

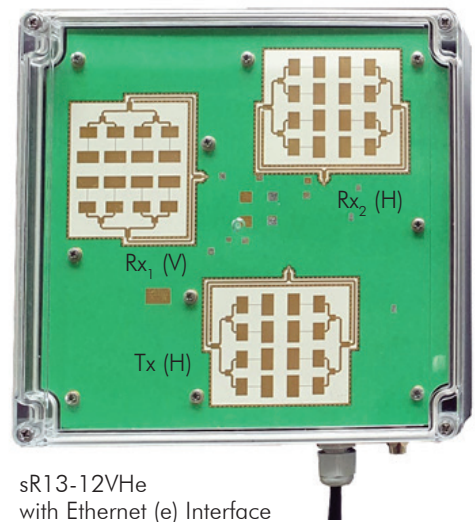


13.5 GHz RADAR KIT (1Tx + 2Rx)

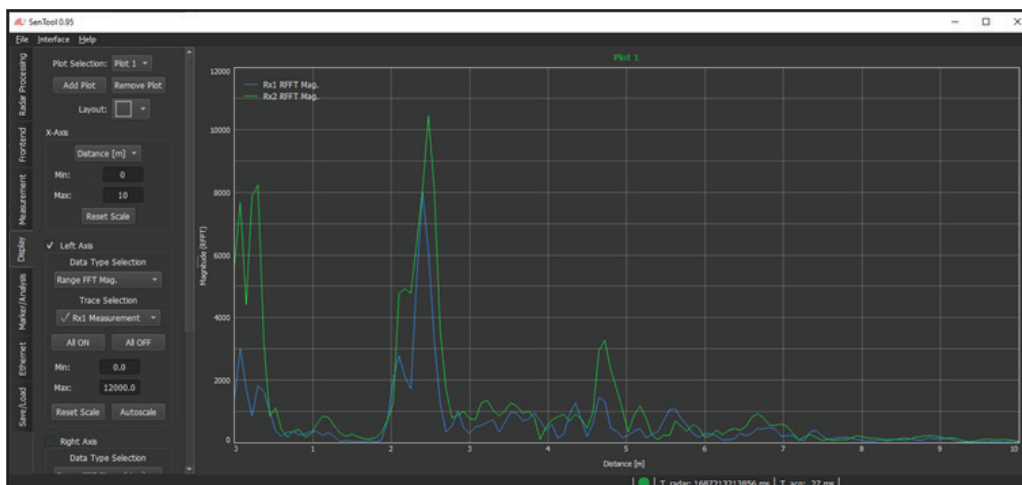
DK-sR13-12VHe AND sR13-12VHe
FMCW RADAR FOR DISTANCE MEASUREMENTS WITH
LINEAR V-/H-POLARIZATION

IMST's 13.5 GHz FMCW Radar sR13-12VHe and the Developer-Kit DK-sR13-12VHe are designed for high accuracy distance measurements. It enables a 2 GHz bandwidth from 12.5 to 14.5 GHz. Transmit and receive antennas are designed for linear horizontal (H) and vertical (V) polarization, which enables the characterization of material properties. The radar has been designed for snow and ice parameter and thickness measurements. The user has access to internal radar results via an advanced data interface.

The Developer Kit DK- sR13-12VHe comes with a Graphical User Interface (GUI) called SenTool™. SenTool™ makes it easy to configure the sensor and to measure, visualize and analyze radar data in several different graphical plots.



sR13-12VHe with Ethernet (e) Interface



SenTool™ with Range FFT Diagram from V- and H-Polarization





TECHNICAL DATA sR13-12VHe

GENERAL

Radar Method, Modulation	FMCW
Operating Frequency Band	13.5 GHz, 12.5 to 14.5 GHz
Tx/Rx Channels	Tx (H), Rx1 (V), Rx2 (H)
EIRP, Tuning Range	30 dBm, 10 to 30 dBm (Temp. stabilized)
Data Interfaces	(e) Ethernet
Certifications	no

ANTENNA

Antenna Type	Integrated Patch Antennas
Azimuth (3 dB Beam Width)	24.5°
Elevation (3 dB Beam Width)	19.5°
Antenna Gain	17.2 dBi @ 13.5 GHz
Antenna Polarization	linear, V-/H-Polarization
Cross Polarization Suppression	22 dB @ 13.5 GHz

FMCW MEASUREMENT AT BANDWIDTH = 2 GHZ

Range Resolution	0.075 m
Max. Distance (@ 1024 Bins)	76.8 m
Distance Accuracy	± 0.03 m
Selectable Number of Bins	256, 512, 1024, 2048

POWER SUPPLY

Operation Voltage	+24 V DC (from 20 to 28 V)
Operating Power	7.1 W typ.
Max. Power	8.5 W
Operating Temperature	-40°C to +30°C

HOUSING

Dimensions (L x W x H)	190 x 190 x 55 mm	Housing w/o connectors and cables with 2m Ethernet cable
Weight	949 g	
Protection Code for Housing	IP65	

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