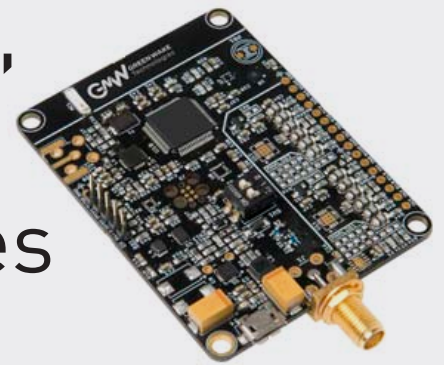


# Sensor Tag for Full-, Half- and Quarter- Bridge Strain Gauges

AST-02-STR



The AST family of sensor tags allows wireless measurements to be taken by sensors from remote locations. Sensors are powered by microwave energy, harvested from a dedicated RF power source and need no batteries or other consumables. The AST-02-STR sensor tag is designed for use with full-bridge, half-bridge & quarter-bridge strain gauge sensors. The device offers gauge offset, gain control and calibration.

## Features

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2450 MHz harvesting frequency

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Maintenance-free:  
no embedded battery, no wiring

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Integrated 868 MHz bi-directional radio

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Operation down to - 9 dBm input RF power

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Up to 100 m working distance  
(application dependent)

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Compatible with quarter-, half- and full-  
bridges configurations

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Gauge offset, gain control and calibration

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RoHS compliant

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CE certified

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# AST-02-STR

## Characteristics

<b>Regulatory approvals</b>	EN 60950-1 EN 61000-6-2 EN 55011	EN 301489-1 & -3 EN 300220-1 & -2	
<b>Harvesting frequency</b>	2450 MHz		
<b>Integrated Radio</b>			
Operating frequency	868.320 MHz		
Modulation (Rx & Tx)	2-GFSK / 50 kHz		
Data bit rate (Rx & Tx)	100 kbps on air		
<b>Integrated energy Storage</b>	200 µF capacitor (other capacitor sizes upon request)		
<b>ADC resolution</b>	24 bits		
<b>Maximum sampling rate</b>	10Hz		
<b>RF Sensitivity</b>	from - 9 dBm to + 15 dBm (max)		
<b>Bridge configurations</b>			
Types	Quarter-, Full- and Half- bridges		
Internal bridge completion	Quarter- bridge: 350 Ω or 1000 Ω (on demand) ± 0,01% Full- and Half- bridges: 1000 Ω ± 0,01%		
<b>Bridge excitation voltage</b>	2,5 V		
<b>Full scale measurement range</b>	± 3,9 mV/V (depending on gain)		
<b>Maximum measurement resolution</b>	0.23 µV/V		
<b>Measurement accuracy</b>	<1%		
<b>Input channels</b>	2		
<b>Mounting</b>	4x metallic holes Ø=3.6 mm in each corner		
<b>Dimensions</b>	70 mm x 52 mm x 9 mm (without SMA connector)		
<b>Operating (storage) Temp.</b>	- 20 °C / + 70 °C (- 40 °C / + 85 °C)		
<b>Weight</b>	30 g (with 1 SMA connector)		

## Ordering Options

Part Number	Configuration Description
AST-02-STR- <b>A0-A1-A2</b>	<p><b>A0</b>: Tag Configuration</p> <p><b>10</b>: Full bridge</p> <p><b>12</b>: Half-Bridge</p> <p><b>14</b>: Quarter-bridge</p> <p><b>A1</b>: Power RF Input</p> <p><b>PVJ</b>: Jack connector for external 50 Ω antenna (vertically mounted)</p> <p><b>PVP</b>: Plug connector for external 50 Ω antenna (vertically mounted)</p> <p><b>PHJ</b>: Jack connector for external 50 Ω antenna (horizontally mounted)</p> <p><b>PHP</b>: Plug connector for external 50 Ω antenna (horizontally mounted)</p> <p><b>A2</b>: Data RF Input/Output</p> <p><b>DA</b>: Integrated 868 MHz - 2,5 dBi antenna</p> <p><b>DVJ</b>: Jack connector for external 50 Ω antenna (vertically mounted)</p> <p><b>DVP</b>: Plug connector for external 50 Ω antenna (vertically mounted)</p> <p><b>DHJ</b>: Jack connector for external 50 Ω antenna (horizontally mounted)</p> <p><b>DHP</b>: Plug connector for external 50 Ω antenna (horizontally mounted)</p>