muRata
INNOVATOR IN ELECTRONICS

TRC104

2.4GHz RFIC
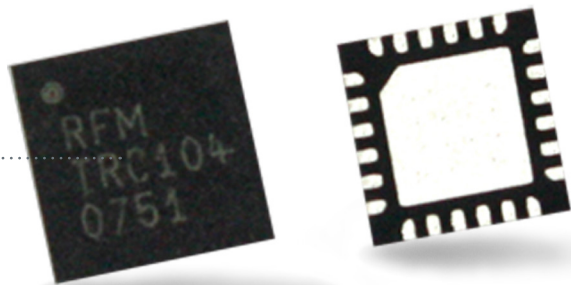
Short-range radio transceiver

Very small size: 4mm X 4mm
Low-power: Four power-saving operating states
Exceptional RX sensitivity: -95 to -90 dBm
High communications reliability: GFSK with FHSS capability
High data rates: Up to 1 Mb/s

Wide range of applications

The small size, low power consumption, and superior receiver sensitivity of the TRC104 make it ideal for a wide variety of short-range radio applications:

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Automotive	• Automobile immobilizers • Auto entertainment systems • Two-way remote keyless entry	• Communications systems in motorcycle helmets
Building Automation and Control Commercial and Residential	• Lighting control • Thermostats	• Remote entry access
Communications	• Wireless modules	• Data communications
Computer Peripherals	• Wireless keyboards • Wireless mouse devices • Wireless joysticks	• WIreless printers • WIreless copiers • Wireless audio
Consumer Electronics	• Wireless game controllers • Wireless headsets • Wireless audio • WIreless advanced toys	• WIreless leisure equipment • Wireless sports and performance monitoring
Industrial/Manufacturing	• RFID readers • Active RFID tags • Industrial sensors	• Low-power two-way telemetry systems • Asset and personnel tracking
Medical	• Insulin pumps • Asset and personnel tracking	• RFID readers • Active RFID tags
Retail	• RFID readers • Active RFID tags	• Low-power two-way telemetry systems
Security/Theft Prevention Residential, Commercial and Construction	• Door/window sensor intrusion systems • Motion detectors	• Smoke/fire detector and alarm systems • Security cameras
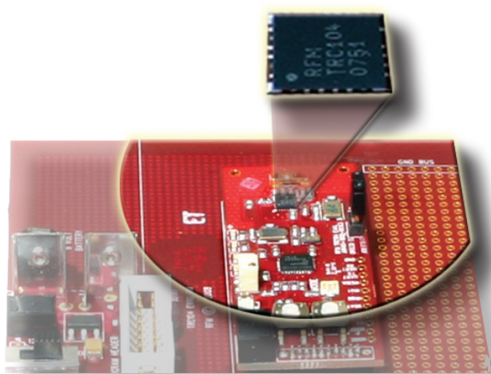
ROHS Compliant
FCC & ETSI Certifiable

Ideal for low-cost, high volume, two-way short-range wireless applicatiosn operating in the worldwide unlicensed 2.4 GHz ISM Band

Single-chip   Multi-Channel   Low-power   Small size

- GFSK with Frequency Hopping Spread Spectrum capability
- High Sensitivity: -95 dBm @ 250 kb/s and -90 dBm @ 1 Mb/s
- High Data Rate: Up to 1 Mb/s
- Low current consumption:
- Receive current: 18 mA -Transmit current: 13 mA @ 0 dBm
- Up to 1 mW transmit power
- Wide operating supply voltage: 1.9 to 3.6 V
- Low sleep current: 0.4 µA

Easy design-in

All crltlcal RF and base-band functions are Integrated In the TRC104, minimizing external component count and simplifying design-in. Only a microcontroller, crystal and several passive components are needed to create a complete , robust radio function.

- Integrated PLL, IF and base-band circuitry
- Low-cost crystal reference
- Integrated RSSI
- Integrated crystal oscillator
- Integrated 16-bit packet CRC
- Integrated DC-balanced data scrambling
- Integrated voltage regulators
- Four power-saving operating states
- Integrated data & clock recovery
- Programmable RF output power
- Transmit/receive FIFO, 32 Byte
- Programmable TX/RX FIFO depth

- Continuous & protocol modes
- Packet destination and sender addressing
- Packet hand ling features:
- Packet address fllterlng
- Error detection
- SPI configuration & data interface
- TTL/CMOS compatible I/0 pins
- Host mlcrocontroller Interrupt outputs
- Programmable data rate
- Small plastic package: 24-pin QFN (4mmX4mm)
- Standard 13 inch reel, 3K pieces

Long battery life

Includes a set of low-power states to reduce overall current consumption and extend battery life.

Fast-track your design -- order a Developer Kit today!

- Over-the-air data rate GFSK communication up to 1 Mb/s
- 57.6 kb/s serlal PC communication
- Reference antennas
- Data terminal program
- Complete DR board configuration through RFDA 4.0 software
- TX/RX diagnostic LEDs for vlsual verlfl catlo n
- Packet checksum verification
- Range test: default packet or up to 128 byte custom packet
- Appllcatlon firmware development

DR-TRC1-4-2400-DK contains:

- Two DR-TRC104 development boards
- Two USB 2.0 cables
- Two 2xAA battery packs
- Four AA batteries
- Two 9V batteries
- Two antennas with standard SMA connector
- Program CD
- Two universal power supplies

How To Buy

Murata products are sold through a world-wide network of sales reps and distributors. Go to the Murata website at www.murata.com and visit the "Products - Wireless Connectivity Platforms" section to locate a sales/distribution partner near you.