4-Quadrant CVCC HP Controller Board

VCC

R18 10k R19 10k

CN3
1
2
3
4

SCL2
SDA2

GND

VCC

R16 10k R17 10k

CN2
1 VSS
2 VCC
3 SCL
4 SDA

OLED-CN

SCL1
SDA1

GND

VCC

C13 C8 C7 C6 C5 C4
1u 0.1u 0.1u 0.1u 0.1u 0.1u

GND

VCC

DBG
5
4
3
2
1

A7
A6

GND

LPC1768

Pin	Signal		Signal	Pin

USB-RX 46 P0[0]/RD1/TXD3/SDA1   P1[0]/ENET_TXD0   95
USB-TX 47 P0[1]/TD1/RXD3/SCL1   P1[1]/ENET_TXD1   94
A7   98 P0[2]/TXD2/AD0[7]   P1[4]/ENET_TX_EN 93
A6   99 P0[3]/RXD0/AD0[6]   P1[8]/ENET_CRS   92
        81 P0[4]/I2SRX_CLK/RD2/CAP2[0] P1[9]/ENET_RXD0 91 IO9
CS2   80 P0[5]/I2SRX_WS/TD2/CAP2[1] P1[10]/ENET_RXD1 90 IO10
CS1   79 P0[6]/I2SRX_SDA/SSEL1/MAT2[0] P1[14]/ENET_RX_ER 89 IO11
SCK   78 P0[7]/I2STX_CLK/SCK1/MAT2[1] P1[15]/ENET_REF_CLK 88
MISO   77 P0[8]/I2STX_WS/MISO1/MAT2[2] P1[16]/ENET_MDC 87
MOSI   76 P0[9]/I2STX_SDA/MOSI1/MAT2[3] P1[17]/ENET_MDIO 86
SDA1   48 P0[10]/TXD2/SDA2/MAT3[0] P1[18]/USB_UP_LED/PWM1[1]/CAP1[0] 32 R7 10k D1 VCC
SCL1   49 P0[11]/RXD2/SCL2/MAT3[1] P1[19]/MCOA0/USB_PPWR/CAP1[1] 33
SCK2   62 P0[15]/TXD1/SCK0/SCK   P1[20]/MCI0/PWM1[2]/SCK0 34
        63 P0[16]/RXD1/SSEL0/SSEL   P1[21]/MCABORT/PWM1[3]/SSEL0 35
MISO2   61 P0[17]/CTS1/MISO0/MISO   P1[22]/MCOB0/USB_PWRD/MAT1[0] 36
MOSI2   60 P0[18]/DCD1/MOSI0/MOSI   P1[23]/MCI1/PWM1[4]/MISO0 37
CS3   59 P0[19]/DSR1/SDA1   P1[24]/MCI2/PWM1[5]/MOSI0 38
CS4   58 P0[20]/DTR1/SCL1   P1[25]/MCOA1/MAT1[1] 39
        57 P0[21]/RI1/RD1   P1[26]/MCOB1/PWM1[6]/CAP0[0] 40
        56 P0[22]/RTS1/TD1   P1[27]/CLKOUT/USB_OVRCR/CAP0[1] 43
A0   9 P0[23]/AD0[0]/I2SRX_CLK/CAP3[0] P1[28]/MCOA2/PCAP1[0]/MAT0[0] 44
A1   8 P0[24]/AD0[1]/I2SRX_WS/CAP3[1] P1[29]/MCOB2/PCAP1[1]/MAT0[1] 45
A2   7 P0[25]/AD0[2]/I2SRX_SDA/TXD3 P1[30]/VBUS/AD0[4] 21 A4
A3   6 P0[26]/AD0[3]/AOUT/RXD3   P1[31]/SCK1/AD0[5] 20 A5
SDA2   25 P0[27]/SDA0/USB_SDA
SCL2   24 P0[28]/SCL0/USB_SCL   P2[0]/PWM1[1]/TXD1 75 IO0
        29 P0[29]/USB_DPLUS   P2[1]/PWM1[2]/RXD1 74 IO1
        30 P0[30]/USB_DMINUS   P2[2]/PWM1[3]/CTS1/TRACEDATA[3] 73 IO2
                                      P2[3]/PWM1[4]/DCD1/TRACEDATA[2] 70 IO3
RES   17 RESET   P2[4]/PWM1[5]/DSR1/TRACEDATA[1] 69 IO4
        14 RSTOUT   P2[5]/PWM1[6]/DTR1/TRACEDATA[0] 68 IO5
                                      P2[6]/PCAP1[0]/RI1/TRACECLK 67 IO6
        28 VDD(3V3)1   P2[7]/RD2/RTS1 66 IO7
        54 VDD(3V3)2   P2[8]/TD2/TXD2/ENET_MDC 65 IO8
        71 VDD(3V3)3   P2[9]/USB_CONNECT/RXD2/ENET_MDIO 64
        76 VDD(3V3)4   P2[10]/EINT0/NMI 53 ISP
        42 VDD(REG)(3V3)1   P2[11]/EINT1/I2STX_CLK 52
        34 VDD(REG)(3V3)2   P2[12]/EINT2/I2STX_WS 51
        19 VBAT   P2[13]/EINT3/I2STX_SDA 50
        20 VDDA
        72 VREFP   P3[25]/MAT0[0]/PWM1[2] 27
                                      P3[26]/STCLK/MAT0[1]/PWM1[3] 26
        15 VREFN   P4[28]/RX_MCLK/MAT2[0]/TXD3 82
        11 VSSA   P4[29]/TX_MCLK/MAT2[1]/RXD3 85
        41 VSS1
        55 VSS2   RTCX1 16
        65 VSS3   RTCX2 18
        83 VSS4
        97 VSS5   XTAL1 22
        23 VSS6   XTAL2 23

         1 TDO/SWO
         2 TDI
         3 TMS/SWDIO
         4 TRST
         5 TCK/SWDCLK
       100 RTCK   NC 13

12MHz Crystal
P2_10=0->ISP
P0_2/3 is primary UART.

LED1->P1_18
Active Lo Reset

X1 FA238-12MHz
C2 15p   C3 15p
XTAL1 22   XTAL2 23
GND

USB / FT230XS

CN1 USB40B5 Type-C
VBUS
SBU1
SBU2
D+1
D+2
D-1
D-2
CC1
CC2
SHELL
GND

C1 C9 0.1u
GND

R3 27 R4 27

R1 4.7k R2 4.7k

GND

IC1 FT230XS
VCC   TXD
D-   RXD
D+   RTS
       CTS
RESET CBUS0
3V3OUT CBUS1
VCCIO CBUS2
       CBUS3
C10 0.1u
GND1
GND2
GND

C11 0.1u
GND

R5 27 USB-TX
R6 27 USB-RX

IC3 NJM2884U1-33
IN OUT
CTRL
GND NC

VCC
C12 4.7u
GND

A0=VM1, A1=IM1, IO0=EN1, IO1=TSD1, IO2=ISRC, ISNK

VCC

R8 10k

CN4
A0 1 2
A1 3 4 CS1
IO0 5 6 SCK
    7 8 MOSI
    9 10 IO2

IO1

VCC

R9 10k

GND

VCC

R10 10k

CN5
A2 1 2
A3 3 4 CS2
IO3 5 6 SCK
    7 8 MOSI
    9 10 IO5

IO4

VCC

R11 10k

GND

VCC

R12 10k

CN6
A4 1 2
A5 3 4 CS3
IO6 5 6 SCK2
    7 8 MOSI2
    9 10 IO8

IO7

VCC

R13 10k

GND

VCC

R14 10k

CN7
A6 1 2
A7 3 4 CS4
IO9 5 6 SCK2
    7 8 MOSI2
    9 10 IO11

IO10

VCC

R15 10k

GND

H1 MOUNT-PAD-ROUND3.0
H2 MOUNT-PAD-ROUND3.0
H3 MOUNT-PAD-ROUND3.0
H4 MOUNT-PAD-ROUND3.0
GND