

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)



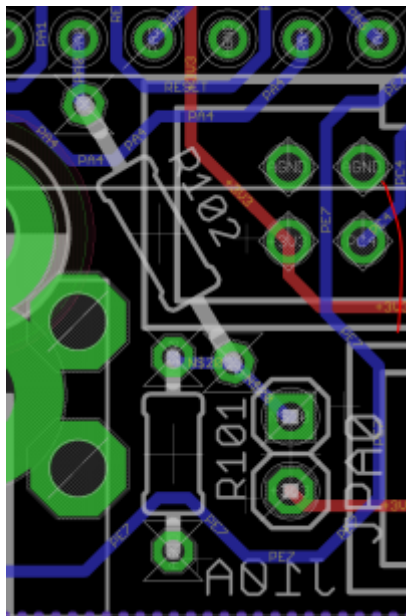
This header supplies +5V, 0V, USB data and the ID state. Normally it will be connected to the [USB module](#) by a short cable.

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 |
|--------------------|-----|----------|------------|--------------|------------------|----------|--------|-------|-------------------|
| resistors | | | | | | | | | |
| | 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 | | | | | |
| pots | | | | | | | | | |
| | 2 | 10k | 6*5mm vert | P1, P2 | | | | | |
| capacitors | | | | | | | | | |
| | 3 | 100n | 1206 | C1A, C1B, C2 | | | | | |
| diodes | | | | | | | | | |
| | 1 | 1N4148 | THT | | | | | | |
| transistors | | | | | | | | | |
| | 1 | BC337 | TO-92 | T1 | | | | | |
| ICs | | | | | | | | | |
| | 2 | 74HCT125 | SOIC | IC1A, IC1B | 595-SN74HCT125DR | | | | Ensure HCT |
| | 1 | 74HC595 | SOIC | IC2 | | | | | |
| Headers | | | | | | | | | |
| | 2 | 1*2 | male | | | | | | |

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|---------------------|-----|---------------------|-----------|--------|--------|----------|--------|-------|------------------|
| resistors | | | | | | | | | |
| | 1 | 1*3 | male | | | | | | |
| | 1 | 1*5 | male | | | | | | or wire directly |
| | 9 | 2*5 | male | | | | | | |
| | 3 | 2*8 | male | | | | | | |
| | 2 | 2*8 | male | | | | | | |
| Hardware | | | | | | | | | |
| | 4 | | M3 spacer | 8mm(?) | | | | | |
| MCU breakout | | | | | | | | | |
| | 1 | Waveshare Core 407v | | | | | | | |

Versions

v1.0: first release.

Assembly

License

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