

M2M

J9
P1
1
2
3
4
P1A
P1B
P1C
P1D

J10
P2
1
2
3
4
P2A
P2B
P2C
P2D

J11
P3
4
3
2
1
P3A
P3B
P3C
P3D

J18
Module
RXD1 8
TXD1 7
SPI0_TX 6
SPI0_SCK 5
SPI0_SC 4
SPI0_RX 3
Vmod O 2 1

J12
I2C0
1
2
3
4
SDA0
SCL0
+3V3

J14
I2C0
1
2
3
4
SDA0
SCL0
+3V3

J16
I2C0
1
2
3
4
SDA0
SCL0
+3V3

J13
I2C0
1
2
3
4
SDA0
SCL0
+3V3

J15
I2C0
1
2
3
4
SDA0
SCL0
+3V3

J17
I2C0
1
2
3
4
SDA0
SCL0
+3V3

The schematic diagram illustrates the RPI-PICO board layout. It features a central microcontroller (U1) with various pins connected to external components and headers. Key connections include:

- Power and Ground:** +3V3 and +5V power rails are connected to the board's power pins. Ground connections are shown throughout the circuit.
- GPIO Pins:** Numerous pins are labeled with their functions, such as TXD0, RXD0, GP0, GP1, GP2, GP3, GP4_SDA0, GP5_SCL0, GP6, GP7, GP8_TX1, GP9_RX1, GP10, GP11, GP12, GP13, GP14, and GP15.
- ADC Pins:** Pins for the analog-to-digital converter are labeled, including VBUS, VSYS, GND, 3V3_EN, 3V3, ADC_VREF, GP28, GP32, GP27, GP26, GP22, GP21, GP20, GP19, GP18, GP17, and GP16.
- Serial Communication:** Pins for SPI (GP10, GP11, GP12, GP13, GP14, GP15) and I2C (GP4_SDA0, GP5_SCL0) are shown.
- Headers:** Headers J1 (Raspberry Pi) and J19 (FAM) are connected to the board's pins. J1 includes pins for SDA0, SCL0, RXD0, TXD0, SWDIO, SWCLK, and G22. J19 includes pins for +5V and GND.

The schematic diagram illustrates the power and signal conditioning section of the ECG system. It features three input sections labeled FONTE V1, V2, and V3. Each section includes a differential input stage (U2, AMS1117-3.3) and a differential output stage (U3, MIC29302WU). The output of U3 is connected to a differential output stage (U4, LM2596S-ADJ) which provides a regulated output (V1) to the ADC. The schematic also shows various passive components like capacitors (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11), resistors (R1, R2, R3, R4, R5, R6, R7, R8), and a diode (D1).

