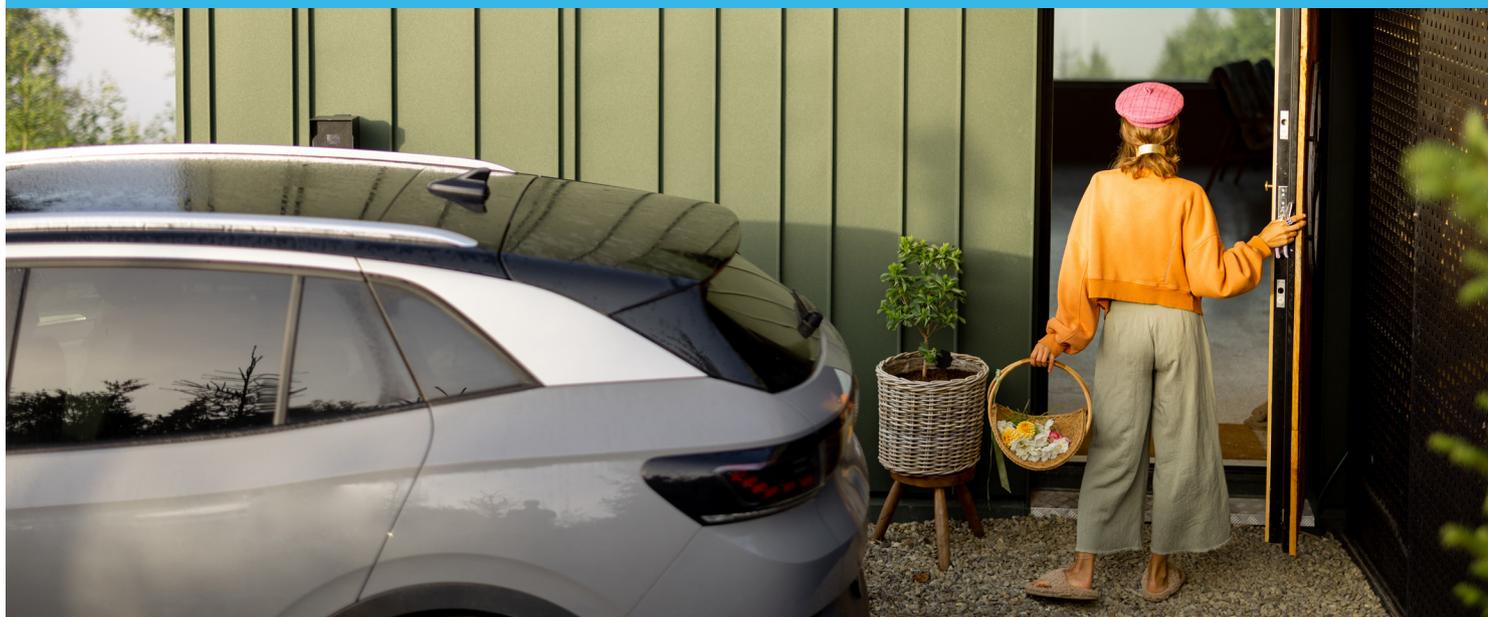




ST64UWB-C SERIES

Consumer UWB ICs for premium hand-free access and precise spatial awareness



All-in-one ultra-wideband (UWB) chip with narrow-band assistance radio (NBA) for secure and precise ranging

ST's next generation UWB ICs offer extended range and greater processing power for a variety of consumer and industrial applications. Enable secure connected applications such as hands-free home access and presence automation with UWB secure ranging and precise localization capabilities.

The ST64UWB-C series targets Aliro-compliant smart door locks, digital key systems, and occupancy-based building automation across consumer and industrial environments. It features an Arm® Cortex®-M85 core with an integrated secure enclave for the highest hardware security and fast go-to-market deployment. It is also part of ST's Aliro comprehensive solution in combination with ST NFC and STM32 Bluetooth® LE microcontrollers.

KEY FEATURE AND BENEFITS

- 8x greater secure ranging distance with IEEE 802.15.4ab NB-assisted secure ranging
- 50% greater range on IEEE 802.15.4z UWB technology via unique FD-SOI process
- Dual antennas for diversity, maximum ratio combining, and angle of arrival calculations
- Lowest system cost with on-chip Arm® Cortex® M85
- Aliro software package available for fast go-to-market

KEY APPLICATIONS

- Aliro-compliant smart door locks and openings
- Presence-aware automation
- Asset tracking
- Real-time location systems (RTLS)

Extended channel support

ST64UWB-C supports UWB channels 5, 6, 8, 9, 10, 12, covering 6.49 to 8.99 GHz. In addition, ST64UWB-C supports IEEE 802.15.4ab NB on channels UNII3 (5.8 GHz) and UNII5 (6.2 GHz).

Exceptional range

Combining a high transmitter (Tx) output power with 3 dB better sensitivity, the ST64UWB-C ICs offer 50% more range operating with the IEEE 802.15.4z standard. Narrowband-assisted multi-millisecond ranging based on IEEE 802.15.4ab increases the range by a factor of 8, increases the link budget by 18 dB (1 MMS), and adds 3 dB for each doubling of the MMS frames. This feature makes ST64UWB-C highly suitable for scenarios in which a UWB-enabled device or key fob is placed in a user's back pocket or purse. It significantly enhances the user experience and enables new use cases.

Unrivalled processing power

ST64UWB-C ICs run on the Arm® Cortex®-M85 processor, which offers twice the processing performance compared to an Arm® Cortex®-M33. An on-chip secure enclave (SESIP LVL3) provides secure storage and crypto co-processing and allows for secure ranging based on Time-of-Flight (ToF), uplink and downlink time difference of arrival (TDoA), and angle of arrival (AoA).

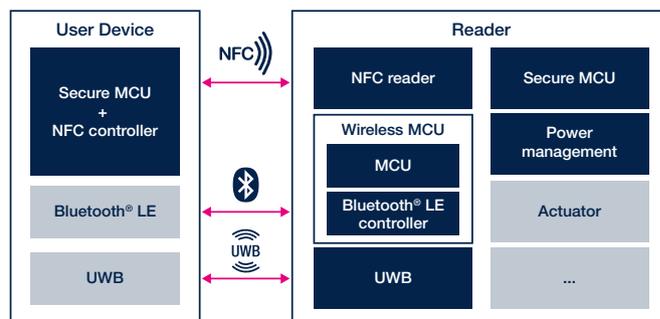
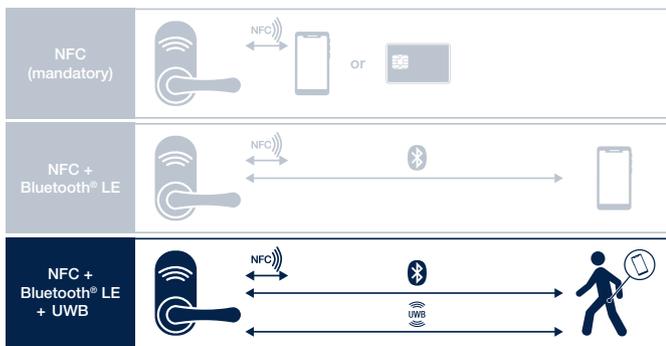


Aliro hands-free and tap-free experience with UWB

The Aliro standard defines three configurations with different connectivity technologies to enable a secure and contactless exchange of credentials between user devices (mobile, wearable device, or smartcard) and reader devices (access control readers and locks on doors and openings).

Aliro solution architecture with NFC, Bluetooth® LE, and UWB

The ST64UWB-C enables a complete solution for secure, hands-free access control without the need to tap the user device.



■ ST Aliro-ready products available

Part number	Protocols	Interfaces	Processor	Temperature range	Package
ST64UWB-C100	IEEE 802.15.4z IEEE 802.15.4ab	SPI I ² C	Arm® Cortex®-M85 40-100 MHz	-40 to 115 °C	WFQFN40 (6 x 6 mm)



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