button, a saved configuration is loaded.



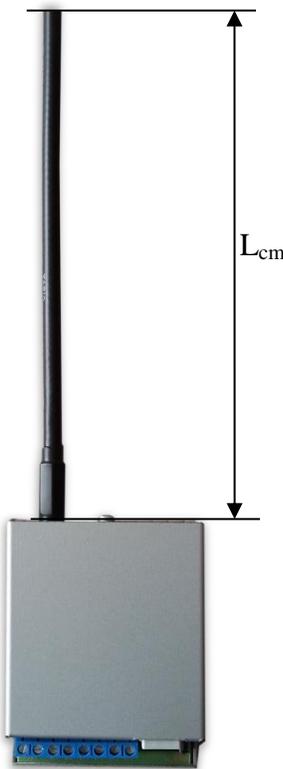
4. Hardware reset

In case you changed the settings and can't reach the device or if you forgot your password, Radina U2 is capable to return to its factory defaults. For this purpose you must disconnect from power supply, push and hold the button for hardware reset and reconnect to the power supply. Hold the button for 5 seconds until the LED is blinking. Once the LED goes off you can release the button and connect to the device.

5. How to determine the height of the antenna

The height of the antenna is determined by the radio frequency. If you use more than one radio frequency – make a compromise between all the frequencies. Put the antenna on its place, remove the plastic cap on the top – start measuring from the end of the box.

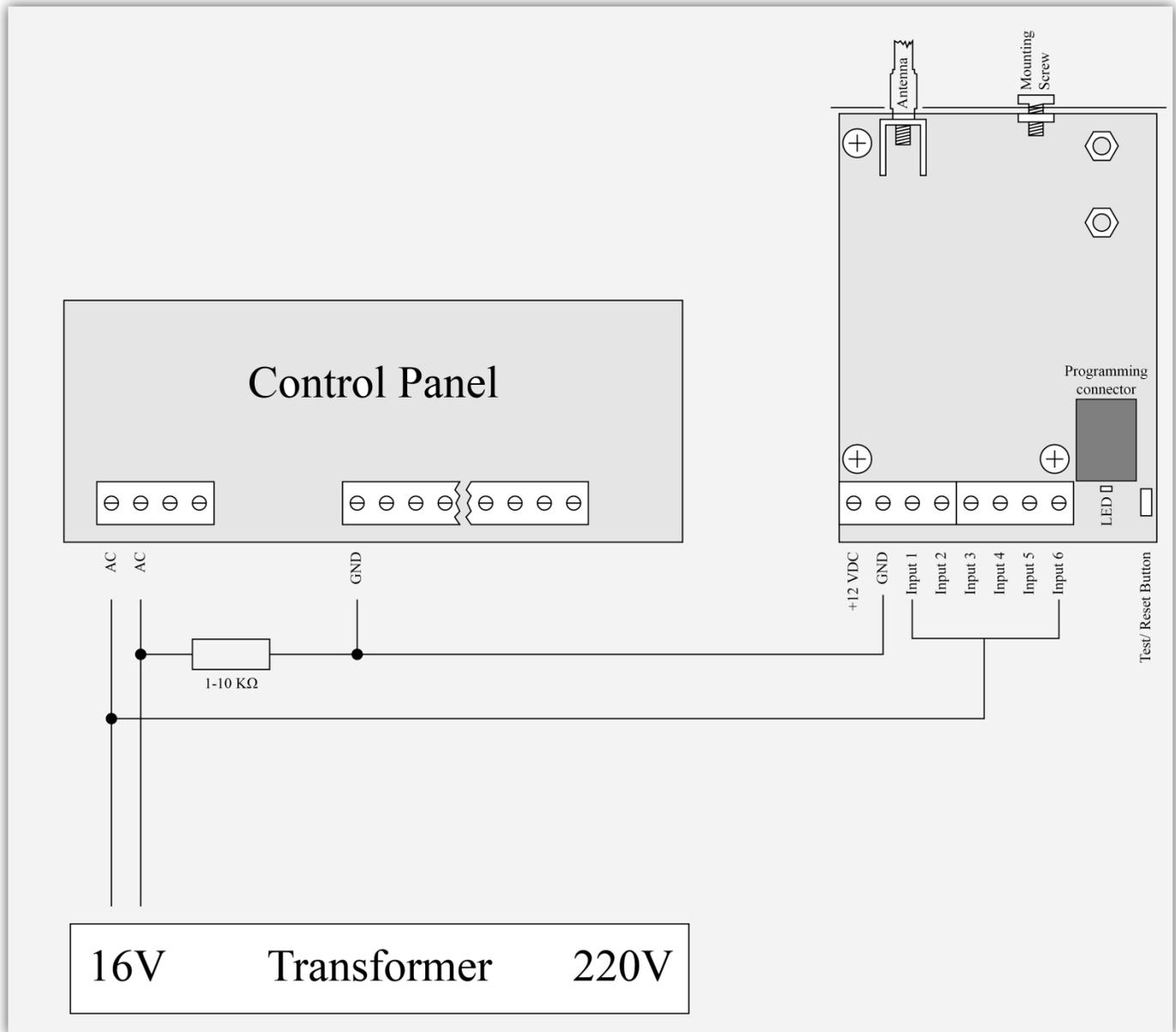
$$\text{Height, cm} = 7500 / \text{Frequency, MHz} : L_{\text{cm}} = 7500 / F_{\text{MHz}}$$



Frequency F_{MHz}	Formula	Height of the antenna L_{cm}
400.0000 MHz	$7500 / 400$	18.75 cm
410.0000 MHz	$7500 / 410$	18.29 cm
420.0000 MHz	$7500 / 420$	17.86 cm
430.0000 MHz	$7500 / 430$	17.44 cm
440.0000 MHz	$7500 / 440$	17.05 cm
450.0000 MHz	$7500 / 450$	16.67 cm
460.0000 MHz	$7500 / 460$	16.30 cm
470.0000 MHz	$7500 / 470$	15.96 cm

6. Hardware AC connection

Each of the digital inputs could be used as a “Hardware AC” input. In this mode it will monitor the AC and generate a message for “AC Loss/AC Restore”.



7. Mounting in the security panel box

The mounting screw on the top of Radina U2 should be used for proper mounting of the device in the box of the security panel. The pictures below shows how to use it.

