

24 GHz FMCW-RADAR KIT

DEVELOPMENT KIT DK-sR-1800e WITH PC SOFTWARE SenTool

The IMST 24 GHz FMCW Radar Development Kit **DK-sR-1800e** consists of 1 transmit and 8 receive antennas. The transmit antenna covers 70° in azimuth and 8° in elevation. The 8 receive channels cover fixed sectors of 9° beam-width in azimuth and 8° in elevation, so that unambiguous distances and velocity can be measured in each sector. This is achieved by applying a Rotman Lens in the frontend circuit. DK-sR-1800e comes with a Graphical User Interface (GUI) called SenTool. **SenTool** makes it easy to configure the sensor and to measure, visualize and analyze the data of the radar in several different graphical plots. SenTool offers a wide range of functions:

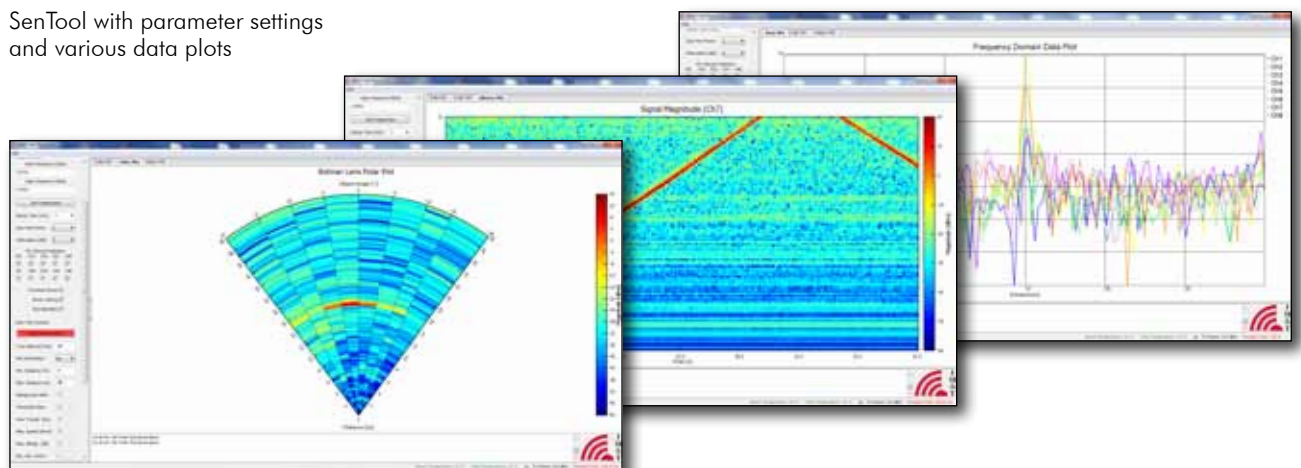
- **Configuration** of the Radar and the interface.
- **Radar Selection** out of several connected Radars.
- **Measurement Monitoring** in different presentation Forms: Time Domain, Frequency Domain, Phase-Domain, Polar Plot, History Plot.
- **Storing** and **Restoring** of measurement data in binary or ASCII format.
- **Offline Visualization** of measurement data without connection to the Radar.



DK-sR-1800e with Ethernet Interface

- **Animated** or **Static** display of recorded data.
- **Zoomed Plots** with max. hold and marker function.
- **Firmware update** via Ethernet interface.

SenTool with parameter settings and various data plots



TECHNICAL DATA DK-sR-1800e

GENERAL

Modulation:	FMCW / CW
Operating Frequency:	24.0GHz - 24.25GHz (ISM band), max. BW = 700 MHz
Number of Channels:	1 Tx, 8 Rx
Data Interface:	Ethernet (with PoE)

ANTENNA

Antenna Type:	Integrated Patch Antennas
Tx Antenna Characteristics:	70° Azimuth, 8° Elevation
Rx Antenna Characteristics:	8 x 9° Azimuth, 8° Elevation
Antenna Gain:	18 dBi (Tx)
Antenna Polarization:	linear

MEASUREMENT

Min. Measurement Range:	0.6m (@ ISM band)
Max. Measurement Range:	307m (@ ISM band)
Range Resolution:	max. 0.6m (@ ISM band)
Max./Min. Speed (theoretical):	±3200m/s
Speed Resolution:	6.25m/s (@ 24GHz, CW Mode, Pulse Time = 1ms)

FMCW PERFORMANCE

Frequency Ramp Duration:	1ms - 100ms
Typical Update Rate:	8Hz - 100Hz (depending on application)
Output Power (EIRP):	10dBm - 25dBm (tunable)

TEMPERATURE

Min. Operating Temperature:	-40°C
Max. Operating temperature:	60°C (@ duty cycle < 50%)

POWER SUPPLY

Operation Voltage:	44V - 54V (PoE) and 5V from external adapter
Standby Power:	2.2W
Operating Power:	5.5W

SETUP

Dimensions (L x W x H):	175mm x 125mm x 30mm
Weight:	~200g (with cable)
Mounting:	5 Mounting Holes in Circuit Board
Connection Cable and Connector:	CAT-6 with RJ45 Female Plug (Ethernet)
Housing:	Stack of Boards, No specific Protection



IMST GmbH

Carl-Friedrich-Gauss-Str. 2-4
47475 Kamp-Lintfort
Germany

T +49-2842-981-0

F +49-2842-981-199

E radar@imst.com

I www.radar-sensor.com

