

Generic Autonomous Sensor Tag

AST-01-GEN



Description

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-01-GEN sensor tag can be used to interface with various industrial analogue and digital micro-sensors.

The device can be operated in continuous or pulsed mode, depending on the application and working distances. In continuous mode, the sensor connected to the tag has sufficient energy to perform measurements and send/receive data at any time. In pulsed mode, the sensor measures and sends data only when the tag's capacitor is fully charged.

Features

2450 MHz harvesting frequency

Maintenance-free:
no embedded battery, no wiring

Integrated 868 MHz bi-directional radio

Operation down to - 8 dBm input RF power

Up to 100 m working distance
(application dependent)

Custom sensor interfaces: analogue & digital
inputs, configurable output voltages


RoHS compliant

CE certified



AST-01-GEN

Characteristics

Regulatory approvals	EN 301489 EN 60950 EN 300220	
Harvesting frequency	2450 MHz	
Integrated Radio		
Operating frequency	868.300 MHz (868.900 MHz alternate)	
Modulation (Rx & Tx)	2-GFSK / 50 kHz	
Data bit rate (Rx & Tx)	100 kbps on air	
Integrated Power Storage	100 µF capacitor (other capacitor sizes upon request)	
DAC resolution	16 bits	
Maximum Data Refreshing Frequency	100 ms	
RF Sensitivity	from - 8 dBm to + 15 dBm (max)	
Available Output voltages	1 V, 1.8 V, 3.3 V, 5 V, 10 V Factory set-up voltage: 1.8 V	
Inputs	2x Analogue 0 – 10 V 1x SPI 1x I2c	
Mounting	4x metallic holes Ø = 3.5 mm	
Dimensions	80 mm x 80 mm x 14 mm (with vertically mounted SMA) 80 mm x 93 mm x 12 mm (with horizontally mounted SMA)	
Operating Temp.	- 20 °C / + 70°C	
Storage Temp.	- 40 °C / + 85°C	
Weight	40 g (with 2 SMA connectors)	

Ordering Options

Part Number	Configuration Description
AST-01-GEN- A1-A2	<p>A1: Power RF Input</p> <p>PVJ : Jack connector for external 50 Ω antenna (vertically mounted) PVP : Plug connector for external 50 Ω antenna (vertically mounted) PHJ : Jack connector for external 50 Ω antenna (horizontally mounted) PHP : Jack connector for external 50 Ω antenna (horizontally mounted)</p> <p>A2: Data RF Input/Output</p> <p>DA : Integrated 868 MHz - 2,5 dBi antenna DVJ : Jack connector for external 50 Ω antenna (vertically mounted) DVP : Plug connector for external 50 Ω antenna (vertically mounted) DHJ : Jack connector for external 50 Ω antenna (horizontally mounted) DHP : Jack connector for external 50 Ω antenna (horizontally mounted)</p>