n-Blocks

n-PRO-50

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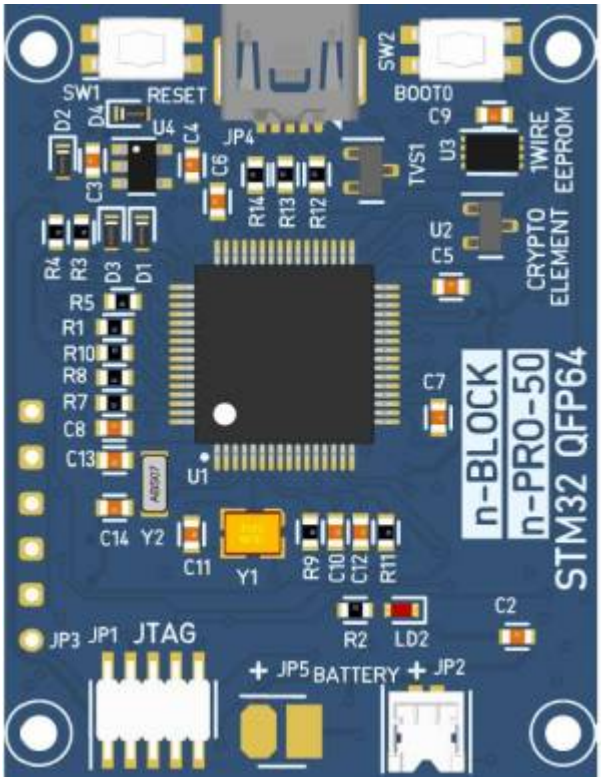
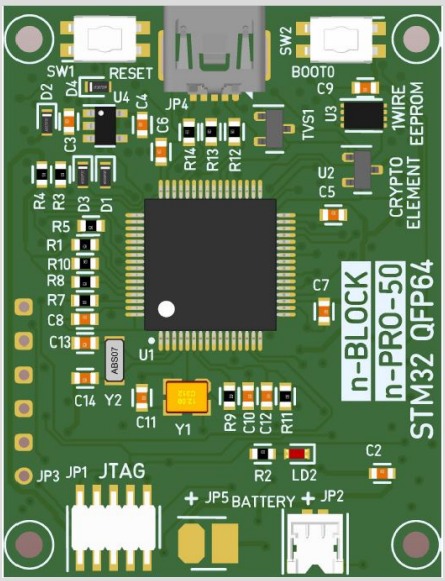
n-PRO-50

n-PRO-50 has been designed to accommodate wide range of 64 pins LQFP64 STM32 microprocessors. It can be used as a generic development board with n-Blocks PRO form factor.



n-PRO-50



n-PRO-50

License	GPL 2.0
Status	Tested
Buy at:	
Categories	
Hardware repo	Bitbucket
Firmware repo	Bitbucket

Overview

n-PRO-50 is a low-cost and easy-to-use development board which provides the flexibility to build prototypes with the STM32 microcontrollers. It has been assembled with pin compatible wide range of 64pin LQFP64 Cortex M0,M3,M4 CPUs and mbed supported libraries. It allows end-user or designer to choose from different combinations of performance, power consumption and clock rates. The board also have Four Hirose DF30-series 60-pin low profile connectors which can enable additional functionality such as RF-Communication, External Sensor interface, display control interface etc. n-PRO-50 comes with the following microcontrollers:

- STM32L152: Ultra Low Power, LoRaWAN Stack

- STM32F103: Generic, low cost, well established, widely used, many examples and community projects
- STM32F401: Generic, low cost, well established, widely used, Cortex M4 more powerful than F103, many application notes
- STM32L476: Ultra Low Power, CortexM4, Many application notes including LoRa
- STM32L073: Ultra Low Power and Low Cost, Many application notes including LoRa

Some of the targeted applications are listed below:

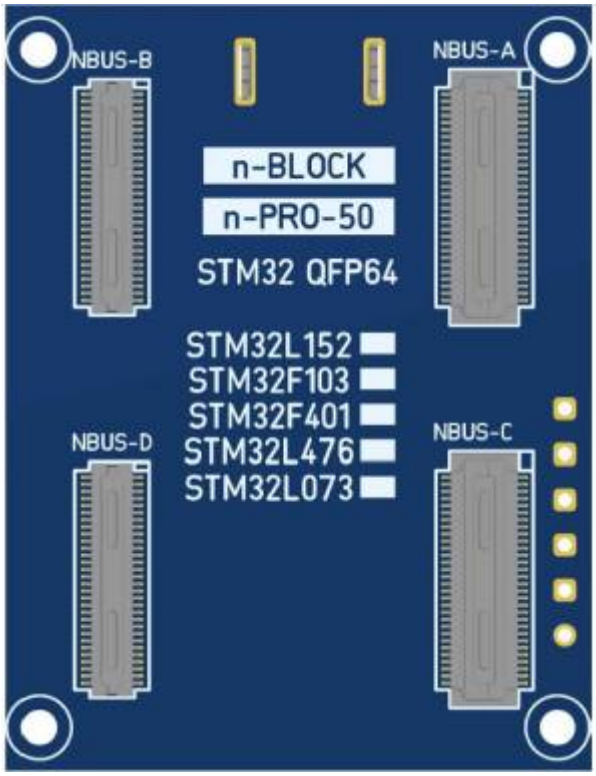
- Wireless Sensors and Wearables using the Low Power variations with Sensing and Radio n-Blocks Peripheral boards
  - Low Power Radio Sensors: LoRaWAN, LoRa 2.4 GHz, 802.15.4, BLE, 3G, NBiOT
  - Environmental Sensors: Temp, Humidity, Barometric, CO2, Air Particles, VOC, CO2, Movement, Light, Sun-Irradiance
  - Localisation: GPS, LoRa2.4-TOF, UWB
- Motion Controllers for 3Dprinting and BLDC servo
- PLC controller boards
- Modbus Sensors and peripherals

n-PRO-50 Features

- **to be updated**

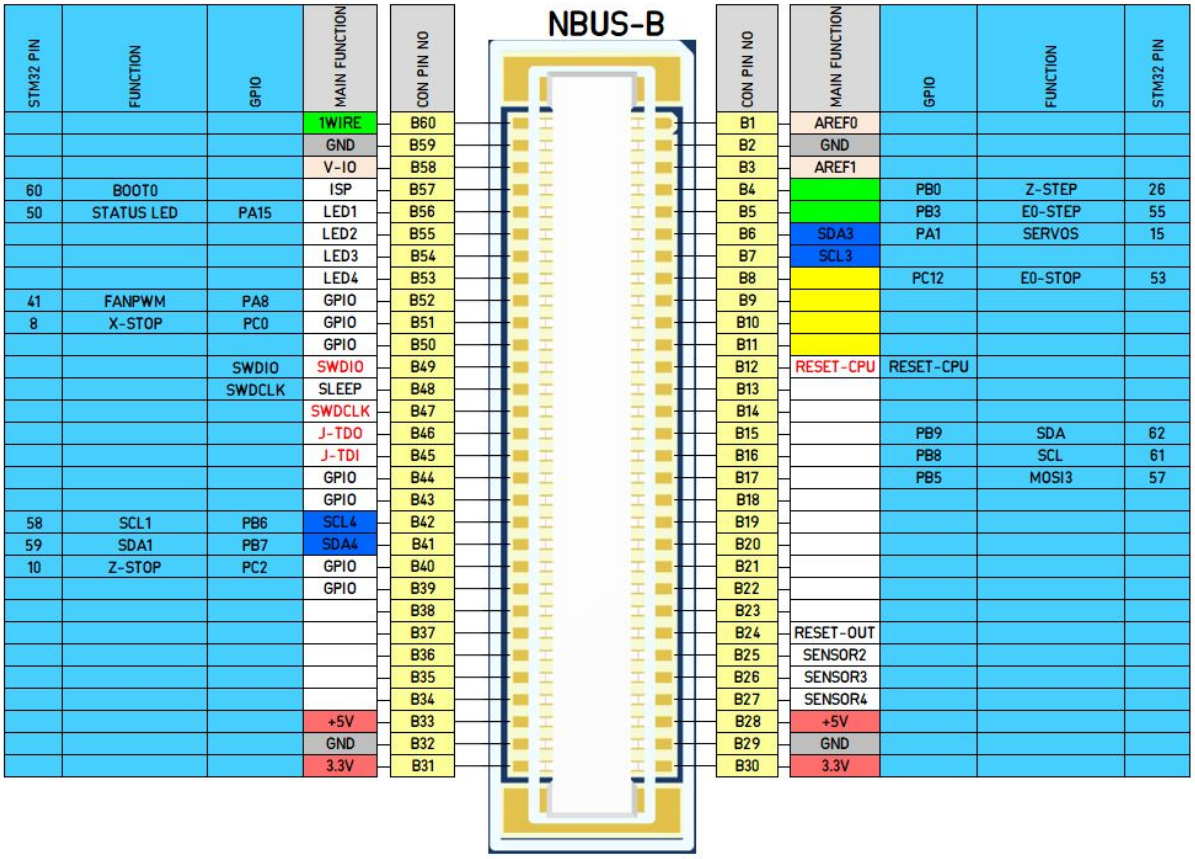
Board Pinout

n-PRO-50 is a **HOST** board with four Hirose DF30-series 60-pin low profile connectors at bottom side, following the n-Blocks PRO form factor.

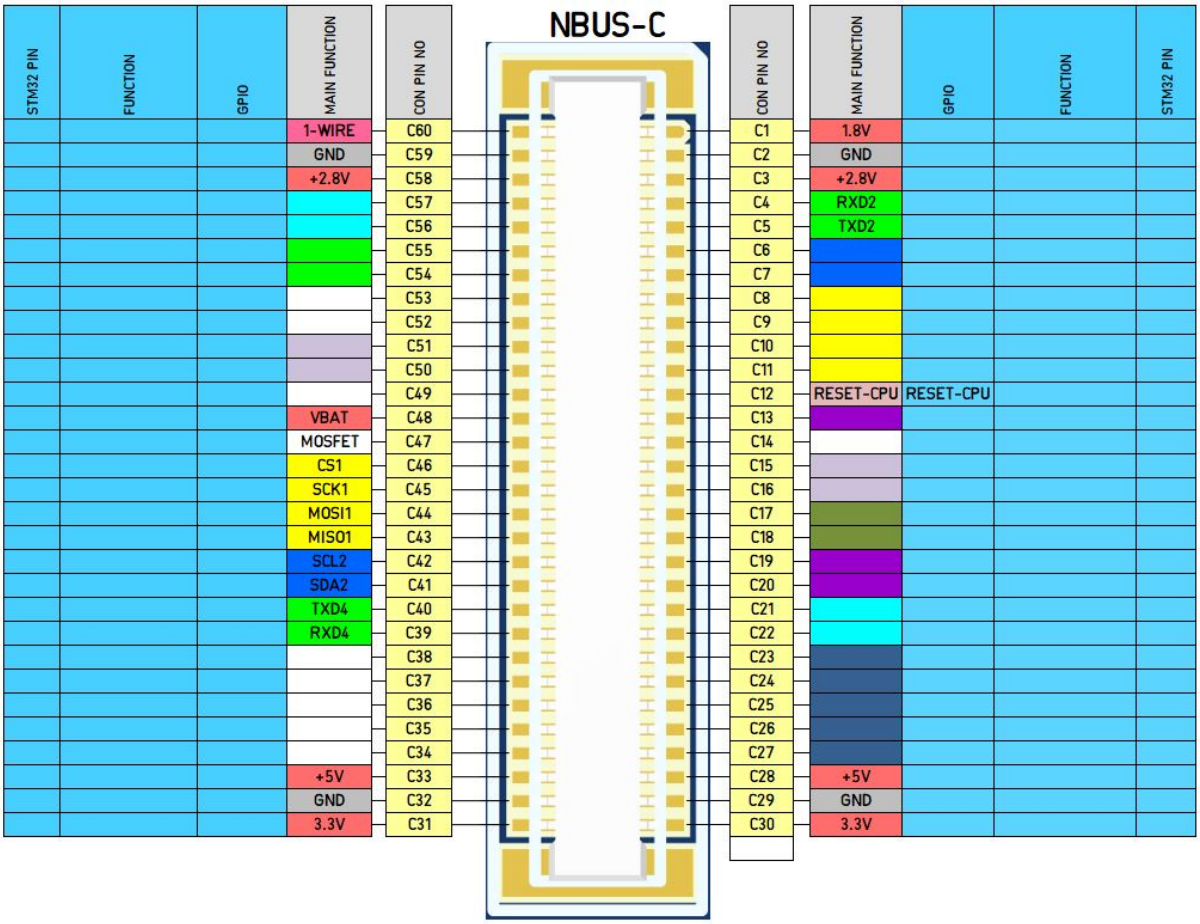


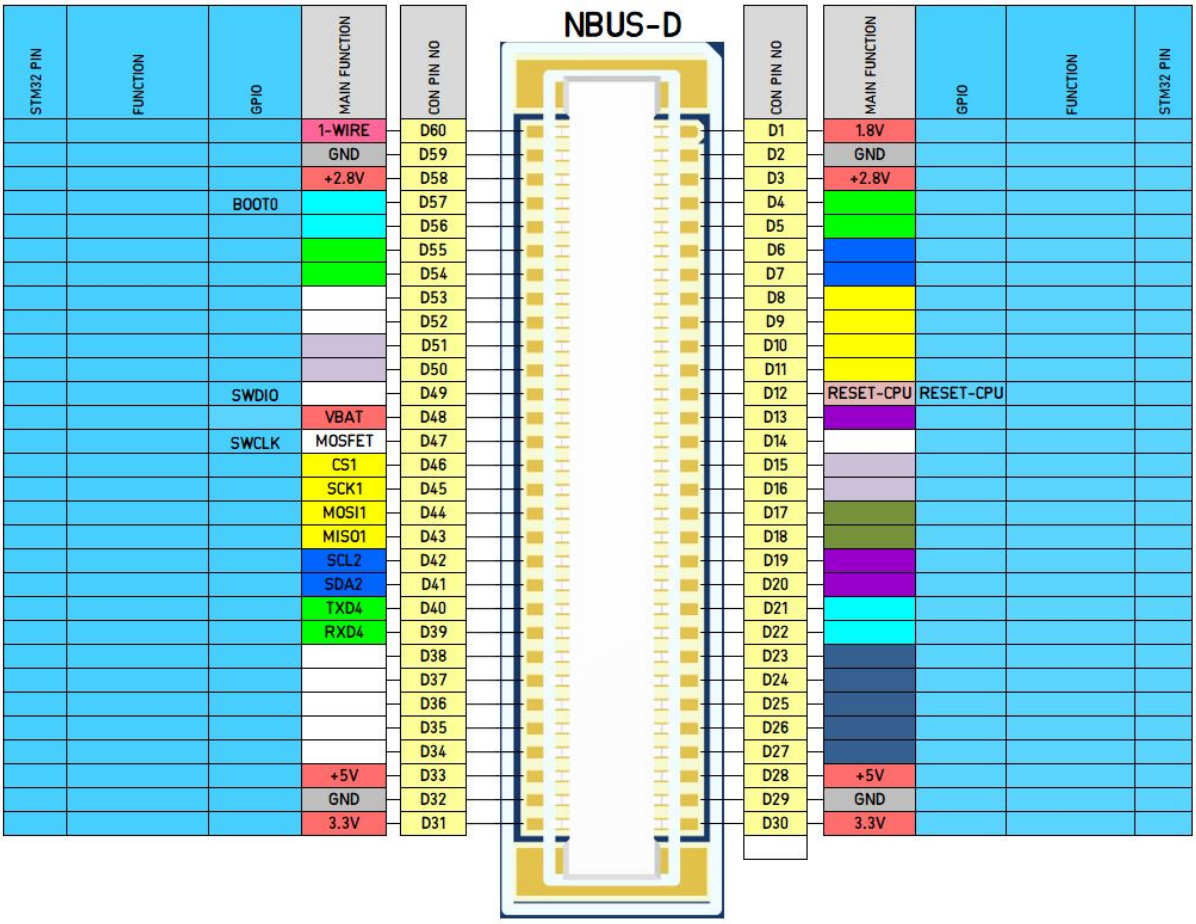
NBUS-A

STM32 PIN	FUNCTION	GPIO	MAIN FUNCTION	CON PIN NO	CON PIN NO	MAIN FUNCTION	GPIO	FUNCTION	STM32 PIN
38	1-WIRE	PC7	1-WIRE	A60	A1	1.8V			
			GND	A59	A2	GND			
			+2.8V	A58	A3	+2.8V			
35	X-EN	PB14	CAN2-RD	A57	A4	RXD1	PB13	X-STEP	34
33	X-DIR	PB12	CAN2-TD	A56	A5	TXD1	PB10	Y-STEP	29
43	RXD1	PA10	RXD0	A55	A6	SDA1	PB11	Y-EN	30
42	TXD1	PA9	TXD0	A54	A7	SCL1	PB2	Y-DIR	28
40	BEDPWM	PC9	PWM1	A53	A8	MISO0			
			PWM2	A52	A9	MOSI0			
			ADC3	A51	A10	SCK0			
24	SDDET	PC4	ADC2	A50	A11	SS0			
9	Y-STOP	PC1	CLKOUT	A49	A12	RESET-CPU	RESET-CPU		
			VBAT	A48	A13	USB-CON	PC13	USB-CON	2
39	HEAD0-PWM	PC8	MOSFET	A47	A14	QENCB			
20	SPI1-CS	PA4	CS1	A46	A15	ADC0	PA0	THERM0	14
21	SPI1-SCK	PA5	SCK1	A45	A16	ADC1	PC3	THERMB	11
23	SPI1-MOSI	PA7	MOSI1	A44	A17	EINT3			
22	SPI1-MISO	PA6	MISO1	A43	A18	EINT2			
25	Z-DIR	PC5	SCL2	A42	A19	USB-DP	PA12	USB_DP	45
27	Z-EN	PB1	SDA2	A41	A20	USB-DN	PA11	USB_DN	44
16	TXD2	PA2	TXD4	A40	A21	CAN1-TD	PB4	E0-DIR	56
17	RXD2	PA3	RXD4	A39	A22	CAN1-RD	PD2	E0-EN	54
				A38	A23	SLEEP			
				A37	A24	SENSOR1	PB15	X-UART	36
				A36	A25	SENSOR2	PC6	Y-UART	37
				A35	A26	SENSOR3	PC10	Z-UART	51
				A34	A27	SENSOR4	PC11	E0-UART	52
			+5V	A33	A28	+5V			
			GND	A32	A29	GND			
			3.3V	A31	A30	3.3V			



STM32 PIN	FUNCTION	GPIO	MAIN FUNCTION	CON PIN NO	CON PIN NO	MAIN FUNCTION	GPIO	FUNCTION	STM32 PIN
			1WIRE	B60	B1	AREF0			
			GND	B59	B2	GND			
			V-IO	B58	B3	AREF1			
60	BOOT0		ISP	B57	B4		PB0	Z-STEP	26
50	STATUS LED	PA15	LED1	B56	B5		PB3	E0-STEP	55
			LED2	B55	B6	SDA3	PA1	SERVOS	15
			LED3	B54	B7	SCL3			
			LED4	B53	B8		PC12	E0-STOP	53
41	FANPWM	PA8	GPIO	B52	B9				
8	X-STOP	PC0	GPIO	B51	B10				
			GPIO	B50	B11				
		SWDIO	SWDIO	B49	B12	RESET-CPU	RESET-CPU		
		SWDCLK	SLEEP	B48	B13				
			SWDCLK	B47	B14				
			J-TDO	B46	B15		PB9	SDA	62
			J-TDI	B45	B16		PB8	SCL	61
			GPIO	B44	B17		PB5	MOSI3	57
			GPIO	B43	B18				
58	SCL1	PB6	SCL4	B42	B19				
59	SDA1	PB7	SDA4	B41	B20				
10	Z-STOP	PC2	GPIO	B40	B21				
			GPIO	B39	B22				
				B38	B23				
				B37	B24	RESET-OUT			
				B36	B25	SENSOR2			
				B35	B26	SENSOR3			
				B34	B27	SENSOR4			
			+5V	B33	B28	+5V			
			GND	B32	B29	GND			
			3.3V	B31	B30	3.3V			


NBUS-C
STM32 PIN
FUNCTION
GPIO
MAIN FUNCTION
CON PIN NO
1-WIRE C60
GND C59
+2.8V C58
C57
C56
C55
C54
C53
C52
C51
C50
C49
VBAT C48
MOSFET C47
CS1 C46
SCK1 C45
MOSI1 C44
MISO1 C43
SCL2 C42
SDA2 C41
TXD4 C40
RXD4 C39
C38
C37
C36
C35
C34
+5V C33
GND C32
3.3V C31
CON PIN NO
MAIN FUNCTION
GPIO
FUNCTION
STM32 PIN
C1 1.8V
C2 GND
C3 +2.8V
C4 RXD2
C5 TXD2
C6
C7
C8
C9
C10
C11
C12 RESET-CPU RESET-CPU
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
C26
C27
C28 +5V
C29 GND
C30 3.3V



Getting started

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- n-pro-50

RF, CPU, nblock, BLE, nsensorRF

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Address: Cork Institute of Technology Campus, Bishopstown, Cork

Phone: (021) 433 5560