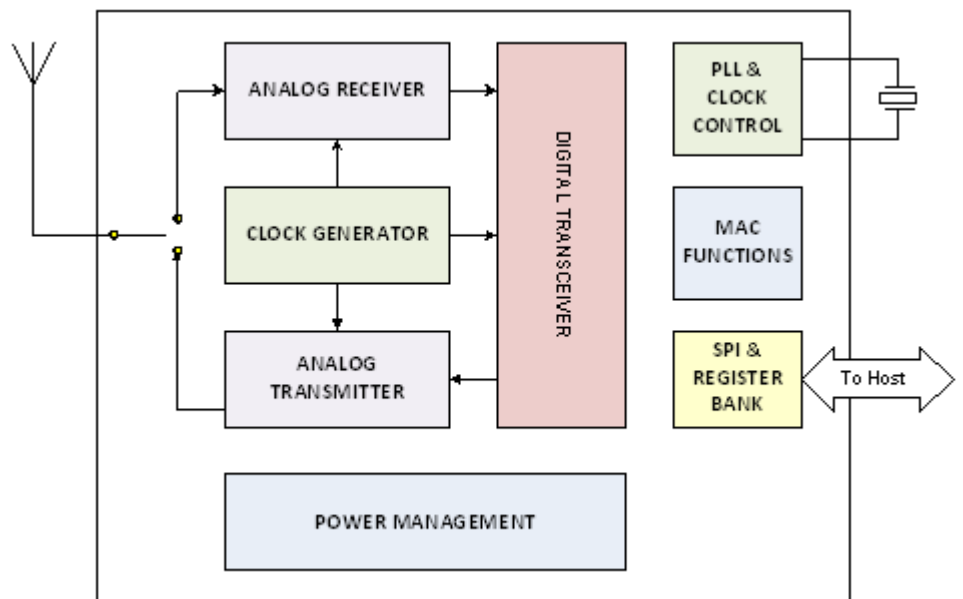


Overview of DW1000 ScenSor (Seek Control Execute Network Sense Obey Respond)

- 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



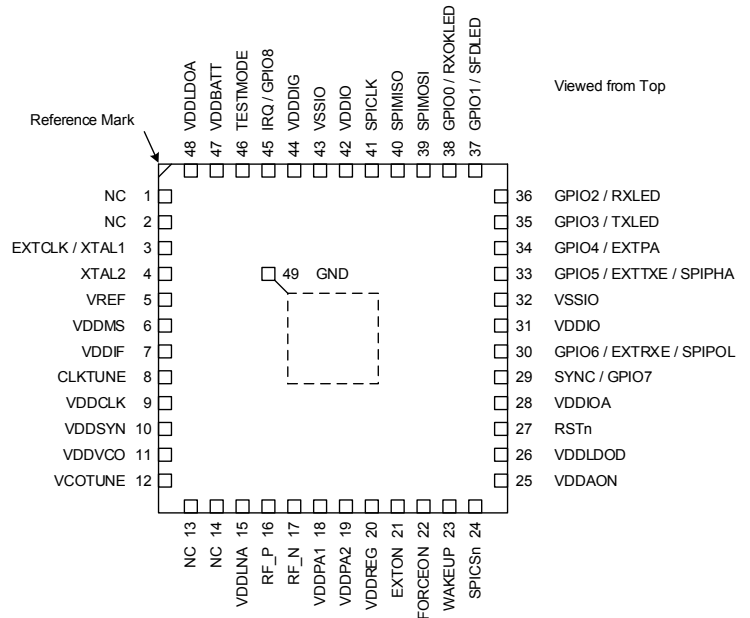
Functional Block Diagram

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 μs 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 μControllers
- Single Supply Voltage 2.8 V to 3.6 V
- Low Power Consumption
 - Transmit mode from 31 mA*
 - Receive mode from 64 mA*
 - 2 μA 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

Every effort has been made to ensure that the information contained in this document is correct. However the information is provisional and subject to change. All information is provided strictly for informational purposes and is proprietary to DecaWave. DecaWave reserves the right to withdraw, modify, or replace the specification at any time, without notice. No obligation is made by DecaWave regarding the level, scope, or timing of DecaWave's implementation of the functions or features discussed in this specification. The specification is "as is" and DecaWave makes no warranty and disclaims all warranties expressed or implied. DecaWave accepts no liability whether statutory related or implied for any inaccuracy, omission, incompleteness or error of any kind. DecaWave accepts no liability for direct, indirect, consequential or incidental damages or incurred costs relating to any aspect of this information or its use. This information is © DecaWave and may not be copied, reproduced, or issued to any third party except to those with a need-to-know for the purpose noted above. All Rights Reserved.