VoltMagic
RADIO CONTROL SYSTEM ■ MONITOR   VM₁ᵣ

Quick Configuration Guide

www.VoltMagic.com

To **CONFIGURE,** first decide…

…GLITCH		**…or FAILSAFE (PCM Receivers only)**

Connect VoltMagic to receiver.

Connect VoltMagic to unused channel on receiver.

Set transmitter ATVs (end points) to >85% for channel connected to VoltMagic

1. Set transmitter ATVs (end points) to maximum (typically 140% for Futaba, 150% for JR) for channel connected to VoltMagic.
2. Set the channel's failsafe position to full high or low.
3. Re-set the channel's ATV's to 85%.

SET GLITCH or FAILSAFE MODE:

1. Turn on receiver while continuously toggling the channel connected to VoltMagic back and forth **quickly** during the first 3 seconds after power up, until green LED 1 starts blinking (LED 1 will blink continuously during configuration).
2. If red LED 8 already indicates the desired mode (it will be off for glitch or on for failsafe as you cycle through the voltage range choices), skip to **SET VOLTAGE RANGE, step 2**.
3. Otherwise, toggle the channel slowly to step through the choices. Find the last two choices in the cycle (see Table 1), which display red LED 8 either off for glitch or on for failsafe (plus the last saved voltage range choice). If you go past, just keep toggling until the last two choices come around again. At that point…
4. Stop when red LED 8 is OFF for glitch detection, or ON for failsafe detection

Turn power off within 20 seconds to save glitch/failsafe selection.

SET VOLTAGE RANGE:

1. Turn on receiver while continuously toggling the channel connected to VoltMagic back and forth **quickly** during the first 3 seconds after power up, until green LED 1 starts blinking (LED 1 will blink continuously during configuration).
2. Toggle the channel slowly to step through the choices (see **Table 1, column 2** below), then stop when the desired LED configuration is reached (if you go past, just keep toggling until your choice comes around again).
3. Turn power off within 20 seconds to save voltage range selection. You're done!

TABLE 1: Configuration of Voltage Ranges + Glitch or Failsafe Mode -- In order of appearance during configuration.

✓ Note: The default (range 3) is usually a conservative four-cell choice. Ranges 2 and 6 are also common choices.

Voltage Range for LED's 1 – 8 Glitch Mode (last two choices)		**Configuration LED Display**
1.	5.30 volts – 4.60 volts *	Green LED 5
2.	5.40 volts – 4.70 volts *	Greed LED 4
3.	5.50 volts – 4.80 volts * (Default)	Green LED 3
4.	5.60 volts – 4.90 volts *	Green LED 2
5.	6.50 volts – 5.80 volts *	Green LED 5 + Yellow LED 6
6.	6.60 volts – 5.90 volts *	Green LED 4 + Yellow LED 6
7.	6.70 volts – 6.00 volts *	Green LED 3 + Yellow LED 6
8.	6.80 volts – 6.10 volts *	Green LED 2 + Yellow LED 6
9.	7.70 volts – 7.00 volts *	Green LED 5 + Yellow LED 7
10.	7.80 volts – 7.10 volts *	Green LED 4 + Yellow LED 7
11.	7.90 volts – 7.20 volts *	Green LED 3 + Yellow LED 7
12.	8.00 volts – 7.30 volts *	Green LED 2 + Yellow LED 7
Glitch	(Default)	Saved voltage range + Red LED 8 **OFF**
Failsafe		Saved voltage range + Red LED 8 **ON**

Blinks continuously during configuration

OFF for Glitch mode ON for Failsafe mode

During configuration these LEDs select the voltage range

1   2   3   4   5   6   7   8

[G] [G] [G] [G] [G] [Y] [Y] [R]

G L I T C H   **N O R M A L**   **L O W**

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Operation Guide

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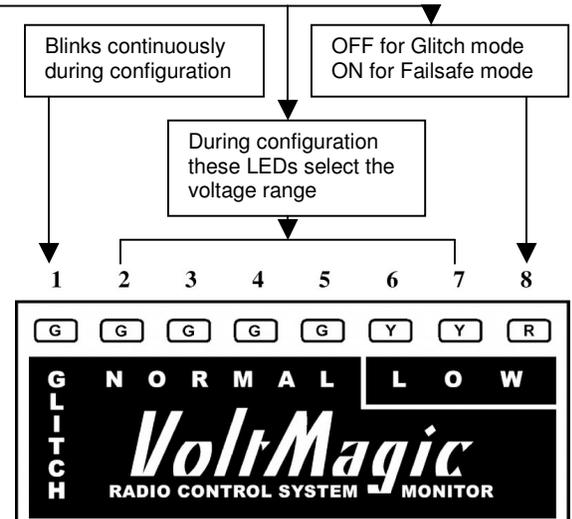
VoltMagic lets you configure the battery voltage monitor for your particular battery. During normal operation the LEDs will indicate current battery voltage, plus record low voltage spikes (PLV) and/or radio glitches that occur. The objective of proper installation is for the LEDs to reflect the status of your system as follows:

RED (blinking or solid) = Warning — voltage low.
YELLOW (blinking or solid) = Caution — voltage lower than normal.
GREEN blinking = Glitch count (LED 1) or PLV values approaching the yellow level (LED 5).
GREEN solid = Normal (voltage displayed).

Upon power up, VoltMagic briefly displays an LED test pattern that ends with the current configuration LEDs (see **Table 1,** column 2 on reverse side). Then, if peak low voltage (PLV) and/or glitches were logged from the previous flight, they will display for 10 seconds, after which VoltMagic displays the current battery voltage and PLV. Glitch (or failsafe) counting is enabled after one minute.

✓ Note that if you cycle power within one minute, you can view the previous flight data again. After one minute of operation, the previous PLV and glitch data is erased and current data is recorded.

Batteries need some time and load for the voltage to stabilize. Exercise the servos rapidly and check VoltMagic (before starting the engine).

TABLE 2: Peak Low Voltage (PLV) -- The specified LED blinks once or twice followed by a pause when voltage falls below the setting, only the lowest voltage is displayed. If battery voltage is also being displayed with the same LED, it will blink off instead of on.

LED	Blinks	NiMh/NiCd 4 Cell	NiMh/NiCd 5 Cell	Lithium/LiPoly (2 Cell)
Green LED 5	1	4.50	5.50	6.50
Green LED 5	2	4.40	5.40	6.40
Yellow LED 7	1	4.30	5.30	6.30
Yellow LED 7	2	4.20	5.20	6.20
Red LED 8	1	4.10	5.10	6.10
Red LED 8	2	4.00	5.00	6.00

TABLE 3: Glitch (or Failsafe) Event Counter -- After a bad or missing pulse, those within 2/3 second are counted as the same glitch. Detection is disabled for the first minute, or if connected without servo pulses. If LED 1 is displaying battery voltage, it will blink off instead of on.

Number of LED 1 Blinks	Glitch or Failsafe Count
1	1
2	2 to 3
3	4 to 7
4	8 to 15
5	16 to 31
6	32 or more

Battery Voltage is indicated by which one of the 8 LEDs is on. The LEDs are in 0.10 volt increments per the range configured (see **Table 1**).

Sudden changes in voltage from servo movement are filtered out for a steady reading. Note: If connected <u>after</u> a voltage regulator, the voltage output of the regulator will be indicated instead of the battery voltage.

PLV is shown by blinking LEDs 5, 7, and 8 (see **Table 2**).

Examples with default configuration 3 (5.5 to 4.8 volts)

LED 3 on	Voltage = 5.3
LED 3 on LED 5 blinks once	Voltage = 5.3 PLV = 4.5
LED 5 on LED 5 blinks (off) twice	Voltage = 5.1 PLV = 4.4
LED 8 on LED 7 blinks twice LED 1 blinks twice	Voltage = 4.8 PLV = 4.2 2 to 3 glitches counted

1 2 3 4 5 6 7 8

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