

Discontinued

# New 2.4 GHz RFIC

## Short-Range Radio Transceiver



## TRC104



**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

*FCC and ETSI Certified  
RoHS Compliant*

## 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:

### Automotive

- Automobile immobilizers
- Auto entertainment systems
- Two-way remote keyless entry

- Communications systems in motorcycle helmets

### Building Automation and Control Commercial & Residential

- Lighting control
- Thermostats

- Remote entry access
- Card-key access control

### 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 & personnel tracking

- RFID readers
- Active RFID tags

### Retail

- RFID readers
- Active RFID tags

- Low-power two-way telemetry systems

### Security / Theft Prevention Residential, Commercial, & 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 applications 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  $\mu$ A

#### EASY DESIGN-IN

All critical 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 handling features:
  - Packet address filtering
  - Error detection
- SPI configuration & data interface
- TTL/CMOS compatible I/O pins
- Host microcontroller 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 serial PC communication
- Reference antennas
- Data terminal program
- Complete DR board configuration through RFDA 4.0 software
- TX/RX diagnostic LEDs for visual verification
- Packet checksum verification
- Range test: default packet or up to 128 byte custom packet
- Application firmware development

#### DR-TRC104-2400-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



**"Out-of-the-box" operation between two Windows-based PCs**

**DR-TRC104-2400-DK  
\$280**

**HOW TO BUY:** RFM products are sold through a world-wide network of manufacturer's sales reps and distributors. Go to [www.RFM.com](http://www.RFM.com) and visit our "How to Buy" section to locate a sales / distribution partner near you.