

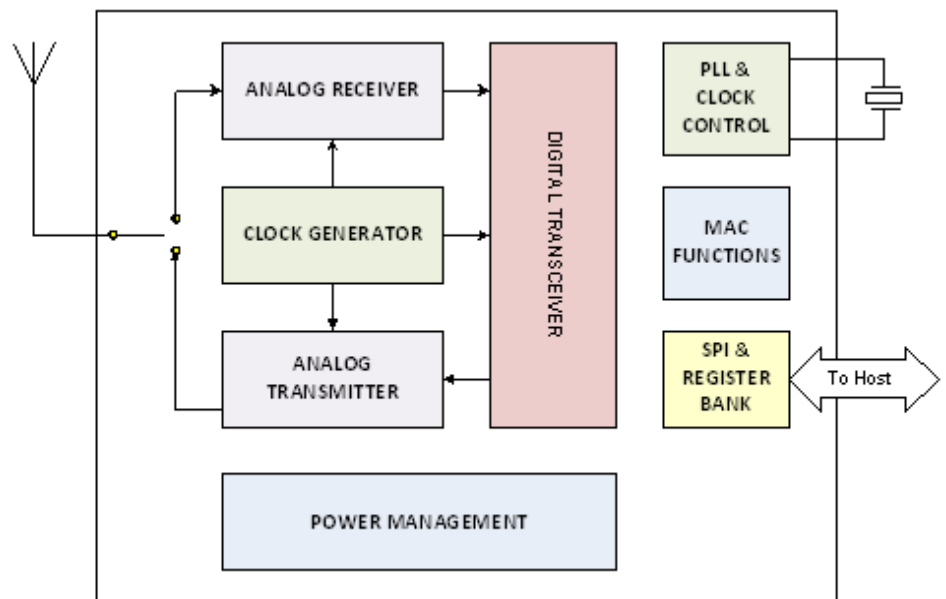


Overview of DW1000

- A single chip wireless transceiver based on ultra-wideband techniques compliant with the IEEE802.15.4-2011 standard
- Allows the location of objects in real time location systems (RTLS) to a precision of 10 cm indoors
- Allows high data rate communications, up to 6.8 Mb/s
- Excellent communications range of up to 300 m thanks to coherent receiver techniques*
- Short packet durations support high tag densities – up to 11,000 in a 20 m radius
- Highly immune to multipath fading – allows reliable communications in high fading environments
- Low power consumption allows operation from batteries for long periods*
- Small package size and solution footprint allow the implementation of cost-effective solutions in RTLS and WSN

Key Benefits

- Very precise location of tagged objects delivers enterprise efficiency gains and cost reductions
- Long LOS and NLOS range reduces amount of infrastructure required to deploy systems
- Low chip cost allows cost-effective implementation of solutions
- Low power consumption reduces the need to replace batteries and lowers system lifetime costs
- Standards based solution (IEEE802.15.4-2011), eases proliferation



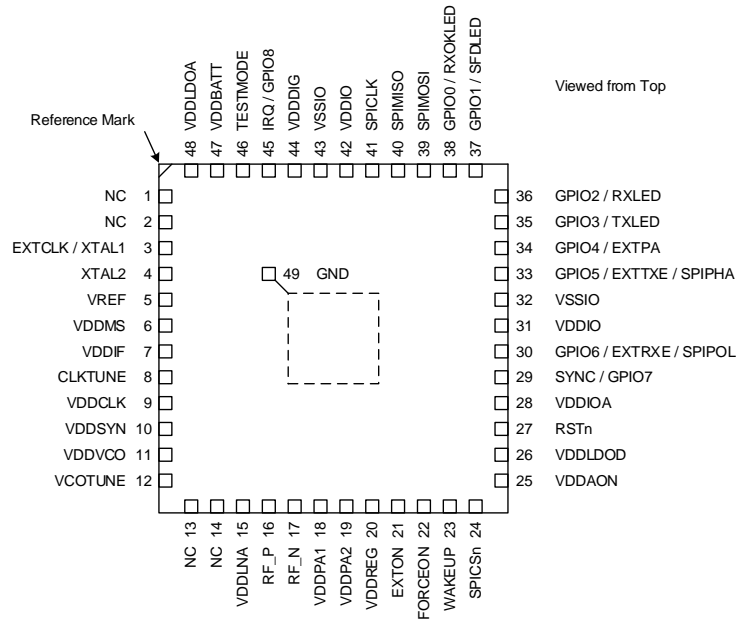
Functional Block Diagram

Target Applications

The DecaWave DW1000 is optimized for applications in Real Time Location Systems and Wireless Sensor Networks across a variety of markets including agriculture, building control and automation, factory automation, healthcare, safety & security, warehousing & logistics and a range of others.

Technical Data

- Supports 110 kbit/s, 850 kbit/s & 6.8 Mbit/s data rates
- 6 frequency bands supported with center frequencies from 3.5 GHz to 6.5 GHz
- Transmit Power -14 dBm or -10 dBm
- Transmit Power Density < -41.3dBm / MHz
- Preamble Length 64 μ s to 4 ms
- Supports Packet Sizes up to 1023 bytes
- Modulation: BPM with BPSK
- Integrated FEC and CRC insertion and checking
- SPI interface to host controller (20 MHz max)
- Allows easy integration with wide range of μ Controllers
- Single Supply Voltage 2.8 V to 3.6 V
- Low Power Consumption
 - Transmit mode from 31 mA*
 - Receive mode from 64 mA*
 - 2 μ A watchdog timer mode
- 100 nA deep sleep mode
- Media Access Techniques
 - FDMA: 6 channels
 - CDMA: 12 different channel codes



DW1000 Pin Diagram

- Supports both two way ranging and one way ranging, using Time of Flight (TOF) and time difference of arrival (TDOA) methods
- Fabricated in 90 nm CMOS
- Industrial temperature range -40°C to +85°C
- 6 mm x 6 mm 48 pin QFN package
- Hardware & software applications support material available from DecaWave

*Mode dependent

To find out more contact: sales@decawave.com

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