



Redpoint

See the moving world



RTLS Module

The RTLS Module is a fully-functional real-time location system (RTLS) subsystem in a compact form factor. The self-contained module delivers all RTLS functions including high-accuracy positioning and data communication over the Redpoint UWB network — without the need of additional hardware.

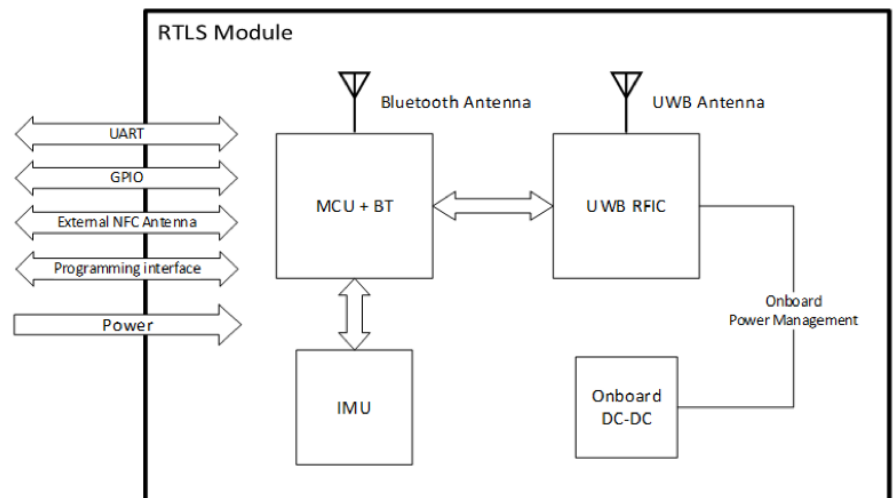
The module allows Redpoint partners and customers to design their own location tags, or add real-time location and two-way data communication capability to existing products.

- The module can be used as is, or as part of a customized design.
- It can be connected to external processors and peripherals through UART and GPIO interfaces.
- The single-sided assembly with castellation pins allows the module to be directly installed on custom-designed carrier boards as it is compatible with the standard SMT assembly process.
- The firmware is preloaded and therefore no programming or configuration is needed for the module to operate.

The figure to the right shows the functional blocks in the RTLS Module.

The module is a single PCB design consisting of a:

- Micro-controller
- UWB radio transceiver with an onboard antenna
- BLE radio with onboard antenna
- 6-axis IMU
- Power management circuitry



Features

UWB radio for communications and positioning

Built-in IMU for power management, positioning and gesture recognition

Over-the-Air firmware updates

Proprietary protocol stack embedded to communicate with Redpoint RTLS network

Positioning engine that delivers up to **20cm accuracy**

Onboard power management, single rail 3.3V power input

UART interface to connect to external processors or user peripherals

Configurable GPIOs allow both digital IOs, analog inputs and serial buses

NFC support (requires external antenna)

Pre-certified for FCC, IC, CE, and CMIIT

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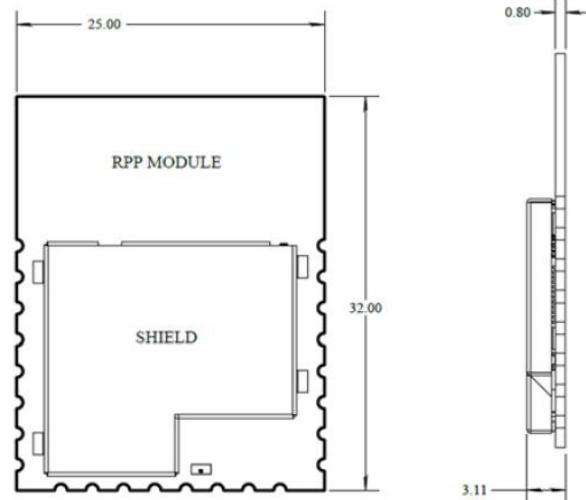
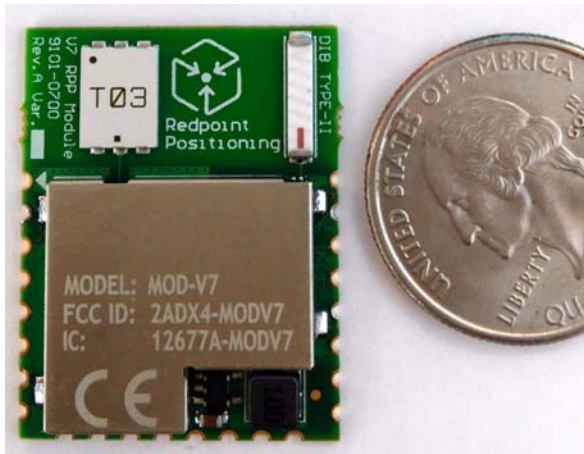
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Electrical & Mechanical

Parameter	Value
Supply Voltage	2.8V to 3.6V
Power Consumption	Peak: 160mA@3.3V Idle: < 20 uA@3.3V
UWB Channel	1, 2, 3, 5
Interface	UART interface 6 GPIO pins, configurable as analog inputs, digital IOs, interrupts or serial interfaces
Operational temperature	-40 °C to 85 °C
Assembly process	Compatible with SMT assembly process
Physical Characteristics	32mm x 25mm x 3.1mm 24 castellation hole pins with 2.54mm (100mil) pitch



Module Outline

Module Side View

Ordering information

The RTLS Module may be ordered directly through Redpoint. Please place a request using part number 9101-0700.

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