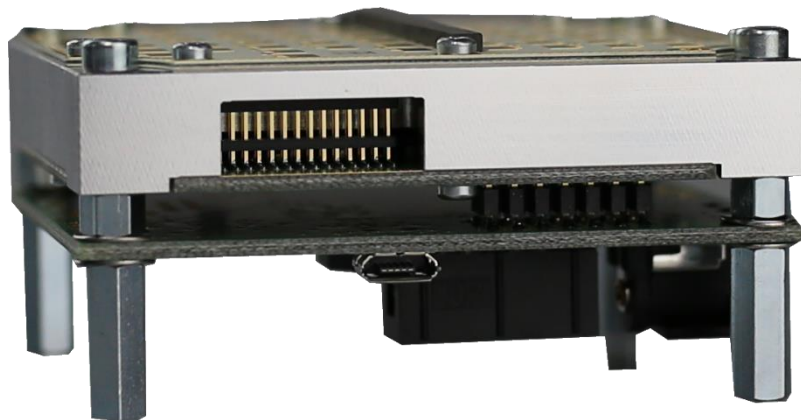


USER MANUAL

iSYS-5011 Evaluation Kit



Revision: 1

Date: 10.12.2018

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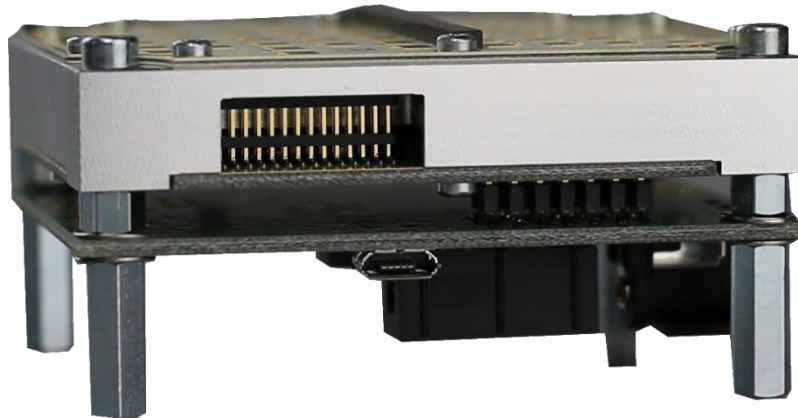
History

Document revision	Date	Change log	Author
1	2017-03-22	First release	TP

Documents

- [1] iSYS-5011 user manual rev_.pdf
- [2] target viewer manual rev_.pdf
- [3] serial radarSDK readMe rev_.pdf
- [4] iSYS serial interface protocol rev_.pdf

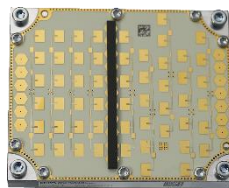
1. Brief description



The Evaluation Kit brings all necessary devices and stuff for a quick installation setup to evaluate the iSYS-5011 performance. Detected targets are shown in a 2D-plot within the Target-Viewer.

The iSYS-5011 Evaluation Kit consists of:

(1) iSYS-5011



(2) Interface-Board



(3) Power-Supply



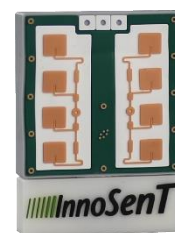
(4) SPI protocol analyzer



(5) USB cable



(6) Software-Package



1.1. iSYS-5011

Experience and Reliability in Radar Technology


www.InnoSenT.de

Data Sheet iSYS-5011

Version 1.0 - 05.12.2018

PRODUCT FAMILY

3D-MIMO-RADAR

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

APPLICATIONS

- Area Surveillance

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 54.9m in distance
- » Unambiguous velocity: 34.9 km/h
- » FOV $\pm 75^\circ$ with an angular resolution of 16° in azimuth
- » Target list on SPI
- » UART command interface
- » Compact design 71 x 57 x 16.6mm
- » 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. Target list output on SPI, UART.

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

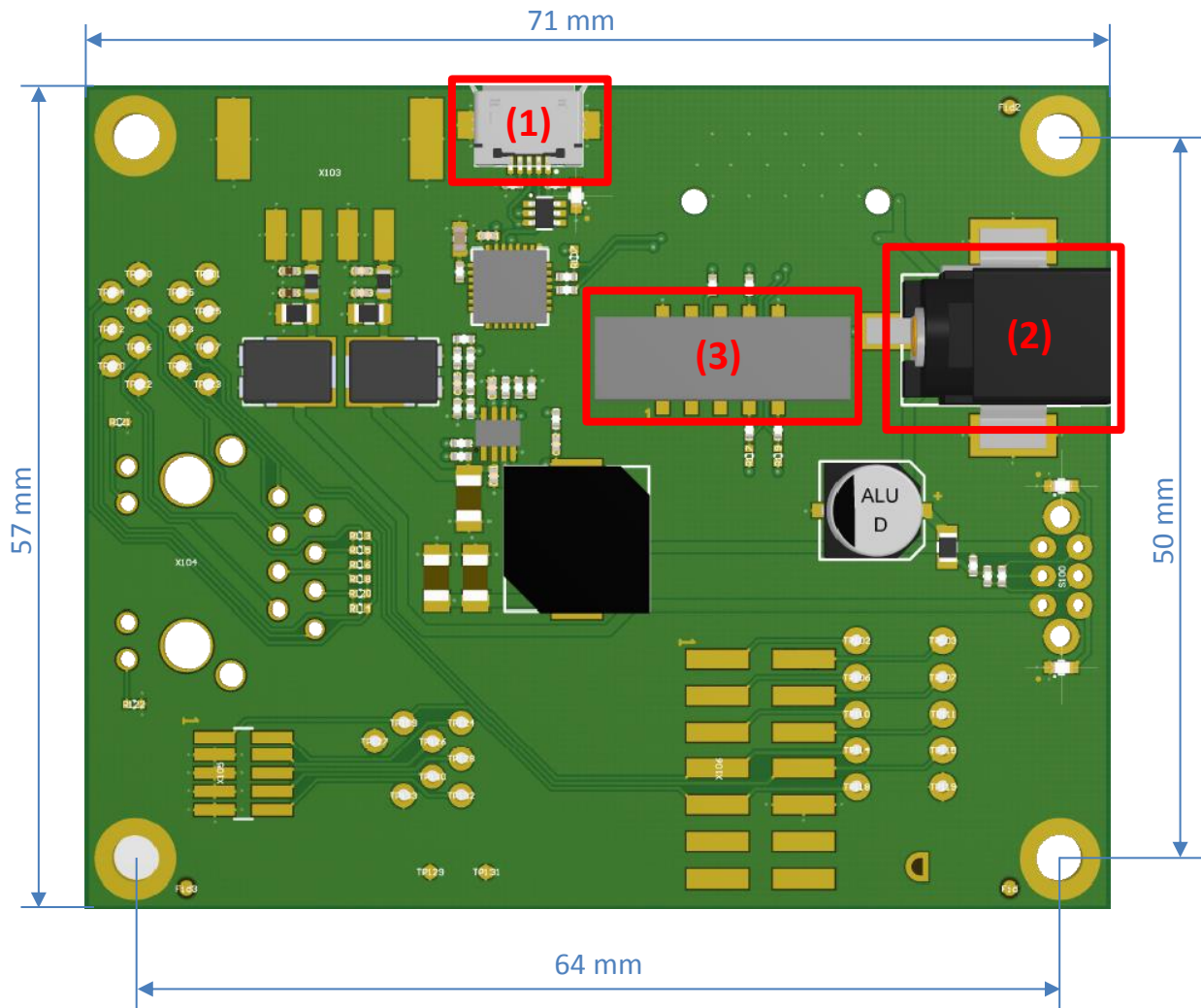
The information contained in this document shall remain the sole and exclusive property of InnoSenT GmbH and shall not be disclosed by the recipient to third parties without prior consent of InnoSenT in writing.

Version 1.0
DATA SHEET iSYS-5011
Page 1

Please regard the iSYS-5011 datasheet [1] and User Manual [2] for detailed product information.

1.2. Interface-Board

The interface board contains a voltage regulator for iSYS-5011 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: 694108105102, Würth Elektronik)

(3) Box Header 2.54mm for Beagle SPI Protocol-Analyzer

1.3. Power-Supply

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

1.3.1. Prepare USPS-1000

(1) Unpack power supply



(2) Set voltage to 12V



(3) Insert correct plug with GND outside



1.3.2. Supply voltages

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

	Comment	Symbol	min.	typ.	max.	Unit
Supply voltage		V_{CC}	11	12	13	V
Ripple		V_{ripple}			360	mV
Current		I		350	500	mA

Table 1: power supply parameters

1.4. SPI protocol analyzer

The Target-Viewer supports the Beagle SPI protocol analyzer from [Total-Phase](#) only.

Install the Beagle drivers delivered on the attached CD for proper working.



1.5. USB cable

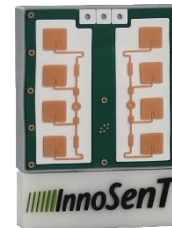
Please use attached USB cable with USB-A to micro-USB plugs for UART connection.

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



1.6. Software-Package

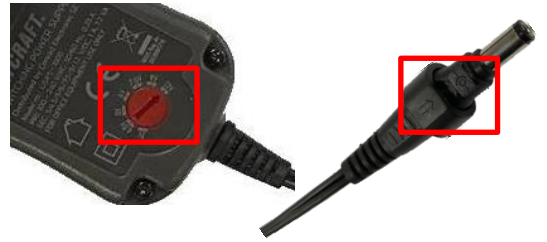
The Software-Package includes all iSYS-5011 Evaluation Kit documents and the Software-Tools provided by InnoSenT.



2. Setup iSYS-5011 Evaluation Kit

Prepare the iSYS-5011 Evaluation Kit in a few steps:

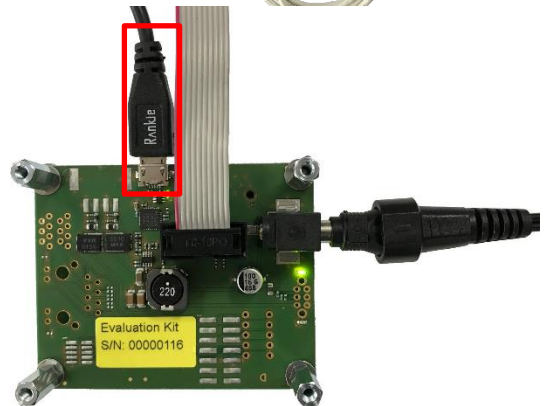
- 1) Setup USPS-1000 Power-Supply according 1.3.1



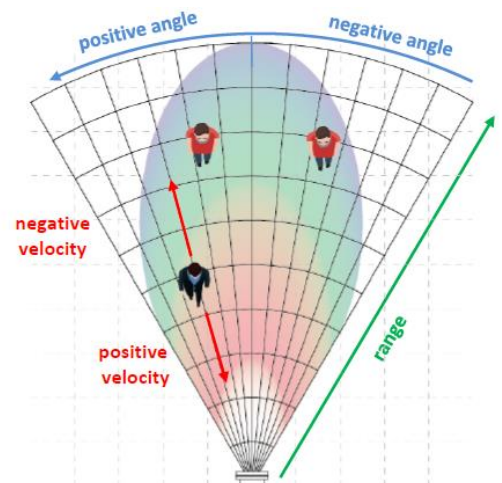
- 2) Connect Beagle to Interface-Board and PC



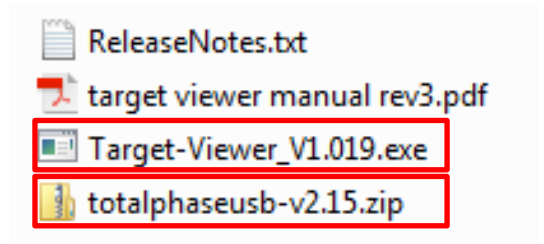
- 3) Connect USB-cable to Interface-Board and PC



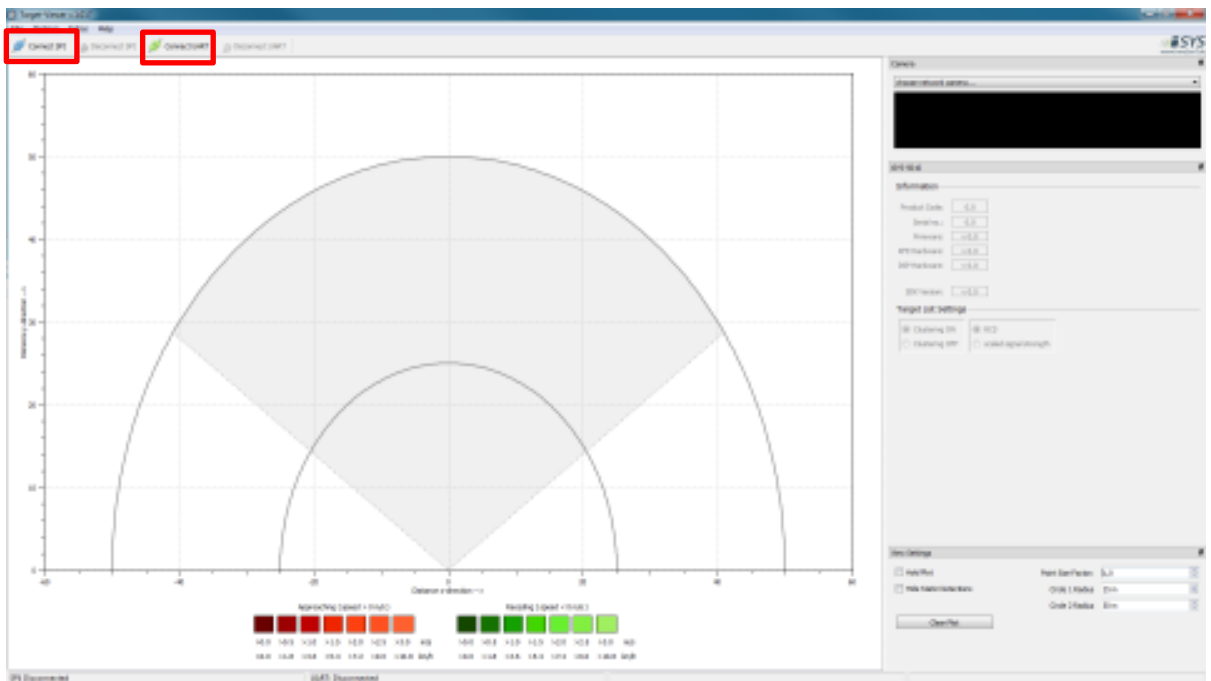
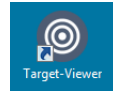
- 4) Align iSYS-5011 into direction of the targets described in iSYS-5011 user manual [1]



- 5) Install Beagle driver first, then InnoSenT Target-Viewer described in target viewer manual [2]
Both attached in the Software-Package folder \GUI\..



- 6) Start Target-Viewer and connect interfaces described in target viewer manual [2]



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