

300MHz to 450MHz ASK Receiver with RSSI and Squelch

Description

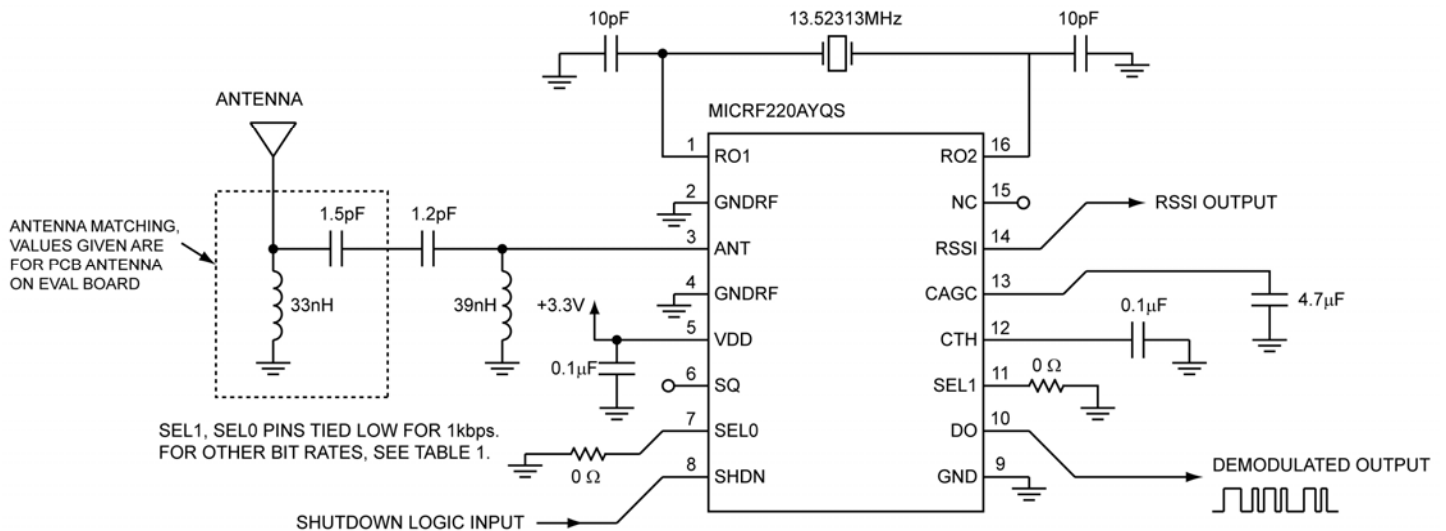
The MICRF220 is a 300MHz to 450MHz super-heterodyne, image-reject, RF receiver with automatic gain control, ASK/OOK demodulator, analog RSSI output, and integrated squelch features. It only requires a crystal and a minimum number of external components to implement. The MICRF220 is ideal for low-cost, 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 0.1µA 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



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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

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