

# Ultra Wide Band TAG AT02

## Key items:

- Person and object tracking using long range UWB
- Operates outside congested wifi bands
- Decawave UWB Radio, 3-7GHz, IEEE 802.15.4a
- 3dBm BLE 5.3
- Firmware upgrade over the air (AES security, unique ID)
- 500mAh LiPo battery

Localisation upto 2cm outdoor and < 30cm indoor accuracy<sup>1</sup>. Typical indoor range in buildings for AIRTLS UWB equipment is 30m at 6.8Mbps passing through some walls. Special electronics to increase sensitivity and selectivity of the radio transceiver enable long range indoor tracking. Radio signals travel through walls enabling a true 3D tracking environment of the whole building. The ultrawideband radio guarantees a reliable connection as a data backhaul for bi-directional secured communication. UWB operates outside the WiFi bands using worldwide allowed unoccupied frequencies.

## Options

- Display 128x128, 4uW, memory in pixel
- Haptic motor
- NFC
- Qi charge
- Magnetometer
- SpO2 blood oxygen sensor
- GNSS, GPS



Sports tracking, object tracking



UWB indoor & outdoor tracking



Energy efficient:



Network to all IOT devices



3D visualisation app



Infiniscale®, wireless scaleable



42000 1Hz trackers per zone (200x200m)<sup>2</sup>



2800 locates per second in 3D



Low latency, collect data every 40ms



AIRTLS 7 pin magnet-USB connector  
Charge cable included  
Black or transparent covers

Dimensions	65 x 35 x 11 mm
Weight	25g
Operational temperature	-10 to +70 °C
Accu	500 mAh
Radio	UWB 4-7GHz BLE 5.3 2.4GHz

<sup>1</sup>: Accuracy range from up to sub cm accuracy in line of sight condition in a calibrated environment to few decimeter accuracy in standard commercial building environment with brick or concrete walls  
<sup>2</sup>: Standard firmware supports 20822 trackers at 40ms latency in data collection per typical zone of 200x200m, per UWB channel. 2 UWB channels can be active.  
High Capacity firmware support 84000 1Hz trackers (reverse TDoA) at a higher latency.

## DISPLAY

MIP display 128x128

UTF-32 compatible for non-ascii characters: 追踪器

Artwork, logo's, and animation uses sprites, 8x8 pixel blocks

QR code is active when the tag has horizontal orientation

QR code shows mac-address and name of the tag

The display stays 'on' even in sleep mode (consumes 4 micro Watt)



In any other orientation. The device status and ranging information is displayed.

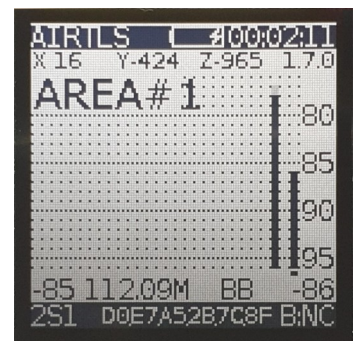
In the example screen on the right:

The tag has been operational for 2min11

The battery is full and (trickle)-charging

The accelerometer values are shown XYZ 1G=4096

The name is AREA#1 (9 char UTF-8)



The 3 pixels below the bar indicate the signal strength from an anchor ('BB') as received on the tag plus the distance to the anchor.

-85 dBm anchor 'BB' RX

-86 dBm tag RX

Distance 112.09 meter

Dark colored footer

2S1 (UWB channel 2, seat 1, out of 122 is used by the tag). 4 distances per cycle. 12.5cycles per second.

MAC-address

B:NC BLe 5.3 external device, e.g. a heartrate belt or phone: NC not connected.

BT mac-addresses can be set to automatically pair to the device.

**BLe 5.3 Broadcasts over Long distances in a power efficient way.**

## LEDS

	Function	LED	Description
1	UWB	RED/GREEN	Red blinking: TX transmit Green blinking: RX receive
2	BLe 5.3	RED/GREEN	Red : Advertise Green : Blink 500ms 1Mbps Blink 250ms 2Mbps
3	BATTERY	RED/GREEN	Green on : Charging Green blinking : Trickle charge Red :
4	SYSTEM	RED/GREEN	Red : Blink 500ms system error Green : Uwb network sync

