

High Performance Digital FM Transceiver for Portable Devices

General Description

The QN8036 is a high performance, low power, fully integrated single-chip stereo FM transceiver designed for cell phones, PMP/PNDs, and portable radios. It integrates both FM receiving and transmitting functions, auto-seek and clear channel scan, and antenna tuning to ease matching in real applications. Advanced digital architecture enables superior receiver sensitivity, crystal clear audio.

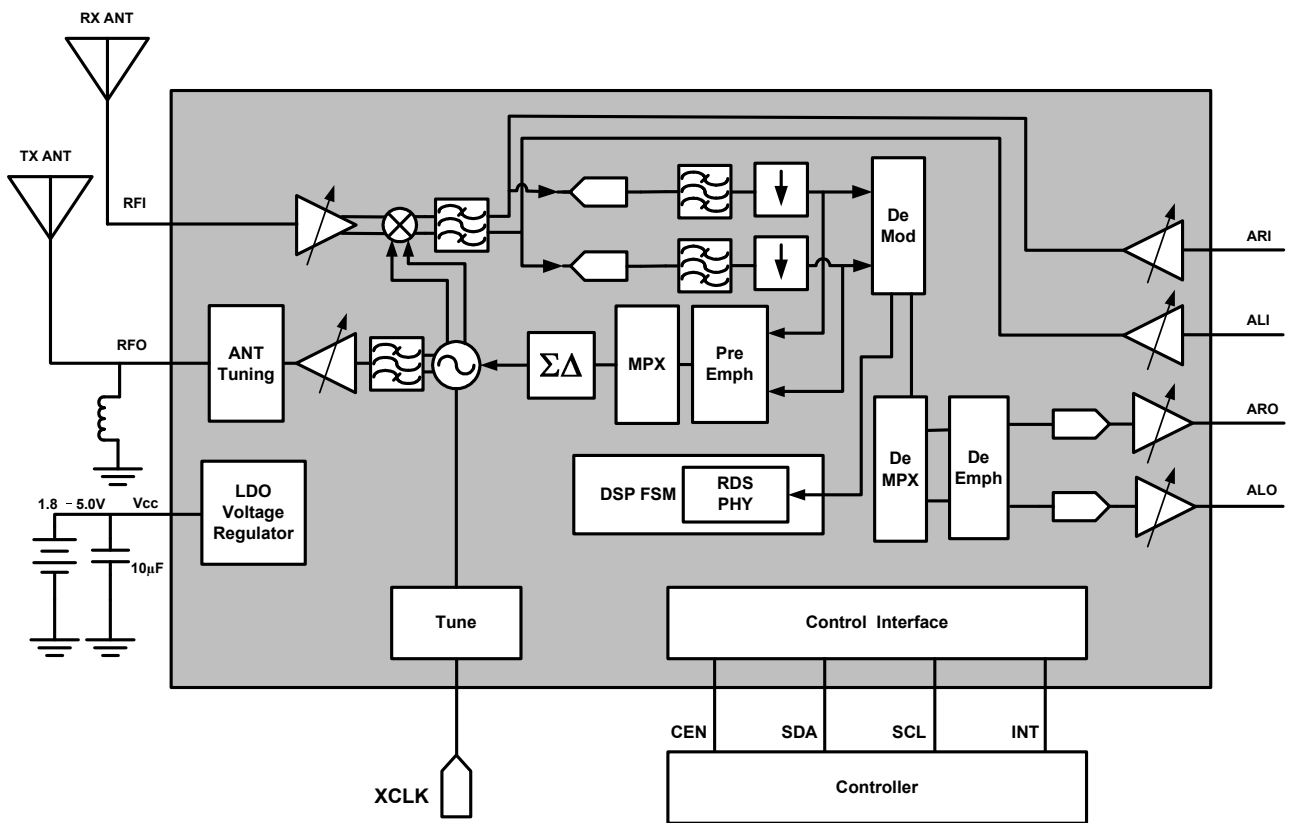
With its small footprint, minimal external component count and multiple clock frequency support, the QN8036 is easy to integrate into a variety of small form-factor low power portable applications. An integrated voltage regulator enables direct connection to a battery and provides high PSRR for superior noise suppression. A low-power Standby mode extends battery life. ESD protection is on all pins. The QN8036 is fabricated in highly reliable CMOS technology.

Key Features

- **Worldwide FM Band Receive and Transmit**
 - 60 MHz ~ 108 MHz full band tuning in 50/100/200 kHz step sizes
 - 50/75 μ s pre-emphasis and de-emphasis
- **High Performance FM Receiver (FMR)**
 - Superior sensitivity: 1.2 μ V_{EMF}
 - High SNR: 63dB Stereo
 - Ultra-low THD: 0.04%
 - High interference rejection
 - Integrated adaptive noise cancellation (SNC, HCC, SM)
 - Auto tuning support
- **Stereo Earphone Driving with Line in feature**
 - In Line-in mode, audio input feed into earphone driver directly, save external earphone driver
- **1 kHz Tone Generator Inside**
- **High Performance FM Transmitter (FMT)**
 - 62dB Stereo SNR, 0.04% THD
 - Maximum 119 dB μ V RF output level with 42dB adjustable range
 - Integrated Clear Channel Scan
- **Automatic Input Audio Sensing**
 - RF power automatically turned off if no input audio signal for 60s
- **RDS/RBDS Transmit & Receive**
 - Supports US and European data service, including TMC (Traffic Messaging Channel)
 - High speed RDS mode
- **Very Low Power Consumption**
 - 9.2mA (Transmit Mode), 13.5mA (Receive Mode)
 - Power saving IDLE and STANDBY modes
 - Low shutdown leakage current
- **Ease of Integration**
 - Small footprint, 2.5 \times 2.5mm QFN16 and 4.9 \times 3.9mm SSOP16
 - Low cellular and GPS band spurs
 - 32.768 kHz and multiple MHz clocks input
 - I²C control interfaces
 - VCC: 1.8~5.0V, integrated LDO, support battery direct connection. Accommodate 1.6~3.6V digital interface
- **Robust Operation**
 - -25^oC to +85^oC operation
 - ESD protection on all input and output pads

Typical Applications

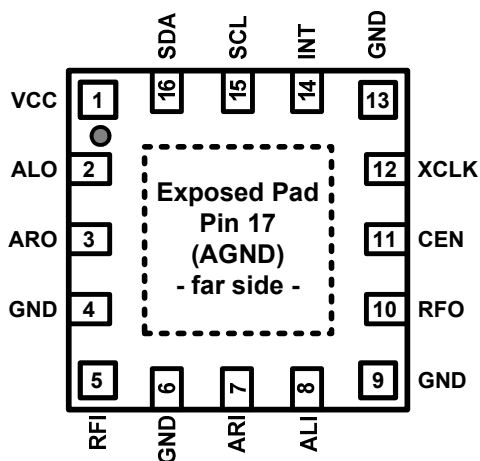
- Feature Phones / Smart Phones
- Portable Audio & Media Players
- Net book
- Automotive Accessories



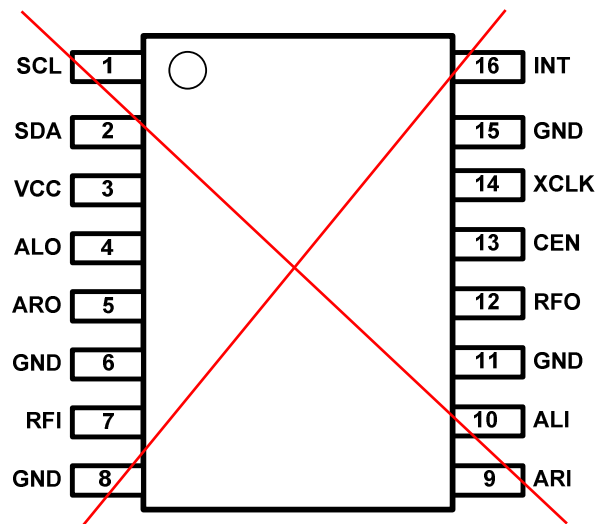
QN8036 Block Diagram



(Top View)



QN8036-NCNB Device Pin out



QN8036-UCNB Device Pin out

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