

The Lemon Rx DIY module is an electronic kit that addresses the need for RC modeler in legacy transmitter conversion. The module is designed to work with Lemon Rx or Spektrum-compatible aircraft receiver (not compatible with Spektrum surface receiver). The firmware is specifically designed to restore the original PPM waveform on Lemon Rx or Spektrum™ receiver. The module accepts 5V to 12V as supply input while accepting PPM signal from 3V to 12V with auto detection on PPM signal polarity. The module accepts high tolerance of PPM signal found in some legacy transmitter while accepting a minimum of 2 channels and up.

**RCgroups discussion (Click below link for user manual page with link to RCGroups)**

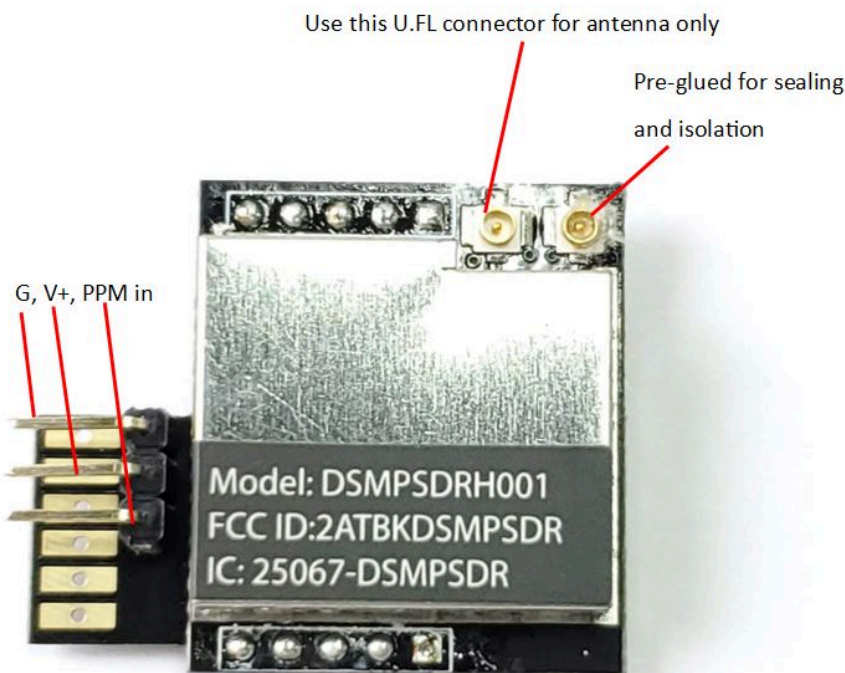
<https://lemon-rx.com/manual>

### Caution before installation

- Avoid static electric by grounding yourself to metallic surface. Metallic surface working table is recommended (such as on top of a laundry).
- Do not interrupt power provided to the module initially. Doing so may damage the RF front-end. Make sure power wiring harness is connected securely before providing power to the module.
- Install SMT connector to SMA conversion cable to the module as well as antenna prior to power on. Power on without antenna may possibly damages the device.

### Antenna connection and Wiring implementation 1

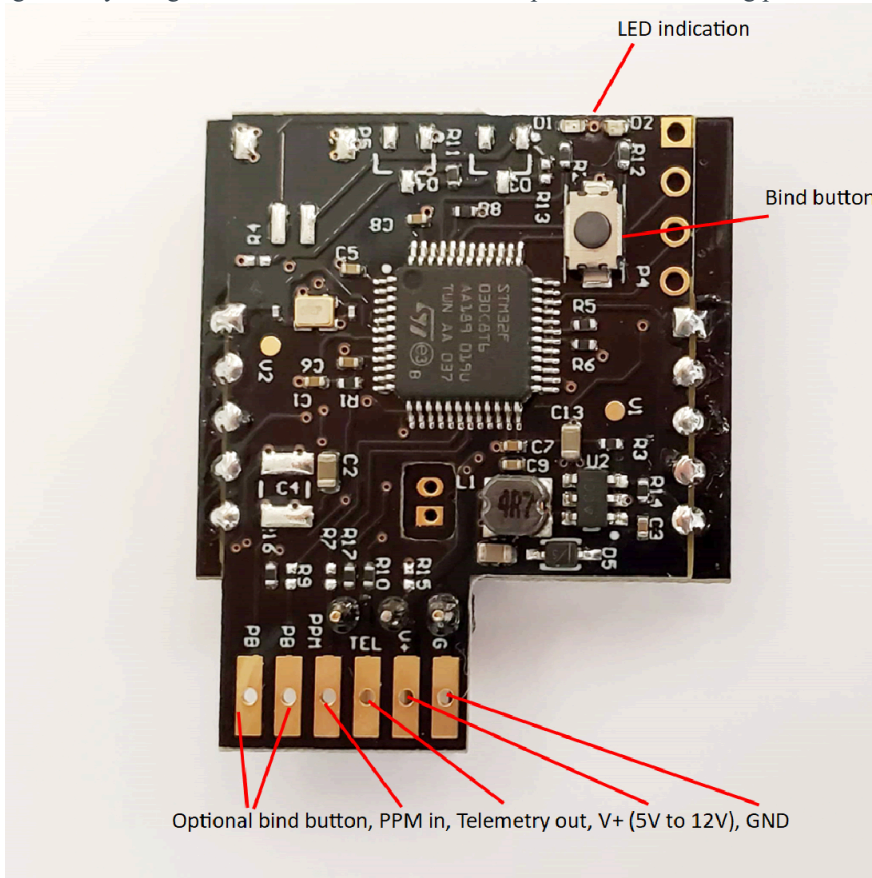
The SMT U.FL connector closest to the center of module should only be used for RF transmission. The optional 3 header pins can be optionally soldered for Ground, V+ and PPM signal in. All these connections are needed for full operation with the on board button for binding and range check. See below diagram.



### Wiring implementation 2

Below diagram uses the module pads for direct soldering to suit installation needs. The 3 header pins on implementation 1 can be

ignored by using these connections. External bind push button soldering pad can be found here.



### Bind procedure and implementation

Bind button on board can be used or externally wired with 2 pads labeled "PB".

- Turn on the transmitter and by pass all the warning messages (if any)
- Wait until the module turns on with red light on and green light flashing
- Release button
- Observe indication. Green light on means binding is completed. Red light flashing indicates bind fails. Turn off the transmitter and resume the whole binding procedure if bind fails.

### Range check

During normal operation (green light on), press and hold the button puts the module in range check mode (red light on). Range check mode passes with valid control of the model from 30 meters away. Release the button to allow full power transmission.

### Telemetry support with ErSky / EdgeTX firmware for non-vintage radio (See LMT0001 as a better alternative)

Although unlikely to be used, LMT0002 comes with telemetry serial UART output when a telemetry capable receiver is used. Telemetry display and alert is supported with ErSky firmware under PPM / 9XR-DSM protocol. ErSky firmware can be downloaded at <http://www.er9x.com/>. For EdgeTX user, the LemonTx module DSMP protocol has been in limited testing in EdgeTX release 2.7 and appears to work correctly. However you are advised to do a proper range check and full channel functionality check before using it for serious model aviation.

### Note:

- 1) This is not a Spektrum DSMX or DSM2 product, nor is it a copy of a Spektrum DSM2 or DSMX product. The Spektrum, DSMX and DSM2 brand is a trademark of Horizon Hobby, Inc.
- 2) This is not an underground black market fake Spektrum product. Lemon Rx quality is guaranteed.
- 3) Lemon Rx products are tested to be compatible with Spektrum's DSMX and or DSM2 product (Spektrum, DSMX and DSM2 are the registered trademark of Horizon Hobby, Inc.).