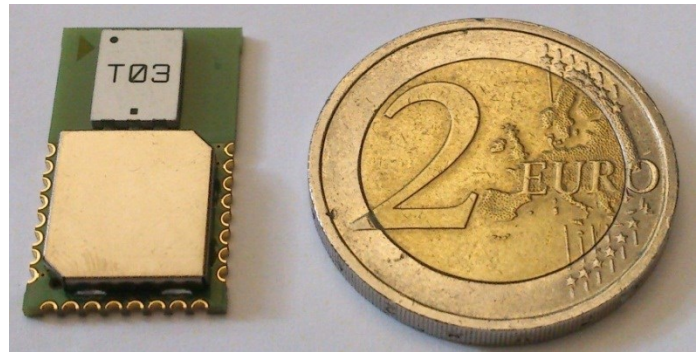


## Overview of DWM1000 Module

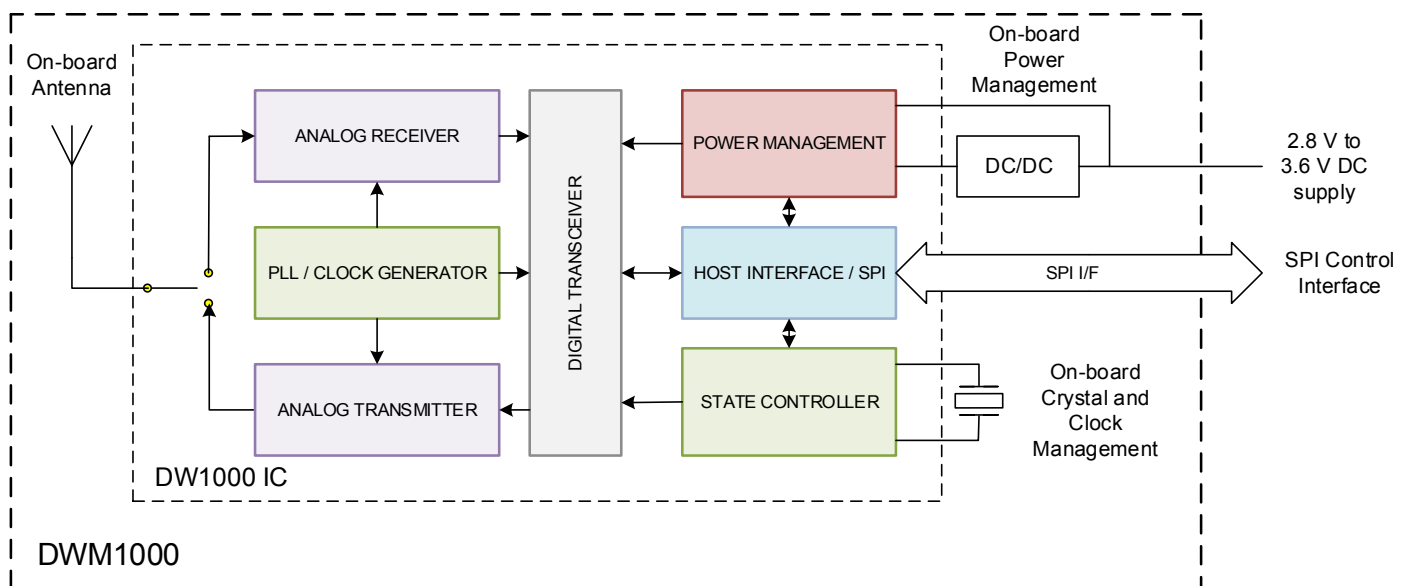
- An IEEE802.15.4-2011 UWB compliant wireless transceiver module based on DecaWave's DW1000 IC
- Allows the location of objects in real time location systems (RTLS) to a precision of 10 cm indoors
- Allows high data rate communications, up to 6.8 Mb/s
- Excellent communications range of up to 300 m thanks to coherent receiver techniques\*
- Short packet durations support high tag densities – up to 11,000 in a 20 m radius
- 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
- Standards based solution (IEEE802.15.4-2011), eases proliferation
- Low cost allows cost-effective implementation of solutions



DWM1000

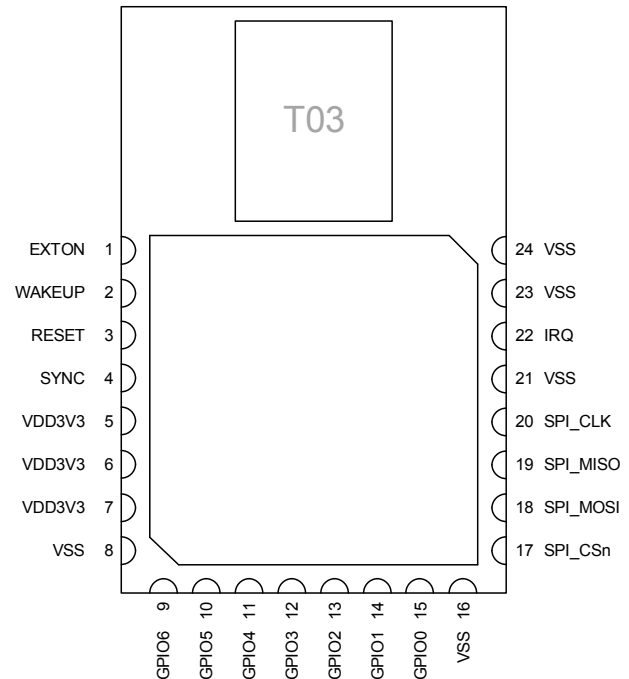


## Target Applications

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
- 6 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  $\mu$ s 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  $\mu$ Controllers
- 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  $\mu$ A watchdog timer mode
- 100 nA deep sleep mode
- Media access techniques
  - FDMA: 6 channels
  - CDMA: 2 different codes / channel
- Supports time of flight (TOF) and time difference of arrival (TDOA) location schemes



**DWM1000 Pin Diagram**

- Industrial temperature range -40°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

\*Mode dependent

To find out more contact: [sales@decawave.com](mailto:sales@decawave.com)

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