

LED Cheat Sheet



Team 2655

Power LED

Indicates power issues with RoboRIO.

Color	State	Meaning
Off	Off	Power not in proper signal range (no power).
Red	Blink	Voltage too high (above 16V).
Red	Solid	Fault (short or over-current).
Orange	Solid	Brownout (battery voltage too low).
Green	Solid	Powered correctly.

Status LED

Indicates RoboRIO Software Status (Always Orange).

Flashes per Second	Meaning
2	Software (firmware) error (usually when upgrade interrupted).
3	Device in safe mode.
4	Software crashed twice without reboot (usually out of memory).
Continuous	Unrecoverable error. Contact National Instruments.

Radio LED

Indicates conditions for USB radio (not implemented on older router).

Color	State	Meaning
Off	Off	No connection.
Red	Any	Not released by National Instruments.
Orange	Blinking	Booting as access point.
Orange	Solid	Access point active.
Green	Blinking	Booting as bridge.
Green	Solid	Bridge active.

Comm LED

Indicates robot communication status.

Color	State	Meaning
Off	Off	No communication detected.
Red	Solid	No robot code.
Red	Blink	Emergency stopped.
Orange	Any	FIRST proprietary.
Green	Solid	Code active.

Mode LED

Indicates RoboRIO output modes.

Color	State	Meaning
Off	Off	Outputs disabled.
Red	Solid	Outputs unknown or in test mode.
Orange	Solid	Outputs enabled (TeleOperated mode).
Green	Solid	Outputs enabled (Autonomous mode).

Robot Safety Light (RSL) LED

Indicates robot state.

Color	State	Meaning
Off	Off	No power.
Orange	Solid	Robot is powered.
Orange	Blinking	Robot is powered and enabled.

Comm and Stat LED's
(Usually Both are the same color and state).
Indicates CAN communication and robot state.

Color	State	Meaning
Off	Off	No Power.
Red	Slow Blink	No CAN communication.
Orange	Slow Blink	Robot disabled. Sticky fault detected.
Green	Fast Blink	Robot is enabled.
Green	Slow Blink	Robot is disabled.
Orange / Green	Blink	Device in boot-loader.

Power Distribution Panel (PDP)

5V or 12V LED

Indicates VRM power status.

Color	State	Meaning
Off	Off	Corresponding breaker is tripped.
Green	On	Corresponding channels are powered.

Voltage Regulator Module (VRM)

Compressor LED (Comp)

Indicates compressor status.

Color	State	Meaning
Off	Off	Compressor is off.
Green	On	Compressor is on.

Pneumatic Control Module(PCM)

Solenoid LED's (on sides)

Indicates state of solenoids.

Color	State	Meaning
Off	Off	Corresponding breaker is tripped.
Green	On	Corresponding channels are powered.

Pneumatic Control Module(PCM)

Status LED

Indicates PCM status.

Color	State	Meaning
Off	Off	No power.
Red	Slow Blink	Solenoid fault (corresponding solenoid light blinks too).
Red	Strobe	No CAN communication.
Red	Long Strobe	Compressor current too high.
Orange	Slow Blink	Sticky fault.
Green	Any	No problems.
Orange & Red	Slow	Damaged hardware.
Orange & Green	Slow	Device in boot-loader.

Pneumatic Control Module(PCM)

Direction LED

Shows output voltage polarity.

Color	State	Meaning
Off	Off	No power.
Red	Blink	Reversed polarity (negative voltage).
Orange	Blink	No output (disabled state).
Green	Blink	Normal polarity (positive voltage).

NOTE: Blink speed corresponds to percent power.

Both LED's (indicate output and status)

Color	State	Meaning
Off	Off	No Power.
Red	Solid	In brake mode.
Red	Blink	Reversed polarity (negative voltage).
Orange	Solid	No throttle (no output).
Green	Blink	Normal Polarity (positive voltage).
Off & Red	Strobe	Limit switch of software limit.
Off & Red	Alternate	CAN not connected.
Off & Orange	Alternate	Robot disabled.
Red & Orange	Alternate	Damaged hardware.
Green & Orange	Solid (One LED)	In boot-loader.

Talon SRX

LED

Shows output voltage and device status.

Color	State	Meaning
Off	Off	No power.
Red	Solid	Full reverse.
Orange	Solid	No output (brake).
Orange	Blink	No PWM.
Green	Solid	Full forward.

LED

Shows output voltage and device status.

Color	State	Meaning
Off	Off	No power.
Red	Solid	Full reverse.
Orange	Solid	No output (brake).
Orange	Blink	No PWM.
Green	Solid	Full forward.

LED

Shows output voltage and device status.

Color	State	Meaning
Off	Off	No power.
Red	Solid	Full reverse.
Red	Blink	Reverse (blink indicates percent power).
Orange	Solid	Neutral (brake).
Orange	Blink	No PWM.
Green	Solid	Full forward.
Green	Blink	Forward (blink indicates percent power).

Note: This does not apply for calibration mode.

LED (indicate output and status)

Color	State	Meaning
Off	Off	No Power.
Red	Solid	Full reverse.
Red	Slow Blink	Voltage, temperature, or limit switch fault.
Red	Fast Blink	Reverse.
Orange	Solid	Neutral.
Orange	Slow Blink	Network or servo link lost.
Orange	Fast Blink	Invalid CAN ID.
Green	Solid	Full forward.
Green	Fast Blink	Forward.
Red & Orange	Slow Blink	Current fault.

Jaguar Motor Controller

Power LED

Shows output voltage and device status.

Color	State	Meaning
Off	Off	No power.
Red	Solid	Power.

SD540 Motor Controller

PWM LED

Shows output voltage and device status.

Color	State	Meaning
Red	Solid	No PWM signal.
Green	Solid	Has PWM signal.

SD540 Motor Controller

Motor LED

Shows output voltage and device status.

Color	State	Meaning
Off	Off	Neutral.
Red	Solid	Forward.
Green	Solid	Reverse.

SD540 Motor Controller

LED

Shows output voltage and device status.

Color	State	Meaning
Off	Off	No power.
Red	Solid	Full reverse.
Red	Blink	Reverse.
Green	Solid	Full forward.
Green	Blink	Forward.
Blue / Orange	Solid	Neutral (blue: brake orange: coast).
Blue / Orange	Slow	No signal (blue: brake orange: coast).

Note: does not apply in calibration mode.

Spark Motor Controller

LED

Shows output voltage and device status.

Color	State	Meaning
Off	Off	No power.
Red	Solid	Reverse.
Orange	Solid	Neutral.
Green	Solid	Forward.

Spike H-Bridge Controller