# MX VTX-58XX PRO HV Series Video Transmitter

**Button Operation:**

The button on VTX board has three functions or use ways: set up channel, set up frequency band, set up VTX power. Connect VTX with power, wait till the LED finishes indicating the present working frequency, long press the button(SW) 2 seconds, VTX will enter set up menu, two of the LED will show the present menu state. The exact operation will be as the following:

1）   Set up channel(Channel): long press button(SW) for 2 seconds till the blue LED is turned on, then release the button, entering channel set up mode(red LED flashes one time), select channel by short pressing the button(SW)----times of the blue LED flashes indicating the current channel value;

2）   Set up channel group (Band): long press button(SW) 2 seconds till blue LED light is on, then release the button(SW), it enters channel set up mode(red LED flashes two times), short press the button(SW), select channel group(Band)----times of the blue LED flashes indicating the value of current channel group(Band).

3）   Set up transmitting power: long press button(SW) 2 seconds till the blue LED light is on, then release the button(SW), it enters set up channel mode(red LED flashes 3 times), select power by short pressing button(SW)---times the blue LED flashes indicating the current value of power.

4）   Exit and save: long press the button (SW) 2 seconds till blue ELD is on, then release the button(SW), after red and blue LED flashes in turn for 5 times, VTX logs out of set up mode, the changed parameters are saved.

**Note:**

1)  The above operation should only be in 1),2),3),4) order.

2) The transmitting power will be 25mW automatically when VTX enters set up mode, and VTX will return to the already setup power when VTX exits set up mode.

3) When manually control power function is in use, the power of VTX will follow the manually controlled power. When manually control power function is not in use, the working power of VTX will be decided by the setup power of VTX.
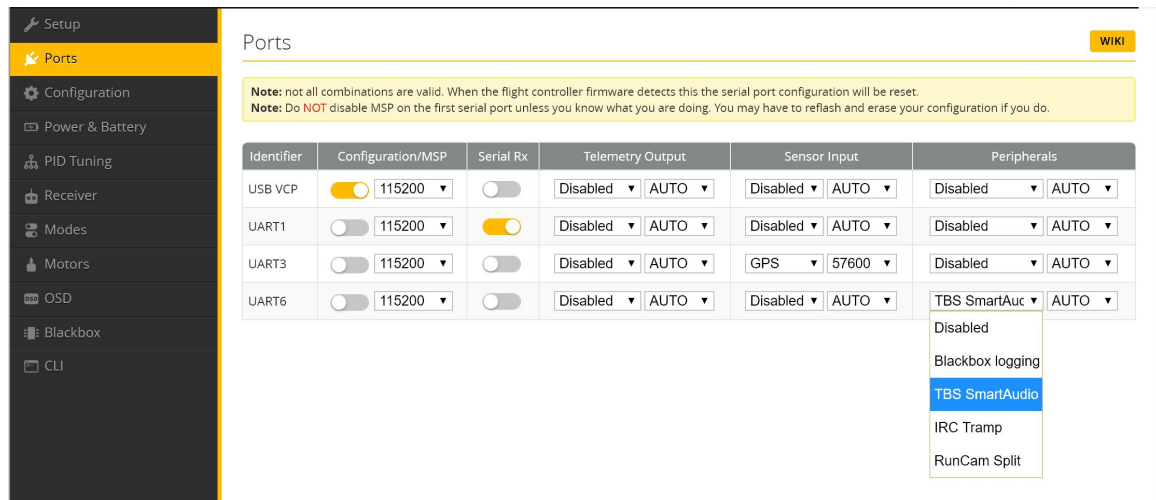
## Structure of button press menu
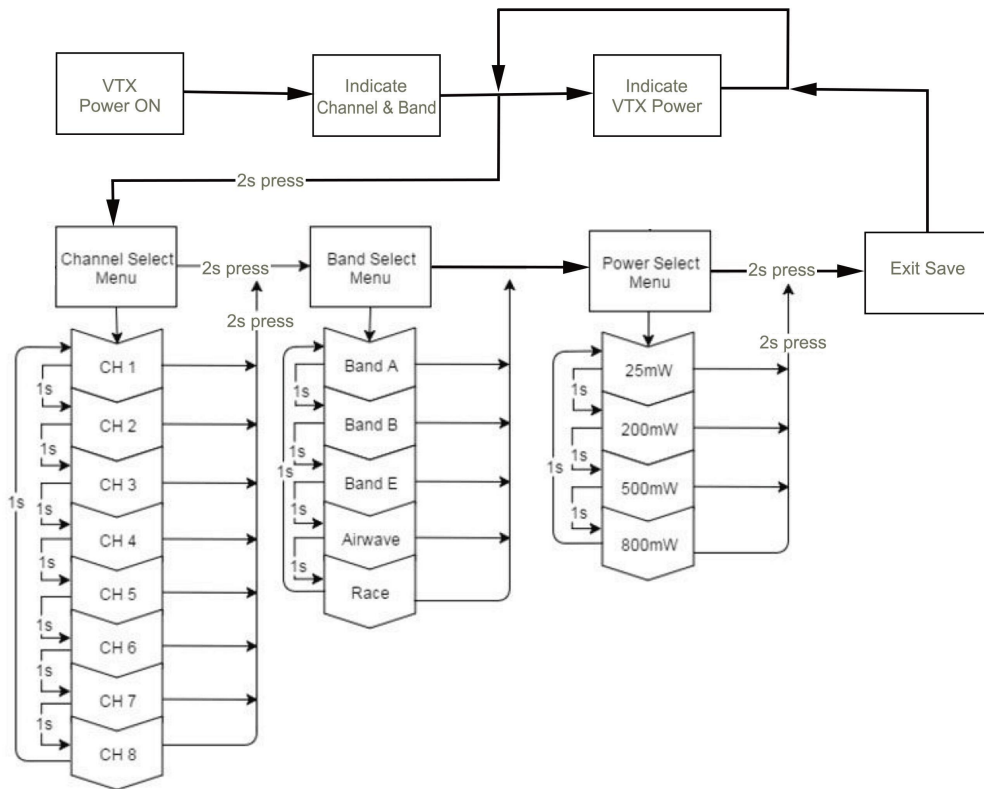
**SmarAudio Protocol:**

SmartAudio protocol is a convenient operation for setting up VTX working frequency and power on OSD display through radio, it is a solution for connection between VTX and flight control board., which is very simple and direct way.

For using this function, please connect RXD on VTX to TXD on UART3 or UART6 of flight control board first, turn on SmartAudio function on flight control board as the following:
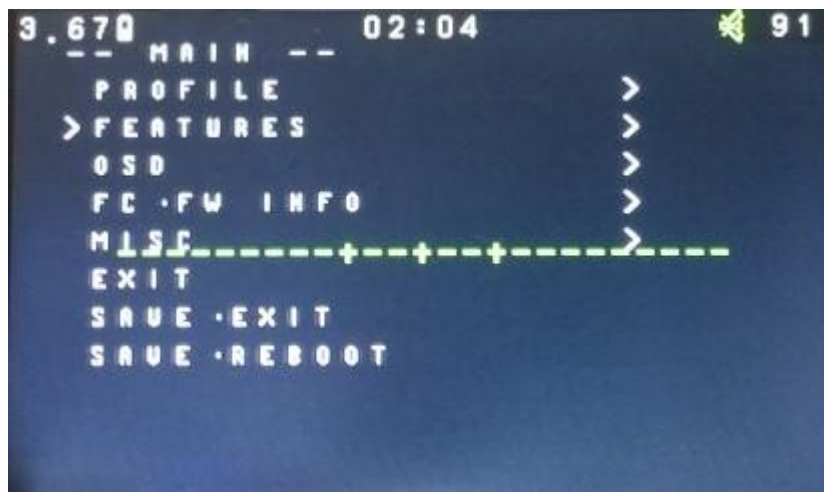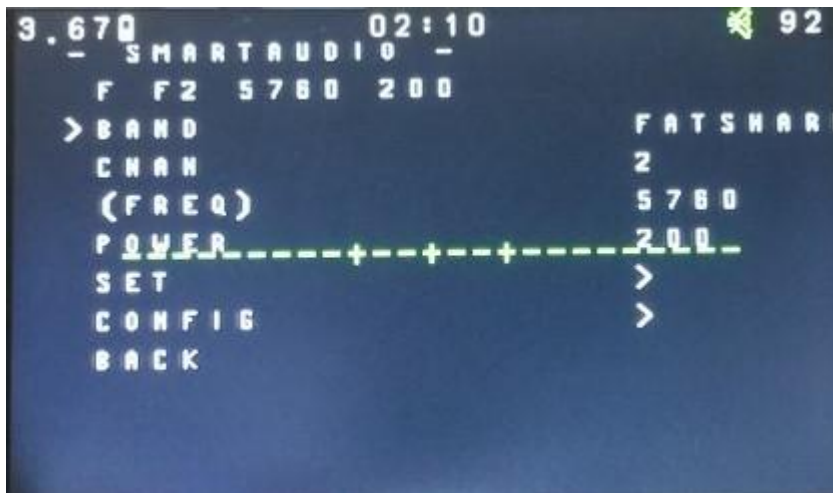


Then enter set up mode according to guided message on OSD, and enter set up menu for VTX, VTX will save the data automatically as soon as the setup is effective(red and blue LED flashes 6 times in turn).

**Indication for VTX working frequency and power:**

LED flashing state indicates current working frequency when VTX is powered. Circulated flashing blue LED indicates the current transmitting power of VTX after VTX working frequency is indicated.

● Red and blue LED flashing state indicates the current working frequency of VTX at the time VTX is powered.

● Circulated flashing blue LED(red LED is solid bright) indicates the current transmitting power of VTX.

**LED Indication function:**

MX VTX-58XX PRO HV indicates different working state through two color LED lights which is simple and efficiency. Flashing times of red LED indicates different option, flashing one time indicates Channel, flashing two times indicates Band, flashing three times indicates power. Flashing times of blue LED indicates the value of the option.

| Red LED | Option:（Channel），（Band），VTX power |
|---|---|
| Blue LED | value of the option |

**Example:** Channel 5, Band B, 500mW power, the LED flashes like the following:

● 1x Red & 5x Blue = Channel, 5

● 2x Red & 2x Blue = Band, 2 (=B)

● 3x Red & 3x Blue = Power, 3 (= 500mW)

**Menu table:**

| Red LED | | Blue LED | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1* | 2* | 3* | 4* | 5* | 6* | 7* | 8* |
| 1* | Channel | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2* | Band | A | B | E | Airwave | Race | | | |
| 3* | Power | 25mW | 200mW | 500mW | 800mW | | | | |

**Frequency table:**

| Channel | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
|---|---|---|---|---|---|---|---|---|---|
| Band A | 5865 | 5845 | 5825 | 5805 | 5785 | 5765 | 5745 | 5725 | MHz |
| Band B | 5733 | 5752 | 5771 | 5790 | 5809 | 5828 | 5847 | 5866 | MHz |
| Band E | 5705 | 5685 | 5665 | 5645 | 5885 | 5905 | 5925 | 5945 | MHz |
| Airwave | 5740 | 5760 | 5780 | 5800 | 5820 | 5840 | 5860 | 5880 | MHz |
| Race | 5658 | 5695 | 5732 | 5769 | 5806 | 5843 | 5880 | 5917 | MHz |
| | | | | | | | | | |
| Power | 25mW | 200mW | 500mW | 800mW | | | | | |

（The selections in **yellow** requires HAM license to operate legally. The video transmitter ensures that you cannot select illegal channels or power levels by accident:）

**Ports description (marked at the back of the board)**
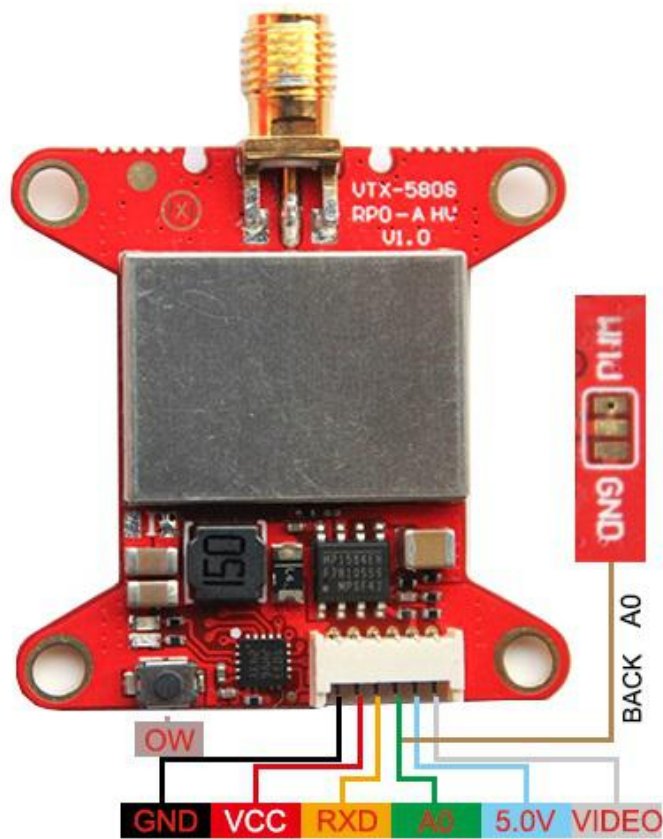
**Note:** A0 gets two functions: GND and PWM, when A0 at the back of the board is connected with GND port, the manually power control function will be terminated, as a result, A0 functions GND.

**Manually power real time control:**

Manually power real time control is for adjusting transmitting power of VTX manually according to distance between transmitter and flying model, through which VTX can be less power consumption and less interference to other pilots at the scene. Transmitting power of VTX is decided by (button)SW set up or by the setup value of SmartAudio protocol if manually power control function is not in use.

The manually power control function changes VTX power according to standard servo signal (1.0~2.0Ms). When signal is added to A0 pin, MCU on VTX changes VTX power accordingly through checking signal width, blue LED flashing times indicates the current power.

**Matchup table between blue LED flashing times and VTX power:**

| | Blue LED | | | | |
|---|---|---|---|---|---|
| Times | 1* | 2* | 3* | 4* | |
| Power | | 25mW | 200mW | 500mW | 800mW |
| | | | | | |

**Matchup table between standard servo signal(1.0~2.0Ms) and VTX power：**

| | VTX-5808 PRO-A HV | VTX-5804 PRO-A HV | VTX-5805 PRO-B HV |
|---|---|---|---|
| Power | Standard servo signal（1.0~2.0mS） | | |
| 25mW | A0-t<1.2mS | A0-t <1.2mS | A0-t <1.2mS |
| 200mW | 1.2 mS < A0-t <1.6mS | A0-t >1.2 mS | 1.2 mS < A0-t <1.8mS |
| 500mW | 1.6 mS < A0-t <1.8mS | NC | A0-t >1.8 mS |
| 800mW | A0-t >1.8 mS | NC | NC |

Note: A0-t indicates the time of high level when standard servo signal inputs A0 port. NC means nothing for the VTX.

**Example for manually power real time control:**

Set up one signal channel A on receiver or on flight control board as standard servo signal output mode ( on CLI mode), connect signal A to A0 port on VTX, set up corresponding channel for signal A onto a 3-gear switch on transmitter, when the 3-gear switch on transmitter is pulled, flashing times of the blue LED will be changed indicating the current transmitting power.

For MX VTX-5808 PRO-A HV with 4 transmitting power options, you can't use a 3-gear switch for setting up the value of 4 transmitting power options, customer can set up corresponding channel for signal A onto a VR potentiometer channel, or set up 2.0ms as the highest value for getting 800Mw(no use for 500mW) power on the 3-gear switch(the corresponding channel for A) on the transmitter, or set up 1.7ms as the highest value for getting 500Mw(no use for 800mW) power on the 3-gear switch(the corresponding channel for A) on the transmitter. Customer can figure out the highest value of transmitting power according to LED flashing times by pulling 3-gear switch.

**Installation:**

MX VTX-58XX PRO HV serial video transmitters have mounting holes on the board, customer can install it by screws for FPV multirotor. Customer can install it by 3M tape on fixed-wing FPV airplane.