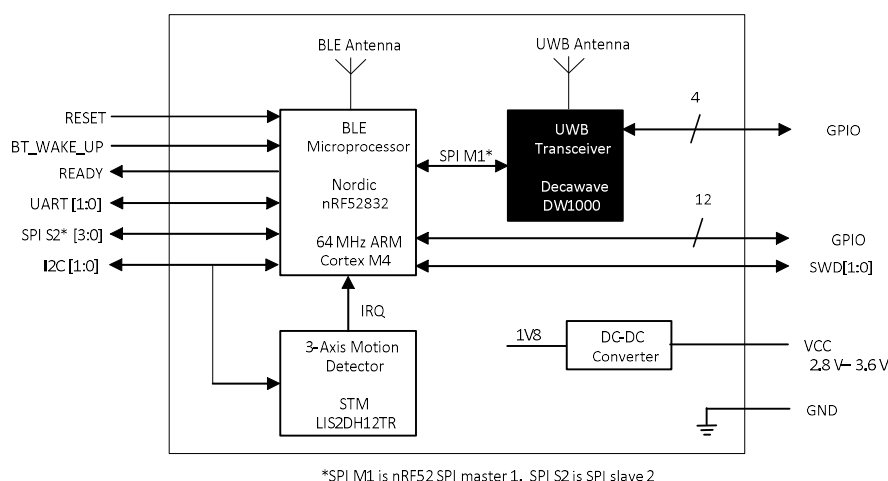


Date: 28 August 2018

FCC ID: 2AQ33-DWM1001
IC: 23794-DWM1001

DWM1001C Module operational description:

The DWM1001C RTLS Module is a full-function real-time location system (or RTLS) subsystem in a compact factor. The DWM1001C module system enables customers to quickly get a RTLS system up-and-running. The system is design to operate on 6.490 GHz (Channel 5) Centre Frequencies Nominal with a 500 MHz Bandwidth and a data rate of 6.8Mbps only.



DWM1001C Block diagram

The DWM1001C module is based on Decawave's DW1000 Ultra Wideband (UWB) transceiver IC, which is an IEEE 802.15.4-2011 UWB implementation. It integrates UWB and Bluetooth® antenna, all RF circuitry, Nordic Semiconductor nRF52832 and a motion sensor.

The module has a DW1000 UWB transceiver mounted on the PCB. The DW1000 uses a 38.4 MHz reference crystal. The crystal has been trimmed in production to reduce the initial frequency error to approximately 3 ppm, using the DW1000 IC's internal on-chip crystal trimming circuit.

The module is primarily used for ranging to other UWB modules. It also can be used to some relay data between modules. The maximum range is in the order of 30 meters.

The DWM1001C module is used in conjunction with precompiled firmware, supplied by Decawave Ltd. only. The transmitter/receiver configuration is restricted to: CH5 6.490 GHz (6.240MHz to 6739.2MHz), preamble length of 128, pulse repetition frequency (PRF) 64 MHz and a 6.8Mbps data rate. Other configurations are not covered by the modular approval. The firmware also supports a temperature and voltage monitoring hardware and compensation routines that precisely and dynamically controls the system.

The module transmit power levels are factory calibrated and stored in OTP. The OTP once programmed cannot be changed.

The non-removable UWB PCB antenna is specifically design for CH5 operation. The DWM1001C module power supply is specified from 2.8 to 3.6 Volts DC.