

LED Reference

Overview

iReporter can drive hardware LEDs on your iReporter Button Box to provide visual indicators for active crash/incident timers and the Blue Flag Helper approach warning.

Serial Protocol

iReporter communicates with the button box using a simple text-based protocol over the configured COM port at 9600 baud. Each LED command is a single line in the format:

```
LED;{COLOUR};{STATE};
```

Where:

- **COLOUR** — one of: RED, BLUE, GREEN, AMBER
- **STATE** — 1 to turn the LED on, 0 to turn it off

Examples:

```
LED;RED;1;      (turn red LED on)
LED;RED;0;      (turn red LED off)
LED;AMBER;1;    (turn amber LED on)
```

LED Assignments

Feature	Setting	Behaviour
Crash Capture	Timeout LED (in Crash Capture settings)	Steady ON while crash is active (timed mode) — OR — brief 600ms flash on capture (No Timeout mode)
Incident Capture	Timeout LED (in Incident Capture settings)	Steady ON while incident is active (timed mode) — OR — brief 600ms flash on capture (No Timeout mode)

Feature	Setting	Behaviour
Blue Flag Helper	Approach LED (in Blue Flag Helper settings)	ON when a top-X leader is within the configured gap AND more than 1 full lap ahead

Timed vs No Timeout LED Behaviour

The crash and incident LEDs behave differently depending on the timeout setting:

Timeout Setting	LED Behaviour	Data Cleared When
Timed (1-60s)	Stays ON for the full timeout duration, then turns OFF	Timeout expires
No Timeout (0)	Flashes ON for 600ms on detection, then turns OFF	Next crash/incident is detected (overwrites previous)

The brief flash in No Timeout mode confirms that a crash or incident has been captured without implying it is still pending — the data remains available in message variables indefinitely.

Colour Options

Option	Description
None	No LED output for this feature
RED	Red LED
BLUE	Blue LED
GREEN	Green LED
AMBER	Amber / orange LED

Notes

- iReporter only sends a new LED command when the state changes — it does not repeatedly send the same command.
- Multiple features can use different colours simultaneously (e.g. RED for crash, AMBER for incident).
- If two features are assigned the same colour, the last state change wins. It is recommended to assign a unique colour to each feature.
- The COM port and baud rate (9600) are fixed. Ensure your iReporter Button Box firmware listens on 9600 baud and parses the `LED;COLOUR;STATE;` format.

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