

13.0 GHZ RADAR KIT (2Tx + 2Rx)

DK-sR13-22VHce AND sR13-22VHce

FMCW RADAR WITH COAXIAL CONNECTORS FOR EXTERNAL ANTENNAS
(V-/H-POLARIZATION POSSIBLE) FOR DISTANCE AND VELOCITY MEASUREMENTS

IMST's 13.0 GHz FMCW Radar sR13-22VHce and the Developer-Kit DK-sR13-22VHce are designed for high accuracy distance measurements. It enables 6 GHz adjustable bandwidth from 10.0 to 16.0 GHz. Transmit (Tx1, Tx2) and receive (Rx1, Rx2) ports are designed as SMA coaxial connectors for external antennas. This enables the use of horizontal (H) and vertical (V) polarized (horn-) antennas for the characterization of material properties. The radar has been designed for cryosphere observations in Ku-band. A typical application is the measurement of snow and ice layer thicknesses and their polarization properties. Characteristic properties of surfaces, materials, substances or tissues can be determined with the help of polarization features.



sR13-22VHce with coax. Connectors (c) and Ethernet (e) Interface



Example of sR13-22VHce with two conical dual-polarized horn-antennas.

The Developer Kit DK-sR13-22VHce comes with a Graphical User Interface (GUI) called SenTool™ (for Windows™). This software makes it easy to configure the sensor and to measure, visualize and analyze radar data in several different graphical plots.

The user has access to comprehensive radar data applying an extensive library of interface commands.



TECHNICAL DATA sR13-22VHce

GENERAL

Radar Method, Modulation	FMCW
Operating Frequency Band	13 GHz, 10 to 16 GHz
Tx/Rx Channels	Tx1, Tx2, Rx1, Rx2
Output Power, Tuning Range	9 to 13 dBm, 25 dB (Temp. stabilized)
Data Interfaces	(e) Ethernet
Certifications	no

ANTENNA

Antenna Connectors	(c) coaxial, female SMA Connectors for external Antennas
Azimuth (3 dB Beam Width)	-
Elevation (3 dB Beam Width)	-
Antenna Gain	-
Antenna Polarization	V-/H-Polarization possible with external Antennas
Cross Polarization Suppression	-

FMCW MEASUREMENT AT BANDWIDTH = 6 GHZ (BW IS ADJUSTABLE)

Range Resolution	0.025 m
Max. Distance (@ 1024 Bins)	25.6 m
Distance Accuracy	± 0.015 m (approx.)
Selectable Number of Bins	256, 512, 1024, 2048

POWER SUPPLY

Operation Voltage	+18 V DC (from 18 to 36 V)
Operating Power	6 W typ.
Max. Power	10 W
Operating Temperature	-40°C to +30°C

HOUSING

Dimensions (L x W x H)	160 x 120 x 75 mm	Housing w/o Connectors and Cables
Weight	640 g	without Cables
Protection Code for Housing	IP65	

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