

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



ON Semiconductor®

www.onsemi.com



**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

SPSPRDR1-8

SPS UHF READER INFORMATION

The SPSRDR1-8 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 SPSRDR1-8 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

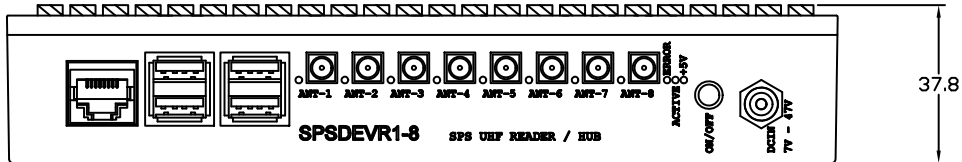
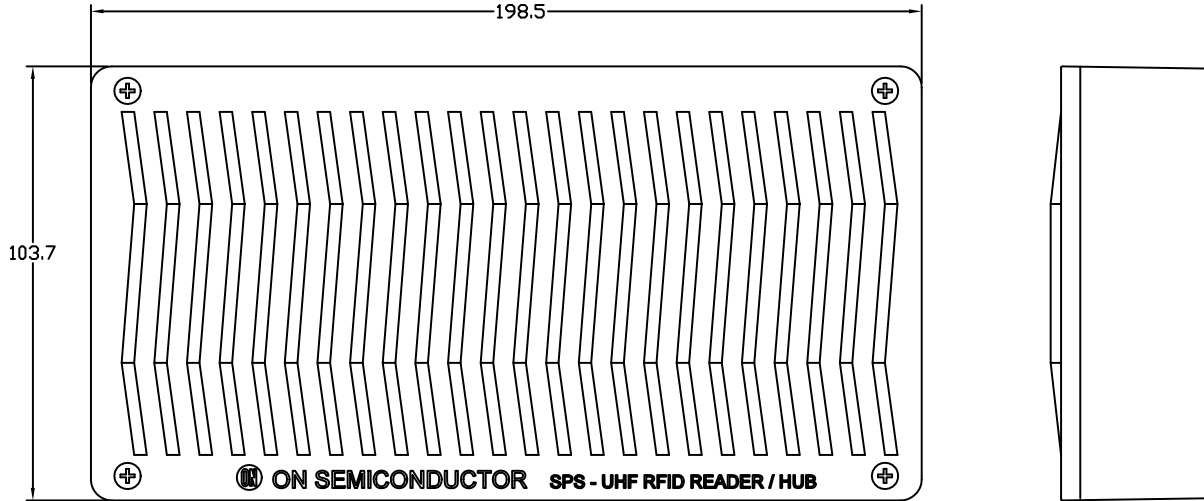
Device	Regional Certification	Frequency Range	Package	Shipping
SPSPRDR1-8NA	FCC, North America	902-928 MHz	Box	1 unit
SPSPRDR1-8EU	ETSI, Europe	865-868 MHz	Box	1 unit
SPSPRDR1-8CH	MII, China	920-924 MHz	Box	1 unit
SPSPRDR1-8KR	South Korea	917-920 MHz	Box	1 unit
SPSPRDR1-8JP	MIC, Japan	916-923 MHz	Box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

Smart Passive Sensor is a trademark of RFMicron, Inc.
Magnus is a registered trademark of RFMicron, Inc.

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS


SPS UHF Reader / Hub Server
CASE MODGM
ISSUE 0

DATE 05 SEP 2018



DIMENSIONS IN MILLIMETERS

DOCUMENT NUMBER:	98AON97321G	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	SPS UHF Reader / Hub Server	PAGE 1 OF 1

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Email Requests to: orderlit@onsemi.com

ON Semiconductor Website: www.onsemi.com

TECHNICAL SUPPORT

North American Technical Support:
Voice Mail: 1 800-282-9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:

Phone: 00421 33 790 2910

For additional information, please contact your local Sales Representative

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Sub-GHz Modules](#) category:

Click to view products by [ON Semiconductor](#) manufacturer:

Other Similar products are found below :

[HMC-C024](#) [nRF24L01P-MODULE-SMA](#) [CMD-KEY2-418-CRE](#) [V640-A90](#) [SM1231E868](#) [HMC-C582](#) [SM-MN-00-HF-RC](#) [HMC-C031](#)
[LoRa Node Kit\(US\)](#) [Sierra HL7588 4G KIT\(US\)](#) [WISE-4610-S672NA](#) [EC21AUFA-MINIPCIE](#) [EC21EUGA-MINIPCIE](#) [CS-EASYSWITCH-](#)
[25](#) [EC21JFB-MINIPCIE](#) [DL-RFM95-915M](#) [DL-RFM96-433M](#) [Ra-07H-V1.1](#) [Ra-01SH](#) [Ra-01S-T](#) [Ra-01SH-T](#) [CMD-HHCP-418-MD](#) [CMD-](#)
[HHCP-433-MD](#) [CMD-HHLR-418-MD](#) [2095000000200](#) [XB9X-DMRS-031](#) [20911051101](#) [COM-13909](#) [HMC-C033](#) [COM-13910](#) [WRL-](#)
[14498](#) [SX1276RF1KAS](#) [HMC-C004](#) [HMC-C011](#) [HMC-C014](#) [HMC-C010](#) [HMC-C050](#) [HMC-C001](#) [HMC-C006](#) [HMC-C029](#) [HMC-C030](#)
[HMC-C021](#) [HMC-C041](#) [HMC-C042](#) [HMC-C048](#) [HMC-C051](#) [HMC-C071](#) [HMC-C072](#) [A2500R24C00GM](#) [702-W](#)