Instruction Manual

SkyRC Smart RC Lap Timing System

SK-500048
V.126

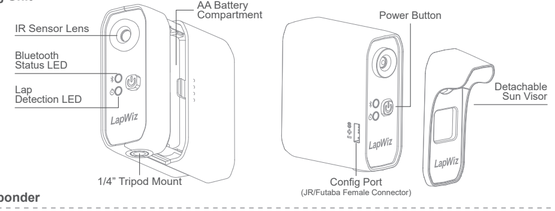
Introduction

Thank you for choosing SkyRC LapWiz!
LapWiz is a smart RC lap timing and race performance system designed for personal practice, club racing, and professional track environments. Combining high-precision IR timing, real-time race management, Ghost Car training, cloud connectivity, and performance analysis, LapWiz helps racers understand every lap and improve with confidence. Whether you are practicing alone, organizing club races, or competing with friends, LapWiz delivers fast, accurate, and reliable lap timing with an intuitive app experience.
LapWiz is available in Standard Kit and Mini-Z Kit versions. Included accessories may vary by package. Please refer to the In the Box section for package contents.

Track every lap.
Analyze every run.
Improve every race.

Meet LapWiz

Timing Unit



Transponder

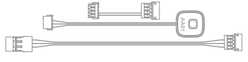
T01 Standard Transponder
(Optional, sold separately)



T02 Enhanced Transponder
(Optional, sold separately)



T03 Mini-Z Transponder
(Optional, sold separately)



T04 Battery-Powered Transponder
(Optional, sold separately)



Key Features

1. Real-time Ranking
2. League Sync
3. Car & Driver Profiles
4. Club Leaderboards
5. Session Backup & Sync
6. Historical Performance Tracking
7. Race Result Sharing
8. Cloud Race Records

In The Box


Timing Unit (Decoder) *1


Sun Visor *1


AA Batteries *2


Tripod *1



Quick Start Guide *1

Transponder ×1



T01 Standard Transponder
(Standard Kit)



T03 Mini-Z Transponder
(Mini-Z Kit)



T04 Battery-Powered Transponder
(Battery-Powered Kit)

Get Started

1. Install the App
Download the SkyRC App from App Store or Google Play.

2. Power On
* Turn on the timing unit.
* Status LED will indicate system readiness.



3. Connect
Open the app → Tap Device Connection → Select your LapWiz.

4. LED Status Explained
* Blinking Blue: Not Connected
* Solid Blue: Connected

Hardware Setup

1. Transponder Mounting
(⚠ **Note:** Proper installation ensures the best detection range and the most reliable lap timing.)
Mount the transponder on the vehicle and secure it firmly; Connect the plug to the receiver for power;
Ensure the IR emitter faces outward; Keep the emitter clear of obstruction;

CORRECT

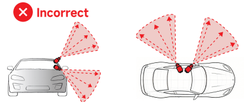


- IR emitter faces the LapWiz decoder.
- Level with the ground and perpendicular to the direction of travel.



- Unobstructed IR path (outside the body shell, through a mounting hole, or behind a clear body shell).

Incorrect


- IR emitter tilted upward, downward, or at an angle.


- IR emitter facing away from the LapWiz decoder.


- IR path blocked by the body shell or other components.

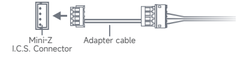
T03 Mini-Z Transponder Quick Start Guide:
T03 can be powered via the Mini-Z Light Unit or I.C.S. Connector. Choose the connection that matches your chassis.

Method 1: Power via I.C.S. connector

1. Connect the adapter cable:
Connect the supplied adapter cable to the T03 Transponder.



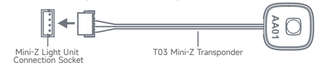
2. Connect to the transponder:
Plug the adapter cable into the Mini-Z I.C.S. Connector.



Method 2: Power via Light Unit connection socket or Optional Light unit connector

⚠ **Note:** When powering the T03 Mini-Z Transponder from a Mini-Z receiver, turn the CH4 knob on the Mini-Z transmitter fully counterclockwise. Otherwise, the transponder may not operate correctly.

1. Connect the Power:
Connect the transponder to the Light Unit Connection Socket on the Mini-Z receiver.



2. Set the Transmitter:
Turn the CH4 knob on the Mini-Z transmitter fully counterclockwise.

Tip: When the status LED flashes blue slowly, the transponder has been powered successfully and is ready for use.



T04 Battery-Powered Transponder Quick Setup Guide:

Button Controls

Short Press: Power on.
Press and Hold for 2 Seconds: Power off (red LED flashes rapidly twice).
Press and Hold for 10 Seconds: Restore factory settings (red LED flashes rapidly five times, then the device restarts).

LED Status Explained

Normal Operation	Blue LED flashes slowly
Low Battery Operation	Red LED flashes slowly
App Connected	Blue LED stays solid
Connected & Low Battery	Red LED stays solid
Firmware Update	Blue LED flashes rapidly
Charging	Red LED pulses
Fully Charged	Blue LED stays solid

Note: When the battery is low, the red LED indicator takes priority over other status indications.

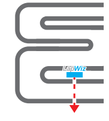
How It Works

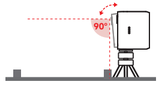
Automatic Operation: Automatically transmits IR Car ID signals when powered on.
Auto Sleep: Enters sleep mode after 3 minutes of inactivity and automatically wakes when motion is detected.
Auto Power-Off: Automatically powers off after 6 hours in sleep mode (adjustable via the app).
Car ID Setup: SkyRC App → LapWiz Decoder Settings → Connect T04.
Note: T04 requires a LapWiz decoder to operate.

2. Timing Unit Positioning & Mounting

Place at the start/finish line or a position that ensures reliable detection of all transponder signals;
Use the stand to adjust height and angle;
Avoid positioning the timing unit facing the sun, and keep a clear line of sight between the transponder and timing unit;

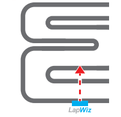
Correct


- Place the decoder on the inside of a straight section of the track.
- Position it perpendicular to the track.

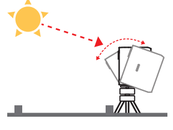


- Keep the receiver window level or tilted slightly downward.

Incorrect


- Outside of a straight section.

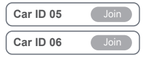

- On a corner.


- Receiver window facing up or down.
- Receiver window facing direct sunlight.

3. Pre-Race Checklist
- Transponder correctly oriented toward the decoder.
- Transponder powered on.
- Perform a test pass to confirm lap detection.

4. Check Transponder IDs
* Each vehicle must use a unique Transponder ID.

Correct (Unique IDs)



Incorrect (Duplicate IDs)

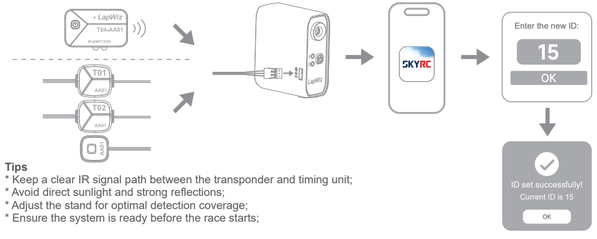


5. How to Customize a Transponder ID

Select the appropriate connection method based on your transponder model.
Open the SkyRC app, go to Device Settings, and follow the on-screen instructions to assign or customize the transponder ID.

* Note: Each transponder has a 4-character serial number (e.g. AB12) printed on the case for easy identification when using multiple transponders. This serial number is different from the 2-digit Transponder ID stored in the transponder's IC and used by the LapWiz system for timing and race management.

·**T04:** Pair and connect the transponder wirelessly via the app.
·**T01 / T02 / T03:** Connect the transponder to the LapWiz decoder's Config Port.



Tips
* Keep a clear IR signal path between the transponder and timing unit;
* Avoid direct sunlight and strong reflections;
* Adjust the stand for optimal detection coverage;
* Ensure the system is ready before the race starts;

Hands-On

Choose a mode:
* Practice;
* Qualifying;
* Race;
* Free Run;

Modes Explained

Practice:
Timing starts automatically when the first car crosses the timing line. Each car runs its own independent timed practice session (5 minutes by default).

Qualifying:
Timing starts after the countdown. Each car is given an independent qualifying session (5 minutes by default), with ranking based on fastest lap time.

Race:
Timing starts after the countdown. All cars share the same race timer. When the race time ends (5 minutes by default), the race finishes after all cars complete their current lap.

Free Run:
Unlimited open-session driving with multi-car support and no ranking. The system remains active continuously (up to 16 hours, or automatically shuts down after 30 minutes of Bluetooth disconnection) until manually stopped. Multiple cars can be recorded simultaneously, with automatic session splitting support. For example, if a car runs for 5 minutes, stops for maintenance for 30 minutes, then runs again for another 5 minutes, the system automatically creates two separate valid sessions while excluding inactive maintenance time.

Race Setup:
Create a race and optionally share a QR code for racers to join.

Shadow Run Explained:
Shadow Run is a training mode that lets you race against your previous best lap or a saved session in real time.
Perfect for testing setup changes such as tires, camber, toe, gearing, and driving lines, Shadow Run helps you tune smarter, drive more consistently, and chase faster laps.

Scan or Click to Watch:

Race View on TV

Mirror your phone to a TV via:
* AirPlay / Apple TV
* Android screen casting

Perfect for races, events, and trackside viewing.

Button & Status LEDs

	Action	Function
Power Button	Short Press	Power On
	Press and Hold for 2 Seconds	Power Off
	Press and Hold for 10 Seconds	Factory Reset
Bluetooth Status LED	Solid Blue	Bluetooth Connected
	Blue Blinking	Bluetooth Not Connected
	Rapid Blue Flashing	Upgrading
Lap Detection LED	White Blinking	Valid IR Signal Detected

Specifications

LapWiz (Timing Decoder)	
Model	RT004
Power Supply	2 × AA Batteries
Communication	Bluetooth
Dimensions	55 x 26 x 65 mm
Weight	45 g
T01 Standard Transponder	
Connector	JR/Futaba
Input Voltage	DC 3–15 V
IR Transmission Range	3–10 m*
Suitable for	Indoor and Outdoor Tracks
Controller Dimensions	20 × 17 × 7 mm
Cable Length	285 mm
Weight	4.5 g
T02 Enhanced Transponder (Dual IR Emitters)	
Connector	JR / Futaba
Input Voltage	DC 3–15 V
IR Transmission Range	4–10 m*
Suitable for	Indoor and Outdoor Tracks
Controller Dimensions	20 × 17 × 7 mm
Cable Length	285 mm
Weight	6 g

Specifications

T03 Mini-Z Transponder	
Connector	JST-ZH 1.5 mm 4-Pin
Input Voltage	DC 3–15 V
IR Transmission Range	5 m*
Suitable for	Indoor Tracks
Controller Dimensions	15 × 14 × 6 mm
Extension Cable Length	120 mm
Transponder Cable Length	72 mm
Adapter Cable Length	30 mm (Compatible with Mini-Z ICS Port)
Weight	1.5 g
T04 Battery-Powered Transponder	
Charging Port	USB-C
Input Voltage	DC 5 V
Battery Capacity	140mAh
Runtime	12+ Hours
IR Transmission Range	4–10 m*
Track Compatibility	Indoor and Outdoor
Dimensions	30.8 × 18.5 × 11 mm
Weight	6.5 g

* Test data was obtained under standard indoor conditions. Actual detection range may vary with lighting conditions, ambient infrared interference, transponder placement, and vehicle speed. For optimal outdoor performance, avoid direct sunlight on the LapWiz IR receiver and use the sun visor when needed for enhanced detection reliability.

CONFORMITY DECLARATION

LapWiz satisfies all relevant and mandatory CE directives and FCC Part 15 Subpart B.

EN-55032	Electromagnetic compatibility of multimedia equipment - Emission requirements	Conform
EN-55035	Electromagnetic compatibility of multimedia equipment - Immunity requirements	Conform
EN 61000-3-2	Electromagnetic compatibility (EMC) – Part 3-2: – Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	Conform
EN 61000-3-3	Electromagnetic compatibility (EMC) - Part 3-3: Limitation of voltage supply systems for equipment with rated current ≤ 16 A.	Conform
EN 62368-1	Audio/Video, Information and communication technology equipment part 1: Safety requirement	Conform
EN 62479	Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)	Conform
EN 50663	Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz - 300 GHz)	Conform
EN 301489-1 EN 301489-17	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements. Part 17: Specific conditions for Broadband Data Transmission Systems.	Conform
EN 300328	Wideband transmission systems;Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum	Conform
FCC Part Subpart 15B	Title 47 Telecommunication PART 15 - RADIO FREQUENCY DEVICES Subpart B - Unintentional Radiators	Conform

Warranty and Service

Liability Exclusion

The device is designed and approved exclusively for the scenarios stated in this Instruction Manual. SkyRC accepts no liability of any kind if the device is used for any purpose other than that stated. We are unable to ensure that you follow the instructions supplied with the power supply, and we have no control over the methods you employ for using, operating, and maintaining the device. For this reason, we are obliged to deny all liability for loss, damage, or costs that are incurred due to the incompetent or incorrect use and operation of our products, or which are connected with such operation in any way. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of those SkyRC products which were immediately and directly involved in the event in which the damage occurred.

Warranty and Service

We guarantee this product to be free of manufacturing and assembly defects for a period of one year from the time of purchase. The warranty only applies to material or operational defects, which are present at the time of purchase. During that period, we will repair or replace free of service charge for products deemed defective due to those causes.
This warranty is not valid for any damage or subsequent damage arising as a result of misuse, modification, or as a result of failure to observe the procedures outlined in this manual.

Note:

1. The warranty service is valid in China only.
2. If you need warranty service overseas, please contact your dealer in the first instance, who is responsible for processing guarantee claims overseas. Due to high shipping costs, and complicated custom clearance procedures to send back to China, please understand that SkyRC can't provide warranty service to overseas end users directly.
3. If you have any questions which are not mentioned in the manual, please feel free to send an email to support@skyrc.com.

The content is subject to change without notice;
please refer to our website for the latest version!
https://www.skyrc.com

If you have any questions about this document, please contact SkyRC by sending a message to **support@skyrc.com**

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