



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.

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

Ordering Information

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



WLCSP 52 3.1 mm x 3.5 mm

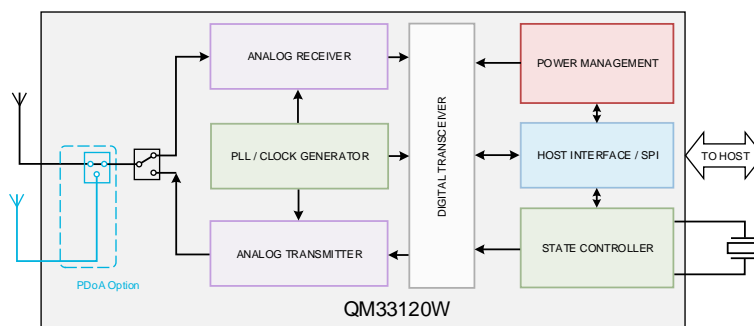
Key Benefits

- 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

Functional Block Diagram



High-Level Block Diagram

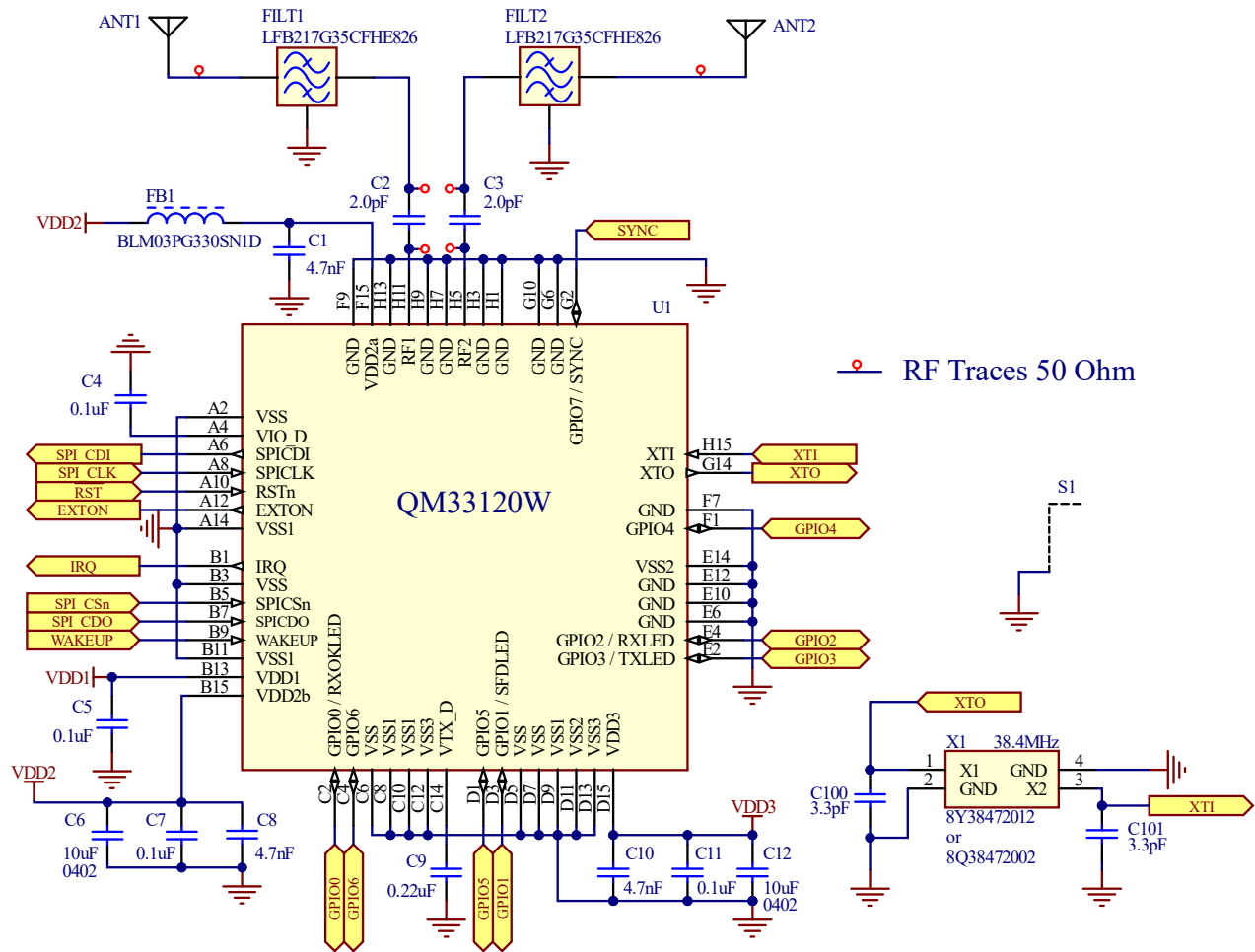




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Application Circuit Diagram



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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