

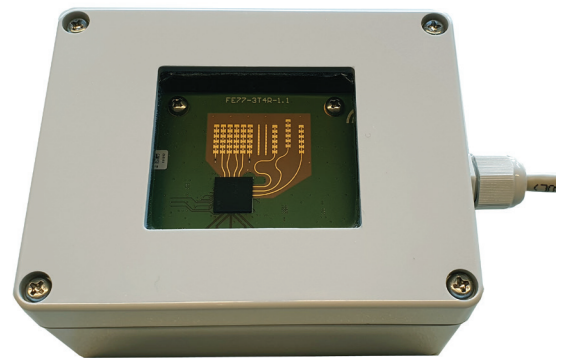


77 GHz RADAR KIT (3Tx + 4Rx)

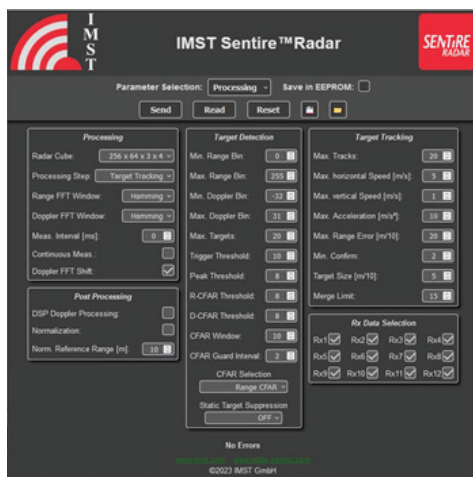
DK-sR77-3403e/u AND sR77-3403e/u
 FMCW RANGE-DOPPLER RADAR FOR AUTOMOTIVE,
 TRAFFIC AND INDUSTRIAL APPLICATIONS

IMST's 77 GHz Radar sR77-3403 and the Developer-Kit DK-sR77-3403 are designed for high accuracy and high-resolution distance and velocity measurements. This Radar supports the two bands 76 to 77 GHz and 77 to 81 GHz for automotive, traffic and industrial applications. The integrated signal processing includes Range- and Doppler-FFT, Peak Detection, 2D-CFAR, Tracking, Micro Doppler and MIMO with 12 virtual channels as optional radar method. The user has access to internal radar results via an advanced data interface.

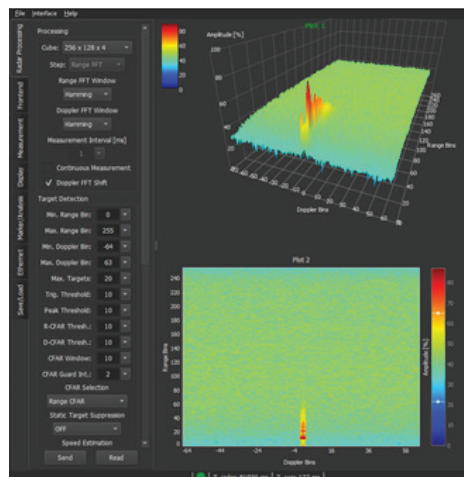
The Developer Kit DK-sR77-3403 comes with a Graphical User Interface (GUI) called SenTool™. SenTool™ makes it easy to configure the sensor and to measure, visualize and analyze radar data in several different graphical plots.



sR77-3403e/u
 with Ethernet (e) or USB (u)



Sentire™ Web-Interface



SenTool™ with Range-Doppler Map





TECHNICAL DATA sR77-3403e/u

GENERAL

Radar Method, Modulation	FMCW, Fast-Chirp-Sequence, MIMO
Operating Frequency Band	76 to 77 GHz, 77 to 81 GHz
Tx/Rx Channels	3Tx, 4 Rx
EIRP, Tuning Range	24 dBm, 30 dB
Data Interfaces	(e) Ethernet, (u) USB
Certifications	no

ANTENNA

Antenna Type	Integrated Patch Antennas
Azimuth (3 dB Beam Width)	68°
Elevation (3 dB Beam Width)	22°
Antenna Gain	12 dBi
Antenna Polarization	linear

FMCW MEASUREMENT

Min. Distance Range Resolution	0.15 m @ 76 to 77 GHz, BW = 1 GHz 0.0375 m @ 77 to 81 GHz, BW = 4 GHz
Max. Distance (@ 1024 Bins)	153.6 m @ 76 to 77 GHz, BW = 1 GHz 38.4 m @ 77 to 81 GHz, BW = 4 GHz
ADC Sampling Frequency	2 MHz to 37.5 MHz
Min. Chirp Time @ 30 MHz	4.2 μs = 128/30MHz
Max. Chirps per Sequence	256

PROCESSING EXAMPLES

	SINGLE TRANSMITTER	MIMO WITH 3 TX
Max. Doppler-MAP	512 x 128 Bins	512 x 64 Bins
Max. Target Distance	76.8 m	38.4m
Max. Target Speed	± 21m/s	± 11m/s
Azimuth Resolution	~30°	~15°
Elevation	not possible	~60°

POWER SUPPLY

Operation Voltage	12 V DC, 10V to 36V
Operation Power	6.5 W
Max. Power	tbc
Operating Temperature	tbc

HOUSING

Dimensions (L x W x H)	115 x 90 x 55 mm	Housing w/o connectors and cables
Weight	260 gr	
Protection Code for Housing	IP65	

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