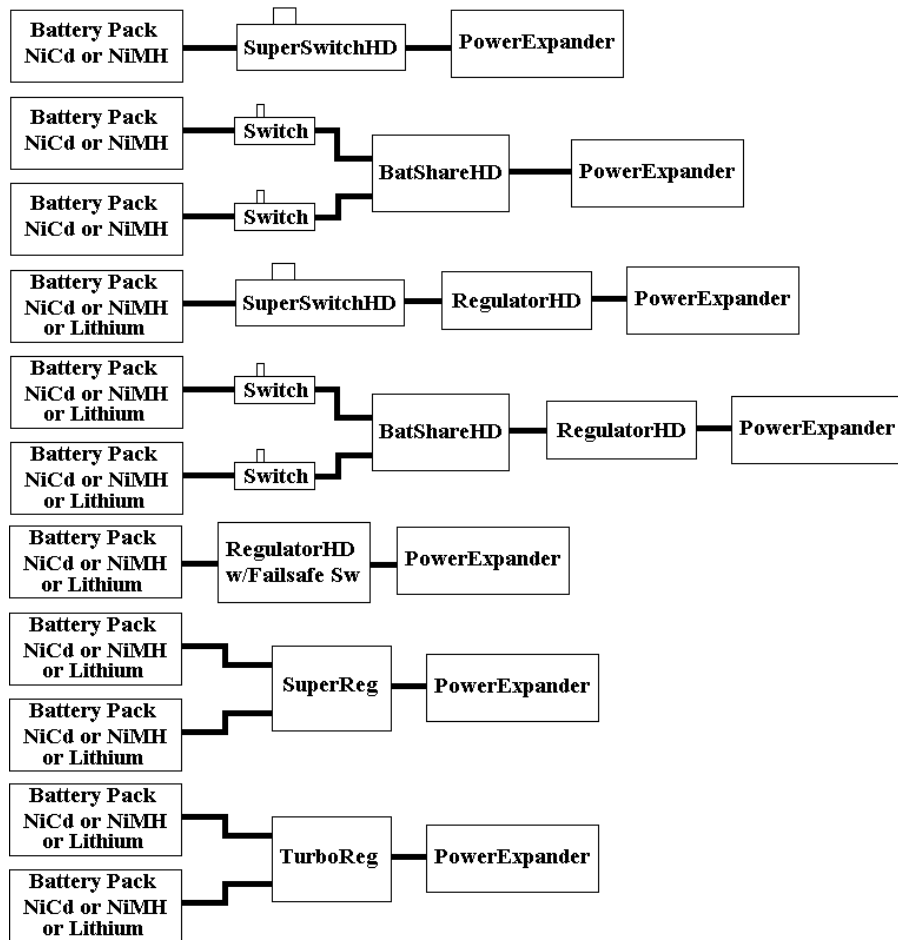


## LED Indicators

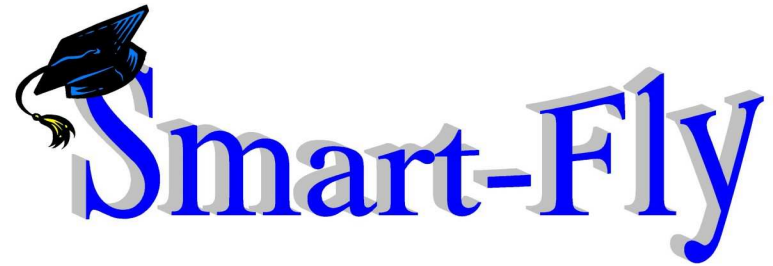
The LED indicators simply indicate that power is present for the unit and the receiver. They are not indicators of power being within an acceptable range.

## Typical Installation Configurations



Additional information and technical help can be found at [www.Smart-Fly.com](http://www.Smart-Fly.com)

Quest Engineering & Development  
1328 East Cottonwood Lane  
Phoenix, AZ 85048-4765  
Ph: (480) 460-2652 Fax: (480) 460-2653



# PowerExpander

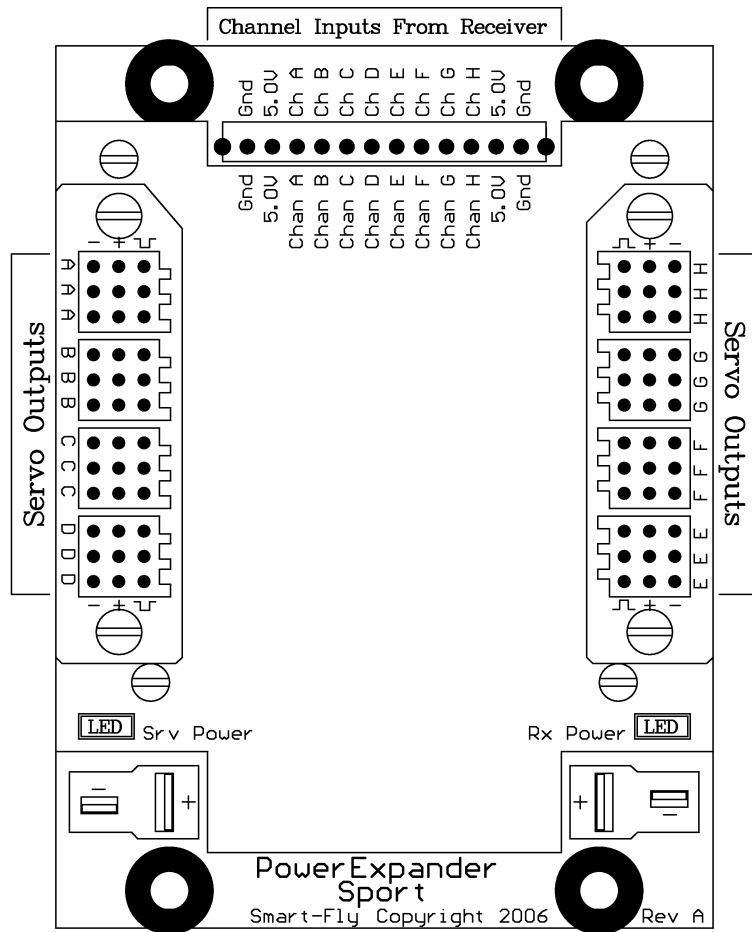
# Sport

## User Guide

*Thank you for purchasing the Smart-Fly PowerExpander Sport!*

This manual takes you through the installation and operation of the Smart-Fly PowerExpander Sport. The unit is a power distribution unit that supplies full power to your servos while supplying a clean, regulated voltage to your receiver. Features of the PowerExpander Sport are:

- **Light weight, 1.8oz, 52g**
- **Compact design, footprint is 2.6" x 3.5"**
- **Filtered and regulated 5.0V power to the receiver**
- **LED power indicators for input and receiver power**
- **Fully buffered outputs on all channels**
- **Full filtration of all signals in and out of the unit**
- **High-current Deans UltraPlug Power input connectors**



### Receiver Mounting

The receiver mounts in the center of the unit. 3M dual-lock mounting tape has been supplied to mount the receiver. The tape's holding power is extremely strong so it is recommended that the whole 1"x 2" piece not be used. Instead cut some 1"x 1/2" strips and use these on either end of the receiver.

### Receiver Connections

The receiver servo outputs are connected to the pigtailed coming out of the PowerExpander Sport in the area marked "Channel Inputs From Receiver" on the reference drawing. The two channels on the end ("Chan A" and "Chan H") have power connections to the receiver in addition to the signal connection. It is recommended that if you have a receiver that has less than eight channels that you still use both the end connections as this will provide you with power redundancy to the receiver in event that a power or ground lead should fail.

The unit will accommodate both end-loading receivers and top-loading receivers. All signals coming from the receiver into the PowerExpander Sport are RF filtered.

This prevents noise from the servos from going out the receiver connectors into the receiver. If not all channels are going to be used then the unused pigtail can be tucked away.

### Connections Directly To Receiver

If you want to connect a device directly to the receiver instead of going through the PowerExpander Sport, make sure the current draw of the receiver and the device is less than one amp.

There are several reasons that a device might be connected directly to the receiver instead of going through the PowerExpander Sport. The most likely would be if you had a nine or ten channel receiver and needed to use the extra channels. Items such as Ignition Cutoffs and smoke pump control do not draw much current and could be used. Throttle servos may or may not be used. Analog servos should work fine, but digital servos may draw too much current. As long as the combined current draw of the receiver and servo does not exceed one amp this will work just fine.

### Servo Connections

Servos are connected to the PowerExpander Sport along the two rails on either side of the receiver. The servo connectors are universal in that they will work with Futaba or JR connectors. When using a JR connector be careful to observe the polarity of the connection. The negative servo power lead (black on Futaba, brown on JR) is indicated by the "minus" sign. The positive servo power lead (red on Futaba and JR) is indicated by the "plus" sign. The servo signal line (white on Futaba, orange on JR) is indicated by the "top hat" symbol.

All receiver channels have each servo signal output individually buffered. If a servo were to short its signal wire, the other servos on that channel would not be affected. Eight of the channels have three servo outputs and two of the channels have four servo outputs. The channels with four servo outputs correspond to Futaba's and JR's assignments of the rudder channel.

The unit also RF filters each signal output and matches line impedance resulting in a cleaner signal down long servo leads. The impedance matching reduces the electrical "ringing" that can occur on long servo leads. Ringing can generate RF interference and can reduce receiver range.

### Power Connections

Power is supplied to the unit through the two Deans UltraPlug male connectors. The polarity of the Deans connector is shown on the reference drawing. It is highly recommended that you beef up the power wiring between the battery and the PowerExpander Sport above the standard 22ga wiring. Failure to do this will diminish the effectiveness of the PowerExpander Sport at providing the highest possible voltage to the servos. Servos operating at lower voltages produce less torque than they are rated at. The two input connectors are connected together internally. There is no isolation between the two inputs; however if you desire some kind of battery isolation the BatShareHD can be used.