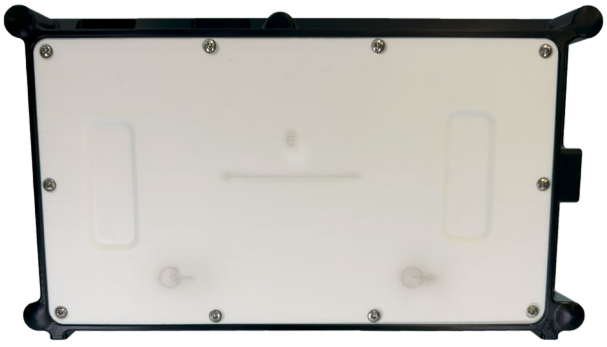
DATASHEET

HANDHELD TARGET SIMULATOR
HTSDG, 77 GHZ



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CONTENT

1 USER SAFETY WARNING

Please read the entire document carefully before using the device.

INSTALLATION

Please pay attention to the details below before installing and connecting the device:

- Only use provided or approved equipment for the operation.
- Only skilled and instructed persons shall install and connect the device.
- All connectors are pin-coded and fit in only one position.
- Be cautious when using the device on or around active roadways and pay attention to moving traffic.
- Make sure that test procedures are in accordance with local safety policies and procedures as well as company practices.

OPERATION

Please note that the device is not waterproof. Take care of proper rain coverage when working outside. Do not operate the device if the device itself or any cables are damaged.

Transmission of radio frequency waves starts after the device is powered up and stops after it is switched off.

Do not dispose electrical and electronic equipment in household trash.

TECHNICAL SERVICE

Only use provided or approved equipment for operation.

Do not attempt to service or repair this device:

- No user-maintainable parts are contained in the device.
- To avoid electrical shock, do not remove or open the cover.
- Unauthorized opening will void all warranties.
- smartmicro is not liable for any damages or harms caused by unauthorized attempts to open or repair the device.

RADIATION

This device generates radio frequency energy. There are strict limits on continuous emission power levels to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

- Human exposure to transmitted waves from this device is generally considered as safe. Still, it is considered good practice that humans are not subject to higher radiation levels than necessary.

This device may interfere with other devices using the same frequency band.

2 PRODUCT SPECIFICATIONS

HTSDG (Handheld Target Simulator) is a handheld, battery-powered, portable target simulator for 76 GHz to 81 GHz radar sensors.

It can be used for:

- Alignment of sensors in the field at the time of the installation
- Yearly inspection of sensors
- Sensor development
- General functional testing of sensors in the field or in the lab

2.1 FEATURES AND APPLICATIONS

The HTSDG has the following features:

- Standalone or remote (SCPI) operation
- Programmable speed interval from -320 km/h to +320.0 km/h
- Programmable RCS
- Programmable presets
- Battery rechargeable by USB
- Display and user interface for easy parameter change
- Compact and rugged construction

2.2 CHARACTERISTICS

Parameter	Conditions/Notes	Symbols	Typical Values (min… max)
Operating Conditions			
Battery	3x 18650 protected cells	V_{ccBatt}	3 x 3.6 V
External Supply Voltage	USB	VccUSB	5 V to 20 V
External Supply Power	Operating, recommended	-	10 W
	Charging, recommended	-	>15 W
Operating Time	Typical from full charge	-	4h
Temperature Range	Operating (non-condensing)	T_{op}	0…+40 °C | 32…+122 °F
	Storage	T_{st}	-20…+60 °C | -4…+104 °F
Target Simulator			
Frequency Range		f_{TG}	76 GHz to 77 GHz 77GHz to 81 GHz
Doppler Frequency Range	80.466 Hz step size	$f_{Doppler}$	-46 kHz to +46 kHz
Doppler Frequency Error	Over temperature and life of the product.	$\Delta f_{Doppler}$	±5.6 ppm
Simulated Speed Range	Digitally adjustable	$v_{Doppler}$	-320km/h to +320 km/h | -198.8mph to +198.8 mph
Maximum Target Size	For linear polarized transceivers	RCS_{lin}	. $5m^2$ | $53.8ft^2$
Target Size Adjustment	Adjustable attenuation	-	0to 31.5 dB
Antenna Polarization	Supports vertical or horizontal	-	Linear
3 dB Beam Width	horizontal/ vertical	W_{φ}	25° ± 5° [prelim.]
Sidelobe Level	E- and H-Plane	-	max. -30 dB
Mechanical Details			
Outline Dimensions	-	-	183 x 105 x 46 mm | 7.2 x 4. x 1.81 inch
Weight		-	950 g | 33.51 oz
Further Information			
Host Interface (SCPI)	USB remote operation	-	Serial data, Type-C Connector
Enclosed Accessories	-	-	USB cable

3 COMPLIANCES

The sensor model complies with the following EU directives:

- RED 2014/53/EU
- RoHS 2011/65/EU
- EC 1907/2006 REACH

Applied Standards:

- Spectrum Usage:
  - EN 301 091-2 V2.1.1
  - EN 302 264 V2.1.1
- EMC:
  - EN 301 489-1 V2.2.0
  - EN 301 489-51 V2.1.0
- Health and Safety:
  - EN 62311: 2008
  - EN 62368-1: 2014 + AC: 2015

Regarding spectrum usage, this sensor model is currently being tested and certified by independent test labs (formally approved by a test lab or notified body):

- EU RED directive
- FCC part 95M
- ISED RSS-251

This sensor model is also generally compliant with the following regional regulations (but may not be formally tested/approved):

- SRRC
- KCC
- MIIT
- NCC

Note: This statement of compliance means that the sensor allows operation compliant to the listed standards. However, not all standards are certified through test labs. Formal frequency approval or registration is not accomplished for all countries. In certain countries or regions, a customer-specific local frequency approval is reasonable. smartmicro supports customers throughout this process.

4 LEGAL DISCLAIMER NOTICE

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