## Overview of DWM1000 Module

- An IEEE802.15.4-2011 UWB compliant wireless transceiver module based on DecaWave's DW1000 IC

- 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

- High immunity to multipath fading – allows reliable communications in high fading environments

- Low power consumption allows operation from batteries for long periods*

- Small physical size allows the implementation of cost-effective solutions in RTLS and WSN

- Integrated antenna allows simple product implementation – no RF design required

Key Benefits

- Integration of DW1000 IC, antenna, power management and clock control simplifies design integration

- 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 power consumption reduces the need to replace batteries and lowers system lifetime costs
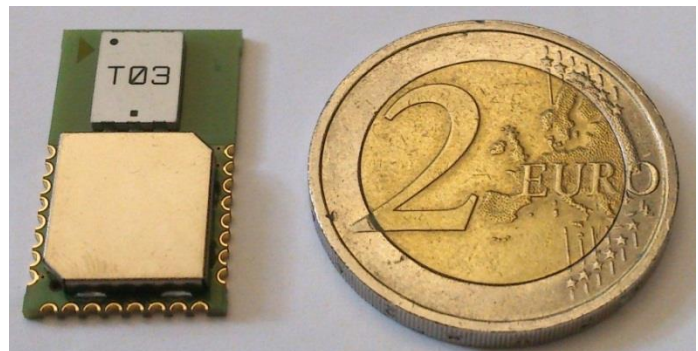
DWM1000

- Standards based solution (IEEE802.15.4-2011), eases proliferation

- Low cost allows cost-effective implementation of solutions
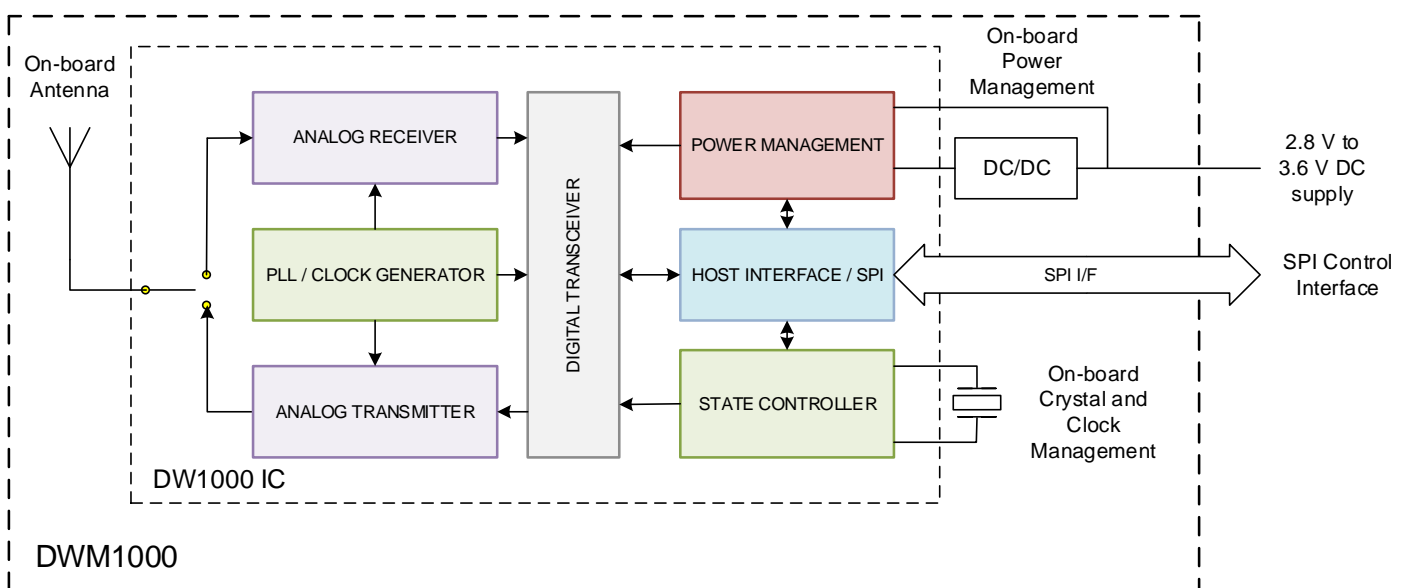
Target Applications

The DecaWave DWM1000 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

➢ 4 frequency bands supported with centre frequencies from 3.5 GHz to 6.5 GHz

➢ Transmit power density programmable from −35 dBm /MHz to -62 dBm / 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

➢ Standard SPI interface to host (20 MHz max)

➢ Allows easy integration with wide range of µControllers

➢ Single supply voltage 2.8 V to 3.6 V DC

➢ 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: 4 channels
  - CDMA: 2 different codes / channel

➢ Supports time of flight (TOF) and time difference of arrival (TDOA) location schemes
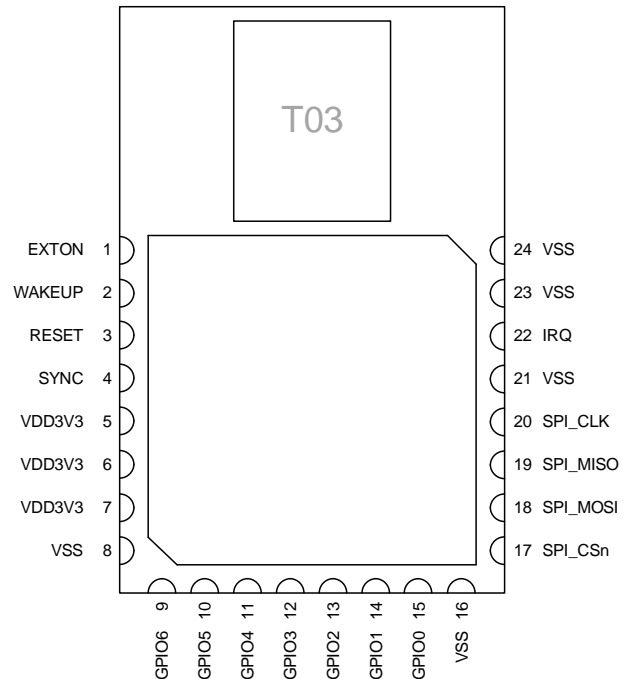
*Mode dependent

DWM1000 Pin Diagram

➢ Industrial temperature range   -30°C to +85°C

➢ 23 mm x 13 mm x 2.9 mm 24-pin side-castellation package

➢ Hardware & software applications support material available from DecaWave

To find out more contact: sales@decawave.com