



## **!! IMPORTANT SAFETY WARNING !!**

**This watch is NOT waterproof or water-resistant.**

- Do NOT expose to rain, water, or high humidity
- Do NOT wear while washing hands or in wet conditions
- Keep away from liquids at all times
- Water damage is NOT covered by warranty

## **PitWatch User Manual**

Thank you for choosing IWI — your choice drives our mission forward.

We are committed to continuous improvement and constantly refining every detail of our products.

Your feedback is our most valuable asset and we welcome any suggestions to grow together.

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# Introduction

PitWatch is a specialized racing timing watch for RC car enthusiasts and pit crews, providing comprehensive race timing, pit stop management, fuel strategy calculations, and real-time transponder system integration.

## Key Features:

- Multi-mode operation (Race, Stopwatch, Strategy, Transponder)
- Race timing with countdown and pit stop tracking
- Fuel consumption calculations
- Real-time transponder system integration via WiFi
- Automatic time keeping
- Wireless updates
- Power-efficient with auto-sleep modes

## Getting Started

### Power On

1. Short press physical button
2. Tap welcome screen to proceed
3. Swipe left to Mode Selection

### Power Off

- Long press physical button

### Navigation

- **Swipe Left/Right:** Navigate between pages
- **Swipe Up/Down:** does nothing
- **Back Arrow** (top-left): Return to Mode Selection
- **Physical Button:**
  - Short press: Action button (start race, lap trigger)
  - Long press: Power off

# Watch Face



Digital watch face with time/date display and power management.

## Setting Time & Date

1. Tap and hold (2 sec) on watch face
2. **Time:** Use Hour (00-23) and Minute (00-59) rollers
3. **Date:** Use Day (01-31), Month (JAN-DEC), Year (2020-2050) rollers
4. Tap **SAVE** to confirm or **CANCEL** to discard

**Note:** Time persists after power off.

## Power Management

- Screen turns off after 10 seconds of inactivity
- WiFi enters low power after 30 mins (when screen off)
- Tap anywhere to wake

# Mode Selection



Central hub for all functions. Access from Watch Face (swipe left) or any mode.

## Main Modes (4 Buttons)

**Race** (Left): Race session with countdown and timing

**Stopwatch** (Right): Independent stopwatch with lap timing

**Strategy** (Top): Fuel consumption calculator

**Transponder** (Bottom): Real-time lap data from transponder system

## Additional Controls

**WiFi Button** (Top-Right)

**Short Press:** Toggle WiFi

- Grey: Off
- Blue: Connecting
- Green: Connected

**Long Press (3 sec):** Open WiFi settings

**Update Settings** (Top-Left): Gear icon for software updates

# Race Mode

Core timing feature with pit stop management and fuel strategy.

## Starting a Race



1. Tap **Race button** from Mode Selection
2. Set **Refuel Time** (pit stop duration):
  - Minutes: 0-9
  - Seconds: 0-55
3. Set **Race Duration**: 10-60 minutes
4. Press **physical button** to begin

## Race Interface



**Race Timer** (Top): Total elapsed time (HH:MM:SS) - never resets

**Partial Timer** (Middle): Time since last pit stop - resets at pit

**BOX Counter** (Right): Pit stops completed

**Time to Race End** (inside bottom arc, small): Remaining race time (MM:SS)

**Next Pit Timer** (inside bottom arc, large): Countdown to next pit (MM:SS)

- Visual arc changes green→red
- Vibrates at 30 sec (1x) and 15 sec (2x)

## Controls

**SET** button (small circle below arc)

- Long press (3 sec): Adjust pit stop duration
- Timers continue in background

**PAUSE** button (bottom left)

- Long press (2 sec): Pause all timers
- **RESET** (red): Start new race
- **RESTART** (green): Resume

## Pit Stops

1. Press **physical button** during race
2. Stopwatch appears and runs automatically
3. Press **physical button** or tap circle when complete
4. Returns to race timers, BOX increments, partial resets

## Additional Pages

**Swipe Left:** Pit Event Table (history of all pit stops)

**Swipe Right:** Fuel Projection (live consumption calculation)





# Stopwatch Mode



Independent stopwatch with lap timing.

## Interface

**Lap Table** (Center): Scrollable list of laps (LAP #, LAP TIME) --> purple for fastest, green for fast (within 0.1s from fastest)

**Total Time** (Bottom-Left): Cumulative time

**Current Lap** (Bottom-Right): Ongoing lap time

## Controls

1. Press **physical button** or tap **START**
2. Press **physical button** for new lap
3. Tap **STOP** to pause
4. Tap **RESUME** to continue
5. Tap **RESET** when stopped

**Note:** Automatically resets and starts when race begins.

# Strategy Mode



Calculate fuel consumption and predict race autonomy.

## Interface

**Tank Size Toggle** (Top-Right): Switch between 75cc/125cc

**Track Time** (Left): Minutes (0-15), Seconds (0-55, 5-sec increments)

**Remaining Fuel** (Right): 0-150cc (5cc increments)

**EST. RUN TIME** (Bottom): Calculated total autonomy (MM:SS)

## Usage

1. Set tank size (75cc or 125cc)
2. Fill tank completely
3. Run timed session on track
4. Measure remaining fuel
5. Input track time (left rollers, minutes:seconds) and remaining fuel (right roller)
6. View estimated total autonomy

### Example:

- Tank: 125cc, Time: 5:00, Remaining: 75cc

- Consumed: 50cc, Autonomy: 12:30

**Tip:** Build in 20 seconds safety margin for pit stops.

# Transponder Integration

Real-time lap timing from transponder system via WiFi.

## Prerequisites

- WiFi connection (recommended before entering)
- Active transponder

## Setup

1. **WiFi:** Short press WiFi button (turns green), or just enter the page (the watch will connect automatically to the network if available)

2. **Transponder Number** (only first setup or new transponder):

- Tap **Transponder button**
- **Swipe right** to QR Code page
- Scan QR with phone
- Insert transponder number
- Watch shows "All set"



3. Swipe left, tap **START**



## Live Timing Interface



**Display:** Scrollable lap list with:

- LAP #, LAP TIME
- Best overall lap (purple)
- Auto-updates every 3 seconds

**Controls:**

- **START:** Begin fetching
- **CONTINUE:** Resume after inactivity
- **Back:** Stop and return to Mode Selection

## Status Messages

- "Fetching data...": Normal operation
- "No valid session...": Scan QR code
- "Connecting...": WiFi connecting
- "WiFi not connected": Enable WiFi
- "Rescan QR code...": Session invalid

## Smart Features

- Pauses 8 sec after new lap
- Stops after 30 sec inactivity
- Manual scroll pauses auto-scroll (resumes after 3 sec)

# Settings & Configuration

## WiFi Settings

**Access:** Long press WiFi button (1 sec) from Mode Selection

### Features:

- Network list with status (green checkmark = connected)
- Connect to new networks or forget saved ones
- **Best practice:** save max 2-3 networks

### Password Setup:

1. Click on the network to connect
2. Tap **Connect**, instructions will appear (also reported below)
3. Scan QR code with phone and **close** the camera
4. A window will appear on your phone, enter password of the network from your phone (you will have to use phone's hotspot most likely)
5. Watch shows green checkmark (up to 10 sec)
6. **YOU ONLY NEED TO SET THE PASSWORD ONCE FOR A GIVEN NETWORK** (unless the password changes, the watch will remember it and connect automatically in the future)

## Software Updates



**Access:** Tap gear icon from Mode Selection

**Process:**

1. Connect to WiFi first, or just enter the page (the watch will connect automatically to the network if available)
2. Tap **CHECK UPDATES**
3. If available, tap **INSTALL UPDATE**
4. Green progress bar appears
5. Takes 2-3 minutes
6. **Warning:** Requires stable connection and sufficient battery



# Power Management

## Battery Indicator

- Bright green border when charging

## Auto Power Saving (Watch Mode Only)

- Screen off after 10 sec inactivity (only in watch mode, otherwise screen is always on)
- WiFi off after 30 min inactivity (only in watch mode, WiFi never turns off while you are using the watch functions)

## Charging

- Connect USB-C cable
- Full charge: 2-3 hours
- Fully functional while charging

## Battery Life

- Watch mode: 8-12 hours
- With WiFi: 4-8 hours

## Tips

- Return to watch mode for auto screen-off
- Disable WiFi when not using transponder
- End race sessions when idle
- Charge before race days

# Tips & Troubleshooting

## General Tips

- **Data Persistence:** Time, WiFi credentials, and session code are saved
- **Quick Wake:** Tap anywhere on screen
- **Navigation:** Back arrow always returns to Mode Selection

## Race Mode

### Pre-Race:

- Set accurate refuel time from testing
- Ensure battery charged
- Practice pit workflow

### During Race:

- Monitor "NEXT PIT" timer
- Check RACE TIME for progress
- Swipe for pit history

### Pit Workflow:

1. Call driver as timer approaches zero
2. Press button to start pit stopwatch
3. Complete pit work
4. Press button when car leaves

## Transponder Mode

### Setup for Practice:

1. Configure WiFi day before (use phone hotspot)
2. Session link available after first lap
3. Keep phone nearby for better signal

## Troubleshooting

### Watch won't wake:

- Press and hold physical button (2 sec) to shut down the watch
- Short press physical button to restart the watch
- Check battery level

**WiFi won't connect:**

- Verify network name/password has not changed since last time
- Long press on WiFi icon, select the network and click **FORGET**, then connect again with the usual procedure (QR code)
- Check signal strength
- Restart watch

**Laptime not updating:**

- Confirm WiFi connected (green icon in main page)
- Insert the session link again (swipe left and scan QR code)
- Check transponder is active