



# TRACK BOX PASSIVE

The Track Box Passive allows UHF transponder timing with only one small device. The hands-free solution is easy to carry, super fast in setup and managed remotely. With UHF reader, GPS and battery integrated, it is the ideal device for split points, remote timing locations and advanced race visualization.

## Features

- Internal battery for up to 18 hours of runtime
- Real-time timing data sent via mobile network (SIM)
- Easy, hands-free operation, easy to set up for volunteers
- Lightweight (1.7kg/3.7lbs) and portable for remote locations
- Remote configuration and management through an online interface
- Optional solar panel support
- Energy-efficient standby mode when inactive



| Dimensions & Standards                                  |                                                                                                                                                                              |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protection class (power connector plugged in or closed) | IP54                                                                                                                                                                         |
| Regulatory conformity and standards                     | EN60950 (safety)<br>EN50581:2012 (RoHS)<br>EN302208 (UHF RFID)*<br>EN301489 (2.4 GHz)*<br>FCC Part 15.247 (UHF RFID)*<br>FCC Part 15 (2.4 GHz)*<br>ARIB-STD-T106 (UHF RFID)* |
| Regulatory regions                                      | ETSI_LOW<br>ETSI_HIGH<br>FCC<br>CANADA<br>JAPAN<br>AUSTRALIA<br>CHINA                                                                                                        |
| Versions**                                              | 1) 866 MHz / ETSI LOW<br>2) 915 MHz / FCC<br>3) 915 MHz / ETSI HIGH, CANADA, AUSTRALIA, CHINA, JAPAN                                                                         |
| Temperature range                                       | -20°C to 50°C                                                                                                                                                                |
| Dimensions / weight                                     | 335 mm x 160 mm x 55 mm<br>1.7 kg                                                                                                                                            |

\*Pending

\*\*UHF operates globally on different frequencies (e.g. Europe 865 - 868 MHz, USA 902-968 MHz, AUS 920-925 MHz) with different detailed regulatory requirements. That is why RACE RESULT provides different versions of the system for different regulatory areas. When operating the passive part of the system in another country, make sure it complies with local regulation.

| Power & Battery           |                                                                                                               |
|---------------------------|---------------------------------------------------------------------------------------------------------------|
| Battery                   | 3 x 4000 mAh 3.7 V Li-Po                                                                                      |
| Battery life***           | 12-18 h (UHF reader on - blue LED on)<br>10 days (Standby)                                                    |
| Charging time (0% to 90%) | 6 h (UHF reader off - blue LED off)<br>10 h (UHF reader on - blue LED on)                                     |
| Charging temperature      | 0°C - 40°C                                                                                                    |
| Power consumption         | 4 W (UHF reader on & battery full)<br>10 W (battery charging)                                                 |
| DC power supply           | 12 V - 15 V, 800 mA (battery charging)<br>10.8 V PB battery undervoltage protection                           |
| AC power supply           | 100 V - 230 V, 50/60 Hz                                                                                       |
| Solar power supply        | 5 V - 25 V (4 W / 6 W / 8 W / 10 W)<br>recommended - 30 W - 50 W "12 V" panel<br>DC > 17 V enables solar mode |

\*\*\*Dependent on volume of data transmitted and temperature

| Detection & Passings                                                                                         |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Memory                                                                                                       | 40,000 passings (not persistent)                                                                                |
| Timing resolution                                                                                            | 1/10 <sup>th</sup> second                                                                                       |
| Timing accuracy                                                                                              | Up to 200 ms<br>dependent on speed and distance between box and transponder                                     |
| Detection rate (clear line of sight to visible transponders at 5x transponders per second = 300x per minute) | > 99% within 4 m of a single box<br>> 90% within 8 m of a single box<br>> 99% between 2 boxes with 8 m distance |
| Max speed                                                                                                    | 100 km/h / 60 mph<br>(single transponder in read zone)                                                          |
| Max simultaneous transponders                                                                                | 40 x transponders in read zone                                                                                  |
| Max theoretical throughput                                                                                   | 300 x transponders per minute                                                                                   |

| RF Characteristics                                 |                                                                                                                                                                            |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.4 GHz channel frequencies (worldwide compliance) | 1:2480 / 2410 5:2415 / 2445<br>2:2405 / 2470 6:2460 / 2430<br>3:2425 / 2465 7:2435 / 2455<br>4:2475 / 2440 8:2450 / 2420                                                   |
| 2.4 GHz TX power                                   | 3.5 dBm                                                                                                                                                                    |
| 2.4 GHz range                                      | 50 m - 150 m                                                                                                                                                               |
| UHF bands                                          | <b>ETSI LOW:</b> 865.7 / 866.3 / 866.9 / 867.5 MHz<br><b>ETSI HIGH / FCC/ CANADA / AUSTRALIA / CHINA / JAPAN:</b> 900-930 MHz<br>(bands dependent on regional regulations) |
| UHF TX power                                       | 36 dBm EIRP typical<br>(up to 39 dBm EIRP, dependent on regional regulations)                                                                                              |
| UHF RX sensitivity                                 | -85 dBm                                                                                                                                                                    |
| Integrated UHF Antenna                             | 6 dBi gain<br>90° beamwidth                                                                                                                                                |

| Connectivity & GPS                                   |                                                                                                                                                                                                                 |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Internal GPS                                         | Qualcomm gpsOne Gen8c with GPS, GLONASS, BeiDou/Compass, Galileo and QZSS                                                                                                                                       |
| 29 band 4G / LTE / 3G / 2G module worldwide coverage | <b>FDD:</b> B1 / B2 / B3 / B4 / B5 / B7 / B8 / B12 / B13 / B18 / B19 / B20 / B26 / B28<br><b>TDD:</b> B38 / B39 / B40 / B41<br><b>WCDMA:</b> B1 / B2 / B4 / B5 / B8 / B6 / B19<br><b>GSM:</b> B2 / B3 / B5 / B8 |
| SIM card                                             | 2FF standard / mini-size<br>                                                                                                 |
| Antennas                                             | Internal                                                                                                                                                                                                        |

| Sold as Pack with 2 Track Boxes |                                                                                                                                                                        |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Content                         | Foam-padded case with shoulder strap<br>2 x Track Boxes<br>2 x tripod mounts<br>2 x stakes<br>1 x double charge adapter<br>1 x 12 V AC adapter<br>1 x mains power lead |
| Dimensions / weight             | 390 mm x 300 mm x 135 mm / 5 kg                                                                                                                                        |

| Patents                                                                                                             |                             |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <i>This product may be protected by one or more of the patents listed below. Additional patents may be pending.</i> |                             |
| Patent Numbers:                                                                                                     | EP3832520B1<br>US11580788B2 |

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