

NXS Shifter — LED Status & Diagnostics Specification

Overview

The NXS Shifter uses a **dual RGB LED diagnostic system** to provide real-time feedback on battery state, system health, sensor operation, and remote connectivity.

All colors and blink patterns are intentional and provide actionable information for setup, operation, and troubleshooting.

Hardware Indicators

The motor unit includes the following user-interface elements:

Component	Description
Charging LED	Displays battery voltage and charging status
Function LED	Displays system diagnostics and operational status
Function Button	Triggers diagnostic status display
Reset Button	Performs system reset and triggers diagnostics

Charging LED

Battery Voltage & Charge Status Indicator

When the shifter is connected to a USB power source, the **Charging LED** changes color as battery voltage increases. This allows instant visual confirmation of charging progress.

Charging LED Color Map

Battery Voltage	LED Color
< 3.6 V	● Red
< 3.7 V	● White
< 3.8 V	● Magenta
< 3.9 V	● Yellow
< 4.0 V	● Cyan
< 4.05 V	● Green
> 4.05 V	● Green — Rapid Flash
Fully Charged	● Green — Steady

Charging Note

Rapid-flashing green indicates the battery is fully charged for practical use. Waiting for steady green is optional and not required before riding.

Function LED

System Diagnostic Indicator

The **Function LED** provides a fast health check of the entire system.

The diagnostic sequence is displayed whenever:

- The **Function Button** is pressed (short press), or
- A **system reset** is performed

Diagnostic Sequence

The Function LED displays a **six-blink sequence**, with each blink representing a specific subsystem.

Six-Blink Diagnostic Breakdown

Blink 1 — Home Status

Color	Meaning
● Green	System homed and ready
● Red	Homing required

If red, perform the homing procedure before riding.

Blink 2 — System Status

Color	Meaning
● Green	System operating normally
● Red	Internal error

If red, contact NXS support.

Blink 3 — Position Sensor 1

Color	Meaning
● Green	Sensor functioning correctly
● Red	Sensor fault

Blink 4 — Position Sensor 2

Color	Meaning
● Green	Sensor functioning correctly

- Red Sensor fault

For sensor faults, contact NXS support.

Blink 5 — Remote Connection

Color	Meaning
● Blue	Connected to handlebar remote
● Red	Remote not connected

If red, re-pair the remote and verify remote battery power.

Blink 6 — Battery Level

The final blink displays **current battery level** using the **same color scale as the Charging LED**

(● Red → ● White → ● Magenta → ● Yellow → ● Cyan → ● Green).

This allows battery level checks **without plugging in** the shifter.

Summary

- **Charging LED** = Battery voltage and charge progress
- **Function LED** = Complete system health check in under 3 seconds
- Designed for **at-a-glance diagnostics**, both on the bench and on the trail