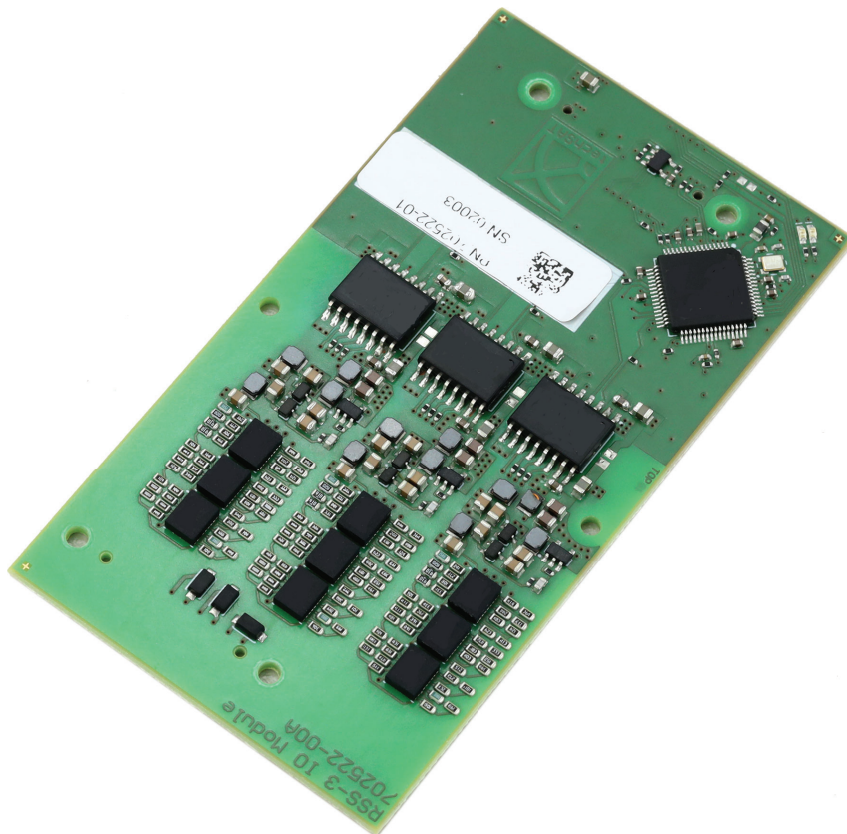


RSS3

Resistive Sensor Simulation Module



- Simulation of a wide variety of resistive sensors: PT100, PT1000, NTC, or PTC
- Three channels, galvanically isolated from each other and from digital domain
- High resolution and accuracy
- Compatible with TechSAT PCIe-2G (PCI) and FAST-2G (Ethernet) carriers
- Integrated in TechSAT's Simulation and Test Environment ADS2™



RSS3

Resistive Sensor Simulation Module

Description

The RSS3 is a member of TechSAT's Modular IO (TSMIO-2G) product family, second generation. TSMIO-2G modules can be mounted either on a PCIe carrier (PCIe-2G Carrier) or on the Ethernet carrier (FAST-2G Carrier). All members of the TSMIO-2G family are fully integrated into the TechSAT ADS2 Simulation and Test Environment as well as provided as standalone products with a fully featured user API.

The RSS3 module provides simulation of resistive sensors, such as PT100, PT1000, NTC, or PTC as well as customer specific scales.

Each module contains three channels and up to four modules can be mounted on a carrier (PCIe or Ethernet).

Each channel is implemented by a resistor network and a set of solid-state switches controlled by a microcontroller to provide the commanded resistor value.

The three sensor channels are galvanically isolated from each other and from the digital domain.

Operation

For each channel, an RSS3 module stores a lookup table translating a user commanded temperature or resistor value into a corresponding switch state so that the commanded value is seen at the output of the channel's terminals. The lookup table index represents the binary encoding of the corresponding temperature or resistance.

To command an output value of a channel, the binary value (i.e. the index into the lookup table) is sent to the module. The module translates this index into a switch state. Under ADS2 the index is determined by Engineering Unit Conversion from the value of a process variable (CVT variable).

The lookup table is created initially during factory calibration and can be adjusted by the user with an easy-to-use calibration utility provided with the module.

Technical Data

Features

- Up to 3 galvanically isolated channels on a module
- Lookup table based individual resistance configuration per channel
- Pre-calibrated, supplied with standard lookup tables
- Virtually unlimited number of customer-specific calibration sets (e.g. for different cable harnesses) through simple calibration algorithm
- Customer-specific sensor characteristics on request
- Accessible via FAST2G or PCIe2G protocol from ADS2 or standalone user API

Electrical Characteristics

- Sensor ranges

	Temperature °C			Resistance in Ohm		
	Min	Max	Resolution	Min	Max	Resolution
PT100	-80	560	0.1	68	300	0.04
PT1000	-160	190	0.1	350	1640	0.2
NTC1	-40	150	0.1			
PTC2	-85	190	0.1	1300	3500	0.25

- Power supply: provided by carrier

Physical Dimensions

- 95 mm x 52 mm

Environmental Conditions

- Operating temperature: 0 °C to +70 °C
- Storage temperature: -40 °C to +85 °C
- Humidity: 0 - 90% non-condensing

Part Number

- 702522