

Transmitter - Replacement Battery Packs NiMH, NiCD & Lipo - DIY.

Replace batteries with NiMH - now cheaper, longer lasting and less chance of damage to system.

Removing the battery pack for charging will not effect model memory in Hitec and Futaba TX. However, majority of JR TX do not have a flash memory system and use a small lithium battery cell soldered to the main board, to retain memory and settings, which should be replaced every 4-5 years. Recommend remove 9.6v battery pack and charge externally when using a fast field charger - helps prevents overheating or missing peak due to the internal diode in many TX charging circuits.

Over voltage is a problem with many TX, the regulators are for internal demand from a nominal 9.6V supply (NiCad or NiMH) and some upto 8 X AA alkaline batteries = 12.0v and can fail under the repeated excess voltage of 12.45v+ supplied by fully charged 3S LiPol. [FWIW an increasing number of TX now use 6 cell NiMH packs]

Use of 3S Lithium Polymer (Lipo) packs in at least Hitec Transmitters voids the warranty as per some previous posts on the topic.

[Lipo replacement in Optic6](#)

[Lipo replacement in Hitec TX](#)

[OPTIC 6 TX Battery charge](#)

[3s Lipo voids warranty](#)

to calculate approximate "time on" from a fresh battery

[Hitec battery drain rates](#)

[JR - Do Not Use 3S Lipo in JR TX](#) - JR Service Dept.

[JR - Do Not Use 3S Lipo in JR TX](#) - JR Service Dept UK

[JR - Replacing RF Deck after unregulated Lipo used in JR TX](#) - JR Service Dept USA.

[Spektrum - Heads Up, Use the right batteries in your Spektrum transmitter for best results](#)

"Warning concerning use of non-standard transmitter batteries

Spektrum transmitters are designed to be operated on 9.6 or 4.8 volt Ni-cad or NiMh batteries only. Use of Li-Po or other power devices operating at higher voltage can add heat to the system, possibly overloading the power regulating transistor for reduced output. Despite what aftermarket battery manufacturers might suggest, use of non-standard batteries offers decreased reliability of your Spektrum. Our service department has received failures associated with Li-Po packs.

For increased flight time, please use increased capacity NiMh cells, like the JRPB5011 2500 Sanyo pack. Charge these packs with the JRPC223 9.6 volt 270mAh output charger. "

[If you really must use a 3S Lipo in place of 8 cell AA NiMH/NiCD packs, use a proper regulator set aprox 10.5-11.0V, or at a minimum, two 1A silicon diodes (not zener) soldered in series on positive lead - [Example Pictured](#).]

Postscript:

12Nov10:

Nothing stays the same for ever. The new Hitec Aurora Transmitter and Optic Sport transmitters are designed to operate on a 6 cell Nicad or NiMH pack and may also operate on a 2S Lipo pack. However, only the Aurora currently has the facility to change battery modes and low voltage warnings. One expects Optic Sport users will soon, using HPP-22, also be able to change the low battery warning to permit safe 2S Lipo use in Optic Sport.

[Aurora A9 - Eclipse 7, Flash 4&5, Optic 6, Prism 7 series](#) - Lipo, Field and Fast Charging still remains relevant.

[Sanwa/Airtronics TX with LiFE & other Batteries](#)

Caution: **Do Not Use LiFE batteries in Hitec TX**

. Hitec Transmitters using a 6 cell NiCD/NiMH pack, e.g. Aurora 9 and Optic 6 Sport: Not only is the size too large for the pocket, the nominal voltage is already at the Low battery Warning level.

. Hitec Transmitters using 8 cell NiCD/ 8 cell NiMH packs: e.g. Eclipse and Optic 6, a 3 cell A123 is really too low and a 4 cell A123 (LiFe) is too high.

. To avoid reversed polarity situations (happens even with Hitec TX despite the tongue and groove polarised fitting), copy, print and glue attached label inside TX as shown, adapt as necessary for other brand of TX, especially Sanwa/Airtronics as the power and ground leads are reverse of the standard servo leads.

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