

HGLRC F4 V6PRO (FC&VTX) Manual



HGLRC

Specifications

CPU: STM32F405RGT6, dual open 8K MPU:MPU6000-SPI connection Built-in 5V/3A BEC output **Direct welding ESC PDB** Built-in current sensor Black box FLASH 16M large capacity storage Input voltage: 2-6S Board thickness: 1.6MM copper foil thickness: 20Z * 8 Maximum current: 200A FPV Transmitter: 0/25/100/200/400/600mW 48CH switchable transmitter Frequency: 5.8GHz 6 bands 48 channels, with Raceband: 5362-5945 MHZ Hole mounting size: M3 30.5 * 30.5mm Size: 44.7*40.5mm(L*W) Weight: 15.6g

Feature:

Built-in BETAFLIGHT OSD to achieve remote control PID parameters Buzzer / programming LED / voltage monitoring / BLHELI-S ESC programming; Support SBUS / PPM / DSMX and other mainstream mainstream receiver;

Warning:

Please read the cautions as follows, otherwise stability of your flight controller cannot be ensured, your flight controller will even get damaged.

- Keep focus on the polarity. Check carefully before power supply.
- Cut off the power when you connect, plug and pull anything.
- Don't connect 5V or electrical power interfaces, otherwise your flight controller will catch fire.
- The refresh rate of PID and Gyroscope is up to 8K.

Flight control characteristics



44.7MM

40.5MM

Technical Parameters:

Size: L*W*H=44.7*40.5*8.7MM

Master: STM32F405 GRT6

Voltage: 2-6S Lipo support

MAX Current: 200A

5v bec: 3A

Net weight:15.6g

Miring Diagram



Frequency table												
	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8				
A	5865	5845	5825	5805	5785	5765	5745	5725				
b	5733	5752	5771	5790	5809	5828	5847	5866				
Е	5705	5685	5665	5645	5885	5905	5925	5945				
F	5740	5760	5780	5800	5820	5840	5860	5880				
r	5658	5695	5732	5769	5806	5843	5880	5917				
L	5362	5399	5436	5473	5510	5547	5584	5621				

FC firmware FLASH and Settings

FC firmware FLASH

1.Long Press BOOT buttons, connect USB, The system automatically install the driver



2.open betaflight configurator, enter DFU mode



Zadig software downloaded to a computer, it is a run file



3.Double-click on the run





4.Click the Options, select List All Devices after the diagram below

Zadig	- 🗆 🗙
Device Options Help	
STM32 BOOTLOADER	∽ □Edit
Driver STTub30 (v3.0.4.0) USB ID 0483 DF11 WCID ² X WCID ² X	More Information <u>WinUSB (libusb)</u> <u>libusb-win32</u> <u>libusbK</u> <u>WinUSB (Microsoft)</u>
1 device found.	JELU SANGE
5.Click Replace Driver	
Zadig	– 🗆 X
Device Options Help	
STM32 BOOTLOADER Installing Driver	✓ ☐ Edit
Driver STTub30 (v3.0.4.0 USB ID 0483 DF11 WCID ²	More Information <u>WinUSB (libusb)</u> <u>libusb-win32</u> <u>libusbK</u> <u>WinUSB (Microsoft)</u>
Installing driver. Please wait	WARDEN WARD

At this point automatically to computer load driver.Now open betaflight tuning software, automatic loading good drive, betaflight software will display in the joint the diagram below:



6.betaflight configurator, select "Firmware Flasher",





7.Don't open the Settings

No reboot sequence
Full chip erase
Manual baud rate 256000 V
Show unstable releases

8.click "Load Firmware[Local]" Select the firmware "betaflight_3.1.*-3.2-*_OMNIBUSF4.hex" (The firmware version according to the actual situation)

Load Firmware [Online]
Load Firmware [Online]

9.click "Flash Firmware", progress bar "Programming:SUCCESSFUL" Finish!

11
Flash Firmware

10.Betaflight Automatically assigned port, click "Connect" Enter setup interface (Different computer COM)





F4 Flight control parameter Settings

$1\ensuremath{\,{\ensuremath{\scriptstyle n}}}\xspace$ horizontal , The acceleration of calibration

	Cotup									
🖌 Ports	Setup									
Configuration	Calibrate Acc	celerometer	Place board or frame on leveled surface, proceed with calibration, ensure platform is not moving dur Move multirotor at least 360 degrees on all axis of rotation, you have 30 seconds to perform this task							
க் PID Tuning	Calibrate Ma	gnetometer								
📩 Receiver	Reset S	ettings	Restore settings to default							
🖀 Modes	Backup	Restore	Backup your configuration in case of an accident, CLI settings are not included - See 'dump' cli comma							
🛓 Motors										
📾 OSD	Heading: 356 deg Pitch: -0.6 deg									
🖣 LED Strip	Roll: -2.4 deg									
: Blackbox										
🖾 CLI										

2、2.4G sbus receiver:open UART1 RX, IRC TRAMP is UART3 TX, ESC telemetry is UART6 RX, then click "save and reboot" (Each set needs to be saved)

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	115200 •		Disabled • AUTO •	Disabled V AUTO V	Disabled • AUTO •
UARTI	115200 •	-	Disabled • AUTO •	Disabled • AUTO •	Disabled • AUTO •
UART3	115200 •		Disabled • AUTO •	Disabled • AUTO •	IRC Tramp · AUTO ·
UART6	115200 •		Disabled • AUTO •	ESC · AUTO ·	Disabled • AUTO •
IART6	115200 •		Disabled • AUTO •	ESC · AUTO ·	Disabled • AUTO
					Save and Repoot

Note: click save after will jump to the startup screen, reconnect!

3.choice of receiver SBUS mode

🖌 Setup	Receiver
🖌 Ports	Serial-based receiver (SPEKSAT, S T
Configuration	Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.
ஃ PID Tuning	SBUS
📩 Receiver	

4.0pen the voltage current detection

Power & Battery

Battery										
ESC Sensor Voltage Meter Source										
None Curren	nt Meter Source									
3.3 🌲 Minimum Cell Voltage										
4.3 A Maximum Cell Voltage										
3.5 🗣 Warning Cell Voltage										
0 🗘 Capacity (mAh)										
Voltage Meter										
ESC Combined	0 V									
ESC Motor 1	0 V									
ESC Motor 2	0 V									
ESC Motor 3	0 V									
ESC Motor 4	0 V									

5.0pen the ESC_SENSOR, osd, article LED lights set (choose) as required

Note: So	ome of the features of the firmware are not s	shown in this list any more, because they have been moved to oth	er places in the
configur	ator.		
	INFLIGHT_ACC_CAL	In-flight level calibration	
	SERVO_TILT	Servo gimbal	
	SOFTSERIAL	Enable CPU based serial ports	0
	SONAR	Sonar	
	TELEMETRY	Telemetry output	
	LED_STRIP	Multi-color RGB LED strip support	
	DISPLAY	OLED Screen Display	0
	BLACKBOX	Blackbox flight data recorder	0
	CHANNEL_FORWARDING	Forward aux channels to servo outputs	
	TRANSPONDER	Race Transponder	0
	AIRMODE	Permanently enable Airmode	
	SDCARD	SDCard support (for logging)	
	OSD	On Screen Display	
	ESC_SENSOR	Use KISS ESC 24A telemetry as sensor	

After set up parameters on this page, save the Settings.

6.set up the function of remote control switch across the channel (below are for reference only)

	Modes																											
	Use ranges to define the s	switches on your t	ransmitte	er and o	orrespond	ing mode	assignm	ents. A r	eceiver ch	annel tha	t gives a r	reading	between a	a range n	nin/max	will activ	ate the m	ode. Ren	nember to	o save yo	ur setting	ts using t	he Save I	button.				
	ARM	AUX 1 .	1																									
ii .		Min: 1500	i.		. 11				. L.						1	х.	П.	1.5	1	1		10	х.	Т.	Л.	10	T	
51 	Add Range	Max: 2100	900						1200				1400		1500		1609				1600						2100	
	AIR MODE	AUX 2 🔹																										
	Add Range	Min: 1675 Max: 2100	900		1000				1200				1400		1500		1600				10081				2050		2100	
	ANGLE	AUX 2 ¥			- 10-				12	- 14	- 14	10				- 10	- 00											
	Add Range	Min: 900 Max: 1650	600		1000				1200				1400		1500		1602										2100	



7.the OSD Settings, according to the need to choose, drag the OSD schematic diagram of the parameters can be adjusted.

	050			
	USD			With
	Elements	Preview (drag to change position) Logo 🧲	Video Format	
	UIII Rssi Value	x 0 0 × 0	AUTO ◎ PAL ◎ NTSC	
	Kain Batt Voltage		Unite	
	Crosshairs	S DETATLISHI	B MOTON & MITTIC	
	Horizon Sidebars		· mpenne · meine	
motors	Contime	A COLORED AND A	Alarms	
OSD	C Flytime	1010 (1000) B	20 \$ Risi	
	C Flymode		2200 Capacity	
	JII Craft Name		ID . Minuter	
	Throttle Position		In the second se	
	Jill Current Draw	the second s	100 - Autobe	
	UR Mah Drawn			
	UII Gps Speed			
	UIII Gps Sats			
	OB Attrude			
	30 Pid Roll			
	D) Pid Pitch			
	Dif Pid Yaw			
	30 Power			

8.LED Strip configuration, set according to need



So far, flight control basic setup to finish.



Using The OSD

The XJB Micro F4 includes Betaflight OSD, which displays information like battery voltage and mAh consumed while you fly. In addition, the Betaflight OSD can be used to configure the quadcopter, making in-field adjustments and tuning more convenient.



The graphics above show the stick command to bring up the OSD menu. The stick command is: throttle centered, yaw left, pitch forward. The exact stick command therefore depends on which mode your transmitter sticks are in.

In the OSD menu, use pitch up/down to move the cursor between menu items. When a menu option has a > symbol to the right of it, this indicates that it contains a sub-menu. Roll-right will enter the sub-menu. For example, in the screen to the right, moving the cursor to "Features" and then moving the roll stick to the right will enter the "Features" sub-menu.

If you are using a video transmitter that supports remote configuration, enter the "Features" menu to configure the vTX. From there, enter either "VTX SA" if you are using SmartAudio (TBS Unify) or "VTX TR" if you are using IRC Tramp Telemetry.

To adjust PIDs, rates, and other tuning-related parameters, enter the "Profile" sub-menu.

In the "Scr Layout" sub-menu, you can move the OSD elements (like battery voltage, mAh, and so forth) around or the screen.

The "Alarms" sub-menu lets you control when the OSD will try to alert you that battery voltage is too low or mAh consumed is too high.

FEATURES SCR LAYOUT ALARMS FC -FW INFO MISC SAVE -REBOOT EXIT		P	R	0	F	U	L	E	į.	-			
SCR LAYOUT ALARMS FC ·FW INFO MISC SAVE ·REBOOT EXIT	>	F	Ξ	A	T	U	R	Ξ	S				
ALARMS FC -FW INFO MISC SAVE -REBOOT EXIT		S	C	R		L	A	Y	0	U	T		
FC «FW INFO MISC SAVE «REBOOT EXIT		A	L	A	R	M	8						
M I S C S A V E - R E B O O T E X I T		F	E	•	F	w		H	N	F	0		
SAUE - REBOOT E × I T		M	0	8	C								
EXIT		8	A	U	Ε		R	E	B	0	0 T		
		E	×	0	T								





When a parameter can be modified, the parameter's current value will be shown on the right-hand side of the screen. In this case, roll left/right will adjust the parameter up and down.

The screen to the right shows the current vTX settings. From here, you can change the frequency band, channel, and power level of the video transmitter. After making the changes, move the cursor to "Set" and press roll-right to confirm the settings.

			M	A	U	N						
	P	R	0	F	U	L	Ξ					
>	F	Ε		T	U	R	Ξ	8	П			
	s	IC.	R		L.	A	Y	0	υπ			
	A	L	A	R	M	s						
	F	C		F	w		1	N	F O			
	M	0	8	E								
	8	R	U	E	•	R	E	в	0 0	T		
	ε	×	0	T								

F4 FC test

- can connect the computer to download firmware & adjustable parameters
- good connection test, after testing all functions
- buzzer sound
- > OSD display is normal
- Have a camera
- > The remote control can be unlocked
- if motor rotation
- ➢ LED light