TRAINING TIMER 3.0
BASIC SET

The wireless Training Timer 3.0 (hereinafter referred to as the TT3) is intended for sectional time measurement during various speed sports activities.

The device is an ideal training accessory for cycling disciplines, especially for BMX racing (bicycle motocross), but also for track cycling, pump-track racing, MTB 4X, speed skating and many other uses.

Content of the TT3 Basic Set

The basic set of TT3 contains the following components:

- 1x Control Unit (CU3);
- 2x Laser Sensor Unit (SUL3);
- 2x white reflector for laser beam reflection;
- 1x DC 5 V power adapter (up to 2A);
- 4x mini-tripod;
- 2x GoPro adapter + 2x ball head;
- 1x hard case (optional).

Control Unit (CU3)

The CU3 is the main system for the functionality of the TT3. It provides communication with individual SUs using a 868 MHz LoRa© working network, measures time based on information from associated SUs and displays the results on a built-in 4x20 characters display. It also operates a

user WiFi network, through which the user can connect to a web application that runs on the CU3 own web server.

CU3 also takes care of recording and saving all measured times in TXT, CSV and HTML format files to internal storage, which can then be downloaded from the archive and used for further analytical use. The last 20 files with measured times are always stored in the archive.

Up to 8 different SUs can be connected to the CU3 at the same time!

Technical specification

Processor	ESP32 Tensilica LX6
Cores	Dual-Core, 32-bit
Frequency	2x 240 MHz
Operation memory	512 kB SRAM
Internal memory	4 MB FLASH
Storage	128 MB (SD card)
WiFi hotspot	802.11 B / G / N HT 40, 2.4 GHz (built-in antenna)
LoRa© network	Frequency – 868 MHz (8dB external antenna)
	Range – up to 600 meters (high power)
Battery capacity	6000 mAh
Battery consumption	ON – 170 mA
	OFF – 1.2 µA
Temperature	-15°C to 80°C
Box material	PETG plastic (heat resistance up to 80 °C)
Tripod material	ABS plastic (heat resistance up to 100 °C)

Laser Sensor Unit (SUL3)

The SUL3 is the basic timer device of timing for obtaining times on the measured section. The SUL3 uses a Class 3R (IIIA) laser beam in the visible spectrum to measure time. The CU3 receives information from the SUs that the laser beam has been interrupted by the driver. Based on this information, the CU3 determines the individual split times and the resulting time, which is shown on the display of the CU3 or in the web application.

Technical specification

Processor	ARM Cortex-M4 ULP
Cores	Single-Core, 32-bit
Frequency	80 MHz
Operation memory	128 kB RAM
Internal memory	1024 kB FLASH
LoRa© network	Frequency – 868 MHz (built-in antenna)
	Range – up to 600 meters (high power)
Battery capacity	3000 mAh
Battery consumption	ON – 60 mA
	OFF – 1.2 µA
Temperature	-15°C to 80°C
Box material	PETG plastic (heat resistance up to 80 °C)
Tripod material	ABS plastic (heat resistance up to 100 °C)

!ATTENTION, ATTENTION!

LASER SENSOR UNITS (SULs) ARE EQUIPPED WITH CLASS 3R (IIIA) LASER BEAM. THE LASER BEAM MUST NOT HIT YOUR EYES OR YOUR FACE, YOU COULD DAMAGE YOUR EYESIGHT! NEVER AIM THE LASER BEAM ON PEOPLE, ANIMALS, VEHICLES, AIRCRAFT AND OTHER OBJECTS, EXCEPT SPECIFIED REFLECTIVE STANDS!

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