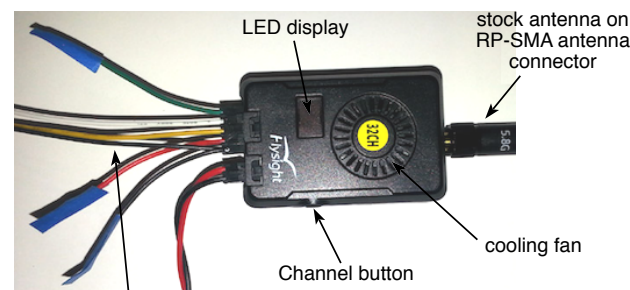
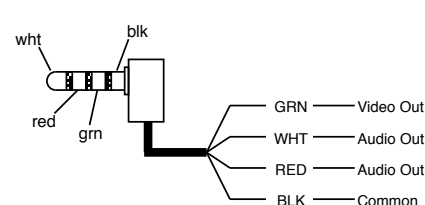


**Black Mamba Model TX5820-V2 5.8GHz Video Transmitter**



Two black wires for +power out, use only one for common for Video In and Audio In. Other wires with blue tap are not used.

GoPro Live AV out FPV cable 90deg version, 2.5 mm plug for Hero2 camera Hobby King product # 258000112-0



**Black Mamba TX5820-V2 5.8 GHz A/V transmitter frequencies**

Band	Ch 1	Ch 2	Ch 3	Ch 4	Ch 5	Ch 6	Ch 7	Ch 8
A	5865	5845	5825	5805	5785	5765	5745	5725
B	5733	5752	5771	5790	5809	5828	5847	5866
E	5705	5685	5665	5645	5885	5905	5925	5945
F	5740	5760	5780	5800	5820	5840	5860	5880

Amateur Radio: 5650 - 5925 MHz  
Part 15 ISM band: 5725 - 5875 MHz

**Reference to other 5.8 GHz A/V units:**

**Boscam TS351 400mW 5.8GHz Transmitter frequencies**

Ch 1	Ch 2	Ch 3	Ch 4	Ch 5	Ch 6	Ch 7	Ch 8
5705	5685	5665	5645	5885	5905	5925	5945

**Drawing Index:**

- PM-E1000 General Wiring Diagram
- PM-E1001 Primary Air-to-Ground Wireless Video Wiring Diagram
- PM-E1002 Secondary Air-to-Ground Wireless Video Wiring Diagram
- PM-E1003 I-Gate Station Wiring Diagram
- PM-E1004 UHF Wireless Video Wiring Diagram
- PM-E1005 Video Receive, Select, and Stream Wiring Diagram
- PM-E1006 GPS and PulseOx to APRS Transmitter Wiring Diagram
- PM-E1007 Weather Station Wiring Diagram
- PM-E1008 Jumper 2-Way Radio Communications Wiring Diagram
- PM-E1009 Jumper 10-meter HF Global Communications Wiring Diagram
- PM-E1010 Slow Scan Television SSTV Camera Wiring Diagram

**ARRL Band Plan** from <http://www.arrl.org/band-plan>  
5 Centimeters (5650.0-5925.0 MHz)

Range	Bandwidth	Functional Use
5650.0-5670.0	0.05 - 1.0 MHz	Amateur Satellite; Up-Link Only
5650.0-5675.0	>= 1.0 MHz	Experimental
5675.0-5750.0	>= 25 kHz & <1 MHz	Analog & Digital; paired with 5850-5925 MHz (Note 2)
5750.0-5756.0	<= 50 kHz	Analog & Digital; paired with 5820-5826 MHz
5756.0-5759.0	< 6 kHz	Analog & Digital; paired with 5826-5829 MHz
5759.0-5760.0	< 3kHz	SSB, CW, Digital Weak-Signal
5760.0-5760.1	< 6 kHz	EME
5760.1-5760.3	< 3 kHz	SSB, CW, Digital Weak-Signal (Note 1)
5760.3-5760.4	< 6 kHz	Beacons
5760.4-5761.0	<= 50 kHz	SSB, CW, Digital Weak-Signal
5761.0-5775.0	>=100 kHz	Experimental
5775.0-5800.0	>=100 kHz	Experimental
5800.0-5820.0	>=25 kHz & <1 MHz	Experimental
5820.0-5826.0	<=50 kHz	Analog & Digital; paired with 5750-5756 MHz
5826.0-5829.0	<=50 kHz	Analog & Digital; paired with 5756-5759 MHz
5829.0-5850.0	0.05-1.0 MHz	Experimental
5830.0-5850.0	>=1.0 MHz	Amateur Satellite; Down-Link Only
5850.0-5925.0	>=1.0 MHz	Analog & Digital; paired with 5675-5750 MHz (Note 2)

Note 1: 5760.1 is the National Weak-Signal Calling Frequency

Note 2: Broadband segment may be used for any combination of high-speed data (eg: 802.11 protocols), Amateur Television and other high-bandwidth activities. Division into channels and/or separation of uses within this segment may be done regionally based on needs and usage.

**IBCrazy 5.8 GHz Airscrew Cloverleaf Ultra Antenna (single)**

Item #1568 \$21.95 Manufacturer: Video Aerial Systems  
<https://www.getfpv.com/ibcrazy-5-8-ghz-aircrew-cloverleaf-ultra-antenna.html>



Built by Alex Greve (IBCrazy), cloverleaf antenna improves on that design by integrating a balun to prevent interactions with extension cables or some other part of the RF system. This 5.8GHz antenna is right hand circular polarized, and can be used with linearly polarized antennas (with some loss) or a more perfect match is another right hand circularly polarized antenna. Antenna mounted to a 2" (5cm) cable with integrated balun. Has a straight SMA male plug. Boscam and some generic brands of equipment will require an RP-SMA female to SMA female adapter.

Manufacturer of 5.8GHz Airscrew is Video Aerial Systems  
<http://videoaerialsystems.com/portfolio-view/aircrew-5-8ghz/>

Part number: AS-5800

Specifications:  
Gain: 1.4dbic Axial Ratio: 0.67 Polarization: RHCP  
Package includes: 1- Airscrew antenna, 1- VAS Finger Wrench

The cloverleaf antenna design has proven to be one of the best antenna designs for FPV flying. Video Aerial Systems has improved on the original IBCrazy Cloverleaf design to increase performance. The Airscrew's design changes tilt angles and adds a balun to prevent unwanted interaction with extension cables and other components of the RF system.

**Black Mamba TX5820-V2 5.8 GHz A/V transmitter Instructions** (from manual)

- A. Connections and Control
- B. Frequency Table
- C. Operating Notice

1. Connect transmitter according to the schematics above. After powering on the transmitter, "LED display" will show the initial channel number.
2. By quick pressing "Channel button" one time the channel number will change. While pressing button the channel number will increase in order of 1,2,3,4,5,6,7,8. "LED display" will show current channel number.
3. By long pressing (at least 3 seconds) "Channel button" the frequency band setup will appear and can be modified.
  - The letters for A, B, E, F band icons will show as follow: "A" is A band, "b" is B band, "E" is E band, "F" is F band.
  - Long press "Channel button" to enter frequency band, and the icon will light up permanently; at this moment, each quick pressing on "Channel button," the frequency band will change in order of A, B, E, F. Long pressing on "Channel button" again, it will quit from frequency band setup mode and the frequency is also be changed.
  - If you want to check the current working frequency band, please long press "Channel button." Once again long pressing "Channel button" to quit menu.

**D. Important Notes**

1. After performing frequency band setup please check properly quitting frequency band setup mode. Otherwise you can't change the frequency correctly.
2. The unit will save current channel while changing and power off.

**Black Mamba TX5820-V2 5.8 GHz A/V transmitter specifications**

- Transmitting power: 2W (33dbm, +/- 1dB)
- Power supply: DC 5v or DC 6-28V
- TX output voltage: 5V/12V(Vin=Vout)
- Consumption current: 800mA
- Antenna impedance: 50Ω
- Antenna connector: RPSMA
- Dimension: 55\*35\*27mm(L\*W\*H)
- Weight: 52g

REV	DATE	REVISION DESCRIPTION	DRAWN	APP
5	3-15-18	Added Airscrew antenna, modified some details on Black Mamba	MF Wright	
4	10-14-15	Added GoPro video output cable information.	MF Wright	
3	10-13-15	Updated drawing numbers.	MF Wright	
2	10-6-15	Corrected drawing numbers.	MF Wright	
1	10-2-15	Added instructions, specs, freqs. changed consultant.	MF Wright	
0	10-1-15	initial release	MF Wright	

PARACHUTE MOBILE "In The Air, On The Air"				
www.parachutemobile.org				
Parachute Mobile Communication Systems				
Primary Air-to-Ground Wireless Video Wiring Diagram				
DRAWN	CHK	INDEX	FSCM. NO.	LIMITS UNLESS NOTED
MF WRIGHT				
DESIGN ENGR	TEAM POSITION		DATE	
MF WRIGHT	Video Ops		3-15-18	
NEXT ASSY	USE ON	CONSULTANTS	AS DWG NO	REV
		M. Gregg, J. Howard	Sheet 1 of 1	
APPLICATION		TEAM COORDINATOR	SCALE	
		R. FENN	NONE	
<b>PM-E1001</b>				<b>5</b>