

# IDR-2050

## User Manual

**Version 0.9 PRELIMINARY**



[www.innosent.de](http://www.innosent.de) – Leading in radar

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## CO-APPLICABLE DOCUMENTS

REFERENCE	DOCUMENT
[1]	IDR-2050 Data Sheet
[2]	IDR-2050 RadarAPI readMe
[3]	IDR-2050 Quick Start Guide
[4]	IDR-2050 Interface Protocol

## REVISION HISTORY

VERSION	DATE	COMMENT
0.9	2024-06-27	Preliminary Release

## 1. SAFETY INSTRUCTIONS

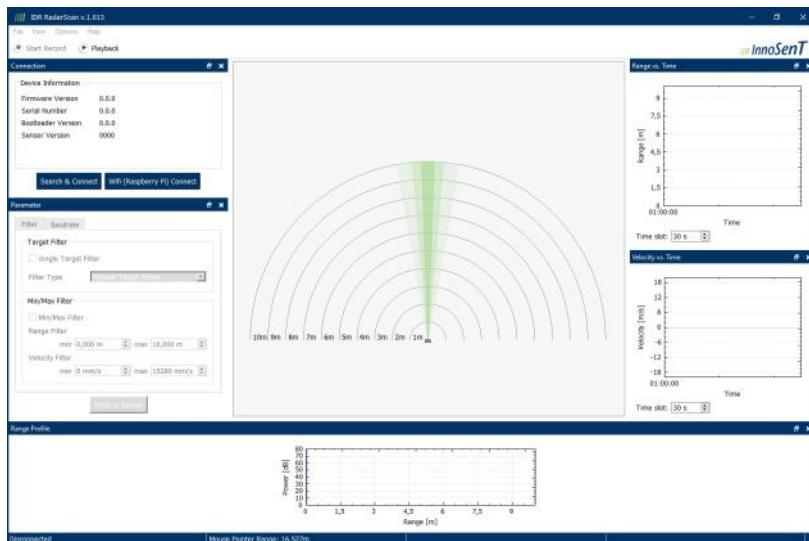
- Only skilled and instructed persons shall install and connect the device.
- Proper experience in working with mains voltage, electrical and electronic devices is required.
- Do not connect the devices directly to mains voltage, instead use the voltage given in the manual.
- Do not wire any connections while power is applied to the device.
- Ground the devices carefully to prevent electrical shock.
- All connectors are pin-coded and fit in only one position.
- Mount the devices carefully to prevent them from shifting or dropping.
- The sensor shall not be opened as this will void the warranty and cause incorrect calibration of the sensor.
- Ensure adequate ventilation during operation.
- Unused connections should be covered with a sealing cap.
- Use an enclosure for the sensor to protect against environmental conditions.
- Only use fully functional equipment (ladders, aerial work platform, ...) when working above ground.
- The devices must be mounted to a stiff and solid support.
- Vibration, oscillation or any kind of movement will reduce the sensor performance.
- Make sure that your installation methods are in accordance with local safety policy and procedures and company practices. The protective conductor connection must not be used for other purposes. It must have a permanent electrical continuity and mechanical strength.

## 2. QUICK START

### 2.1 Install IDR RadarScan

The software package can be downloaded from our website at <https://www.innosent.de/en/downloadportal/>.

Execute the TargetViewer setup file and follow the instructions of the installation on your Windows PC.  
**Note:** Elevated administrator rights are required for the setup.



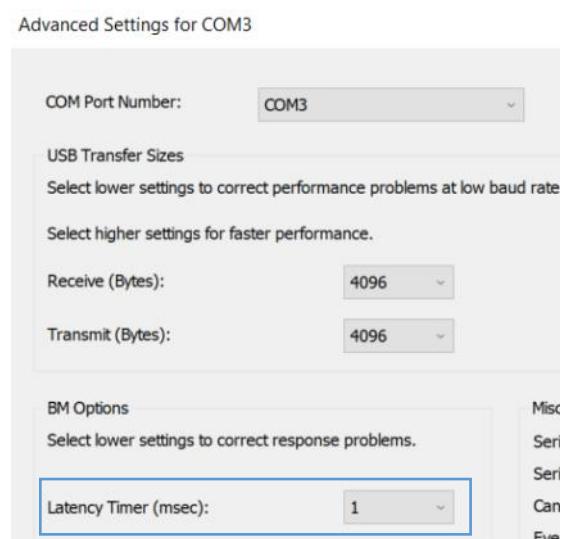
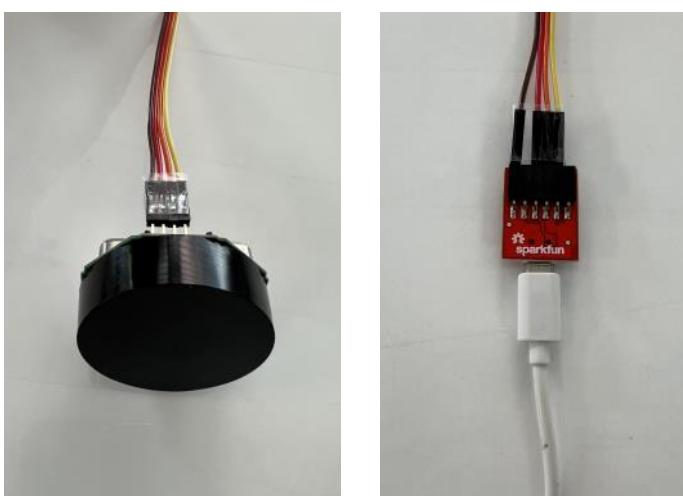
### 2.2 Mounting instruction

Mount the IDR-2050 in a stationary position, e.g. on a tripod. Align the sensor in the desired direction and check the correct orientation and mounting angle for your required field of view.

### 2.3 Cable connection to sensor

To connect the sensor to your PC via USB-port, use the Beefy3 breakout board and the USB to Micro-USB cable. The connection of the sensor to the Beefy3 is established via jumper wires. The jumper wires and Beefy3 are included in the evaluation kit.

- The breakout board must be connected according to the picture below. You can find information about the sensor's pinout in the data sheet.
- Configure cable latency in Windows device manager to 1ms (default 16ms).



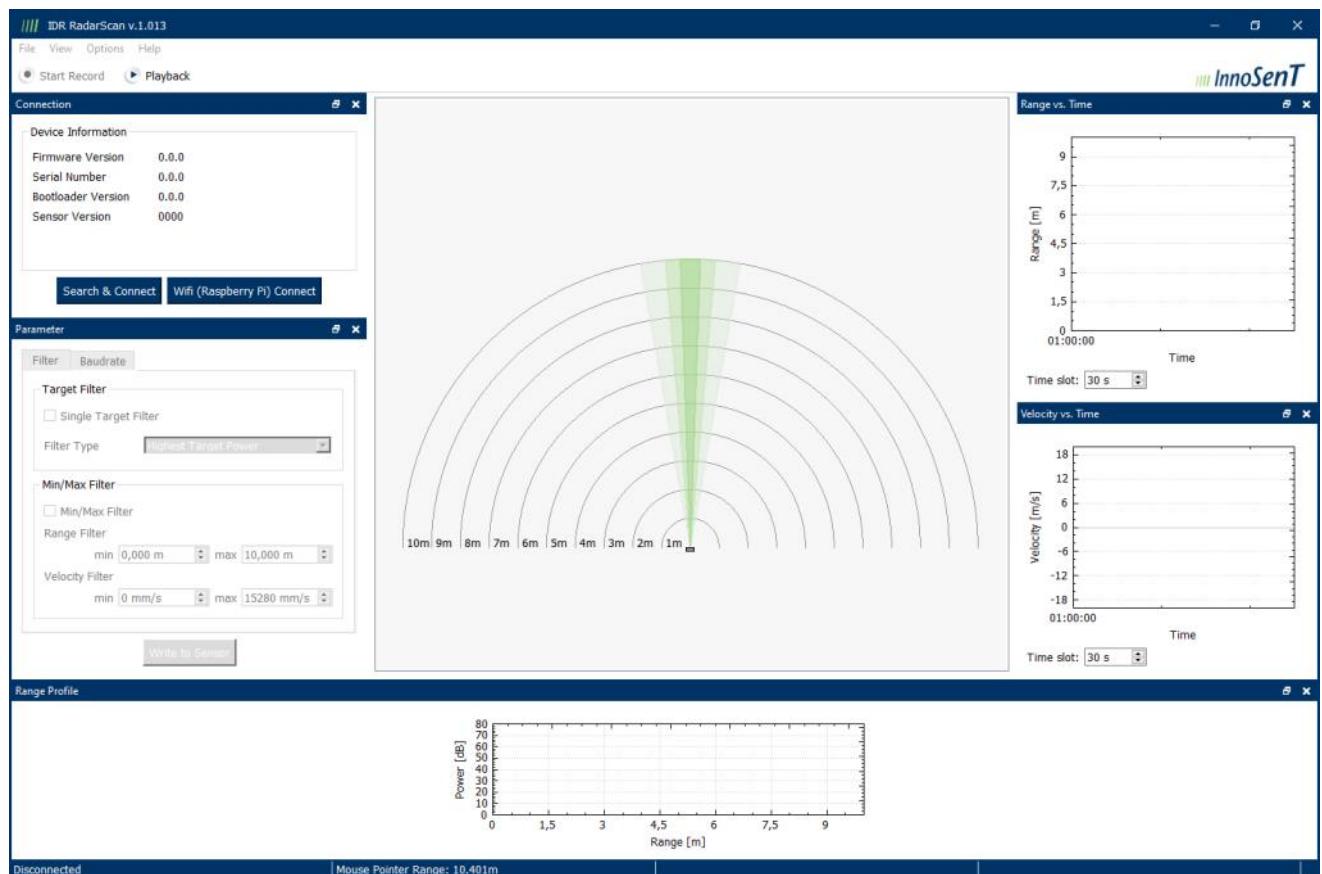
## 2.4 Establish connection

Click the 'Search & Connect' button in the top left corner. Then the connection will be established automatically.



## 2.5 Observe detections

Detections are output in a target list via UART. The detections are plotted and shown in the range profile. Further diagnosis can be done with the time based plots *Range vs. Time* and *Velocity vs. Time*.



## 3. SENSOR CONFIGURATION

Sensor settings are read automatically on connect.

Settings are set to sensor, after button 'Send Configuration from System' has been pressed.

### 3.1 General Settings

Press the button 'Configuration'.

**Note:** The button is only active if the connection to the sensor is established properly. You can check that by reviewing the firmware field on the right side. If the version could be read, the connection was successful.

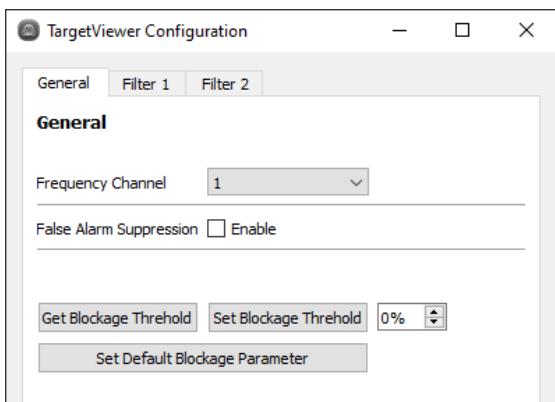
In the configuration wizard you can set the desired configuration.

**Note:** These settings are set in the sensor and have direct impact on the signal processing chain.

**Frequency Channel:** Choose a frequency channel to prevent interference, if more than one sensor is operating nearby.

**False Alarm Suppression:** Enable false alarm suppression to filter out spurious detections occurring randomly. Decrease false positives.

**Note:** This setting causes an additional latency of 250 ms.

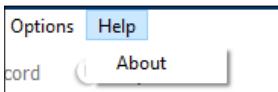


## 4. FIRMWARE UPDATE

### 4.1 Update on PC via IDR RadarScan

After you have successfully connected the sensor to your PC (chap. 2), you can perform a firmware update.

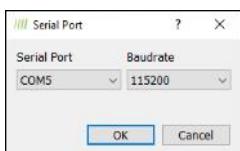
Click on 'Help' and 'About'.



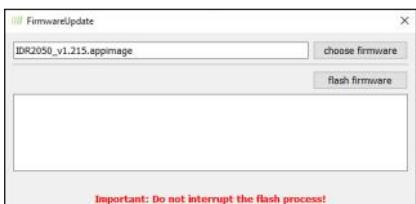
Then click on Firmware Update.



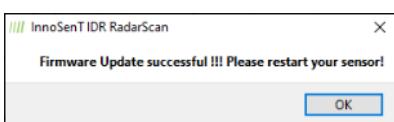
Connect update tool to the sensor.



The latest firmware is always provided with the latest software package.  
Choose it and click 'flash firmware'.



The update process is finished, when the following message appears.



## 5. FREQUENCY INFORMATION

The information that will be given below is only a broad overview; for details please contact the regional approval agency. An overview over the frequency bands in Europe can also be found in the **REC 70-03** which is available under [www.cept.org](http://www.cept.org).

### ISM FREQUENCY BAND

In general, the IDR-2050 can be used in EU, USA, Canada and UK, as well as other regions which apply to those regulations.

### 5.1 COMPLIANCES

Declarations of conformity, certificates and test reports can be provided upon request.

STANDARD	COMMENT
<b>Conformity / Certificates</b>	
CE	Declaration of Conformity
UKCA	Declaration of Conformity
FCC 47 CFR Part 15.255	Tested by external TCB and applies to relevant regulatory limitations.
ISED RSS-210	Tested by external TCB and applies to relevant regulatory limitations.
<b>RF / Electrical / Other</b>	
EN 305 550 V1.2.1	
EN 301 489-1 V2.2.3	
DIN EN IEC 62311	
DIN EN IEC 62368-1	
EN 55035	

### IDs

AGENCY	ID
FCC	UXS-IDR-2050
IC	6902A-IDR2050

## 5.2 FCC & ISED COMPLIANCE

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s) and complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage.
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### FCC §15.21

Changes or modifications made to this equipment not expressly approved by InnoSenT GmbH may void the FCC authorization to operate this equipment.

### FCC §15.105

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### RF Exposure

This equipment complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Ce transmetteur ne doit pas être placé au même endroit ou utilisé simultanément avec un autre transmetteur ou antenne.

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