SERIES 2000 HIGH PERFORMANCE REMOTE ANTENNA RFM AND TUNING MODULE

FEATURES

- **Best in Class Performance Through Patented HDX Technology**
- **High Power Output**
- **Extended Antenna Induction Range**
- **Reader Antenna Distance Up to 120 Meters**
- **Proven In Harsh Industrial Environments**
- **Easy To Install And Use**

APPLICATIONS

- **Access Control**
- **Vehicle Identification**
- **Container Tracking**
- **Asset Management**
- **Waste Management**

DESCRIPTION

The Texas Instruments' low-frequency (LF) reader provides all the functionality required to communicate with Texas Instruments 134.2 kHz LF transponders which are available in a variety of form factors. The RI-RFM-008B radio frequency power module is capable driving the RI-ACC-008B, which then forms the resonant circuit with the antenna. The distance between the antenna - RI-ACC-008B combination and the reader (RI-RFM-008B + control module) can be extended up to 120 meters when connected by a symmetrical twinax cable.

The RI-ACC-008B radio frequency power module is capable driving a variety of antennas with extended inductance ranges from 8µH to 80µH including TI standard antennas RI-ANT-G01E, RI-ANT-G02E, RI-ANT-G04E gate antennas as well as RI-ANT-S01C and RI-ANT-S02C stick antennas. The RI-RFM-008 is designed to be connected to control modules RI-CTL-MB2A (RS232 interface) or RI-CTL-MB6A (RS422/485 interface) which provide the interface to connect a host system, power supply connectors and additional I/O's. The RI-RFM-008B module in combination with a control module and the RI-ACC-008B is well suited for usage in a broad range of applications including, but not limited to, access control, vehicle identification, container tracking, asset management and waste management applications.

The Series 2000 High Performance Remote Antenna RFM together with the Antenna Tuning Module supports the use of antennas installed at a distance of up to 120 meters. It is the interface between the 134.2 kHz HDX/FSK transponder and the Data Processing Unit. It sends an energizing signal to the transponder, modulates the RF signal to send data to the transponder, receives the identification signal and processes it for digital decoding.

ABSOLUTE MAXIMUM RATINGS(1)

over operating free-air temperature range (unless otherwise noted)

	RI-RFM-008B	RI-ACC-008B	UNIT
Operating Temperature	–25 to +70	–25 to +70	°C
Storage Temperature	–40 to +85	–40 to +85	°C

(1) Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

RECOMMENDED OPERATING CONDITIONS

over operating free-air temperature range (unless otherwise noted)

	RI-RFM-008B	RI-ACC-008B
Power Supply	7 to 24 Vdc, regulated	—

OPERATING CHARACTERISTICS

over operating free-air temperature range (unless otherwise noted)

PARAMETER	PART NUMBER		UNIT
	RI-RFM-008B	RI-ACC-008B	
Relative Humidity	< 97% non-condensing, IEC 68-2-30 Test Db, 21 cycles		
RF Transmit Frequency	134.2		kHz
Transponder Types	134.2 kHz HDX/FSK		
Antenna Tuning Range	Determined by the tuning-board	8 to 80 µH	
Antenna Resonance Voltage	Max. 380 Vpeak	Max. 280 / 400 Vpeak (depending on the configured inductance range)	
Dimensions (L × W × H)	(83 × 93 × 44) ± 1	(115 × 70 × 27) ± 1	mm
Weight	160	162	g
Cable (RFM to tuning-board)	Symmetrical shielded cable (twin-ax)		

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
RI-RFM-008B-00	ACTIVE			1	1	TBD	Call TI	Call TI

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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