Smart Passive Sensors™: SPS UHF Reader Hub

SPSPRDR1-8

The SPS UHF Reader hub is designed to enable optimized system performance for applications using ON Semiconductor Smart Passive Sensors powered by Magnus® technology. The SPS reader hub is compatible with the UHF EPC global Gen 2 UHF standard. The reader hub supports up to 8 reader antennas connected through standard RP−SMA coaxial connections. RF output power is adjustable from 5 dBm to 30 dBm in 0.5 dBm increments, and the reader supports read rates of up to 100 tags/second and 1 SPS read/second. Maximum read range is 9m when used with appropriate antennas in free space.

The reader supports all UHF RFID bands residing between 860−930 MHz. The SPSPRDR1−8 is powered by a Quad−core 64−bit ARM Cortex processor, with on board memory and removable flash storage. The reader also includes connectivity through Ethernet and micro−USB on the back of the device.

Features

- Compatible with EPC Global Gen2 UHF Standard
- Support for all UHF RFID bands
- Adjustable RF Output Power up to +30 dBm
- 8 RF antenna ports supported
- Connectivity through micro−USB, Wired Ethernet

Table 1. STANDARD OPERATING CONDITIONS

Parameter	Rating	Unit
Operating Temperature Range	−20 to +50	°C

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SPS UHF Reader / Hub Server
CASE MODGM

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.



Figure 1. Port Connections

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SPS UHF READER INFORMATION

The SPSPRDR1−8 is a complete reader hub platform for Smart Passive Sensors. Included software is used for basic tag reading and connectivity. A feature rich REST API is in development for the SPSPRDR1−8 and is available upon request. Details on the functionality and performance of the reader hub are provided below

Software Functionality

The SPS UHF Reader comes with simple to use software that enables users to quickly read data from Magnus based SPS tags. The included software provides a log of EPC, sensor codes, RSSI value, temperature values, and other data to provide for fast system started and evaluations. Additional software may be available for application specific needs.

Table 2. READER SPECIFICATIONS

Standard Compatibility	EPC Global Gen2 UHF	ISO 18000−6C with DRM ISO 18000−6B (optional)
Operating Frequency	See Ordering Table	
RF Output Power (Note 1)	5 dBm to 30 dBm	Adjustable in 0.5 dBm steps
RF Antenna Ports	8	SMA 50 Ω connection
VSWR	1.1	
Connectivity	RJ45 (10/100 Base−T Ethernet) 1x USB2.0 Type A console port 3x USB2.0 Type A accessory ports Power Jack	 1.7/4.0 mm connector (DC Power)
Read Rate	100 tags/second	
SPS Sensor Read Rate	1 sensor read/second	
Maximum Read Distance	9m	Using 6dBi antenna (36 dBm EIRP)
Max Receive Sensitivity	−62 dBm	
Power Supply Requirements	7.5 V−40.0 V DC, 15W	
Standby Power Consumption	0.250W	
Storage Temperature	−40°C to +85°C	
Dimensions	19.2 cm x 10.3 cm x 3.2 cm 7.6” x 4.1” x 1.3”	
Weight	0.9 kg 2.0 lbs	

NOTE:
1. RF output power adjustable through provided user software. User is responsible to ensure that appropriate antenna is selected to remain compatible with maximum system RF output power. Firmware on reader will limit maximum power at RF port based on regional certification.

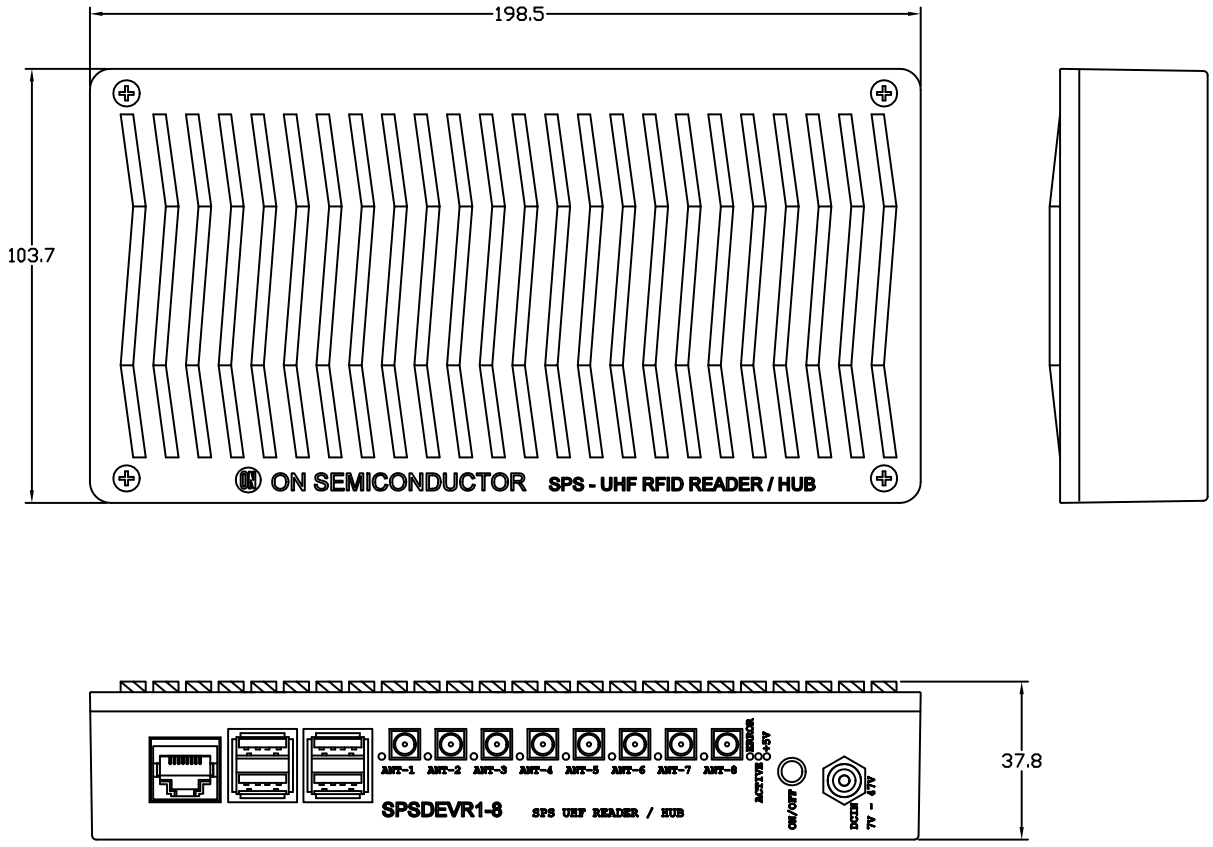
ORDERING INFORMATION

Device	Regional Certification	Frequency Range	Package	Shipping
SPSPRDR1−8NA	FCC, North America	902−928 MHz	Box	1 unit
SPSPRDR1−8EU	ETSI, Europe	865−868 MHz	Box	1 unit
SPSPRDR1−8CH	MII, China	920−924 MHz	Box	1 unit
SPSPRDR1−8KR	South Korea	917−920 MHz	Box	1 unit
SPSPRDR1−8JP	MIC, Japan	916−923 MHz	Box	1 unit

SPSPRDR1−8

PACKAGE DIMENSIONS

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DIMENSIONS IN MILLIMETERS

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