

## Product Bulletin

# High Performance LF Radio Frequency Modules

### Description

The Radio Frequency Module (RFM) is the core of a reader system. Together with an antenna it is the interface between TIRIS LF transponders and a Data Processing Unit. The RFM comes as an open board that can be integrated by customers into their application hardware and software.

Two versions are available, both providing high field strength to enable maximum performance in

readout distance. One model (the "Standard RFM") is designed for local tuning in applications while the other (the "Remote Antenna RFM") supports the use of antennas installed at a distance of up to 120 meters.

For that purpose, the Antenna Tuning Module can be installed either inside the TIRIS RI-ANT-G04E antenna or near each individual antenna to match inductivity of

### Key features:

- Common
  - Variable power supply range
  - Synchronization control in multi-reader arrays
  - High power output
- Standard RFM
  - Capacitive tuning to resonance
  - Supports antenna cable lengths up to 10 metres (depending on antenna design)
- Remote Antenna RFM
  - Supports antenna cable lengths up to 120 metres
  - Capacitive and inductive tuning to resonance

a wide range of customer designed antennas.

Both RF-Modules can be combined with the optionally available Digital Reader Module that can greatly increase noise immunity of the reader.



left-to-right: Standard RFM, Antenna Tuning Module, Remote Antenna RFM.

## Specifications:

Device name/ Part number:	RI-RFM-007B	RI-RFM-008B	RI-ACC-008B
Model description	Standard RFM	Remote Antenna RFM	Antenna Tuning Module
Operating temperature	-25 to +70 °C		
Storage temperature	-40 to +85 °C		
Relative humidity	Acc. to IEC 68-2-30 >= 93% non condensing, Test Db, 21 cycles		
Power supply	7 to 24 Vdc regulated If switched Power Supply is used, the frequency must be > 200 kHz		
RF transmit power	To be set by pulse width to comply with PTT/FCC regulations		
RF transmit frequency	134.2 kHz		
Antenna resonance	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 µH	26 to 27.9 µH	8 to 80 µH (including cable)
Dimensions (LxWxH)	83 x 93 x 44 ± 1.5 mm	83 x 93 x 44 ± 1.5 mm	115 x 70 x 27 ± 1.5 mm
Weight	± 260 g	± 160 g	± 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 Guides  
(11-06-21-042 & 11-06-21-047)

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For more information, call the Sales & Application Center nearest you. Or view our Internet home page:  
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### Europe

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Fax: 886-2-2377 2717