

# SPSPRDR1-8

## Product Preview

### Smart Passive Sensors™ : SPS UHF Reader Hub

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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TBD  
CASE TBD

#### ORDERING INFORMATION

Device	Package	Shipping
SPSPRDR1-8	Box	Box



**Figure 1. Port Connections**

This document contains information on a product under development. ON Semiconductor reserves the right to change or discontinue this product without notice.

# SPSPDR1-8

## 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**

<b>Standard Compatibility</b>	EPC Global Gen2 UHF	ISO 18000-6C with DRM ISO 18000-6B (optional)
<b>Operating Frequency</b>	FCC ETSI	902-928 Mhz 865-868 MHz
<b>RF Output Power</b>	5 dBm to 30 dBm	Adjustable in 0.5 dBm steps
<b>RF Antenna Ports</b>	8	SMA 50 $\Omega$ connection
<b>VSWR</b>	1.1	
<b>Connectivity</b>	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)
<b>Read Rate</b>	100 tags/second	
<b>SPS Sensor Read Rate</b>	1 sensor read/second	
<b>Maximum Read Distance</b>	9m	Using 6dBi antenna (36 dBm EIRP)
<b>Max Receive Sensitivity</b>	-62 dBm	
<b>Power Supply Requirements</b>	7.5 V-40.0 V DC, 15W	
<b>Standby Power Consumption</b>	0.250W	
<b>Storage Temperature</b>	-40°C to +85°C	
<b>Dimensions</b>	19.2 cm x 10.3 cm x 3.2 cm 7.6" x 4.1" x 1.3"	
<b>Weight</b>	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

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