

- Battery is 2S Lipo (7.4V nominal, 6.8 to 8.4V)
- 5V is generated by ESC module (from battery)
- 3V3 is generated by LoLin module (from 5V)
- VTX is powered from battery directly

[illegible]

The diagram illustrates the ESC (Electronic Speed Controller) module. It features a 10k resistor (R12) connected to the PPM_ESC signal and a 4.7uF capacitor (C14) connected to the +VBAT supply. The ESC module has pins for PWR, PWM, GND, BAT+, BAT-, MOT+, and MOT-. The PPM_ESC signal is connected to TP7. The ESC module is connected to a motor (MOT) via pins 1, 2, and 3. The P2 module is connected to the motor via pins 1 and 2.

Optional: the module has a reset button

Add C18 to delay reset thanks to the pullup of the module

A0 has internal divider (on module)
 $R1 = (V_{max} - 3.2) \cdot 100k$ or $V_{max} = 3.2 + R1/100k$
 With $R1=560k$, ADC range is 0-8.8V

D4 (gpio2) has TXD1 which can be used by NeoPixel library to avoid bitbang

D7/D8 has UART hardware

Pin List:

- D3 - GPIO0 : Direction
- D4 - GPIO2 : APA106
- D2 - GPIO4 : SDA
- D1 - GPIO5 : SCL
- D6 - GPIO12 : Headlights
- D7 - GPIO13 : VTX (TX)
- D5 - GPIO14 : ESC
- D8 - GPIO15 : VTX (RX)
- D0 - GPIO16 : IR

Component List:

- SW2 Reset
- C18
- DNP
- R1 560k
- R9 3.3k
- R10 3.3k
- R6 100k
- R7 100k

Module: U1 LoLin_D1_mini_pro

PPM_SERVO

+5V

100nF

4.7uF

4.7uF

U4

2

A

VCC

GND

Y

4

1

+5V

2

3

P3

SERVO

RB10 DNP

Note: MCU has pull-up
Use only if RB5 is removed (replace)

SN74LV1T34DBV

NOTE: The LED current is determined by R2. The value of this resistor should be modified according to the specifications of D1 and D2. Current is approximately $288/R2$, that is 28.8mA for $R2=10k$.

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Reference	Value	Footprint	Distrib Ref	Distributor	Manuf Ref	Manufacturer	Qté
> C1, C4, C12-C14, C16, C17	4.7uF	Capacitor_SMD:C_0805_2012Metric	2533952	Farnell	885012107013	Würth elektronik	7
> C2, C3, C5, C8-C11, C15	100nF	Capacitor_SMD:C_0603_1608Metric	2581045	Farnell	C0603C104M4RACTU	Kemet	8
C6	470nF	Capacitor_SMD:C_0603_1608Metric	2812270	Farnell	885012106015	Würth elektronik	1
C18	DNP	Capacitor_SMD:C_0805_2012Metric	-	-	-	-	1
> D1, D2	LED	LED_THT:LED_D5.0mm_Horizontal_O3.81mm_Z3.0mm					2
D3	SMAJ12CA	Diode_SMD:D_SMA	2675283	Farnell	SMAJ12CA+	Multicomp pro	1
D4	LED_APA106	carinsitu:LED-APA106					1
D5	IR_TSOP22	carinsitu:CONN_61300311121	4913073	Farnell	TSOP2238	Vishay	1
F1	Fuse	Fuse:Fuse_Littelfuse_395Series	1345950	Farnell	RGEF600	Littelfuse	1
> FIX1-FIX5	CONN_1	carinsitu:FIX	-	-	-	-	5
H1	MountingHole	carinsitu:VTX_avatar_halfholes	-	-	-	-	1
MOD1	ESC	carinsitu:ESC					1
P1	BAT	carinsitu:CONN_61300211021	2356176	Farnell	61300211021	Wurth	1
P2	MOT	carinsitu:CONN_JST-XH-2	1516289	Farnell	S2B-XH-A	JST	1
P3	SERVO	carinsitu:CONN_61300311021	2356177	Farnell	61300311021	Wurth Elektronik	1
P4	VTX	carinsitu:CONN_61300411121	-	-	-	-	1
Q1	PMOS	Package_TO_SOT_SMD:TO-252-2	3127361	Farnell	DMP3028LK3-13	Diodes inc.	1
R1	560k	Resistor_SMD:R_0805_2012Metric	2447685	Farnell	MCWR08X5603FTL	Multicomp pro	1
> R4, R6, R7	100	Resistor_SMD:R_0805_2012Metric	2447552	Farnell	MCWR08X1000FTL	Multicomp pro	3
> R9, R10	3.3k	Resistor_SMD:R_0805_2012Metric	2073746	Farnell	MCMR08X332JTL	Multicomp pro	2
> R2, R8, R12, R14	10k	Resistor_SMD:R_0805_2012Metric	2073612	Farnell	MCMR08X103JTL	Multicomp pro	4
RB10	DNP	Resistor_SMD:R_0603_1608Metric	-	-	-	-	1
> RB1-RB9, RB11	0	Resistor_SMD:R_0603_1608Metric	2447743	Farnell	MCWR06X000PTL	Multicomp pro	10
RD1	820k	Resistor_SMD:R_0805_2012Metric	2447725	Farnell	MCWR08X8203FTL	Multicomp pro	1
RD2	205k	Resistor_SMD:R_0805_2012Metric	2074399	Farnell	MCSR08X2053FTL	Multicomp pro	1
RSense1	0.01	Resistor_SMD:R_2010_5025Metric	2695180	Farnell	MCWW20W0R01FTL	Multicomp pro	1
SW1	SWITCH_SLIDE	carinsitu:SW_L102xxxML	2931770	Farnell	L102011ML04Q	C&K Components	1
SW2	Reset	Button_Switch_SMD:SW_Push_SPST_NO_Alps_SKRK	3261823	Farnell	SKRKAHE020	Alps Alpine	1
> TP1-TP13	CONN_1	carinsitu:TP	-	-	-	-	13
U1	LoLin_D1_mini_pro	Module:WEMOS_D1_mini_light			Lolin D1 mini pro	Lolin	1
U2	MIC2860	Package_TO_SOT_SMD:SOT-23-6	2509995	Farnell	MIC2860-2PYD6	Microchip	1
U3	MAX17261xxTD	Package_DFN_QFN:TDFN-14-1EP_3x3mm_P0.4mm_EP1.78	2899544	Farnell	MAX17261METD+	Analog devices	1
> U4, U5	SN74LV1T34DBV	Package_TO_SOT_SMD:SOT-23-5	218-4596	RS	SN74LV1T34DBVR	Texas instruments	2
U7	LSM6DS3	Package_LGA:LGA-14_3x2.5mm_P0.5mm_LayoutBorder3x4y	2770317	Farnell	LSM6DS3HTR	ST	1















