

S-NET-MOD-868-AM1

Wireless 868 MHz Module for s-net® battery-operated Mesh Application

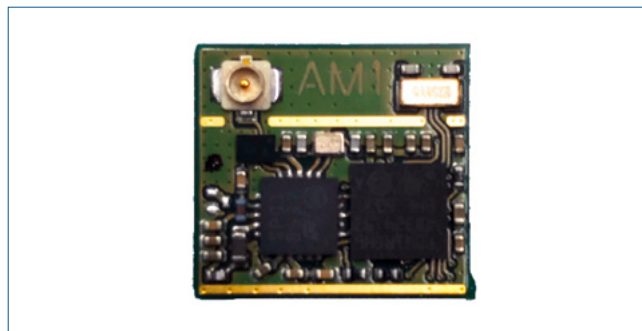
S-NET-MOD-868-AM1 enables battery-operated IoT

Applications

S-NET-MOD-868-AM1 is a low cost RF module, developed specially to connect objects for IoT (Internet of Things) applications or for Cyber Physical Systems. The module uses the s-net® networking protocol which allows low power, self-organizing multi-hop communication:

- Low power consumption, suitable for energy harvesting
- Robust bi-directional multi-hop communication
- Low configuration and maintenance effort
- Unique identification of network and nodes

The s-net® protocol stack provides a continuous bidirectional availability of all nodes while simultaneously fulfilling the requirements for battery-operated networks. It reduces unwanted idle-listening periods to a minimum by introducing short active phases for transmitting and receiving. This enables even relaying nodes to be battery-operated or supplied by energy harvesting. s-net® defines an autonomous organization of active time sequences of all participating nodes. These nodes form a spatially distributed multi-hop mesh network. This topology extends coverage for applications in buildings, whole factory sites or even city areas. The dynamic setup and self-organization of the meshed network leads to a robust network. It also adapts to changing environments and supports mobile nodes by taking into account the local situation at each node. With these features s-net® closes a technological gap in state-of-the-art standards, especially in the case when many mobile or battery-operated nodes must communicate among each other or with backend applications. The module's high quality, small form factor makes it ideal for SMD assembly. STMicroelectronics low power components STM32F0 microcontroller and SPIRIT1 Sub-GHz transceiver are used. The highly integrated design needs few additional components, therefore saving space and cost. The module is pre-certified and conforms to CE and R&TTE regulations.



KEY FEATURES

- 868 MHz Band, up to +11 dBm output power
- Antenna connection via SMD pads or u.FL connector
- Small form factor: 15 mm x 14 mm
- Data communication and configuration via UART
- s-net® communication protocol stack
- Low power consumption allows battery-operated nodes
- Basic firmware supports up to 40 nodes per network

Supports 4 different configuration profiles to balance latency and power consumption:

Profile		Fast	Balanced	Optimal	Saving
Latency [s]		2	4	8	16
Typical current consumption (connected) [mA@3V]	relay node	0,85	0,57	0,26	0,16
	mobile node	0,39	0,34	0,16	0,09

APPLICATION EXAMPLES

- Comprehensive sensory monitoring
- Condition monitoring
- Smart Metering
- Mobile sensors
- Smart Production
- Digitization of processes („Industrie 4.0“)

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