NODER PARKING SYSTEM

Parking space occupancy detection system

Start-up and configuration manual

Ver.1.1_052024

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1. Protection

Read this instruction before installing this product. The manufacturer is not responsible for any malfunction or damage to the equipment resulting from failure to follow the instructions. Damage caused by incorrect installation, maintenance or operation is not covered by the warranty. Making any changes to the unit that are not authorised by the manufacturer or carrying out independent repairs will result in the loss of rights under the warranty. Installation should be carried out by a person with appropriate electrical authorization.

2. Warning

Electric device under voltage! Before performing any activities related to the power supply (connecting wires, installing the device, etc.), make sure that this device is not connected to the power supply. During installation, discharge your electrostatic charge by touching a grounded component each time before installation to avoid voltage surges. The installation should be carried out by a person with the appropriate electrical license.

3. Device description

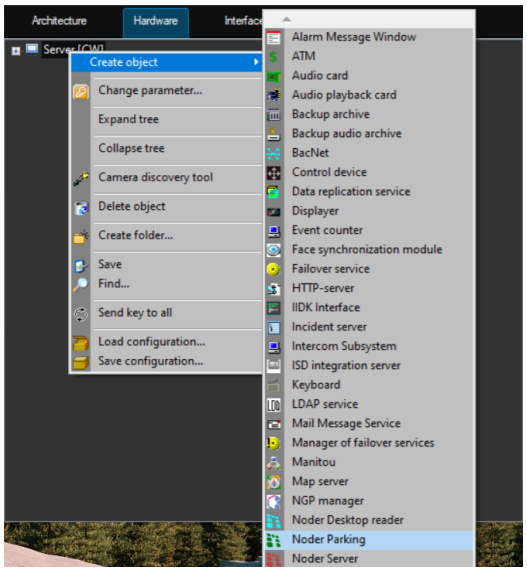
The NODER Parking Space occupancy detection system is based on integrated ultrasonic sensors with visual signaling and IP concentrators. The sensors, mounted above each parking space, make it possible to unequivocally determine the presence of a given vehicle and inform about the status of a given parking space (free or occupied). The sensor uses ultrasonic technology to detect the status of a parking space, and then controls the LED accordingly to display the correct color and let the driver know where the available space is. The sensors are connected to each other in groups using devices, called hubs. Each hub operates the sensors via four independent RS-485 buses, and the hub allows the sensors to exchange data directly with the integrated platform via TCP/IP protocol.

4. Configuration of the NODER Parking module

The **Displayers** and **Norder Parking** modules must be installed for the parking system to operate. Instructions compatible with the module versions:

- **Displayers – 2.0.0.20**
- **Noder Parking – 1.0.0.15**

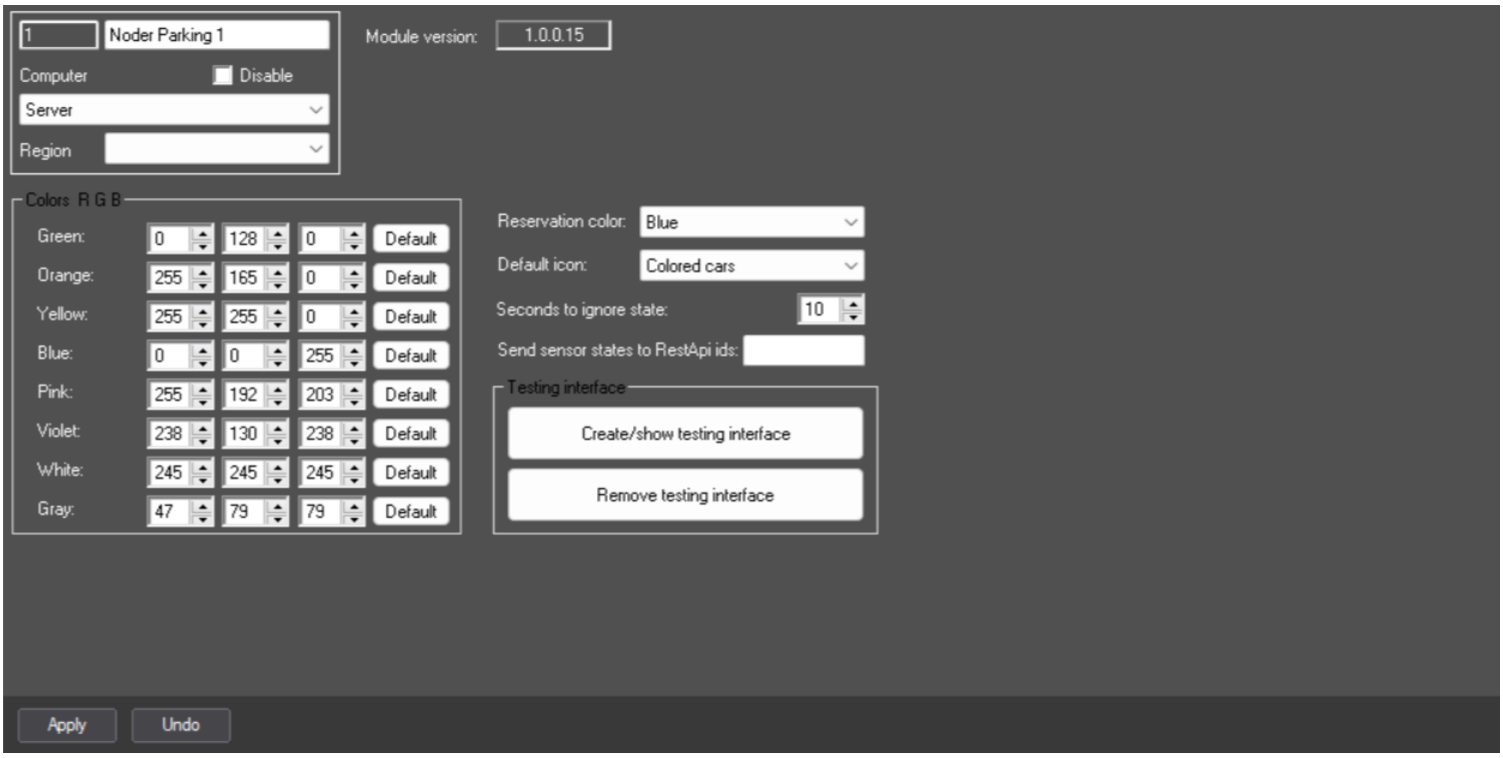
Configuration of Noder Parking system elements is done from the server's administration panel. In the **Hardware** tab of the server on which the module is to work, add a new object named **Noder Parking** via the **Create object** option.



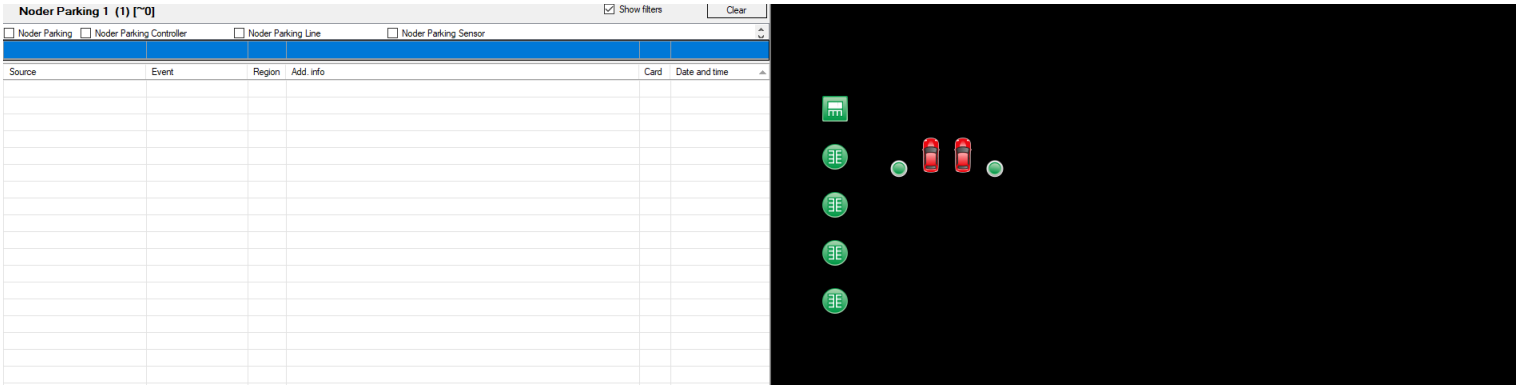
Once an object has been added, a window will open allowing you to specify the name and ID of the object.

4.1 NODER Parking

After creating the Noder Parking object, its configuration window will open.



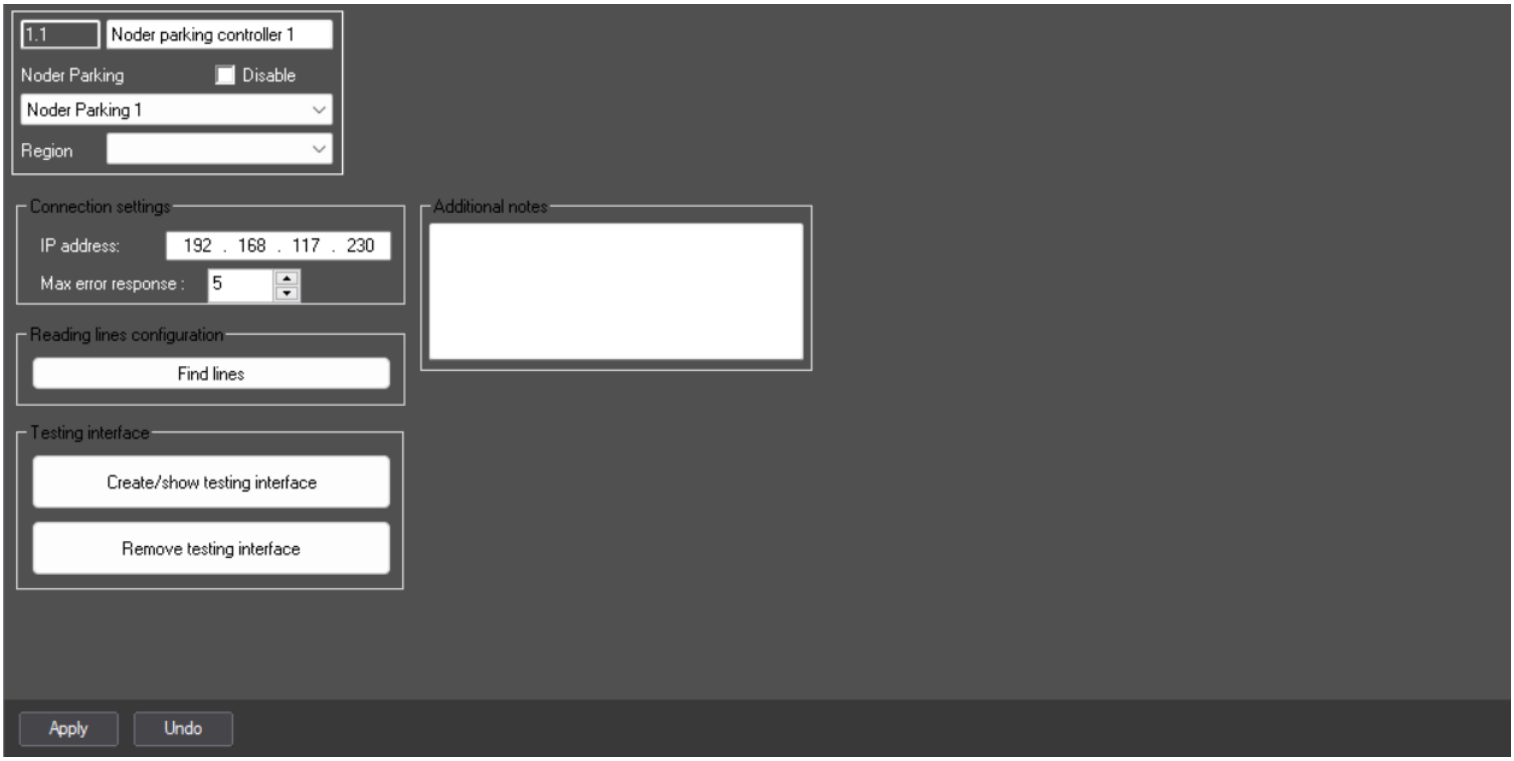
1. **Module version** – the current version of the module.
2. ***Colors R G B*** – allows you to change the default colors. To return to the default color, click **Default**.
3. ***Reservation color*** – allows the system administrator to set the default booking color.
4. ***Default icon*** – allows you to set a default icon on the visualisation.
5. ***Seconds to ignore state*** – allows you to set the time after which the status of a space will change to vacant/occupied. Setting too short a time may generate incorrect statuses.
6. ***Send sensor states to RestApi ids*** – sends the sensor states to RestApi.
7. ***Create/show testing interface*** – creates an interface containing sub-elements of the object in the form of a map and an event viewer. Below is an example of a test interface.



8. ***Remove testing interface*** – removes the test interface.

4.2 NODER Parking Controller

By right-clicking on the Noder Parking object, create the Noder Parking Controller object. The object is used to connect to the parking system controller (NODER CONC-4RS485 Controller).



1. ***Connection settings*** – this option allows you to enter the IP address of the concentrator and to specify the maximum number of incorrect responses.
2. ***Find lines*** – option allows the automatic search for lines to which the parking system sensors are connected. After executing the command, new objects described as **Noder Parking lines** will appear in the tree.
3. ***Create/show testing interface*** – creates an interface containing sub-elements of the object in the form of a map and an event viewer.
4. ***Remove testing interface*** – removes the test interface.
5. ***Additional notes*** – allows you to enter notes (e.g. information about the physical location of the device). It does not affect the operation of the concentrator.

4.3 NODER Parking Line

Once the line has been found, clicking on its object will open its configuration window. Alternatively, by right-clicking on the **Noder Parking Controller** object, a **Noder Parking Line** object should be created. The object is used to connect to the sensors of the parking system.

1. ***Connection settings*** – this option allows you to input the port number of the concentrator and to specify the maximum number of wrong answers.
2. ***Reading sensors configuration*** – option allows automatic search for sensors. The **Name prefix** allows the initial name of each added sensor to be set (e.g. describing the line number). The **Start index** determines from which address the sensors will be searched. Once you have configured these settings and clicked **Apply**, you can start searching for sensors by clicking **Find Sensors**.

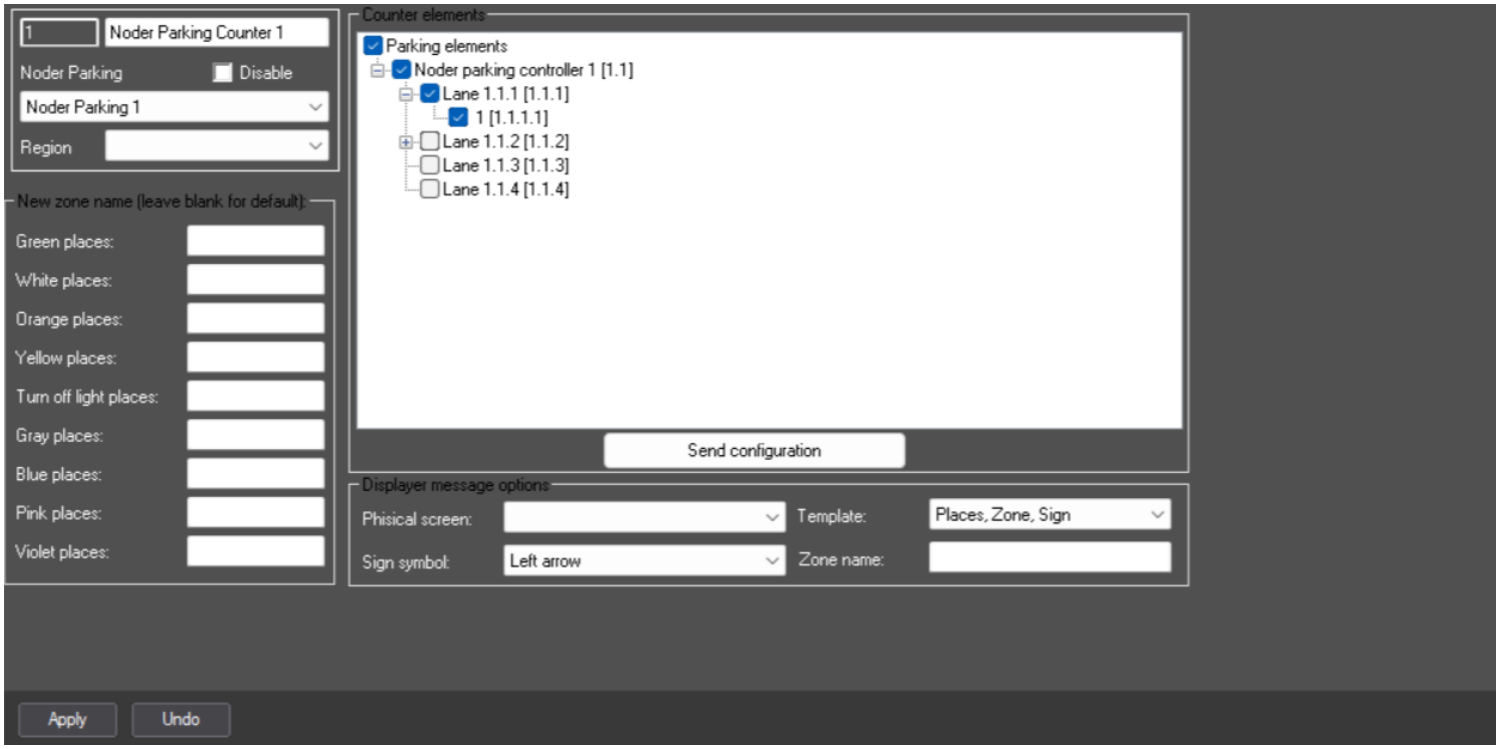
4.4 NODER Parking Sensor

After finding the sensors, clicking on its object will open the configuration window.

1. ***Settings*** – this option allows the choice of an icon representing a particular sensor on the visualisation and the selection of another address.
2. ***Get distance*** – option to measure the distance between the sensor and the ground.
3. ***Notes*** – allows you to enter notes (e.g. information about the physical location of the device). It does not affect the operation of the concentrator.
4. ***Signed to counters*** – displays to which counters the sensor is assigned.

4.5 NODER Parking Counter

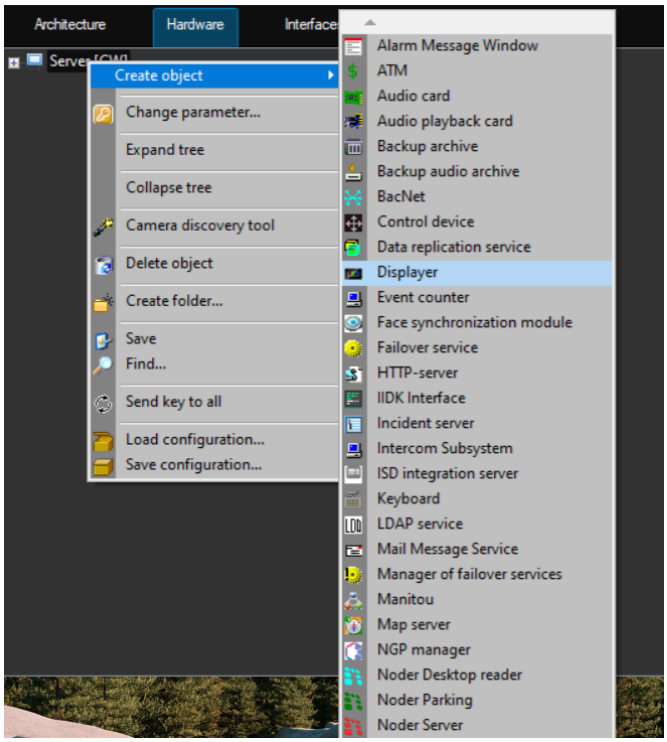
The Noder Parking Counter object is used to display data to the LED Display Board and to inform the operator of the number of available parking spaces. To create it, right-click on the **Noder Parking** object and create the **Noder Parking Counter** object.



1. ***New zone name*** – the option allows you to set counter data for different types of users. When the sensor colour is changed (from the visualisation level using the system command), the zone data will be updated in the counter.
2. ***Counter elements*** – option allows the selection of the sensors to be used in a given counter.
3. ***Send configuration*** – after creating/changing the configuration for a particular counter, call the action.
4. ***Phisical screen*** – to the counter can be assigned a physical LED board with information on the number of parking spaces.
5. ***Sign symbol*** – assign an arrow to the screen displayed on the counter with the direction in which the cars are to travel to the zone.
6. ***Template*** – allows you to define the order in which the data is displayed on the LED board.
7. ***Zone name*** – zone name displayed on the LED board.

5. Displayer module configuration

The configuration of the LED Boards system components is carried out from the server's administration panel. In the Devices tab of the server on which the module is to operate, add a new object called **Displayer** via the **Create object** option.



Once the object has been created, the configuration window opens:

5.1 Displayer

The object is used to configure the LED board. It allows changing the network configuration of the board, setting template colours, etc.

1. ***Screen settings*** – option allows you to select the board resolution (128x32 supplied by default) and a template that divides the screen into 3 segments of specified width.
2. ***Template colours*** – option allows you to select a colour for each section of the display.
3. ***Image settings*** – option allows you to send an image in **png** format. To do this, indicate the path with the image and click **Send Image**.
4. ***Connection network params*** – to connect to the board, enter its current IP address.
5. ***Changing network settings***– once connected to the board, the administrator can change the IP address of the board using this option. After entering the new settings to apply them, click on the **Change network settings button on the device**.