

300MHz to 450MHz ASK Receiver with RSSI and Squelch

Description

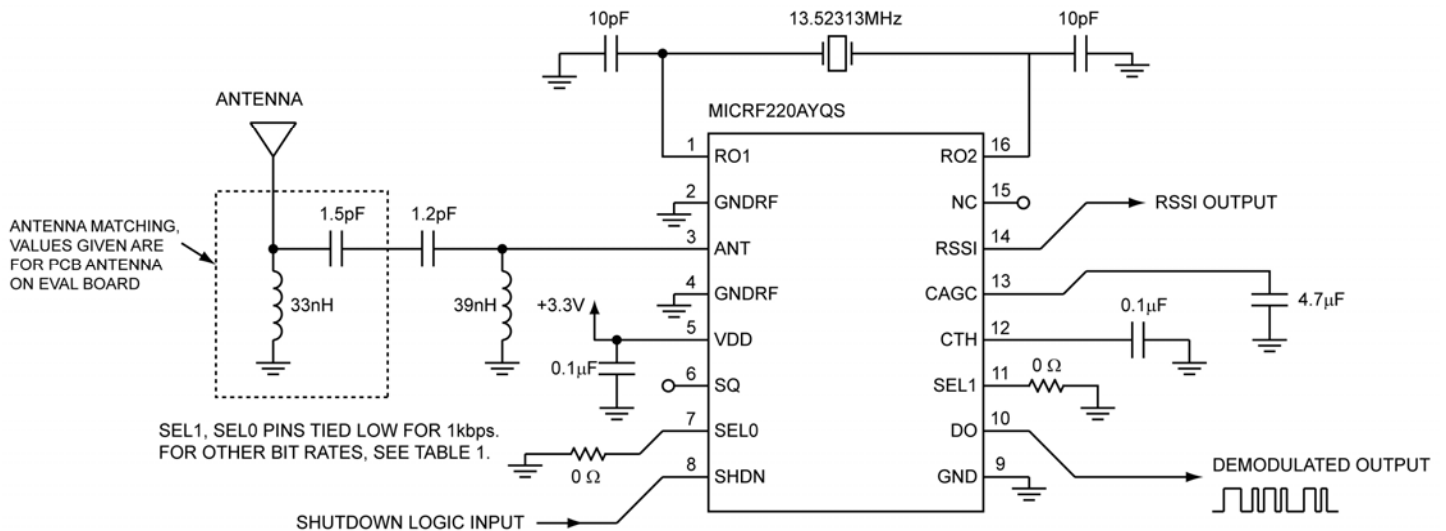
The MICRF220 is a 300MHz to 450MHz super-heterodyne, image-reject, RF receiver with automatic gain control, ASK/OOK demodulator, analog RSSI output, and integrated squelch features. It only requires a crystal and a minimum number of external components to implement. The MICRF220 is ideal for low-cost, low-power, RKE, TPMS, and remote actuation applications.

The MICRF220 achieves -110dBm sensitivity at a bit rate of 1kbps with 0.1% BER. Four demodulator filter bandwidths are selectable in binary steps from 1625Hz to

13kHz at 433.92MHz, allowing the device to support bit rates up to 20kbps. The device operates from a supply voltage of 3.0V to 3.6V, and typically consumes 4.3mA of supply current at 315MHz and 6.0mA at 433.92MHz. A shutdown mode reduces supply current to 0.1 μA typical. The squelch feature decreases the activity on the data output pin until valid bits are detected while maintaining overall receiver sensitivity.

Data sheets and support documentation can be found on Micrel's web site at: www.micrel.com.

Typical Application



QwikRadio is a registered trademark of Micrel, Inc.

| Features | Benefits |
|--|--|
| -110dBm sensitivity at 1kbps with 0.1% BER | Provides excellent range |
| Supports bit rates up to 20kbps at 433.92MHz | Supports most common data rates for ASK transmitters |
| 25dB image-reject mixer | Attenuates signals at the image frequency reducing out of band filtering requirements |
| No IF filter required | Integrated IF filter reduces component count and cost |
| 60dB analog RSSI output | Provides received signal strength indicator over long range |
| 3.0V to 3.6V supply voltage range | Supports common supply voltages |
| 4.3mA supply current at 315MHz (continuous receive) | Low supply current extends operating life of battery |
| 6.0mA supply current at 434MHz (continuous receive) | Low supply current extends operating life of battery |
| 0.1µA supply current in shutdown mode | Low shutdown supply current extends life of battery |
| Optional Data Output Squelch until valid bits detected | Minimizes false triggering and wake up of microcontroller until valid bits are detected |
| 16-pin QSOP Package (4.9mm x 6.0mm) | Small package |
| -40°C to +105°C temperature range | Supports automotive temperature range |
| Pin-for-pin compatibility with MICRF219 and MICRF221 | MICRF219 adds auto-polling and gain reduction. MICRF221 is 800MHz to 950MHz ASK receiver with auto-polling |
| MICRF220 covers full frequency range from 300MHz to 450MHz | MICRF211 covers 380MHz to 450MHz, MICRF213 covers 300MHz to 350MHz. MICRF220 offers one device which covers full frequency range from 300MHz to 450MHz |

Corporate Sales Offices

| Location | Address | | Telephone | Fax |
|------------------------|--|---|---------------------|---------------------|
| Corporate HQ | 2180 Fortune Dr. | San Jose, CA 95131 USA | (408) 944-0800 | (408) 474-1000 |
| Western USA | 2180 Fortune Dr. | San Jose, CA 95131 USA | (408) 944-0800 | (408) 474-1000 |
| Central USA | 2425 N. Central Expressway, Suite 351 | Richardson, TX 57080 USA | (972) 393-2533 | (408) 474-1210 |
| Eastern USA | 93 Branch St. | Medford, NJ 08055 USA | (609) 654-0078 | (609) 654-0989 |
| Latin America | 2425 N. Central Expressway, Suite 351 | Richardson, TX 57080 USA | (972) 393-2533 | (408) 474-1210 |
| China | Rm 601, Bldg., Int'l Chamber of Commerce Mansion, Fuhua Rd., Futian District | Shenzhen, P.R. China | +86-755-8302-7618 | +86-755-8302-7637 |
| Japan | Queen's Tower A 14F, 2-3-1, Minato Mirai, Nishi-Ku, Yokohama-Shi | Kanagawa 220-6014, Japan | +81-45-224-6616 | +81-45-224-6716 |
| Korea | 4F Manzo 2 Bldg, 198-47, Gungnae-Dong, Bundang-Ku | Seongnam-City, Kyungki-do, 463-470, Korea | 82 (2) 538-2380 | 82 (2) 538-2381 |
| Singapore/India | 750A Beach Rd., #07-324 The Plaza | Singapore 199591 | +65-6291-1318 | +65-6291-1332 |
| Taiwan | 4F, No. 43 Lane 188, Rueiguang Rd., Neihu District | Taipei, Taiwan, R.O.C. | +866 (2) 8751-0600 | +866 (2) 8751-0746 |
| France/Southern Europe | Les Laurentides Immeuble Ontario, 3 avenue du Quebec | 91140 Villebon sur Yvette, France | +33 (0) 1.6092.4190 | +33 (0) 1.6092.4189 |
| UK/EMEA | 1 st Floor, 3 Lockside Place, Mill Lane, Newbury, Berks | United Kingdom RG14 5QS | +44 (1635) 524455` | +44 (1635) 524466 |
| Sweden/Nordic | Lundagatan 11 6tr | SE-171 63 Solna Sweden | +46 (8) 470-5950 | +46 (8) 470-5950 |

