

MICROCONTROLLER

The schematic diagram illustrates the internal components and connections of a microcontroller board. Key elements include:

- Microcontroller (U5):** A PIC32M06GFS12H microcontroller with multiple pins connected to various peripherals.
- USB Connector (J1):** A USB connector B with pins for Vbus, D+, D-, and ground.
- USB Connector (J7):** A USB connector with pins for GND, PGD, and MCLR.
- Resistors:** R7 (10k), R16 (100k), R22 (10k), R24 (150), R25 (100), R26 (100), R27 (100), R28 (100), R29 (100), R30 (100), R31 (100), R32 (100), R33 (100), R34 (100), R35 (100), R36 (100), R37 (100), R38 (100), R39 (100), R40 (100), R41 (100), R42 (100), R43 (100), R44 (100), R45 (100), R46 (100), R47 (100), R48 (100), R49 (100), R50 (100), R51 (100), R52 (100), R53 (100), R54 (100), R55 (100), R56 (100), R57 (100), R58 (100), R59 (100), R60 (100), R61 (100), R62 (100), R63 (100), R64 (100), R65 (100), R66 (100), R67 (100), R68 (100), R69 (100), R70 (100), R71 (100), R72 (100), R73 (100), R74 (100), R75 (100), R76 (100), R77 (100), R78 (100), R79 (100), R80 (100), R81 (100), R82 (100), R83 (100), R84 (100), R85 (100), R86 (100), R87 (100), R88 (100), R89 (100), R90 (100), R91 (100), R92 (100), R93 (100), R94 (100), R95 (100), R96 (100), R97 (100), R98 (100), R99 (100), R100 (100).
- Capacitors:** C14 (10u), C20 (10u), C24 (150), C35 (100), C40 (100), C41 (100), C42 (100), C43 (100), C44 (100), C45 (100), C46 (100), C47 (100), C48 (100), C49 (100), C50 (100), C51 (100), C52 (100), C53 (100), C54 (100), C55 (100), C56 (100), C57 (100), C58 (100), C59 (100), C60 (100), C61 (100), C62 (100), C63 (100), C64 (100), C65 (100), C66 (100), C67 (100), C68 (100), C69 (100), C70 (100), C71 (100), C72 (100), C73 (100), C74 (100), C75 (100), C76 (100), C77 (100), C78 (100), C79 (100), C80 (100), C81 (100), C82 (100), C83 (100), C84 (100), C85 (100), C86 (100), C87 (100), C88 (100), C89 (100), C90 (100), C91 (100), C92 (100), C93 (100), C94 (100), C95 (100), C96 (100), C97 (100), C98 (100), C99 (100), C100 (100).
- Crystal:** X2 (32kHz), X1 (48kHz).
- Other Components:** J1, J7, R7, R16, R22, C14, C20, C24, C35, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100.

The diagram shows the following connections:

- USB Connector (J1):** Vbus to Vbus, D+ to D+, D- to D-, ground to ground.
- USB Connector (J7):** GND to GND, PGD to PGD, MCLR to MCLR.
- Resistors:** R7 (10k) between Vbus and USB_DETECT. R16 (100k) between USB_DETECT and ground. R22 (10k) between MCLR and ground.
- Capacitors:** C14 (10u) between Vbus and ground. C20 (10u) between Vbus and ground. C24 (150) between Vbus and ground. C35 (100) between Vbus and ground. C40 (10u) between Vbus and ground. C41 (100) between Vbus and ground. C42 (100) between Vbus and ground. C43 (100) between Vbus and ground. C44 (100) between Vbus and ground. C45 (100) between Vbus and ground. C46 (100) between Vbus and ground. C47 (100) between Vbus and ground. C48 (100) between Vbus and ground. C49 (100) between Vbus and ground. C50 (100) between Vbus and ground. C51 (100) between Vbus and ground. C52 (100) between Vbus and ground. C53 (100) between Vbus and ground. C54 (100) between Vbus and ground. C55 (100) between Vbus and ground. C56 (100) between Vbus and ground. C57 (100) between Vbus and ground. C58 (100) between Vbus and ground. C59 (100) between Vbus and ground. C60 (100) between Vbus and ground. C61 (100) between Vbus and ground. C62 (100) between Vbus and ground. C63 (100) between Vbus and ground. C64 (100) between Vbus and ground. C65 (100) between Vbus and ground. C66 (100) between Vbus and ground. C67 (100) between Vbus and ground. C68 (100) between Vbus and ground. C69 (100) between Vbus and ground. C70 (100) between Vbus and ground. C71 (100) between Vbus and ground. C72 (100) between Vbus and ground. C73 (100) between Vbus and ground. C74 (100) between Vbus and ground. C75 (100) between Vbus and ground. C76 (100) between Vbus and ground. C77 (100) between Vbus and ground. C78 (100) between Vbus and ground. C79 (100) between Vbus and ground. C80 (100) between Vbus and ground. C81 (100) between Vbus and ground. C82 (100) between Vbus and ground. C83 (100) between Vbus and ground. C84 (100) between Vbus and ground. C85 (100) between Vbus and ground. C86 (100) between Vbus and ground. C87 (100) between Vbus and ground. C88 (100) between Vbus and ground. C89 (100) between Vbus and ground. C90 (100) between Vbus and ground. C91 (100) between Vbus and ground. C92 (100) between Vbus and ground. C93 (100) between Vbus and ground. C94 (100) between Vbus and ground. C95 (100) between Vbus and ground. C96 (100) between Vbus and ground. C97 (100) between Vbus and ground. C98 (100) between Vbus and ground. C99 (100) between Vbus and ground. C100 (100) between Vbus and ground.
- Crystal:** X2 (32kHz) connected to pins 19 (VDD), 13 (VDD1), 10 (VDD2), 38 (VDD3), 27 (VDD4), 26 (VDD5), 25 (VDD6), 24 (VDD7), 23 (VDD8), 22 (VDD9), 21 (VDD10), 20 (VDD11), 19 (VDD12), 18 (VDD13), 17 (VDD14), 16 (VDD15), 15 (VDD16), 14 (VDD17), 13 (VDD18), 12 (VDD19), 11 (VDD20), 10 (VDD21), 9 (VDD22), 8 (VDD23), 7 (VDD24), 6 (VDD25), 5 (VDD26), 4 (VDD27), 3 (VDD28), 2 (VDD29), 1 (VDD30).
- Other Components:** J1, J7, R7, R16, R22, C14, C20, C24, C35, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100.

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POWER

The diagram illustrates the power supply network for the PCB. It includes a battery (B1) connected to a decoupling capacitor (C25, 10uF). The output of C25 is connected to the Vin pin of a voltage regulator (U8, 3V). The Vout pin of U8 is connected to a 2.2k resistor (R3) and the VDD pin of a microcontroller (U2, 73852). The VBAT pin of U2 is connected to the output of a second decoupling capacitor (C35, 1uF), which is connected to the BATT MON pin. The VSS pin of U2 is connected to ground. The VREG pin of U2 is connected to the Vout pin of U8. The VSTAT pin of U2 is connected to ground. The VDD pin of U2 is connected to ground.

INPUTS

SENSORS

The diagram illustrates a complex sensor circuit, likely for an audio application. It features several integrated circuits (ICs) and various passive components.

- ICs:**
 - U4:** MCP1801T-3002DGT (Audio Amplifier)
 - U5:** MCP1801T-3002DGT (Audio Amplifier)
 - U6:** MCP1801T-3002DGT (Audio Amplifier)
 - U7:** MCP1801T-3002DGT (Audio Amplifier)
 - U14:** 1.5V Battery
 - U15:** 1V5 Battery
- Passive Components:**
 - Resistors:** R2 (2.2k), R4 (2.2k), R6 (2.2k), R8 (10k), R9 (2.2k).
 - Capacitors:** C2 (10u), C4 (10u), C6 (10u), C7 (10u), C8 (10u), C9 (10u), C19 (1u), C22 (10u), C50 (1u), C52 (1u), C54 (100n).
- Connections:**
 - The circuit is powered by a 3.3V supply (VDD) and a 1.5V supply (VDD1).
 - It includes a 10k resistor (R8) and a 100nF capacitor (C1).
 - The circuit is connected to a 3.3V supply (VDD) and a 1.5V supply (VDD1).
 - It also includes a 10k resistor (R8) and a 100nF capacitor (C1).