VTX CLI Settings

As of Betaflight version 3.3.0, the CLI settings below can be used to configure addressable video transmitters (such as TBS-SmartAudio and IRC-Tramp) that are connected to the flight controller.

At startup the settings are applied to the transmitter. If the video configuration is modified via the CMS OSD menu or via MSP (Taranis/OpenTX smartport 'lua'), the settings are updated.

One nice thing the settings can provide is a way to configure a frequency (via USB / CLI) while the video transmitter is not powered up. After a save and power cycle, the system will startup at the new frequency.

There is a 'vtx_freq' setting that operates as follows: If vtx_band=0 and vtx_freq!=0 then the 'vtx_freq' value (in MHz) will be configured on the transmitter at startup. If both are zero then the settings will be ignored. If vtx_band!=0 and a video transmitter is connected then 'vtx_freq' will be set to the current frequency value (in MHz) at startup.\

> **NOTE**
> Values for settings like vtx_band, vtx_channel, vtx_power are relevant for Betaflight versions prior to 4.1 which had these default values built in. In Betaflight 4.1 and newer to control your VTX you must configure a VTX Table in which you define your own bands, channels and power settings based on local regulations.

vtx_band = #
Allowed range: 0 - 5
0=user, 1=A, 2=B, 3=E, 4=F(Airwaves/Fatshark), 5=Raceband

vtx_channel = #
Allowed range: 1 - 8

vtx_power = #

Allowed range: 0 - 5
for SmartAudio: 0=25mW, 1=25mW, 2=200mW, 3=500mW, 4=800mW
for TBS Unify Nano: 0=25mW, 1=25mW, 2=50mW
for IRC-Tramp: 0=25mW, 1=25mW, 2=100mW, 3=200mW, 4=400mW, 5=600mW

vtx_low_power_disarm = ON|OFF
If ON and the flight controller is disarmed, the video transmitter output power will be set to its lowest value (vtx_power=1). Otherwise, the video transmitter output power will be set to the configured 'vtx_power' value. (Note one exception: If a receiver failsafe has occurred then the output power will not be lowered.)

vtx_freq = ####
Allowed range: 0 - 5999
if vtx_band!=0 and VTX connected then shows freq in MHz
if vtx_band==0 then sets frequency in MHz

if vtx_band==0 and vtx_freq==0 then the settings will not be sent out to the VTX

For example, to configure the VTX to use band 'F' and channel '6' (5840 MHz), enter the CLI and input:

set vtx_band = 4
set vtx_channel = 6
save

The VTX configuration will not be changed until after the 'save' and restart. If it is successful then entering 'get vtx_freq' will show the current frequency value in MHz.

Frequency table:
Channel
1 2 3 4 5 6 7 8
Band 1: 5865 5845 5825 5805 5785 5765 5745 5725 (A: Boscam A / TBS / RC305)
Band 2: 5733 5752 5771 5790 5809 5828 5847 5866 (B: Boscam B)
Band 3: 5705 5685 5665 5645 5885 5905 5925 5945 (E: Boscam E / DJI)
Band 4: 5740 5760 5780 5800 5820 5840 5860 5880 (F: IRC NexWave / Fatshark)
Band 5: 5658 5695 5732 5769 5806 5843 5880 5917 (R: Raceband)

See here for a 5.8GHz FPV "Visual" Frequency Chart

Change vtx power level using aux channel

```
vtx - vtx channels on switch
    <index> <aux_channel> <vtx_band> <vtx_channel> <vtx_power> <start_range>
```

```
<end_range>
```

For example the following will configure a 3-position switch on Aux3 to switch power levels 1/2/3.

```
vtx 0 2 0 0 1 900 1200
vtx 1 2 0 0 2 1300 1700
vtx 2 2 0 0 3 1800 2100
```

Note that the aux channel value supplied to the `vtx` command is zero-based. This means 0 = Aux1, 1 = Aux2, and so on. So in the example `2` represents Aux3.

This can also be used to switch to specific band/channels based on a switch but since the band/channel in the example above are 0 it won't change channels - only power. Whenever the `vtx_band`, `vtx_channel`, or `vtx_power` values are 0 it means to leave the current setting unchanged. See the help for the vtx command.

If Low Power Disarm is enabled, it will override changes made by the `vtx` command.

And for the OSD element:

Enable the vtx Channel element on the OSD tab to display vtx channel and power.