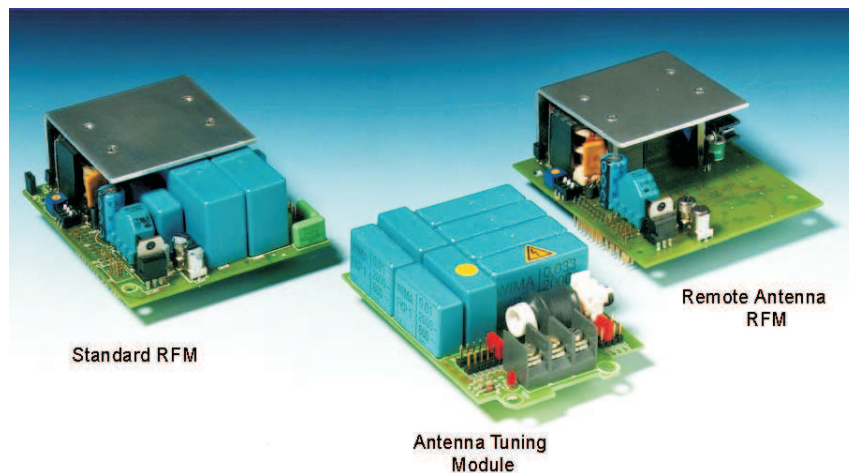


## HIGH PERFORMANCE LF RADIO FREQUENCY MODULE

### FEATURES

- **Common**
  - Variable Power Supply Range
  - Synchronization Control in Multi-Reader Arrays
  - High Power Output
- **Standard RFM**
  - Capacitive Tuning to Resonance
- **Remote Antenna RFM**
  - Supports Antenna Cable Lengths Up to 120 Meters
  - Capacitive and Inductive Tuning to Resonance
- Supports Antenna Cable Lengths Up to 10 Meters (Depending on Antenna Design)



### DESCRIPTION

The RI-RFM-007B radio frequency power module is capable driving a variety of antennas with inductance ranges from 26.0 $\mu$ H to 27.9 $\mu$ H 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-007B module in combination with a control module 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.

### ABSOLUTE MAXIMUM RATINGS<sup>(1)</sup>

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

	RI-RFM-007B	RI-RFM-008B	RI-ACC-008B	UNIT
Operating Temperature	–25 to +70	–25 to +70	–25 to +70	°C
Storage Temperature	–40 to +85	–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.



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

**RECOMMENDED OPERATING CONDITIONS**

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

	RI-RFM-007B	RI-RFM-008B	RI-ACC-008B
Power Supply	7 to 24 Vdc regulated If switched Power Supply is used, the frequency must be > 200 kHz		

**OPERATING CHARACTERISTICS**

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

PARAMETER	TEST CONDITIONS			UNIT
	RI-RFM-007B (STANDARD RFM)	RI-RFM-008B (REMOTE ANTENNA RFM)	RI-ACC-008B (ANTENNA TUNING MODULE)	
Relative Humidity	Acc. to IEC 68-2-30 >= 93% non condensing, Test Db, 21 cycles			
RF Transmit Power	To be set by pulse width to comply with PTT/FCC regulations			
RF Transmit Frequency	134.2 kHz			
Antenna Resonance Voltage	max. 380 Vpeak	max. 380 Vpeak	max. 380 Vpeak If used with customer designed antenna, it may be necessary to limit the output to 280 Vpeak	
Antenna Tuning Range	26 to 27.9	26 to 27.9	8 to 80 (including cable)	μH
Dimensions (L × W × H)	83 × 93 × 44 ± 1.5	83 × 93 × 44 ± 1.5	115 × 70 × 27 ± 1.5	mm
Weight	± 260	± 160	± 162	g
<b>RECOMMENDED ACCESSORIES</b>				
Antenna Tuning Module	No	RI-ACC-008B	No	
Digital Reader Module	RI-CTL-010A	RI-CTL-010A	No	

Additional specifications and application conditions are defined in the relevant RFM Reference Manual (11-06-21-042 (SCBU022) & 11-06-21-033) available on internet at: <http://www.ti.com/mc/docs/tiris/docs/specs/htm>.

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Fax: 886 2 377-2717

**PACKAGING INFORMATION**

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
RI-ACC-008B-30	ACTIVE			0	1	TBD	Call TI	Call TI
RI-RFM-007B-00	OBSOLETE			1		TBD	Call TI	Call TI
RI-RFM-007B-30	ACTIVE			0	1	TBD	Call TI	Call TI
RI-RFM-008B-30	ACTIVE			0	1	TBD	Call TI	Call TI

<sup>(1)</sup> 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.

<sup>(2)</sup> 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)

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

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