



QM33120W Product Brief

UWB Low-Power Transceiver

Product Overview

The QM33120W is a single-chip Ultra-Wideband (UWB) low-power low-cost transceiver device compliant to IEEE Std. 802.15.4-2020 and IEEE Std. 802.15.4z-2020 (BPRF mode). The device can be used in TWR, TDoA, and AoA systems to locate assets to an accuracy of 10 cm. They also provide a precision location and data transfer simultaneously.



WLCSP 52 3.1 mm x 3.5 mm

Key Features

- IEEE 802.15.4-2020 UWB IEEE 802.15.4z-2020 (BPRF mode)
- Supports channels 5 & 9 (6489.6 MHz & 7987.2 MHz)
- Supports 2-way ranging, TDoA and AoA location schemes
- Low external component count
- Supports enhanced Time-of-Flight security modes
- Integrated HW AES 256
- Low power consumption
- Data rates of 850 kbps, 6.8 Mbps
- Packet length from zero to 1023 bytes
- Custom modes to support ultra-short frame lengths
- Integrated MAC support features
- SPI interface to host MCU supports rates up to 32 MHz
- Supports Japan and Korea regulatory compliance

Key Benefits

- Asset location to an accuracy of 10 cm
- High multipath fading immunity
- Secure ranging/distance measurement using STS (Scrambled-Timestamp)
- Supports high tag densities in real-time location systems (RTLs)
- Low-cost precision location
- Suitable for coin cell applications

Applications

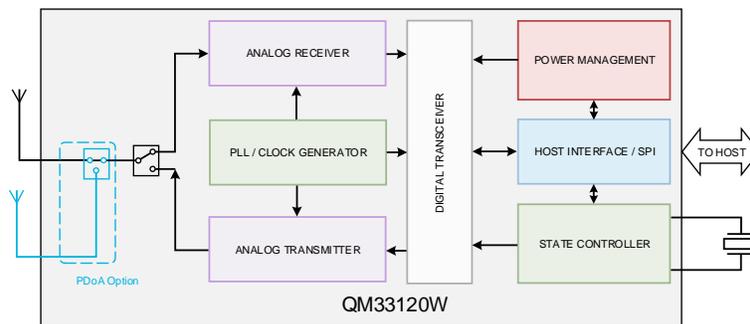
- Precision real-time location systems (RTLs) using TWR, TDoA, or AoA schemes in a variety of mobile, consumer, and industrial applications
- Location-aware wireless sensor networks
- Geo-fencing safety
- Secure access/payments
- Low latency wireless data comms
- Location-aware controls

Ordering Information

Part No.	Description	Quantity
QM33120WSR	UWB Transceiver WLCSP dual RF port	100pc
QM33120WTR13	UWB Transceiver WLCSP dual RF port	3000pc

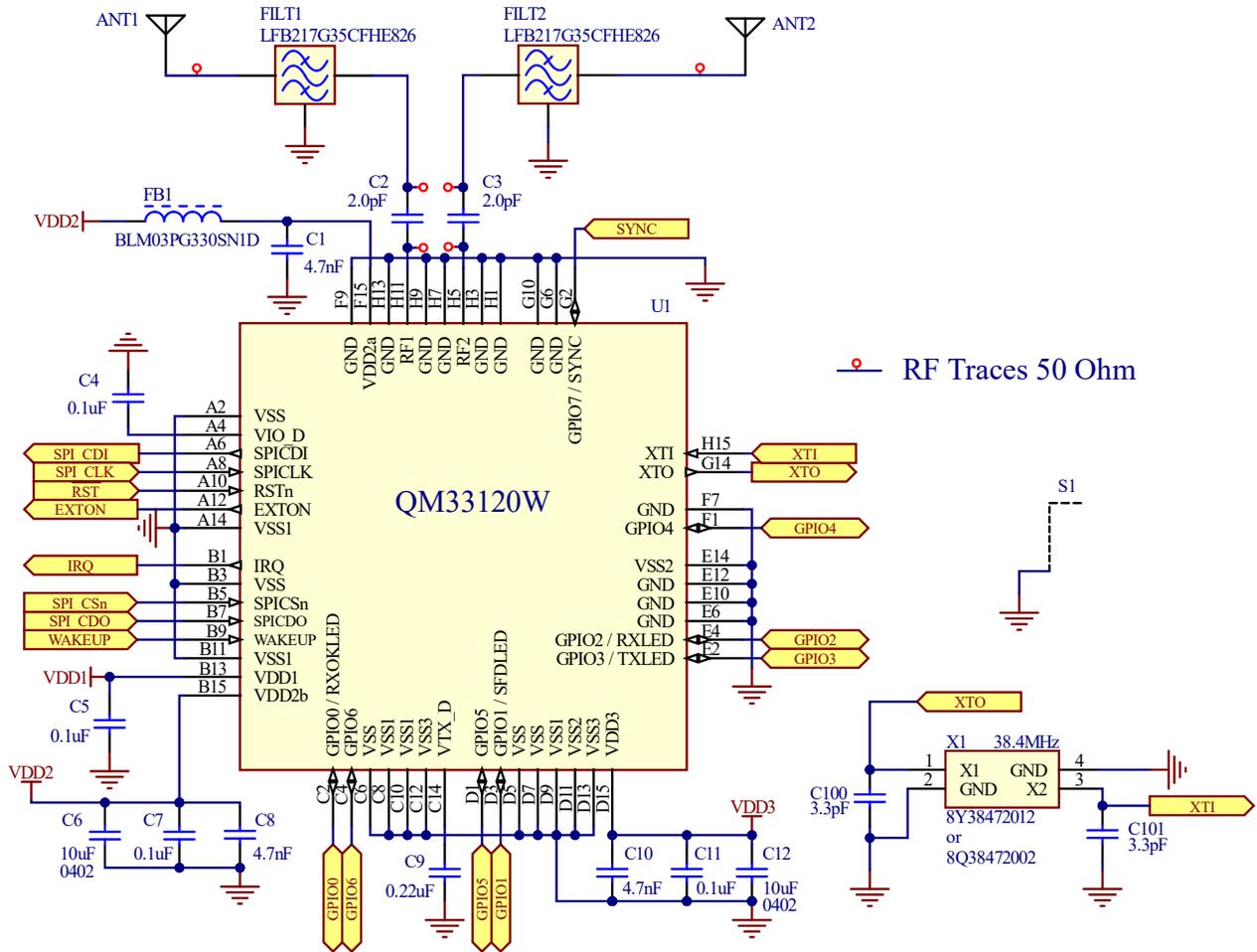


Functional Block Diagram



High-Level Block Diagram

Application Circuit Diagram



QM33120W WLCSP Application Circuit



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Revision History

Revision	Date	DESCRIPTION
C	June 2022	Update QM33120W Application Circuit
B	April 2022	Update ordering information
A	December 2021	Initial product release

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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