WeAct Black Pill V2.0

STM32F411CEU6

Board

Name	WeAct Black Pill V2.0
Part	Unknown
Brand	WeAct Studio
Origin	China

Microcontroller

Part	STM32F411CEU6
Manufacturer	ST-Microelectronics
Core	Arm Cortex-M4
Max. Clock Speed	100MHz
Package	UFQFPN 48 pins

Internal memories

FLASH	512KiB
SRAM	128KiB

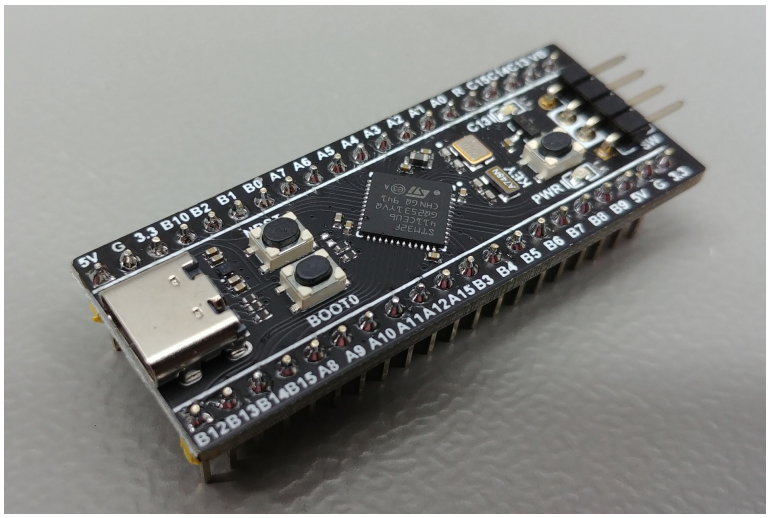
Oscillators

HSI	16MHz
LSI	32kHz
HSE	25MHz
LSE	32.768kHz

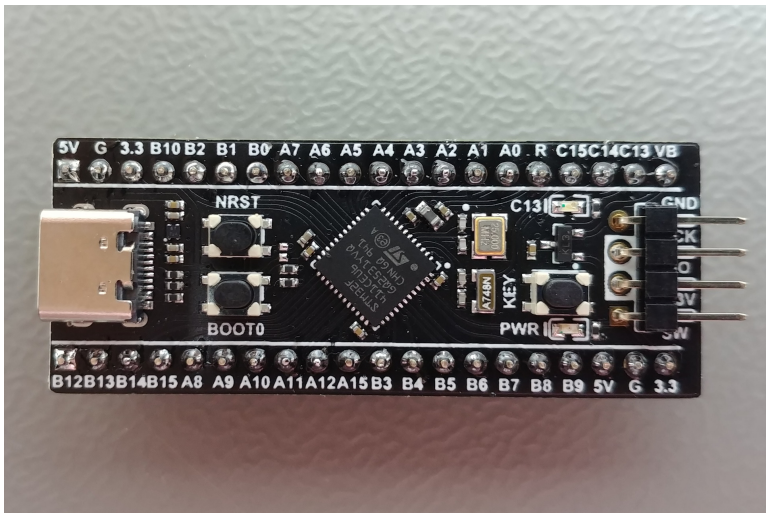
Power

Any +3.3V pin (+3.3V)

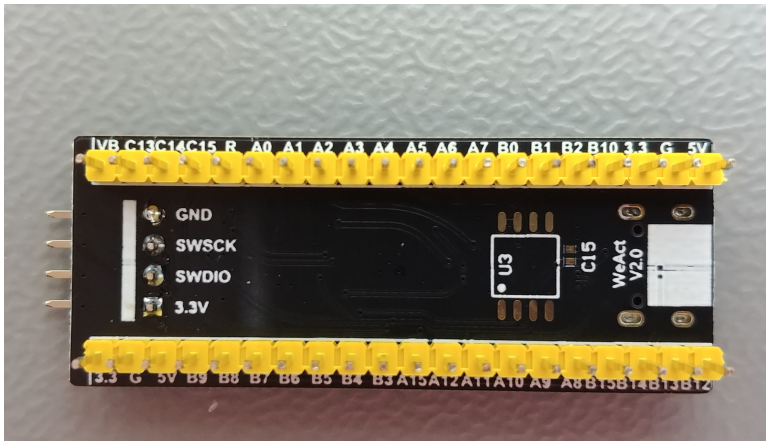
Pictures



WeAct Black Pill V2.0: Perspective view



WeAct Black Pill V2.0: Top view



Sources	Any +5V pin (+5V) USB connector (+5V)
V_{DDA} pin	No
V_{SSA} pin	No
V_{REF-} pin	No
V_{REF+} pin	No
Backup battery	Pin

Regulator

Manufacturer	Diodes Incorporated
Part	AP7343 (6T)
Package	X2-DFN1010-4 4 pins
Input	+3.52V to +5.25V
Output	+3.3V @ 300mA
Datasheet	AP7343.pdf

PCB

Color	Black
Size (w x l)	20.78mm x 52.81mm
Mounting	Breadboard

Remarks

- **Warning:** The +5V pins on this board are directly connected to the +5V pin of the USB connector. There is no protection in place. Do not power this board through USB and an external power supply at the same time.

WeAct Black Pill V2.0: Bottom view

Resources

- Perspective view
- Top view
- Bottom view
- Original schematic
- Original dimensions drawing
- Source files on Github

Inputs

- Reset button
- BOOT0 button
- User button

Outputs

- Power LED
- User LED

Connectors

- Header 1
- Header 2
- USB connector
- SWD header

Devices

- Generic EEPROM

Inputs & outputs

Inputs & outputs

Reset button

Name	NRST
Reference	-
Type	Button
Connected to	$\overline{\text{NRST}}$
Mode	Active low

Power LED

Name	PWR
Reference	-
Type	LED
Connected to	+3.3V rail
Mode	N.A.

BOOT0 button

Name	BOOT0
Reference	-
Type	Button
Connected to	BOOT0
Mode	Active high

User LED

Name	PC13
Reference	-
Type	LED
Connected to	PC13
Mode	Sink

User button

Name	KEY
Reference	-
Type	Button
Connected to	PA0
Mode	Active low

Connectors & headers

Header 1 properties

Name	Unknown
Reference	None
Type	pin header (2.54mm, 20x1, male)

Header 1 pins

#	Name	Function	Connected to
1	5V	-	+5V rail
2	G	-	Ground plane
3	3.3	-	+3.3V rail
4	B10	-	PB10
5	B2	-	PB2

6	B1	-	PB1
7	B0	-	PB0
8	A7	-	PA7
9	A6	-	PA6
10	A5	-	PA5
11	A4	-	PA4
12	A3	-	PA3
13	A2	-	PA2
14	A1	-	PA1
15	A0	-	PA0
16	R	-	$\overline{\text{NRST}}$
17	C15	-	PC15
18	C14	-	PC14
19	C13	-	PC13
20	VB	-	V_{BAT}

⇄ Header 2 properties

Name	Unknown
Reference	None
Type	pin header (2.54mm, 20x1, male)

⇄ Header 2 pins

#	Name	Function	Connected to
1	B12	-	PB12
2	B13	-	PB13
3	B14	-	PB14
4	B15	-	PB15
5	A8	-	PA8
6	A9	-	PA9
7	A10	-	PA10
8	A11	-	PA11
9	A12	-	PA12
10	A15	-	PA15
11	B3	-	PB3
12	B4	-	PB4
13	B5	-	PB5
14	B6	-	PB6
15	B7	-	PB7

16	B8	-	PB8
17	B9	-	PB9
18	5V	-	+5V rail
19	G	-	Ground plane
20	3.3	-	+3.3V rail

USB connector properties

Name	Unknown
Reference	None
Type	USB C

USB connector pins

#	Name	Function	Connected to
A1/B12	-	GND	Ground plane
A4/B9	-	VBUS	+5V rail
B8	-	SBU2	Ground plane via 5.1kΩ (R8)
A5	-	CC1	Ground plane via 5.1kΩ (R8)
B7	-	D-	PA11 via 10Ω (R9)
A6	-	D+	PA12 via 10Ω (R7)
A7	-	D-	PA11 via 10Ω (R9)
B6	-	D+	PA12 via 10Ω (R7)
A8	-	SBU1	Ground plane via 5.1kΩ (R8)
B5	-	CC2	Ground plane via 5.1kΩ (R8)
B4/A9	-	VBUS	+5V rail
B1/A12	-	GND	Ground plane

SWD header properties

Name	SW
Reference	None
Type	pin header (2.54mm, 4x1, male)

SWD header pins

#	Name	Function	Connected to
1	3.3V	VCC	+3.3V rail
2	SWDIO	SWDIO	PA13
3	SWCLK	SWCLK	PA14
4	GND	GND	Ground plane

Devices

Generic EEPROM properties *footprint*

Name	Unknown
Reference	U3
Manufacturer	Unknown
Part	Generic EEPROM
Marking	Unknown
Datasheet	Unavailable
Package	SOP 8 pins
Description	Generic I2C EEPROM

Generic EEPROM pins *footprint*

#	Name	Function	Connected to
1	-	/CS	PA4
2	-	DO	PB4
3	-	/WP	+3.3V rail
4	-	GND	Ground plane
5	-	DI	PA7
6	-	CLK	PA5
7	-	/HOLD	+3.3V rail
8	-	VCC	+3.3V rail