

USER MANUAL

iSYS-5021 Evaluation Kit



Revision: 1

Date: 11.12.2018

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History

Document revision	Date	Change log	Author
1	2018-12-11	First release	TP

Documents

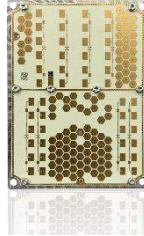
- [1] iSYS-5021 user manual.pdf
- [2] target viewer manual.pdf
- [3] serial radarSDK readMe.pdf
- [4] iSYS serial interface protocol.pdf

1. Brief description

The Evaluation Kit contains all necessary equipment for a quick installation setup to evaluate the iSYS-5021 performance. Detected targets are shown in a 2D-plot within the Target-Viewer software.

The iSYS-5021 Evaluation Kit consists of:

(1) iSYS-5021



(2) Interface-Board



(3) Power-Supply



(4) USB cable



(5) Ethernet cable



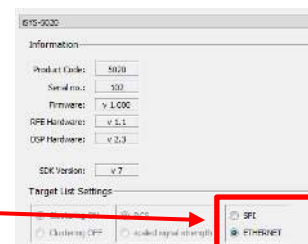
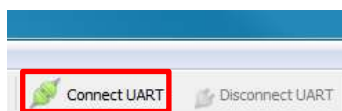
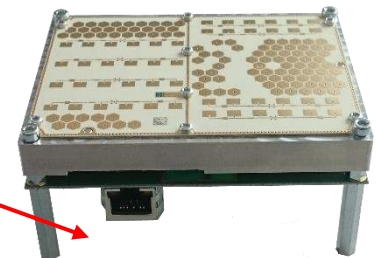
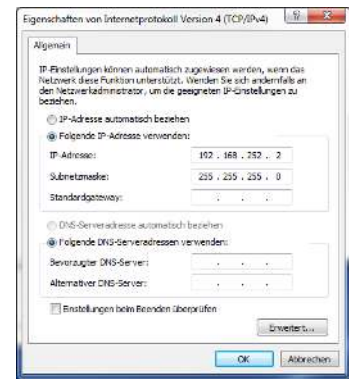
(6) Software-Package



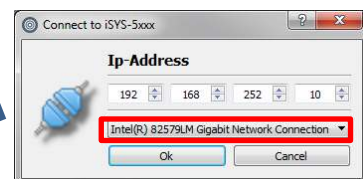
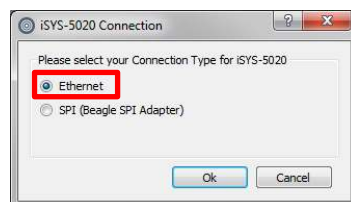
1.1. Quick Start Guide

Follow these steps to evaluate the iSYS-5021 with Ethernet interface.

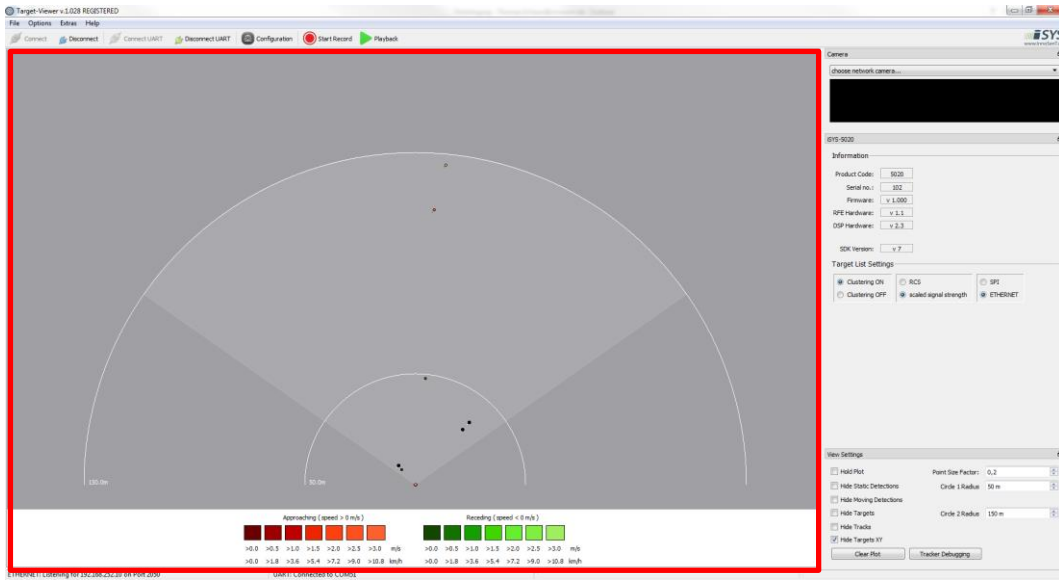
1. Install target viewer software from the software package on your Windows PC.
(s. target viewer manual rev_x.pdf for further information if needed)
2. Prepare your PC for fixed IP address.
(s. screenshot for default configuration. IP: 192.168.252.2.)
3. Assemble the power USPS-1000 power supply and set output voltage to 12 V.(s. section 1.4 for further information)
4. Connect the power supply to the power plug of iSYS-5021 interface board
5. Connect the USB cable to the iSYS-5021 interface board and to your PC.
(if necessary install: CP2102 USB to UART BRIDGE driver from Software package)
6. Connect the Ethernet cable to the iSYS-5021 interface board and to the RJ-45 Plug on your PC.
(Important: The sensor must be connected directly to your PC. A switch or router in between is not allowed.)
7. Align iSYS-5021 into direction of the targets
(described in iSYS-5021 user manual [1])
8. Start target viewer software and connect UART to the sensor.
(Important: Choose correct COM port)
-> Sensor information will be displayed.



9. Choose Target List Settings to ETHERNET.
10. Connect to sensor for target list output
(Important: Choose correct Network Connection)



11. Targets are displayed in the target viewer main window.



1.2. iSYS-5021

Please read the iSYS-5021 datasheet [1] and User Manual [2] for detailed product information.

Experience and Reliability in Radar Technology

iSYS
www.InnoSenT.de

Data Sheet iSYS-5021
Version 1.0 - 05.12.18

designed and manufactured in Germany

PRODUCT FAMILY	3D-MIMO-RADAR
APPLICATIONS	• Area Surveillance

- Movement
- Velocity
- Direction
- Presence
- Distance
- Angle

FEATURES

- » MIMO-Radar working in the 24GHz - ISM - Band
- » Simultaneous capture of speed, distance and angular deviation of a target
- » Detection of targets up to 150m in distance
- » Unambiguous velocity: 34.9 km/h
- » FOV $\pm 75^\circ$ with an angular resolution of $< 12^\circ$ in azimuth
- » Target list on SPI or Ethernet
- » UART command interface
- » Compact design 102 x 77 x 12mm
- » Includes InnoSenT SmartTracker license

DESCRIPTION

Detection and separation of moving and stationary targets according to their speed, range and azimuth angle allows the possibility to detect a target in a 2-dimensional environment.

High speed modulation concept for best signal to noise performance.

Simultaneous capture of speed, distance and angular deviation of a target.

Complete signal processing included.

Communication interface on UART. Target list output on SPI or Ethernet.


Compatible with Smart Tracker for locating and classifying moving targets over time.

ADDITIONAL INFORMATION

InnoSenT Standard Product. Changes will not be notified as long as there is no influence on form, fit and within this data sheet specified function of the product.

CERTIFICATES

InnoSenT GmbH has established and applies a quality system for: development, production and sales of radar sensors for industrial and automotive sensors.



RoHS-INFO

This product is compliant to the restriction of hazardous substances (RoHS - European Union directive 2011/65/EU).

CONFIDENTIAL AND PROPRIETARY

The information contained in this document shall remain the sole and exclusive property of InnoSenT GmbH and shall not be disclosed by the recipient to third parties without prior consent of InnoSenT in writing.

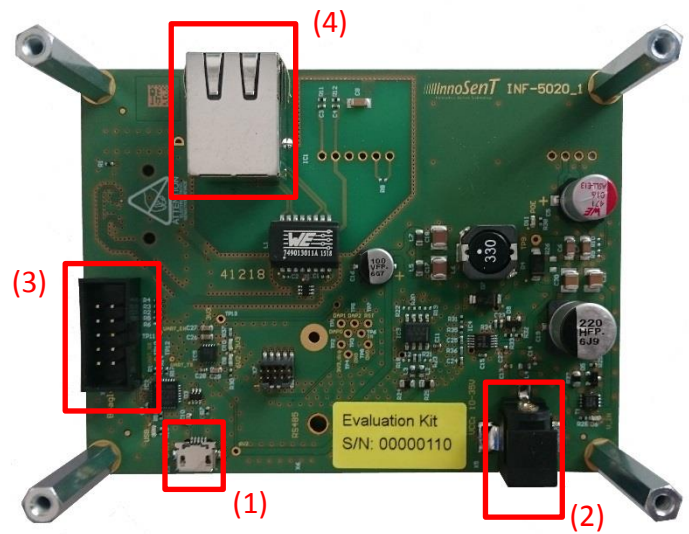
Version 1.0

DATA SHEET: iSYS-5021

Page 1

1.3. Interface-Board

The INF-5021 interface board contains a voltage regulator for iSYS-5021 power supply, a connector for Beagle SPI protocol analyzer and an USB to UART Bridge for UART connection.



- (1) Micro USB plug (Part No: 629105136821, Würth Elektronik)
- (2) DC power jack (Part No: 172-0250, Kobiconn)
- (3) Box Header 2.54mm (for Beagle SPI Protocol-Analyzer - not included in delivery)
- (4) RJ-45 socket for target list over Ethernet

1.4. Power-Supply

The Evaluation Kit contains the VOLT CRAFT USPS-1000 plug-in power unit.

1.4.1. Prepare USPS-1000

(1) Unpack power supply



(2) Set voltage to 12V



(3) Insert correct plug with GND outside



1.4.2. Supply voltages

If not using the VOLT CRAFT USPS-1000 please prepare your power supply according to Table 1: power supply parameters.

	Comment	Symbol	min.	typ.	max.	Unit
Supply voltage		V_{CC}	10	12	30	V
Power consumption		P		4.9	6.4	W

Table 1: power supply parameters

1.5. USB cable

Please use attached USB cable with USB-A to micro-USB plugs for UART connection.

The driver for the USB to UART Bridge of the CP2102 device will be installed automatically after connection to a Windows PC.



1.6. Ethernet cable

Please use attached Ethernet cable for target list transmission.

The Ethernet cable needs to connect the iSYS-5021 Eval-Kit and the windows PC with target viewer software directly. A switch or router between the two devices is not allowed.



1.7. Software-Package

The Software-Package includes all iSYS-5021 Evaluation Kit documents and the Software-Tools provided by InnoSenT.



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