

S541.RF Datasheet

Overview

The S541.RF, a member of INNCOM's Integrated Room Automation System (IRAS), is a radio frequency (RF) transmitter designed to function as a battery powered switch monitor for use in the Layer-1 RF IRAS network. It can also be used in conjunction with virtually any "dry contact" switch input to transmit closure information to the e4 thermostat. The S541.RF maintains the same functionality as the S541.RF.IR (infrared) transmitter, reporting the status of the guestroom door to the network and communicating with other IR compatible Inncom devices. The S541.RF(T) is also equipped with a temperature sensor for applications where a low cost remote battery operated temperature sensor is required.



Figure 1 S541.RF

Application

The S541.RF is typically used to transmit an input from a magnetic switch to monitor a door, window, or mini-bar that cannot be easily wired to an e4 thermostat or the room's S5 network. It is ideal for retrofit situations and for transmitting door status from balcony doors or other room openings.

The S541.RF operates in three modes; sleep mode to conserve battery life when there are no events to report, operation mode to transmit switch status, and bind mode when commissioning the product into the Layer-1 IRAS.

The S541.RF uses radio frequency to communicate wirelessly to the INNCOM IRAS, therefore direct line of sight is not required for communication between the S541.RF and the e4 digital thermostat.

Features

- Small wall mountable form factor
- 2.4Ghz IEEE 802.15.4 compliant RF transceiver (CC2430 radio core)
- On-board temperature sensor
- Industrial temperature ratings 0-65 degrees C
- FCC Part 15 listed

Specification

Parameter✱	S541.RF
RF Data Rate	250kbps
Antenna Type	SMT
Indoor Range	70ft
Outdoor/ RF line-of-sight range	540ft
Transmit Power	1mW (+0dBm)
Receive Sensitivity	-94.6dBm

Frequency Band	2.4Ghz
Encryption	AES-128
Protocol	802.15.4
Frequency Channels	11-26
Temperature Sensing Accuracy	0.5°C from 0°C - 65 °C
Input Voltage	3VDC (Battery Powered)
Battery Life	2 years
Operating Ambient Temperature	0°C -40 °C
LED / Switch	Flashes on power up. Flashes slow in bind mode. Flashes fast when receiving the binding command. Switch presses are used for teach mode.

Network Topology

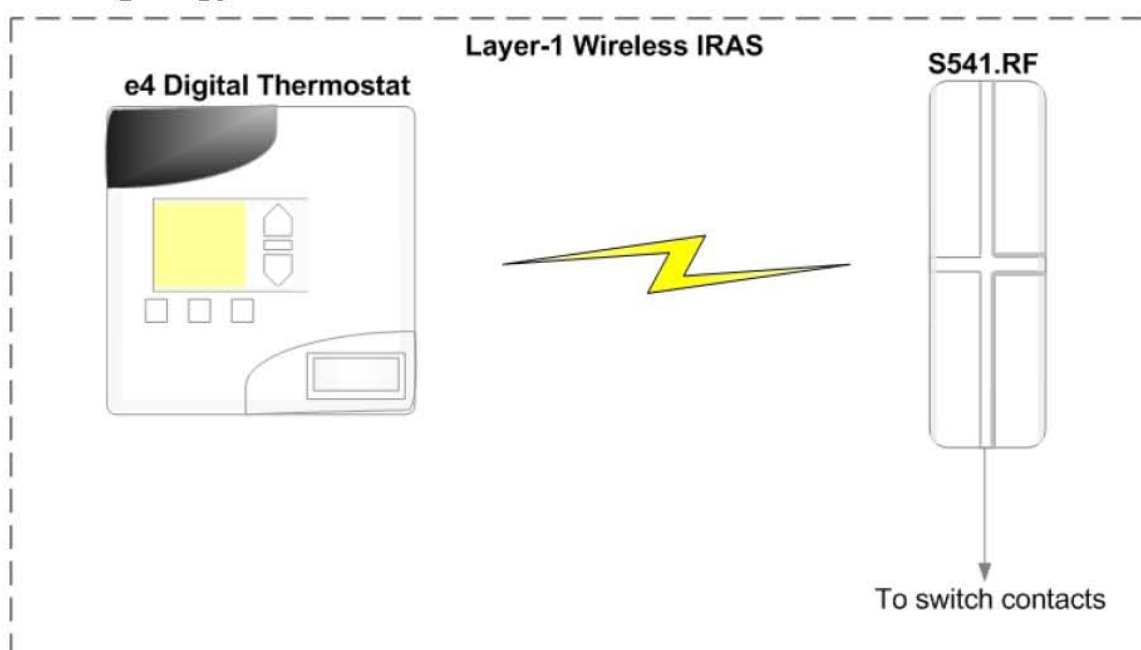


Figure 3 S541.RF Layer-1 Topology

The S541.RF wirelessly transmits the switch status to the e4 digital thermostat in a Layer-1 IRAS application.

Installation

Commissioning

Safety/Regulatory

Parameter✳	Condition✳	Status
FCC	Part 15	FCC listings are pending.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

S541.RF Dimensions✳

Harness

Pin	Function	Type	Min	Max
1-GND	Ground	-	-	-
2-Input	Discrete input	In	11.75	12.25

Ordering Information

Part Number✳	OPN	Description✳
01-9913.RF	S541.RF	S541 door switch monitor
01-9913.RFT	S541.RFT	S541 door switch monitor with on-board temperature sensor

Document Revision History

Revision	Date Issued✳	Reason
0.1	10-Jul-2009	FCC for S541.RF

FCC NOTE:

THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.