QORVO®

The QM35825 is a fully integrated Ultra-Wideband solution compliant with IEEE 802.15.4™-2024. Designed for the best Rx sensitivity and low power.

package: BGA-74
4.08 x 3.38 x 0.63 mm

It is optimized for consumer, enterprise and industrial applications supporting FiRa™, Aliro and Omlox ranging schemes with an accuracy of +/- 5 cm and AoA at +/- 2°. And features on-chip computing for ranging, angle of arrival, radar and data transfer functions.

It integrates 4 flexible RF ports, LNAs, PA and RF switches, a Cortex-M33 with Secure Enclave and a wealth of security features and communication peripherals.

Key Features

- Worldwide UWB Radio Regulatory Compliance
- Supporting all common data rates incl. proprietary 62.4 Mbps
- Supports channels 5 and 9 (6489.6 MHz and 7987.2 MHz)
- Full support for 802.15.4z HRP, BPRF & HPRF modes
- 2 x Hi-Speed SPI slave (typ. 40 MHz)
- 2 x SPI Master & 1x SPI Slave
- 2x UART, Timers, 25x GPIO (1.2 V & 1.8 V supported)
- Supports the ETSI/ECC decision of additional 10 dB Tx power for indoor usage
- -98 dBm 1% RX sensitivity (BPRF-3)
- 4-antenna flexible configuration solution
- Rx diversity with automatic switching
- Supports multiple reference frequencies
- Low power consumption
- 2D AoA, 2D 360° AoA, 3D AoA
- Secure ranging/distance measurement using STS (Scrambled Time Stamp) and enhanced Time-of-Flight security options
- Supports secure TOF modes without the overhead of an ext. secure element
- Cortex-M33 core with Secure Boot, Secure Debug, Secure Enclave
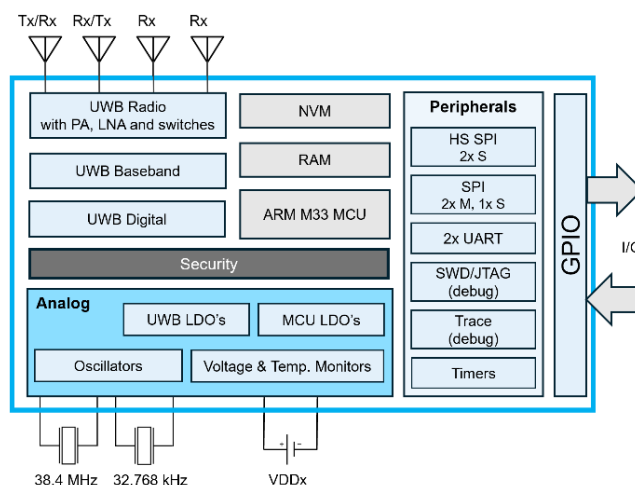- HW support for RSA, SHA, AES, TRNG.

Applications

Enterprise and Industrial:

- Asset tracking and indoor navigation enabled by Precise Real Time Location Systems (RTLS)
- Secure Identification & logical access (payment console, barcode readers, laptops)
- Geofencing for safety
- Radar for Motion Detection, vital sign monitoring, people counting, gesture detection.

Consumer IoT:

- Enhanced user experience with Location Aware Sensing based on FiRa 3.0 (TV and Air Mouse, Speakers and Smart Thermostats)
- Seamless Door Lock access (based on Aliro specification)

Key Benefits

- Secure UWB positioning with radar sensing

- Secure Asset location to an accuracy of +/- 5 cm & Angle of Arrival accuracy of +/- 2°

- Ease of design-in with HSSPI and driver support for multiple Host processors & OS

- Best in class RF Performances with up to 104 dB of link budget

- High multipath fading immunity

- Low Power consumption suitable for coin cell applications (2 µA DeepSleep)

- Supports high tag densities in Real Time Location Systems (RTLS)

- On and Off chip computing for secure ranging and radar applications

- Flexible radar use cases to best fit your application

- Supports advanced security features (including SESIP 3).

Ordering Information

Part No.	Description
QM35825TR13	13" T&R with 3000 pcs
QM35825DK-05	Evaluation Design Kit

Contact Information

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