LibreDAQ logo

open hardware

5V port
SCREWTERMINAL-3.5MM-9
PCK2
PCK1
PWM5
PWM4
PWM3
PWM2
PWM1
PWM0
JP1   GND

3.3V R2 470   BLUE D1   GND
3.3V R3 470   RED   D2   LED1
3.3V R4 470   RED   D3   LED2

TIOA0+TIOB0 = quad encoder

5V port <-> 3.3 bidir port
SCREWTERMINAL-3.5MM-9
PA21_RXD1_5.0
PA20_TXD1_5.0
PA24_SCK1_5.0
PA0_5.0
PA1_5.0
PA2_5.0
PA3_5.0
5.0V
JP3   GND

5V SPI port
QUAD ENCODER

3.3V port
SCREWTERMINAL-3.5MM-9
PA4_3.3
PA5_3.3
TWD_3.3
TWCK_3.3
PA11_3.3
PA12_3.3
3.3V
JP4   GND

ATSAM3U1CB   U3

PA0_3.3   26   PA0/TIOB0/NPCS1/WKUP0   PB0/PWMH0/A2   90
PA1_3.3   27   PA1/TIOA0/NPCS2/WPUP1   PB1/PWMH1/A3   91
PA2_3.3   28   PA2/TCLK0/ADTRG   PB2/PWMH2/A4   92
PA3_3.3   29   PA3/MCCK/PCK1   PB3/PWMH3/A5/AD12B2   7
PA4_3.3   30   PA4/MCDA/PWMH0   PB4/TCLK1/A6/AD12B3   97   ADC2
PA5_3.3   31   PA5/MCDA0/PWMH1   PB5/TIOA1/A7/AD0   98   ADC3
          32   PA6/MCDA1/PWMH2   PB6/TIOB1/D15/AD1   99   ADC4
          33   PA7/MCDA2/PWMH0   PB7/RTSD0/A0/AD2   100   ADC5
                                         PB8/CTS0/A1/AD3   ADC6
PA8_3.3   37   PA8/MCDA3/PWML1   ADC7
TWD_3.3   38   PA9/TWD0/PWML2   PB9/RTCOUT0/DTR0   71
TWCK_3.3 39   PA10/TWCK0/PWML3   PB10/D1/DSR0   70
PA11_3.3 40   PA11/URXD0/PWMFI0   PB11/D2/DCD0   91
PA12_3.3 41   PA12/UTXD0/PWFI1   PB12/D3/RI0   95
          10   PA13/MISO   PB13/D4/PWMH0   94   PWMH1_3.3
          11   PA14/MOSI   PB14/D5/PWMH1   93
          12   PA15/SPCK/PWMH2   PB15/D6/PWMH2   16

RS485_TXEN 13 PA16/NPCS0/NCS1   PB16/D7/PWMH3   15   PWML0_3.3
RS485_TX   17 PA17/SCK0/AD12BTRG   PB17/NANDOE/PWMH0   68   PWML1_3.3
RS485_RX   18 PA18/TXD0/PWMFI2   PB18/NANDWE/PWML1   66   PWML2_3.3
PA20_TXD1_3.3 19 PA19/RXD0/NPCS3   PB19/NRD/PWML2   65   PWML3_3.3
PA21_RXD1_3.3 20 PA20/TXD1/NPCS3   PB20/TXD1/PCK0   64
PA24_SCK1_3.3 5 PA21/RXD1/PCK0   PB21/A21/RTS2   61
ADC0   21 PA22/TXD2/RTS1/AD12B0   PB22/A22/CTS1   62   PCK2_3.3
           22 PA23/RXD2/CTS1   PB23/NWR0/PCK2   58   PCK1_3.3

LED1
ADC1   PA24/SCK1   PB24/NANDRDY/PCK1
           23 PA24/SCK1   73   VDDPLL
           24 PA25/SCK2   72   GNDPLL
PWMH0_3.3 96 PA26/TD/TCLK2   79   VDDUTMI
           27 PA27/RD/PCK0   82   GNDUTMI
           84 PA28/TK/PWMH0
           85 PA29/RK/PWMH1   45   VDDBU
           86 PA30/TF/TIOA2/AD12B1   53   GNDBU
LED2   PA31/RF/TIOB2   52   VDDIN
JTAG_RESET 47 NRSTB/ASYNC_RESET   VDDOUT
           57 NRST/RESET
JTAG_TDI   48 JTAGSEL
           51 TDI   ADVREF
JTAG_TDO   54 TDO/TRACESWO   AD12BVREF
JTAG_TMS   55 TMS/SWDIO   VDDANA
JTAG_TCK   56 TCK/SWCLK   GNDANA
           42 FWUP
R7 100K   43 ERASE   60   VDDIO
nc   44 TST   57   VDDIO
nc   22   VDDIO
C4 10pF   36   VDDIO
R5 6K8 1%
USB_GND   78 VBG   34   VDDCORE
           50 XIN32   59   VDDCORE
C6 10pF   49 XOUT32   83   VDDCORE
Y1 12M   75 XIN   87   VDDCORE
C7 10pF   74 XOUT
           81 DFSDP   35   GND
R6 39R 1% 80 DFSDM   89   GND
USB_D_P   76 DHSDP   61   GND
R8 39R 1% 77 DHSDM
USB_D_N

VDD_UTMI   L4
USB_GND

JTAG
3.3V   3.3V
JTAG_TMS
JTAG_TCK   R18 100K
JTAG_TDO   100K
JTAG_TDI   100K
JTAG_RESET 100K
JTAG
GND

PWR-5V
GND
VUSB
JP_PWR

VDD_UTMI
C8 0.1uF   L3
GND   HZ0603C601R-10-0.3A

3.3V
GND 10 GND VCC 20 5.0V
C9 0.1uF
GND

PWMH0_3.3 U2A
PWML1_3.3 2 A1 Y1 18 PWM0
PWML2_3.3 4 A2 Y2 16 PWM1
PWML3_3.3 6 A3 Y3 14 PWM2
           8 A4 Y4 12 PWM3
GND   G
74HCT241DW

PCK2_3.3   U2B
PCK1_3.3   11 A1 Y1   9 PCK1
PWMH0_3.3 13 A2 Y2   7 PCK2
PWMH1_3.3 15 A3 Y3   5 PWM4
           17 A4 Y4   3 PWM5
5.0V   19 G
74HCT241DW

USB_GND
USB
PESD0603   USB_D_P
PESD0603   USB_D_N
USB-B   VUSB
USB_GND   MI0805J102R-10-1A
JUMPER-PAD-2-NC_BY_PASTE   L1

C1 4.7uF   C2 10uF
GND   GND

5.0V   U1 LM3671MF-3.3
           VIN SW
           GND
           EN   FB
           L2   LBRC5181T2R2M
C3 10uF   C5 1.0uF   3.3V
GND   GND

JP2
R12A   ADC0   R21A
200R   ADC1   200R
200R   ADC2   200R
200R   ADC3   200R
200R   ADC4   200R
22K   ADC5   100K
           ADC6
           ADC7
SCREWTERMINAL-3.5MM-9
GND
GND

3.3V   5.0V
PA21_RXD1_3.3   10K Q1 FDV301N 10K PA21_RXD1_5.0
3.3V   5.0V
PA20_TXD1_3.3   10K Q2 FDV301N 10K PA20_TXD1_5.0
3.3V   5.0V
PA24_SCK1_3.3   10K Q3 FDV301N 10K PA24_SCK1_5.0
3.3V   5.0V
PA0_3.3   10K Q4 FDV301N 10K PA0_5.0
3.3V   5.0V
PA1_3.3   10K Q5 FDV301N 10K PA1_5.0
3.3V   5.0V
PA2_3.3   10K Q6 FDV301N 10K PA2_5.0
3.3V   5.0V
PA3_3.3   10K Q7 FDV301N 10K PA3_5.0

U4 ISL3175
RS485_RX   1 R   RO   VCC 8   3.3V
RS485_TXEN 2 RE   C31 1.0uF
            3 DE BUS- 7   GND
RS485_TX   4 D   BUS+ 6
               GND   5
GND
R11 120R
JUMPER-PTH-2OF3-P0.1
SCREWTERMINAL-3.5MM-3
RS485_P
RS485_N
GND
JP_RS485
GND

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