

# DARWIN-F7-50A

FC:F722

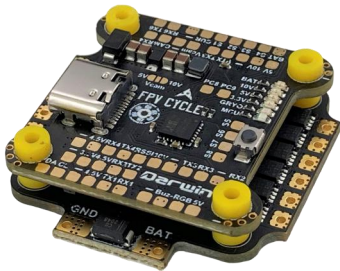
ESC:BL\_S\_50A



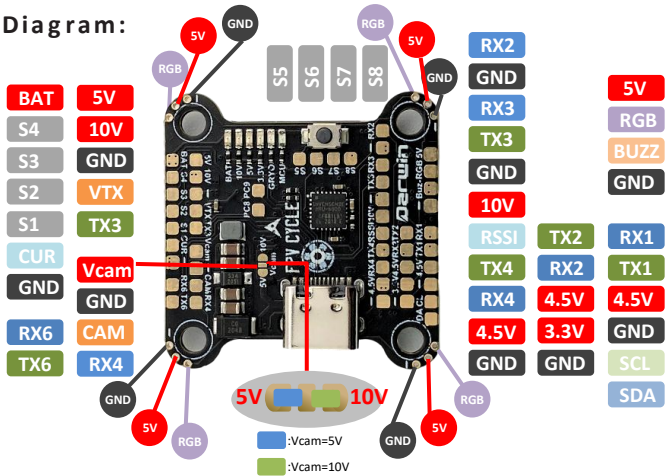
**Darwin** FPV

## Specification:

FC MCU:	STM32F722RET6(216MHz)
Gyro:	MPU6000
OSD:	Betaflight OSD AT7456E
Black Box:	16MB
Baro:	BMP280(I2C)
BEC output:	5V/2A & 10V/2A
Firmware target:	DARWINF722HD
5x Uarts(1,2,3,4,6)	
8x Dshot outputs	
1x I2C	
1x RSSI	
1x BUZZ	
5x RGB	
ESC MCU:	EFM8BB21F16G
Input Voltage:	3-6S LiPo
Continuous current:	50A
MAX current (5seconds):	60A
Current Sensor:	YES(Scale 125)
ESC Traget:	J_H_40
Size:	37x36x10.8mm
Installing Hole:	25.5x25.5mm(M2)
Weight:	12.2g



# Diagram:



# Use DJI or Vista transmitter:

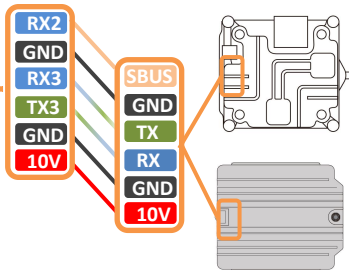
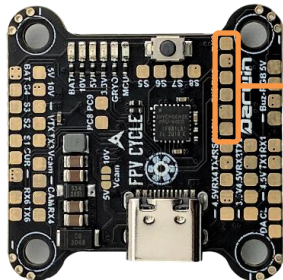
Identifier	Configuration/MSP	Serial Rx
USB VCP	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>
UART1	<input type="checkbox"/> 115200	<input type="checkbox"/>
UART2	<input type="checkbox"/> 115200	<input checked="" type="checkbox"/>
UART3	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>
UART4	<input type="checkbox"/> 115200	<input type="checkbox"/>
UART6	<input type="checkbox"/> 115200	<input type="checkbox"/>

### Receiver

Serial-based receiver (SPEKSAT,  $\text{€}$ ) Receiver Mode

**Note:** Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

SBUS Serial Receiver Provider



# CRSF Receiver:

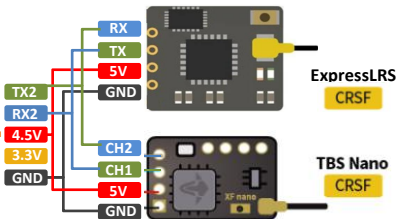
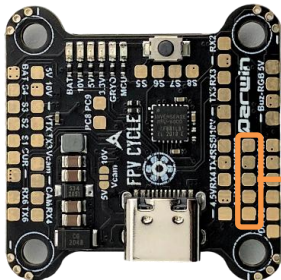
Identifier	Configuration/MSP	Serial RX
USB VCP	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART1	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART2	<input type="checkbox"/> 115200 ▾	<input checked="" type="checkbox"/>

Receiver

Serial-based receiver(SPEKSATS,S ▾) Receiver Mode

**Note:**Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

CRSF ▾ Serial Receiver Provider



# SBUS+S.Port Receiver:

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	
USB VCP	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>	Disabled	AUTO
UART1	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled	AUTO
UART2	<input type="checkbox"/> 115200	<input checked="" type="checkbox"/>	Disabled	AUTO
UART3	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled	AUTO
UART4	<input type="checkbox"/> 115200	<input type="checkbox"/>	SmartPort	AUTO
UART6	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled	AUTO

Receiver

Serial-based receiver (SPEKSAT, 5) Receiver Mode

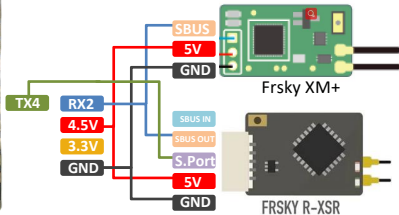
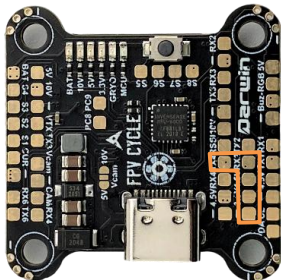
**Note:** Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

SBUS Serial Receiver Provider

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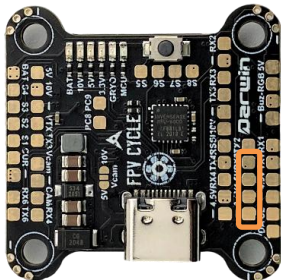
Other Features

**TELEMETRY** Telemetry output



# DSM Receiver:

Identifier	Configuration/MSP	Serial RX
USB VCP	<input checked="" type="checkbox"/> 115200 ▼	<input type="checkbox"/>
UART1	<input type="checkbox"/> 115200 ▼	<input type="checkbox"/>
UART2	<input type="checkbox"/> 115200 ▼	<input checked="" type="checkbox"/>



Receiver

Serial-based receiver (SPEKSAT, ⚙) Receiver Mode

**Note:** Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

SPEKTRUM SRXL2 Serial Receiver Provider

Receiver

Serial-based receiver (SPEKSAT, ⚙) Receiver Mode

**Note:** Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

SPEKTRUM2048 Serial Receiver Provider

Receiver

Serial-based receiver (SPEKSAT, ⚙) Receiver Mode

**Note:** Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

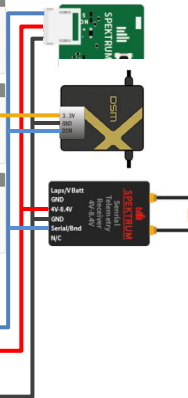
SPEKTRUM2048/SRXL Serial Receiver Provider

RX2

4.5V

3.3V

GND



# IBUS Receiver:

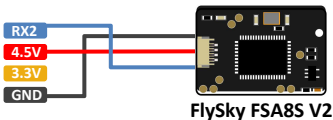
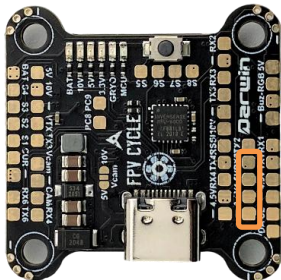
Identifier	Configuration/MSP	Serial RX
USB VCP	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART1	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART2	<input type="checkbox"/> 115200 ▾	<input checked="" type="checkbox"/>

Receiver

Serial-based receiver (SPEKSAT, S ▾) Receiver Mode

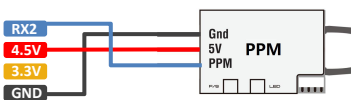
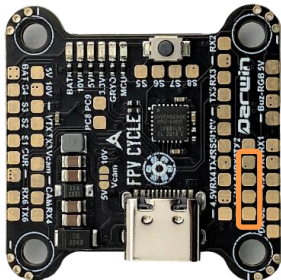
**Note:** Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

IBUS ▾ Serial Receiver Provider



# PPM Receiver:

Identifier	Configuration/MSP	Serial Rx
USB VCP	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART1	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART2	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART3	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART4	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>
UART6	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>

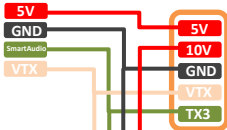
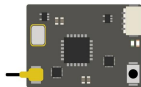




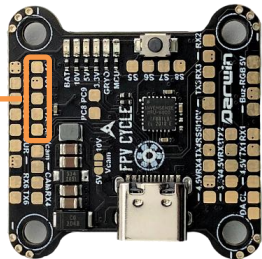
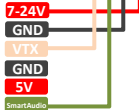
# Analog VTX(SmartAudio):

Identifier	Configuration/AGP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART2	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	VTX (TBS Sm) ▾ AUTO ▾ Disabled Blackbox logging VTX (TBS SmartAudio) ▾ VTX (IRC Tramp) Camera (RunCam Protocol) Benewake LIDAR OSD (FrSky Protocol)
UART4	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	
UART6	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	

## TBS UNIFY PRO 5G8



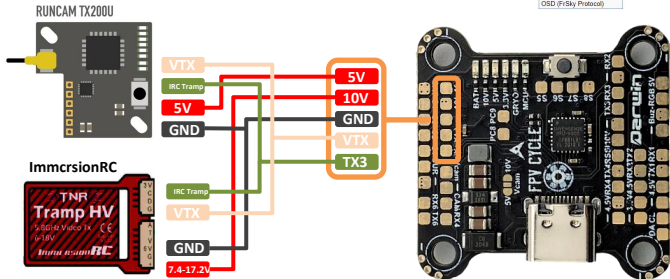
## DarwinFPV TX805



# Analog VTX(IRC Tramp):

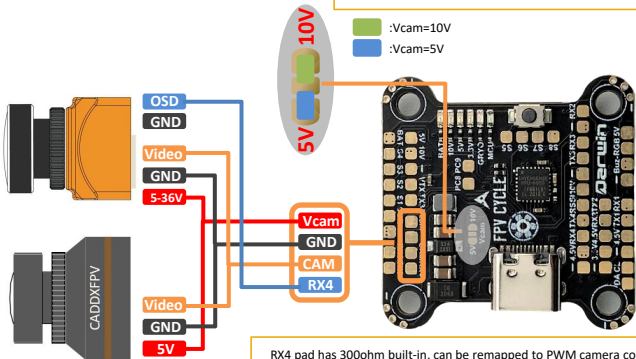
Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO	Disabled   AUTO
UART1	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO	Disabled   AUTO
UART2	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO	Disabled   AUTO
UART3	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO	VTX (IRC Tran   AUTO
UART4	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO	Disabled   AUTO
UART5	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO	Disabled   AUTO

- Disabled
- Blackbox logging
- VTX (TBS SmartAudio)
- VTX (IRC: Tramp)**
- Camera (RunCam Protocol)
- Benewake LIDAR
- OSD (FrSky Protocol)



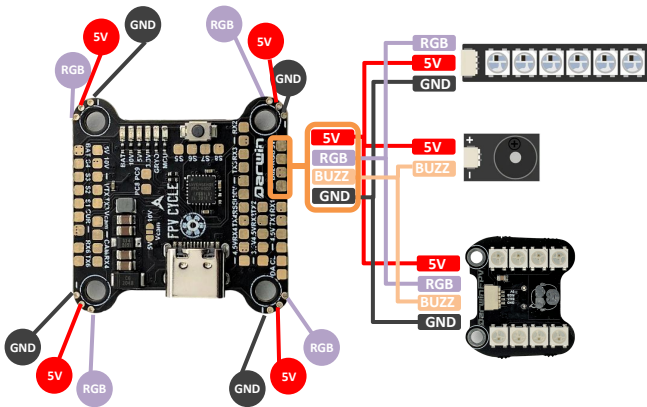
## Camera:

When you notice black spots on the screen, it's probably because the camera is undervoltage, You can change the camera voltage to 10V.



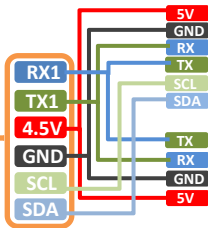
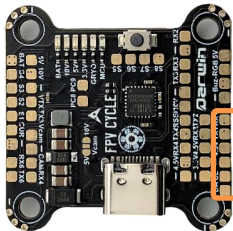
RX4 pad has 300ohm built-in, can be remapped to PWM camera control (BetaFlight CLI: `resource camera_control 1 A01`)

# Buzzer & RGB:



# GPS & COMPASS:

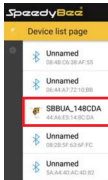
Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input
USB VCP	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO
UART1	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	GPS   AUTO
UART2	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO
UART3	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO
UART4	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO
UART6	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled   AUTO	Disabled   AUTO



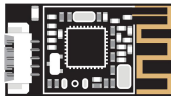
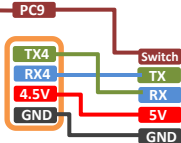
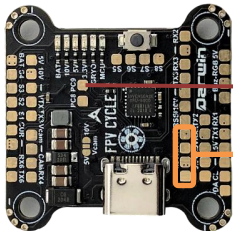
DarwinFPV M80

# Bluetooth-UART Adapter:

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled ▾ AUTO ▾	GPS ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART2	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	<input checked="" type="checkbox"/> 19200	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾



BetaFlight CLI:  
set pinio\_config=129,1,1  
set pinio\_box=0,255,255,255  
resource PINIO 2 C09



# ESC BL\_S & BL\_32:

When use BLHeli\_32 ESC telemetry over a separate wire

Battery

Onboard ADC ▾ Voltage Meter Source

Onboard ADC ▾ Current Meter Source

Amperage Meter

Battery 0.00 A

125 Scale [1/10th mV/A]

0 Offset [mA]

ESC ID	Configuration/AMP	Telemetry	Telemetry Output	Telemetry Input
ESC01	11500 ▾	<input type="checkbox"/>	Disabled • AUTO ▾	Disabled • AUTO ▾
ESC02	11500 ▾	<input type="checkbox"/>	Disabled • AUTO ▾	Disabled • AUTO ▾
ESC03	11500 ▾	<input checked="" type="checkbox"/>	Disabled • AUTO ▾	Disabled • AUTO ▾
ESC04	11500 ▾	<input type="checkbox"/>	Disabled • AUTO ▾	Disabled • AUTO ▾
ESC05	11500 ▾	<input type="checkbox"/>	Disabled • AUTO ▾	ESC • AUTO ▾

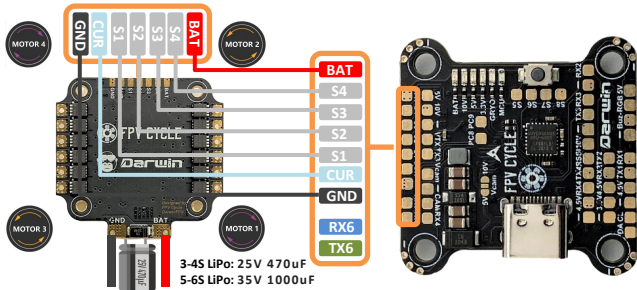
## ESC/Motor Features

DSHOT600 ▾ ESC/Motor protocol

MOTOR\_STOP Don't spin the motors when armed

ESC\_SENSOR Use KISS/BLHeli\_32 ESC telemetry over a separate wire

Bidirectional Dshot (requires supported ESC firmware)



## Include:

1x DARWIN-F7-50A STACK

1x XT60-7CM-14AWG Power cables

1x 8PIN-2CM-30AWG Signal cables

1x 25V 470uF capacitor

1x 35V 1000uF capacitor

8x M2\*6.5mm Damping rings

8x M2\*12mm bolts

8x M2 nuts

## Contact:

Website: <https://darwinfpv.com>

**facebook**



facebook.com/DarwinFPV1

**Official  
website**



darwinfpv.com

**Instagram**



instagram.com/darwinfpv44

**Manual**



darwinfpv.com/pages/support