



300-510 MHz RFIC Transceiver from RFM

Programmable Features Enable Peak Performance for Your Medical Applications

Wireless connectivity for millions of medical devices is enabled by RFM products. The new RFM [TRC105](#) is a single-chip, multi-channel, low-power RFIC transceiver that is ideal for low-cost, high-volume, two-way short-range wireless applications operating in the 300-510MHz frequency band. Many features are programmable to optimize radio performance.

- **Wide range of frequencies** in single footprint and same PIN configuration as RFM's [TRC103](#).
- **Ultra-low RX current consumption** @ 2.7 mA (typical).
- **High RX sensitivity** @ -112 dBm typical (FSK).
- **High data rate** (programmable) @ 32 kb/s OOK, 200 kb/s FSK.
- **Programmable transmit power** +13 dBm. Utilizing the RSSI in Receive mode, the Transmit power can be adjusted to maintain the data link and maximize power consumption.
- **Sleep mode features.** Microcontroller can sleep until data is received that requires processing. Transmit/Receive FIFO can be loaded/unloaded in sleep mode.
- **Easy design-in.** Utilizes 20-35% fewer external components (only a microcontroller, crystal and a few passive components are needed); small 5mmX5mm package.
- **RFIC Design Assistant.** Enables comprehensive evaluation of the RFIC.

Medical Applications. The TRC105 plus other RFM products listed in the tables below support a broad range of medical applications including:

- ✓ CRM – Defibrillators, Pacemakers & External Instrumentation for Data Collection
- ✓ Cardiac Monitoring Systems
- ✓ Blood Glucose / Insulin Pumps
- ✓ Medical Pendants
- ✓ Asset Tagging
- ✓ Neuromodulation – Spinal Cord Stimulation
- ✓ Patient Monitoring Systems
- ✓ Body Sensor Networks

Looking for (MICS) Medical Implant Communications Systems? Check out the TRC105, TR3005, RF1419D, and RO3300E below.

Programmable Features Enable Peak Performance

TRC105
300-510 MHz RFIC Transceiver

Order Your Dev Kit Today!

Dev Kit Only
\$280

RFM
www.RFM.com

The graphic features a blue and orange background. At the top, it says 'Programmable Features Enable Peak Performance'. Below that, the product name 'TRC105' is written in large orange letters, with '300-510 MHz RFIC Transceiver' in smaller black text. To the right is a small image of the RFIC chip. In the center, there's a white box with the text 'Order Your Dev Kit Today!' and an image of the development kit components, including a board, cables, and a CD. At the bottom left, it says 'Dev Kit Only \$280'. At the bottom right is the RFM logo and website 'www.RFM.com'.

Avnet Memec June Enewsletter

RFM Short-Range Radios Ideal for Medical Applications

Part #s	Frequency	Max Data Rate	Supply Current (RX)	Sleep Current nA	Peak RF Output Power	RX Sensitivity	RFM Crystal & RF Filter Part #s
TRC105 Multi-channel OOK/FSK RFIC Transceiver	300-510 MHz	200 kbps / 30 kbps	2.7 mA	200 nA	+10 dBm	-112 dBm (20 Kbps)	XTL1020 + RF3605D (for 403 MHz)
TRC103 Multi-channel OOK/FSK RFIC Transceiver	863-960 MHz	200 kbps / 30 kbps	3.3 mA	200 nA	+10 dBm	-112 dBm (20 Kbps)	XTL1020 + RF3501E (for 868MHz) RF2040E or SF2093E (for 915 MHz) RF3601E (for 950 MHz)
TR1000 OOK/ASK, SAW-Based Transceiver	916.5 MHz	115.2 kbps	3.0 mA	700 nA	0 dBm	-106 dBm @ 2.4 kbps	n/a
TR1001 OOK/ASK, SAW-Based Transceiver	868.35 MHz	115.2 kbps	3.0 mA	700 nA	0 dBm	-106 dBm @ 2.4 kbps	n/a
TR3005 OOK/ASK, SAW-Based Transceiver	403.5 MHz	115.2 kbps	3.0 mA	700 nA	0 dBm	-106 dBm @ 2.4 kbps	n/a
TR3006HS OOK/ASK, SAW-Based Transceiver	314 MHz	115.2 kbps	3.0 mA	700 nA	0 dBm	-106 dBm @ 2.4 kbps	n/a
RX6000 OOK/ASK, SAW-Based Receiver	916.5 MHz	115.2 kbps	3.0 mA	700 nA	n/a	-106 dBm @ 2.4 kbps	n/a

Order Your RFM Short-Range Radio Developer Today!

Part #s	Frequency	Comes with RFM Crystal & RF Filter Below
DR-TRC105-403-DK Dev Kit for the TRC105 403 MHz RFIC Transceiver	402-407.3 MHz	XTL1020 + RF3605D (for 403 MHz)
DR-TRC103-868-DK Dev Kit for the TRC103 868 MHz RFIC Transceiver	863-870 MHz	XTL1020 + RF3501E (for 868MHz)
DR-TRC103-915-DK Dev Kit for the TRC103 915 MHz RFIC Transceiver	902-928 MHz	XTL1020 + RF2040E or SF2093E (for 915 MHz)
DR-TRC103-950-DK Dev Kit for the TRC103 950 MHz RFIC Transceiver	950-960 MHz	XTL1020 + RF3601E (for 950 MHz)
DR2000-DK Dev Kit for TR1000 Transceiver	916.5 MHz	n/a
DR1201-DK Dev Kit for TR1001 Transceiver	868.35 MHz	n/a
DR5000 Dev Kit for RX6000 Receiver	916.5 MHz	n/a

RFM Resonators & Filters Ideal for Medical Applications

Part #s	Frequency	Bandwidth	Insertion Loss (Typical)	Case (mm)
RF1419D Narrowband Receiver Front End Filter	402-405 MHz (403.5 MHz Center Frequency)	7500 kHz	1.60 dB	3.8x3.8
RO3120A Single-Port SAW Resonator	403.55 MHz	n/a	1.1 dB	5.0x3.5
RO3132A Single-Port SAW Resonator	312.0 MHz	n/a	1.4 dB	5.0x3.5
RO3300E Single-Port SAW Resonator	403.55 MHz	n/a	1.0 dB	3.0x3.0