

SINGLE CHIP TRANSCEIVER FOR WALKIE TALKIE

Rev.1.2–Dec.2009

1. General Description

The RDA1846 is a highly integrated single-chip transceiver for Walkie Talkie applications. It totally realizes the translation from RF carrier to voice in the RX path and from voice to RF carrier in the TX path, requiring only one micro controller.

The RDA1846 has a powerful digital signal processor, which makes it have optimum voice quality, flexible function options, and robust performance under varying reception conditions.

The RDA1846 can be tuned to the worldwide frequency band for Walkie Talkie from 400MHz to 500MHz and especially from 134MHz to 174MHz which meets the frequency band of weather broadcast.

The transceiver uses the CMOS process with a package size of 5X5mm. By virtue of its high integration, it requires the least external components and eliminates the complicated design of sensitive RF circuits on PCB.

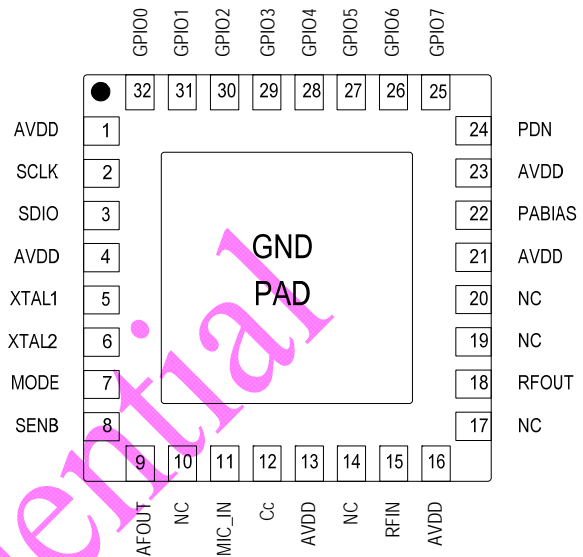


Figure 1.1 RDA1846 Top View

1.1 Features

- CMOS single-chip fully-integrated transceiver
- Fully integrated frequency synthesizer and VCO
- Support worldwide frequency band
 - 134MHz ~ 174MHz
 - 400MHz ~ 500MHz
- 12.5KHz, 25KHz channels
- Support multiple XTAL clocks
 - 12.8/25.6Mhz
 - 13/26Mhz
- Digital auto frequency control (AFC)
- Digital auto gain control (AGC)
- Selectable pre/de-emphasis
- Received signal strength indicator (RSSI)
- VOX and SQ
- Build-in CTCSS/CDCSS generator and judgment
 - CTCSS with 120/180 /240 degree phase shift
 - 23/24 bit programmable DCS code

- DTMF and programmable in-band dual tone
- Programmable in-band single tone transmitter
- Auto RX/TX/SLEEP state switching
- 8 GPIOs
- 3-wire/4-wire/I²C serial control bus interface
- On chip 8 dBm PA
- Analog and digital volume control
- Directly support 32Ω resistance loading
- 3.3 to 4.8 V supply voltage with Integrated LDO
- 5X5 mm 32 pin QFN package

1.2 Applications

- Cellular handsets
- Family radio services
- Walkie Talkies