

# wCoreF4 PCB

This is the carrier board for the Waveshare Core407v. It performs breakout functions of all of the standard ports as per the design based on the STM32 Discovery.

## Schematic

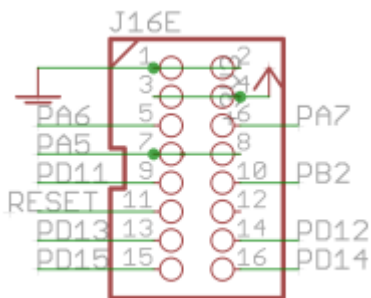
The circuit is mostly identical to what was drawn previously. The following parts are different:

### USB entry (J1)



This header supplies +5V, 0V, USB data and the ID state. Normally it will be connected to the [USB module](#) by a short cable.

### Extended port (J16E)



The original J16 functionality is preserved, but extra pins are available on a IDC16 header. These include the Reset signal and pins normally controlling LEDs. This header is normally connected to the [RES-SD module](#).

### User button (JPA0)



This jumper replaces the “bootloader” functionality of the Discovery board's blue button. It could be wired to an external panel control if needed.

## BOM v1.0

Type	Qty	Value	Package	Parts	Mouser	Reichelt	Conrad	Other	Notes
<b>Resistors</b>									
	2	220R 5%	THT	R7A, R8A					
	2	220R 5%	1206	R7B, R8B					
	1	330R 5%	THT	R102					
	4	1k 5%	1206	R7B1-4					
	2	1k 5%	THT	R11, R13					
	1	10k 5%	THT	R12					
	1	220k 5%	THT	R101					
<b>Pots</b>									
	2	10k	6*5mm vert	P1, P2					
<b>Capacitors</b>									
	3	100n	1206	C1A, C1B, C2					
<b>Diodes</b>									
	1	1N4148	THT						
<b>Transistors</b>									
	1	BC337	TO-92	T1					
<b>ICs</b>									
	2	74HCT125	SOIC	IC1A, IC1B	595-SN74HCT125DR				Ensure <b>HCT</b>
	1	74HC595	SOIC	IC2					
<b>Headers</b>									
	2	1*2	male						

Type	Qty	Value	Package	Parts	Mouser	Reichelt	Conrad	Other	Notes
<b>Resistors</b>									
	1	1*3	male						
	1	1*5	male						or wire directly
	9	2*5	male						
	3	2*8	male						
	2	2*8	male						
<b>Hardware</b>									
	4		M3 spacer	8mm(?)					
<b>MCU breakout</b>									
	1	Waveshare Core 407v							

## Versions

v1.0: first release.

## Assembly

The following build order is suggested:

- R7B1-4, (1k) and located near J15\_S on the top side
- R7B and R8B (220R) on the bottom side
- C1A, C1B and C2 on the bottom side
- IC1A, IC1B and IC2 on the bottom side
- Top-side THT components
- Bottom-side THT components
- Bottom-side JPA0 header
- Bottom-side 2\*25 pin female headers
- Top-side male headers, except for J1
- Solder J1 in conjunction with the USB module
- Mounting brackets if needed
- Looking at the top side of the PCB (with all headers etc.) the Core 407v board plugs in on the bottom side with the JTAG header towards the right

## License

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