

nanoANQ EM ER UWB RTLS Anchor Module

High resolution location and monitoring solutions with high throughput

Flexible Monitoring and Location Solutions

The *nanoANQ Embedded ER*, the UWB RTLS Anchor Module can be integrated into any communication substation by interfacing directly with an Ethernet MAC or PHY via RMII. It precisely detects the time of arrival (ToA) of tag blinks required for TDOA location applications. The module is able to range with other nanoANQ EM ER modules to automatically determine anchor separation distances – a key capability to enable automatic system set-up and maintenance.

Together with swarm bee ER based tags and nanotron’s Location Server, the nanoANQ EM ER anchor module forms the basis for high throughput tracking and monitoring applications in harsh environments.

The credit card size design supports any UWB antenna through its U.FL connectors. There is one connector for each of the two independent radio channels.

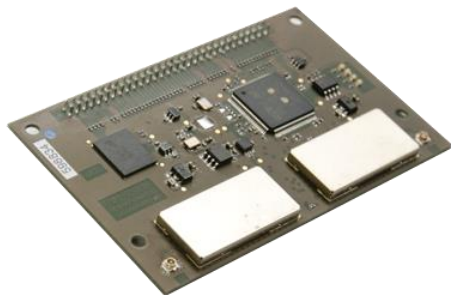


Figure 1 nanoANQ EM ER RTLS Anchor Module

Through its Ethernet port in RMII mode the module utilizes IP-based data and management protocols and features a built-in DHCP client. Thus, it can be configured remotely through its API over the network.

Bidirectional payload exchange between the Location Server and individual tags is supported over the air.

In compliance with CE and other regulations the RF output power is adjusted for channel 5 to -41.3 dBm/MHz.

Key Features

RF technology	Ultra-Wide Band (UWB)
Signal detection rate	up to 900 per second
Location Accuracy.....	30 cm
RF output power	-14 to -10 dBm*
Transmit power density.....	< -41.3 dBm / MHz
RF sensitivity @ 110 Kbps	-96 dBm typ.*
RF sensitivity @ 6.8 Mbps	-84 dBm typ.*
Power supply.....	3.3 V +/- 0.1, 0.35 A
Antenna connector.....	2x U.FL
Operating temperature range.....	-30 to 85 °C
Data interface.....	RMII
Dimensions	85.6 x 54.0 mm

* mode dependent

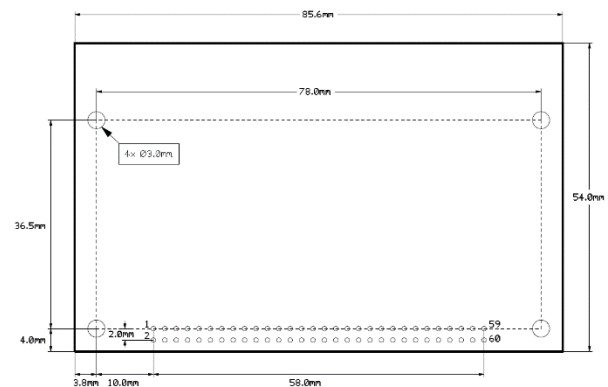


Figure 2 Physical dimensions of the anchor module

Interfaces

Except for the antennas all other signals are connected through a 60 pin connector.

Signal	Description
Antenna	UF.L connector for external antennas
+3V3	Supply Voltage
GND	Ground
Transmit	Active if transmitting
Ethernet	RMI Bus
Out	Output for status indicator
Reset	Reset for module and Ethernet PHY
USB	USB maintenance port

Connector

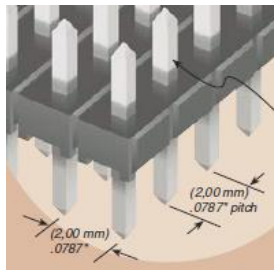


Figure 3 60 pin connector with 2 mm pitch and 3.2 mm pin length

The module allows for low profile designs. Components on the top side require 3 mm in height. PCB thickness and connector body occupy 1 mm and 1.5 mm respectively. The RF circuit is EMI-protected by metal caps.

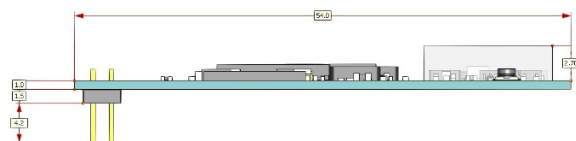


Figure 4 Physical dimensions of the low profile module

Ordering Information

Number	Description
MN01ANQEMER	nanoANQ Embedded ER RTLS Anchor Module incl. nanoLES 3 license
BN01SWBEP	swarm bee DK Plus Board incl. antenna

About nanotron

Nanotron is a leading provider of electronic location awareness solutions. If knowing what, where and when is mission-critical to your business, rely on nanotron with Location Running. Nanotron's solutions deliver precise position data augmented by context information in real-time. Location Running means, reliably offering improved safety and increased productivity, 24 hours a day, 7 days per week: Location-Awareness for the Internet of Things (IoT).

Nanotron Technologies GmbH is a wholly owned subsidiary of Sensera Limited (ASX: SE1), an IoT solution provider that delivers sensor-based products transforming real-time data into meaningful information, action and value.

Visit www.nanotron.com or for more information on nanotron's complete line of products and tools or write to us at nanotron Technologies GmbH, Alt-Moabit 60, 10555 Berlin, Germany.

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