

The WSR-F1 provides a base for batteryless, wireless and low cost temperature measurement solution in combination with our wireless, passive food probe. This Wireless Sensor Reader is a highly sophisticated SAW Sensor interrogation unit and is designed to monitor multiple sensors simultaneously.

This Reader is optimized to enable individual output power settings for each single sensor to meet CE and FCC regulations. On top the WSR-F1 is capable to measure the ambient temperature via an integrated sensor in the reader antenna (e.g. ANT-MON-0003T). SenGenuity will work closely with you to adapt the WSR-F1 to meet the specific needs of your application.

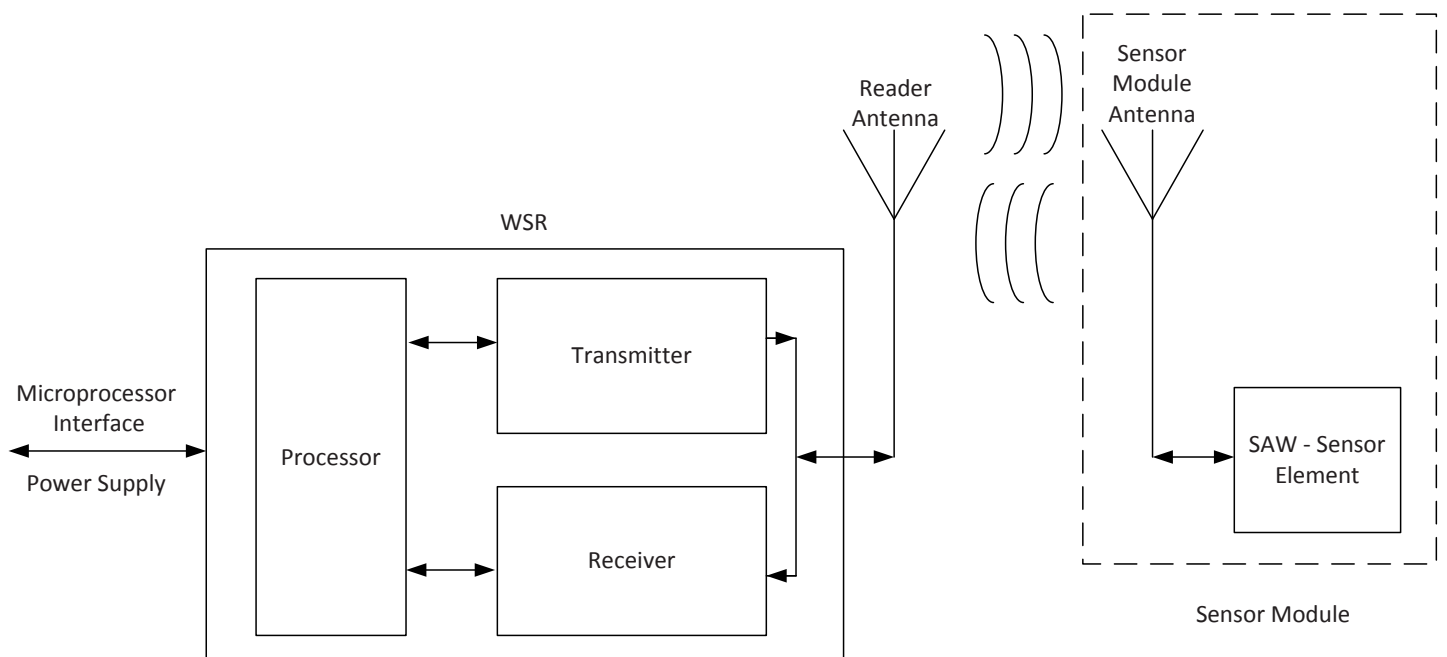
System Features

- Multiple sensor tracking capability (4 per antenna)
- Interrogation distance¹ up to 1,5 m
- Typical sensor measurement range: -10°C to 120°C
- UART or RS485 interface
- Output power will be set by software to meet the CE and FCC regulations
- Possibility to measure antenna temperature
- Reader as SMD option available

System Applications

- Batteryless wireless temperature measurement for culinary ovens, rotisseries, barbecue grills, etc.

Block Diagram System



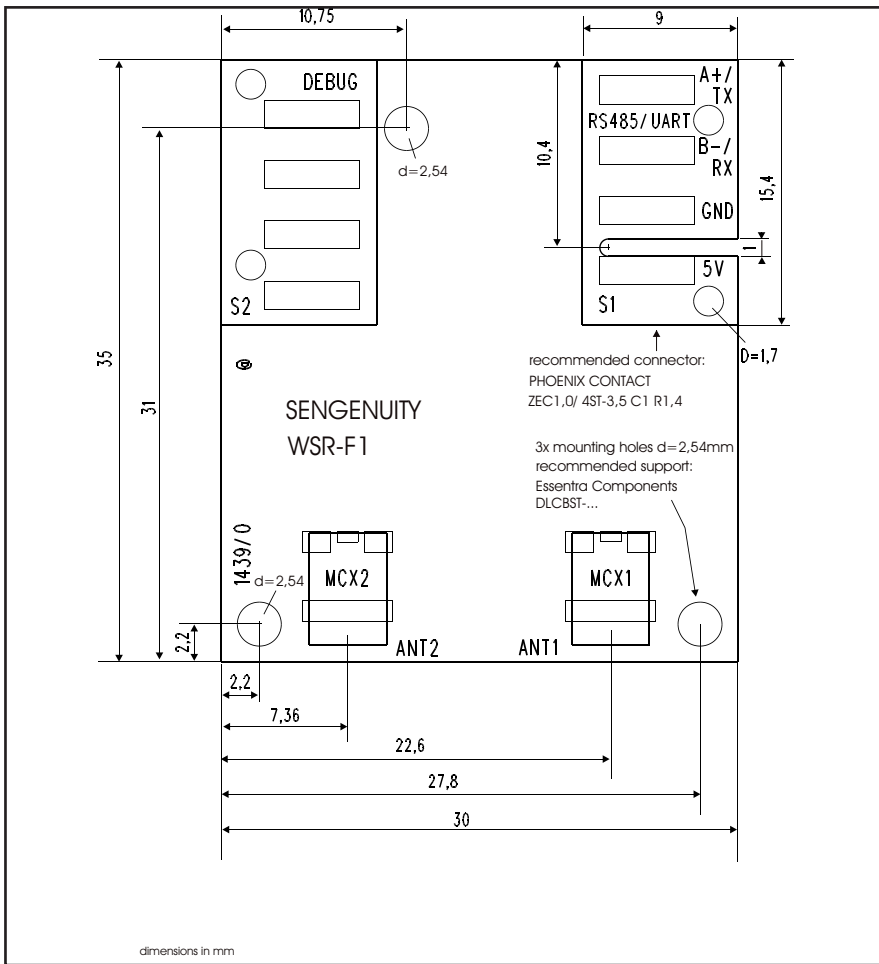
Performance Specifications

Parameter	Min	Typical	Max	Units	Condition
Frequency range ²	430.24		439.7575	MHz	Refer to FCC/CE Certification detail in Notes
Receiver input sensitivity		-95		dBm	
Operating temperature range	-30		+85	°C	for WSR-F1
Initial accuracy	-1.5		+1.5	kHz	@25°C and -75 dBm input power at time of shipment
Accuracy referenced to +25°C	-0.5		+0.5	kHz	vs. operating temperature range
Accuracy referenced to time of shipment	-1.5		+1.5	kHz	vs. aging / 5 years
Measurement time		1000		ms	depends on settings
Number of sensors	1		8	pieces	
Power Supply Possibilities					
Supply voltage	+3.7	+5.0	+5.5	VDC	
Power consumption		0.25	0.35	W	at 5V (unisolated)
Supply voltage	3.27	+3.3	3.33	VDC	optional for SMD version
Power consumption		0.18	0.25	W	at 3.3V (unisolated)
Mechanical Specifications Reader unit enclosure E0002					
Length		35		mm	
Height		8		mm	
Width		30		mm	
Weight		5	8	g	
Interfaces					
Interface	RS485 or UART			via edge connector for enclosure E0002 only UART for enclosure E0001	

Absolute Maximum Ratings

Parameter	Min	Typical	Max	Units	Condition
Humidity			80	%	Non condensation
Operable Temperature Range	-30		+85	°C	
Storage Temperature Range	-40		+85	°C	
Edge Connector, Pin1	0		+7	V	at 5V supply voltage
Edge Connector, Pin1	0		+4	V	at 3.3V supply voltage
Edge Connector, Pin2		NA			GND
Edge Connector, Pin3	-60		+60		RS485B- „hot swap / plug“ capable
Edge Connector, Pin4	-60		+60	V	RS485A+ „hot swap / plug“ capable
Edge Connector, Pin3	-0.3		+3.5	V	UART Rx
Edge Connector, Pin4	-0.3		+3.5	V	UART Tx

Outline Drawing / Enclosure E0002

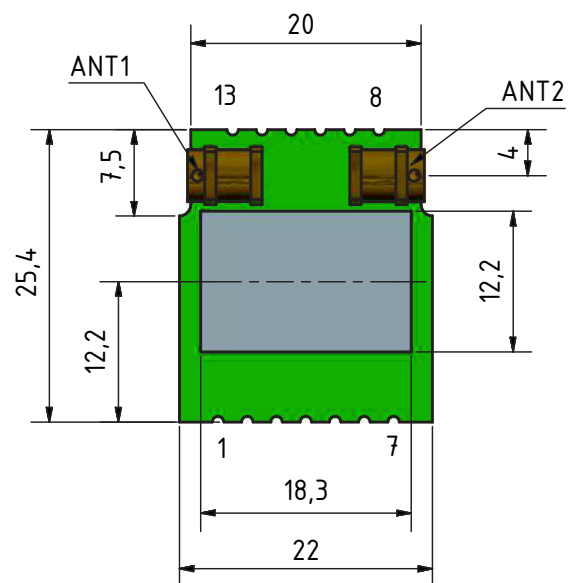
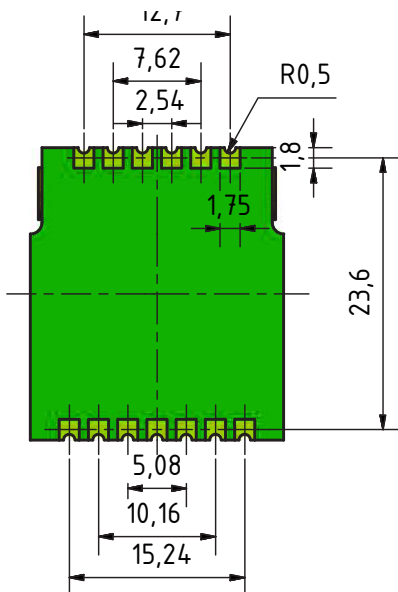


Marking:

SENGENUITY
WSR-F1-01
Serial Number
AYYWW

Pin Connections Edge Connector		
	RS485	UART
1	+ 5 V DC	+ 5 V DC
2	GND	GND
3	B-	Rx
4	A+	Tx

Option SMD / Enclosure E0001



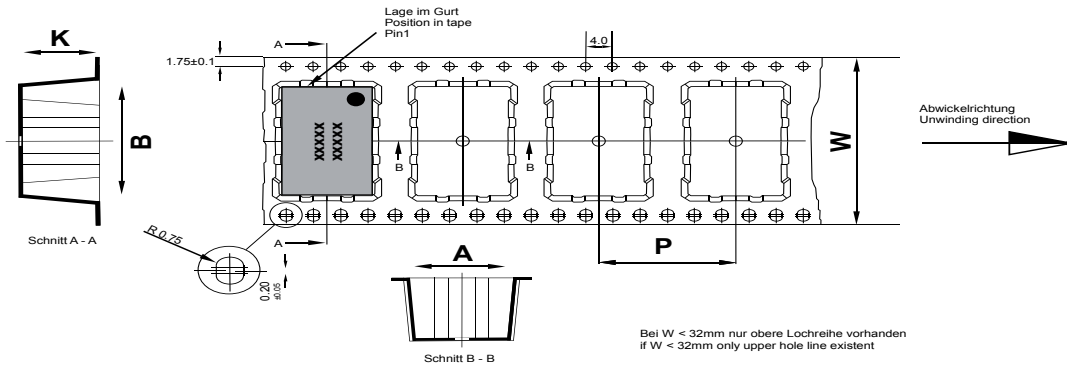
SENGENUITY
WSR-F1-08
AYYWW Serial Number

SMD Pin Connections

1	UART Rx		
2	UART Tx	8	GND
3	Internal Connected/UART Tx (high) Rx (low)*	9	ANT2
4	Internal Connected	10	GND
5	Internal Connected	11	GND
6	Internal Connected	12	ANT1
7	+5V DC (3.3V optional)	13	GND

*) for external RS485 transceiver

Standard Shipping Method SMD Option(E0001)



Maßangaben in mm: A, B und K Maße von Bauelement abhängig Fertigungstoleranzen entsprechen der DIN IEC 286-3	Dimension in mm: A, B und K are dependent upon component dimensions production tolerance complying DIN IEC 286-3
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All dimensions in millimeters unless otherwise stated

Enclosure Type	Tape Width W (mm)	Quantity per meter	Quantity per reel	Dimension P
E0001 (6.5mm)	44	37.5	230	32

Standard Shipping Method (E0002)

ESD carton box 280 x 200 x 66mm; 50pcs. per box

Ordering Information

Item Number	Description	Long description
713200244	WSR-F1-01	WSR-F1 with 2 MCX antenna connectors and RS485 interface; PCB size 35 x 30mm
713200265	WSR-F1-02	WSR-F1 with one MCX antenna connector and RS485 interface; PCB size 35 x 30mm
713200270	WSR-F1-03	WSR-F1 with 2 MCX antenna connectors and UART interface; PCB size 35 x 30mm
713200271	WSR-F1-04	WSR-F1 with one MCX antenna connector and UART interface; PCB size 35 x 30mm ³⁾
713200318	WSR-F1-05	WSR-F1 with 2 MCX antenna connectors and UART interface; SMD PCB size 25 x 22mm
713200319	WSR-F1-06	WSR-F1 with 1 MCX antenna connector and UART interface; SMD PCB size 25 x 22mm
713200320	WSR-F1-07	WSR-F1 without MCX antenna connector and with UART interface; SMD PCB size 25 x 22mm
713200322	WSR-F1-08	WSR-F1 with 1 MCX antenna connector, UART interface, 3.3V Supply; SMD PCB size 25 x 22mm

Notes:

- 1) Dependent on RF environment and output power
- 2) FCC/CE Certification refer to: ADVISORY for COMPLIANCE to COUNTRY DIRECTIVE(S)
- 3) This option does **not** have the possibility to measure antenna temperature

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 No rights under any patent accompany the sale of any such product(s) or information.

Rev: 21-Nov-2016

ADVISORY for COMPLIANCE to COUNTRY DIRECTIVE(S)

This Vectron International shipment contains electrical apparatus that may require compliance to specific country Directive(s) when put in service for end-use.

Vectron is advising customers that this shipment may contain product that is compliant to certain directives as indicated by appropriate marking (e.g. FCC and/or CE marking as appropriate) or un-marked product that is being sold as a “component” or “sub- assembly”.

Product with FCC and/or CE markings must not be altered in any way and must be used in accordance with the requirements of the standards that the product has been tested to comply with (Refer to the User Manual/ Instructions and safety precautions). A declaration of conformity can be provided upon request or obtained from SenGenuity’s web site

<http://www.sengenuity.com/tempsensorresources.html>

Further, if the customers integrate such certified product into their end-product which they intend to put on the market in their own country or any other country, they are ultimately responsible for ensuring compliance to the respective EMC directives or regulations as applicable in those countries.

Un-marked product is intended for further processing and assembly by customers (manufacturers) into their own products with a view to putting such product on the market for service or end-use under their name. If the shipment contains unmarked product (e.g. without FCC and/or CE marking), customers are advised and cautioned that, as the “manufacturer” of the product, they are ultimately responsible for ensuring compliance to the respective EMC directives or regulations as applicable in those countries when they put their end-product incorporating the Vectron product on the market.

For further guidance on this subject, please refer to:

http://ec.europa.eu/growth/sectors/electrical-engineering/emc-directive/index_en.htm

R. Arvikar
Dir. Global Quality & Compliance
Vectron International, Inc.
267 Lowell Road, Hudson, NH 03051
USA

J. Schaefer
Geschäftsführer & Plant Manager
Vectron International GmbH
Landstrasse, D-74924 Neckarbischofsheim
Germany