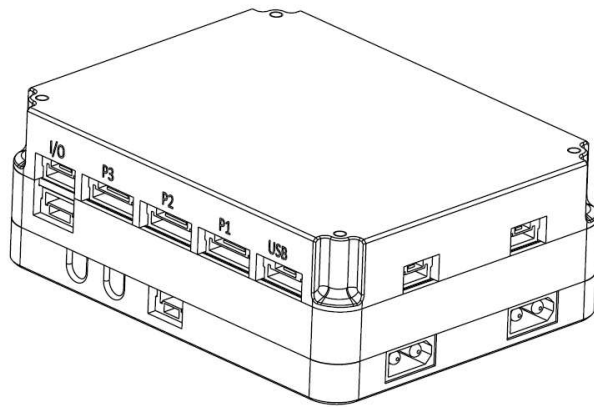




## Codev Dynamics

# DP1000 Hardware User Manual



### Overview

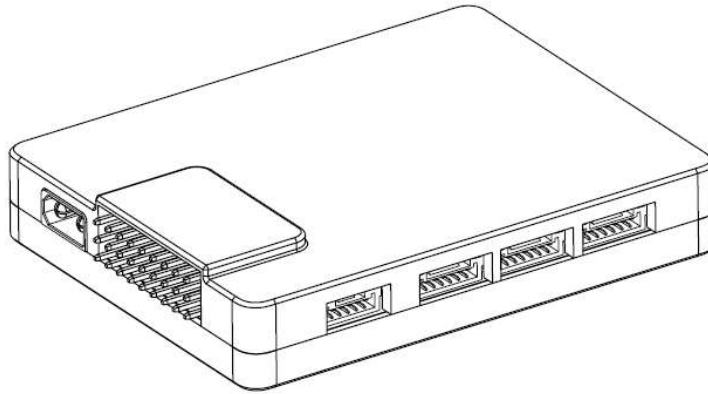
Open source resource :

[https://github.com/CodevDynamics/Opensource\\_Hardware](https://github.com/CodevDynamics/Opensource_Hardware)

### Flight Controller Module:

- 90% compatible with PX4 FMUv5.
- In-box power distribute board: DC-DC: 2-ch 12V 3A , 1-ch 5V 3A . 4\* XT30 connector with 100A solid-state relay.
- Main MCU: STM32F765VI, 216MHz , 2M Flash. 512 Kbytes of SRAM.
- IMU Box : Gyroscope : ICM20689 , Barometer: BMP388 , MTD: AT24C64
- TF-card: SanDisk 32G U3 HIGH ENDURANCE series.

## External IO module :

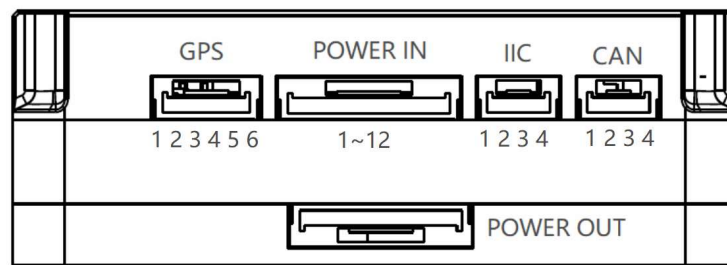


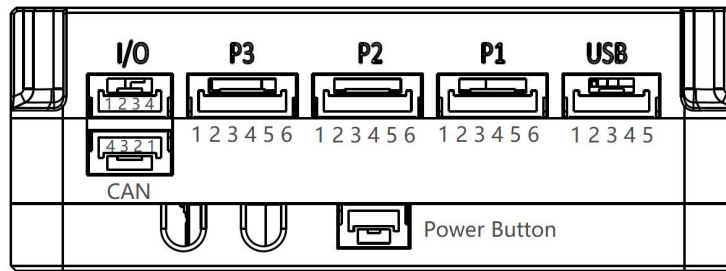
- Build in PX4IO-v2 , 8\* PWM , RC decode support: Sbus , PPM, DSM.
- On Board DC-DC : 1-ch 12V 3A , 1-ch 5V 3A.
- 1\* CAN transceiver: NXP TJA1051
- Connector: 1\* XT30(Battery Voltage), 3\*GH1.25 6Pin(P1/P2/P3) , Flight Controller USB (Type-C) , 1\*CAN GH1.25 4Pin.

## Details

- **Connector definition**

### Flight Controller Module:



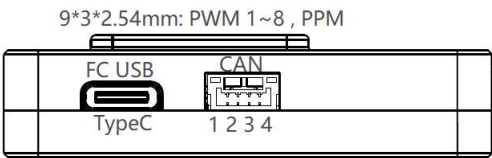
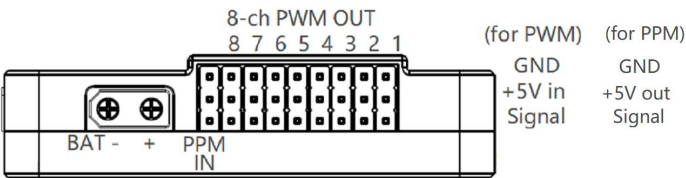
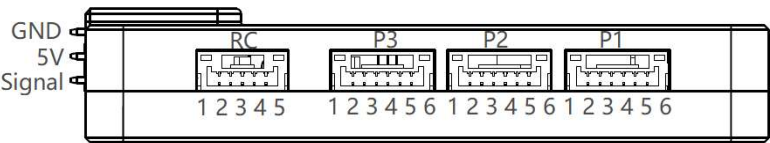


P1 P2 P3	
1	GND
2	12V (P2 P3) , 5V(P1)P
3	TXD (P1 P2 P3:UART 2/3/7)
4	RXD (P1 P2 P3:UART 2/3/7)
5	PWM (P1 P2 P3: PA2 / PA3/ PB14)
6	GPIO (P1 P2 P3: PE2/3/4)

GPS	
1	COMP-I2C-SCL
2	GND
3	COMP-I2C-SDA
4	UART1 RXD
5	UART1 TXD
6	+5V

\*The definitions of IO,USB,IIC,CAN,and POWER IN , Please see the schematic design file: DP\_FC\_SCH.pdf

**Externel IO module :**



RC	
1	RSSI
2	+3.3V
3	SBUS/DSM
4	+5V
5	GND

CAN	
1	+5V
2	CAN-H
3	CAN-L
4	GND

\*P3 P2 P1 is the bypassed from Flight Controller Module.

- Full MCU Pin table

\*see DP1000\_FC\_PinTable.xls

DP1000 MCU STM32F765 Pin Mapping			
PORT	Pin_Num	Pin function	comments
PA	0	BAT_ADC	Scale R : 24K/3K, 2S~6S battery
PA	1		
PA	2	PWM_1	P1 socket
PA	3	PWM_2	P2 socket
PA	4	IMU_Heater	To IMU BOX
PA	5	SPI1_SCK_SENSOR1	To IMU BOX, SPI For IMU chip ICM20689
PA	6	SPI1_MISO_SENSOR1	To IMU BOX, SPI For IMU chip ICM20689
PA	7	SPI1_MOSI_SENSOR1	To IMU BOX, SPI For IMU chip ICM20689
PA	8		
PA	9	USB_FS_VBUS	USB socket
PA	10		
PA	11	USB_FS_DM	USB socket
PA	12	USB_FS_DP	USB socket
PA	13	JTAG-SWDIO	Debug socket
PA	14	JTAG-SWCLK	Debug socket
PA	15		
PB	0	LED_green	on board
PB	1	LED_red	on board
PB	2	EEPROM_WP	To IMU BOX
PB	3		
PB	4		
PB	5		
PB	6	USART1_GPS_TX	GPS socket
PB	7	USART1_GPS_RX	GPS socket
PB	8	I2C1_Compass_SCL	GPS socket

PB	9	I2C1_Compass_SDA	GPS socket
PB	10	I2C2_SCL	
PB	11	I2C2_SDA	
PB	12	UART5_ESC_RX	To 4 ESC socket
PB	13	UART5_ESC_TX	To 4 ESC socket, with 74hc244 buffer chip
PB	14	PWM_3	P3 socket
PB	15		
PC	0	SACLED_5V_ADC	Scale: 1/2
PC	1		
PC	2		
PC	3		
PC	4	POWER_KEY	power socket
PC	5	POWER_EN	power socket, Enable Battery P-MOS
PC	6	UART6_IO_TX	PX4IO socket
PC	7	UART6_IO_RX	PX4IO socket
PC	8	SDMMC1_D0	To TF-card slot
PC	9	SDMMC1_D1	To TF-card slot
PC	10	SDMMC1_D2	To TF-card slot
PC	11	SDMMC1_D3	To TF-card slot
PC	12	SDMMC1_CLK	To TF-card slot
PC	13		
PC	14		
PC	15		
PD	0	UART4_CAN_RX	P4/CAN socket
PD	1	UART4_CAN_TX	P4/CAN socket
PD	2	SDMMC1_CMD	To TF-card slot
PD	3	VDD_3V3V_RC_EN	on board 3.3V
PD	4		
PD	5	UASRT2_P1_TX	P1 socket
PD	6	UASRT2_P1_RX	P1 socket
PD	7		
PD	8	USART3_P2_TX	P2 socket
PD	9	USART3_P2_RX	P2 socket

PD	10		
PD	11		
PD	12	I2C4_SCL_Baro	To IMU BOX, Baro and MTD
PD	13	I2C4_SDA_Baro	To IMU BOX, Baro and MTD
PD	14		
PD	15		
PE	0	UART8_Debug_RX	Debug socket
PE	1	UART8_Debug_TX	Debug socket
PE	2	GPIO_1	P1 socket
PE	3	GPIO_2	P2 socket
PE	4	GPIO_3	P3 socket
PE	5		
PE	6		
PE	7	USART7_P3_RX	P3 socket
PE	8	USART7_P3_TX	P3 socket
PE	9	LED_blue	on board
PE	10	SPI1_CS_SENSOR1	To IMU BOX, SPI For IMU chip ICM20689
PE	11		
PE	12		
PE	13		
PE	14		
PE	15		

- Vendor toolchain STM32CubeMX Project file: DP1000\_FC\_st\_cube.ioc





