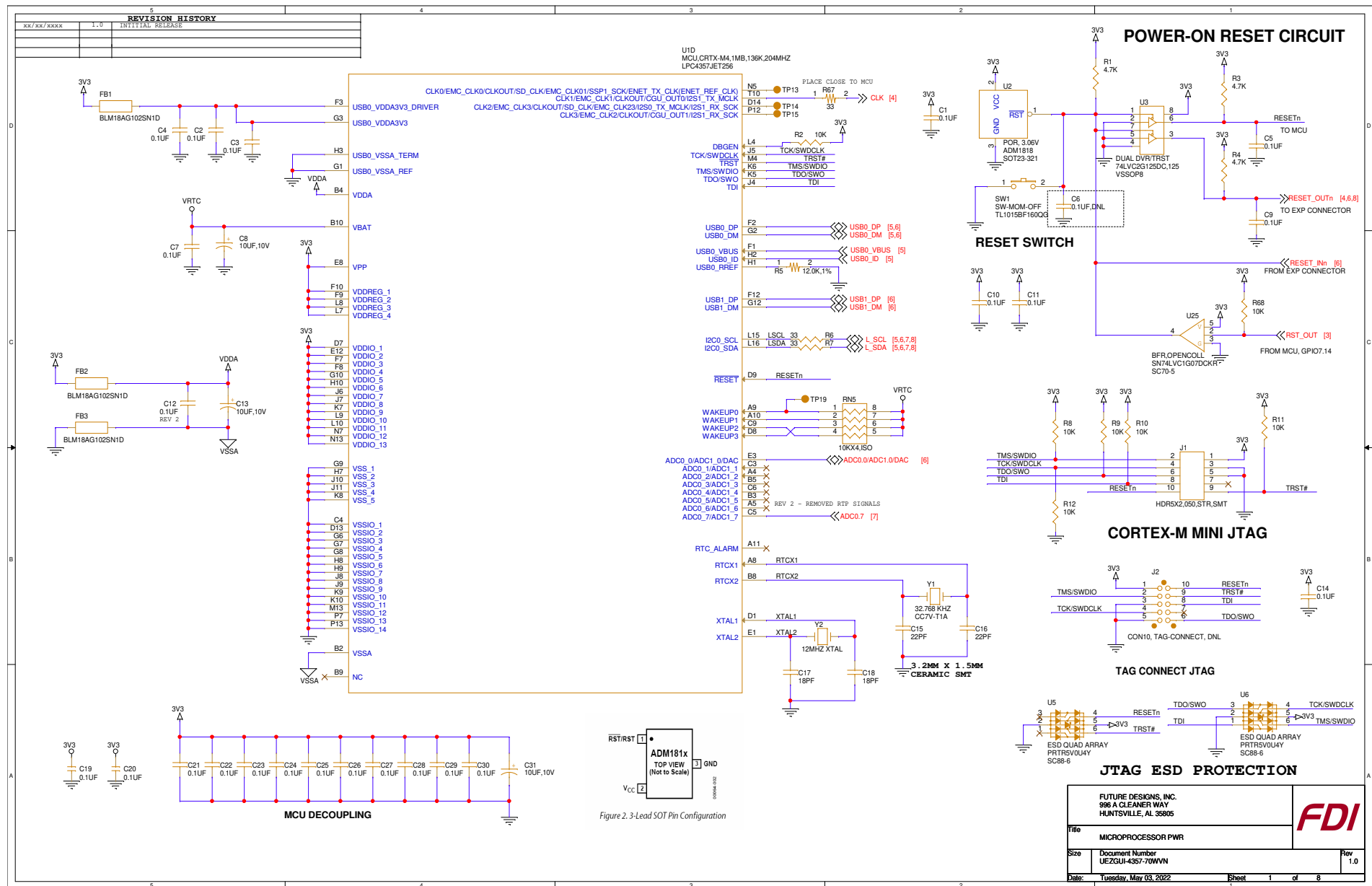
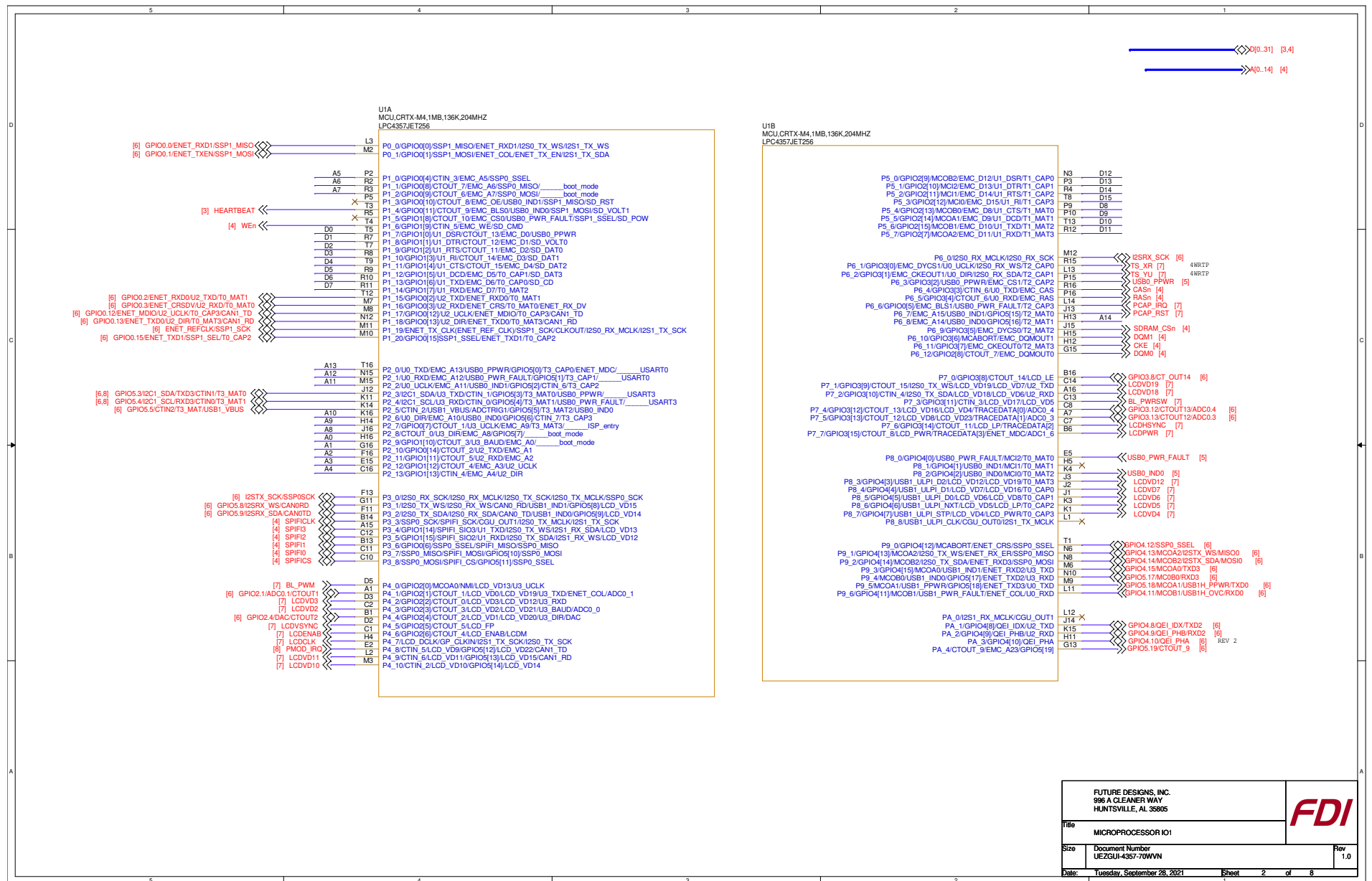






U1C
MCU.CRTX-M4.1MB;136K;204MHZ
LPC4357/JET256

PB_0/CTOUT_10/LCD_VD23/GPIO5[20]
PB_1/USB1_ULPI_D1/LCD_VD22/GPIO5[21]/CTOUT_6
PB_2/USB1_ULPI_D7/LCD_VD21/GPIO5[22]/CTOUT_7
PB_3/USB1_ULPI_D6/LCD_VD20/GPIO5[23]/CTOUT_8
PB_4/USB1_ULPI_D5/LCD_VD15/GPIO5[24]/CTIN_5
PB_5/USB1_ULPI_D4/LCD_VD14/GPIO5[25]/CTIN_7/LCD_PWR
PB_6/USB1_ULPI_D3/LCD_VD13/GPIO5[26]/CTIN_6/LCD_VD19/ADC0_6

PC_0/USB1_ULPI_CLK/ENET_RX_CLK/LCD_CLK/SD_CLK/ADC1_1
PC_1/USB1_ULPI_D7/U1_RI/ENET_TXD2/GPIO6[7]/T3_CAP0/SD_VOL10
PC_2/USB1_ULPI_D6/U1_CTS/ENET_TXD2/GPIO6[1]/SD_RST
PC_3/USB1_ULPI_D5/U1_RTS/ENET_TXD3/GPIO6[2]/SD_VOL11/ADC1_0
PC_4/USB1_ULPI_D4/ENET_TX_EN/GPIO6[7]/T3_CAP1/SD_DAT0
PC_5/USB1_ULPI_D3/ENET_TX_ER/GPIO6[4]/T3_CAP2/SD_DAT1
PC_6/USB1_ULPI_D2/ENET_RXD2/GPIO6[5]/T3_CAP3/SD_DAT2
PC_7/USB1_ULPI_D1/ENET_RXD3/GPIO6[6]/T3_MAT0/SD_DAT3
PC_8/USB1_ULPI_D0/ENET_RX_DV/GPIO6[7]/T3_MAT1/SD_CD
PC_9/USB1_ULPI_NXT/ENET_RX_ER/GPIO6[8]/T3_MAT2/SD_POW
PC_10/USB1_ULPI_STP/U1_DSR/GPIO6[9]/T3_MAT3/SD_CMD
PC_11/USB1_ULPI_DIR/U1_DCD/GPIO6[10]/SD_DAT4
PC_12/U1_DTR/GPIO6[11]/I2S0_TX_SDA/SD_DAT5
PC_13/U1_TXD/GPIO6[12]/I2S0_TX_WS/SD_DAT6
PC_14/U1_RXD/GPIO6[13]/ENET_TX_ER/SD_DAT7

PD_0/CTOUT_15/EMC_DQMOUT2/GPIO6[14]
PD_1/EMC_CKEOUT2/GPIO6[15]/SD_POW
PD_2/CTOUT_7/EMC_D16/GPIO6[16]
PD_3/CTOUT_6/EMC_D17/GPIO6[17]
PD_4/CTOUT_8/EMC_D18/GPIO6[18]
PD_5/CTOUT_9/EMC_D19/GPIO6[19]
PD_6/CTOUT_10/EMC_D20/GPIO6[20]
PD_7/CTIN_5/EMC_D21/GPIO6[21]
PD_8/CTIN_6/EMC_D22/GPIO6[22]
PD_9/CTOUT_13/EMC_D23/GPIO6[23]
PD_10/CTIN_1/EMC_BLS3/GPIO6[24]
PD_11/EMC_CS3/GPIO6[25]/USB1_ULPI_D0/CTOUT_14
PD_12/EMC_CS2/GPIO6[26]/CTOUT_10
PD_13/CTIN_0/EMC_BLS2/GPIO6[27]/CTOUT_10
PD_14/EMC_DVCS2/GPIO6[28]/CTOUT_11
PD_15/EMC_A17/GPIO6[29]/SD_WP/CTOUT_8
PD_16/EMC_A16/GPIO6[30]/SD_VOLT2/CTOUT_12

PE_0/EMC_A18/GPIO7[9]/CAN1_TD
PE_1/EMC_A19/GPIO7[1]/CAN1_RD
PE_2/ADCTRIG0/CAN0_RD/EMC_A20/GPIO7[2]
PE_3/CAN0_TD/ADCTRIG1/EMC_A21/GPIO7[3]
PE_4/EMC_A22/GPIO7[4]
PE_5/CTOUT_3/U1_RTS/EMC_D24/GPIO7[5]
PE_6/CTOUT_2/U1_RI/EMC_D25/GPIO7[6]
PE_7/CTOUT_5/U1_CTS/EMC_D26/GPIO7[7]
PE_8/CTOUT_4/U1_DSR/EMC_D27/GPIO7[8]
PE_9/CTIN_4/U1_DCD/EMC_D28/GPIO7[9]
PE_10/CTIN_3/U1_DTR/EMC_D29/GPIO7[10]
PE_11/CTOUT_12/U1_TXD/EMC_D30/GPIO7[11]
PE_12/CTOUT_11/U1_RXD/EMC_D31/GPIO7[12]
PE_13/CTOUT_14/I2C1_SDA/EMC_DQMOUT3/GPIO7[13]
PE_14/EMC_DVCS3/GPIO7[14]
PE_15/CTOUT_0/I2C1_SCL/EMC_CKEOUT3/GPIO7[15]

PF_0/SSP0_SCK/GP_CLKIN/I2S1_TX_MCLK
PF_1/SSP0_SSEL/GPIO7[16]
PF_2/U3_TXD/SSP0_MISO/GPIO7[17]
PF_3/U3_RXD/SSP0_MOSI/GPIO7[18]
PF_4/SSP1_SCK/GP_CLKIN/TRACECLK/I2S0_TX_MCLK/I2S0_RX_SCK
PF_5/U3_UCLK/SSP1_SSEL/TRACEDATA[0]/GPIO7[19]/ADC1_4
PF_6/U3_DIR/SSP1_MISO/TRACEDATA[1]/GPIO7[20]/I2S1_TX_SDA/ADC1_3
PF_7/U3_BAUD/SSP1_MOSI/TRACEDATA[2]/GPIO7[21]/I2S1_TX_WS/ADC1_7
PF_8/U0_UCLK/CTIN_2/TRACEDATA[3]/GPIO7[22]/ADC0_2
PF_9/U0_DIR/CTOUT_16/GPIO7[23]/ADC1_2
PF_10/U0_TXD/GPIO7[24]/SD_WP/ADC0_5
PF_11/U0_RXD/GPIO7[25]/SD_VOLT2/ADC1_5

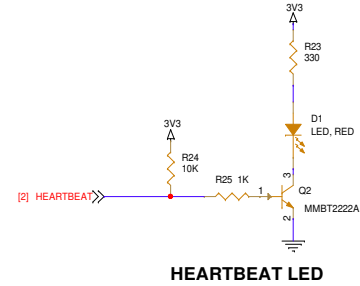
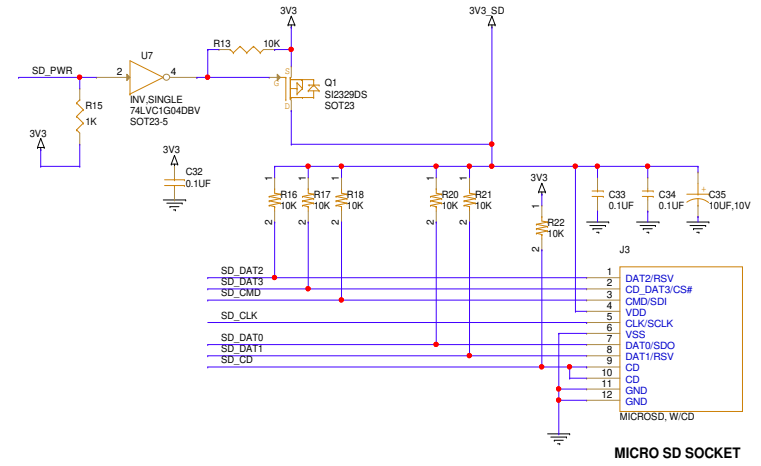
B15 >>> LCDVD23 [7]
A14 >>> LCDVD22 [7]
B12 >>> LCDVD21 [7]
A13 >>> LCDVD20 [7]
B11 >>> LCDVD15 [7]
A12 >>> LCDVD14 [7]
A6 >>> LCDVD13 [7]

D4 1 >>> SD_CLK [6]
E4 R66 V1 33 >>> GPIO6.0/ENET_MDC/T3_CAP0/U1_RI [6]
F6 >>> GPIO6.1/CTS1 [6]
F4 >>> SD_DAT0 [6]
G4 >>> SD_DAT1 [6]
H6 >>> SD_DAT2 [6]
G5 >>> SD_DAT3 [6]
N4 >>> SD_CD [6]
K2 >>> GPIO6.8/ENET_RX_ER/T3_MAT2 [6]
M6 >>> SD_CMD [6]
L5 >>> GPIO6.12/TXD1 [6]
L6 >>> GPIO6.13/RXD1 [6]
N1 >>> GPIO6.12/TXD1 [6]
N1 >>> GPIO6.13/RXD1 [6]

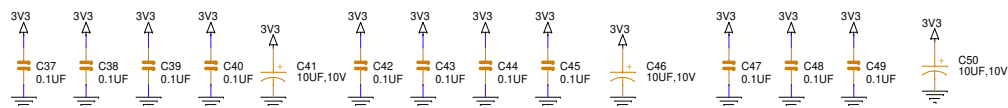
N2 >>> SD_PWR [4]
P1 >>> DOM2 [4]
R1 >>> D16 [6]
P4 >>> D17 [6]
T2 >>> D18 [6]
R6 >>> D19 [6]
R6 >>> D20 [6]
T6 >>> D21 [6]
R8 >>> D22 [6]
T11 >>> D23 [6]
P11 >>> GPIO6.24/CTIN1 [6]
N9 >>> GPIO6.25/CTOUT14 [6]
N11 >>> GPIO6.26/CTOUT10 [6]
T14 >>> GPIO6.27/CTOUT13 [6]
R13 >>> GPIO6.28/CTOUT11 [6]
T15 >>> RTC_IRQn [6]
R14 >>> GPIO6.30/CTOUT12 [6]

P14 >>> PERIPH_RSTn [8]
N14 >>> GPIO7.1 [8]
M14 >>> GPIO7.2 [8]
K12 >>> GPIO7.4/NMI [6]
K13 >>> GPIO7.4/NMI [6]
N16 >>> D24 [6]
M16 >>> D25 [6]
F15 >>> D26 [6]
F14 >>> D27 [6]
E16 >>> D28 [6]
E14 >>> D29 [6]
D16 >>> D30 [6]
D15 >>> D31 [6]
G14 >>> DOM3 [4]
C15 >>> RST_OUT [1]
E13 >>> RST_OUT [1]

D12 >>> SSP0_SCK [8]
E11 >>> GPIO7.16/SSP0_SSEL [8]
D11 >>> GPIO7.17/U3_TXD/SSP0_MISO [8]
E10 >>> GPIO7.18/U3_RXD/SSP0_MOSI [8]
D10 >>> GPIO7.19/ADC1_4/U3_UCLK/SSP1_SSEL [8]
E9 >>> GPIO7.20/ADC1_3/U3_DIR/SSP1_MISO [8]
E7 >>> GPIO7.21/ADC1_7 [7]
E6 >>> GPIO7.22/ADC0_2/U0_UCLK/CTIN2 [6]
D6 >>> GPIO7.23/ADC1_2 [7]
A3 >>> GPIO7.24/TXD0 [6]
A2 >>> GPIO7.25/RXD0 [6]



FUTURE DESIGNS, INC. 996 A CLEANER WAY HUNTSVILLE, AL 35805	
File	MICROPROCESSOR IO2
Size	Document Number UEZGII-4357-70WVN
Date	Tuesday, September 26, 2021
Sheet	3 of 8
Rev	1.0



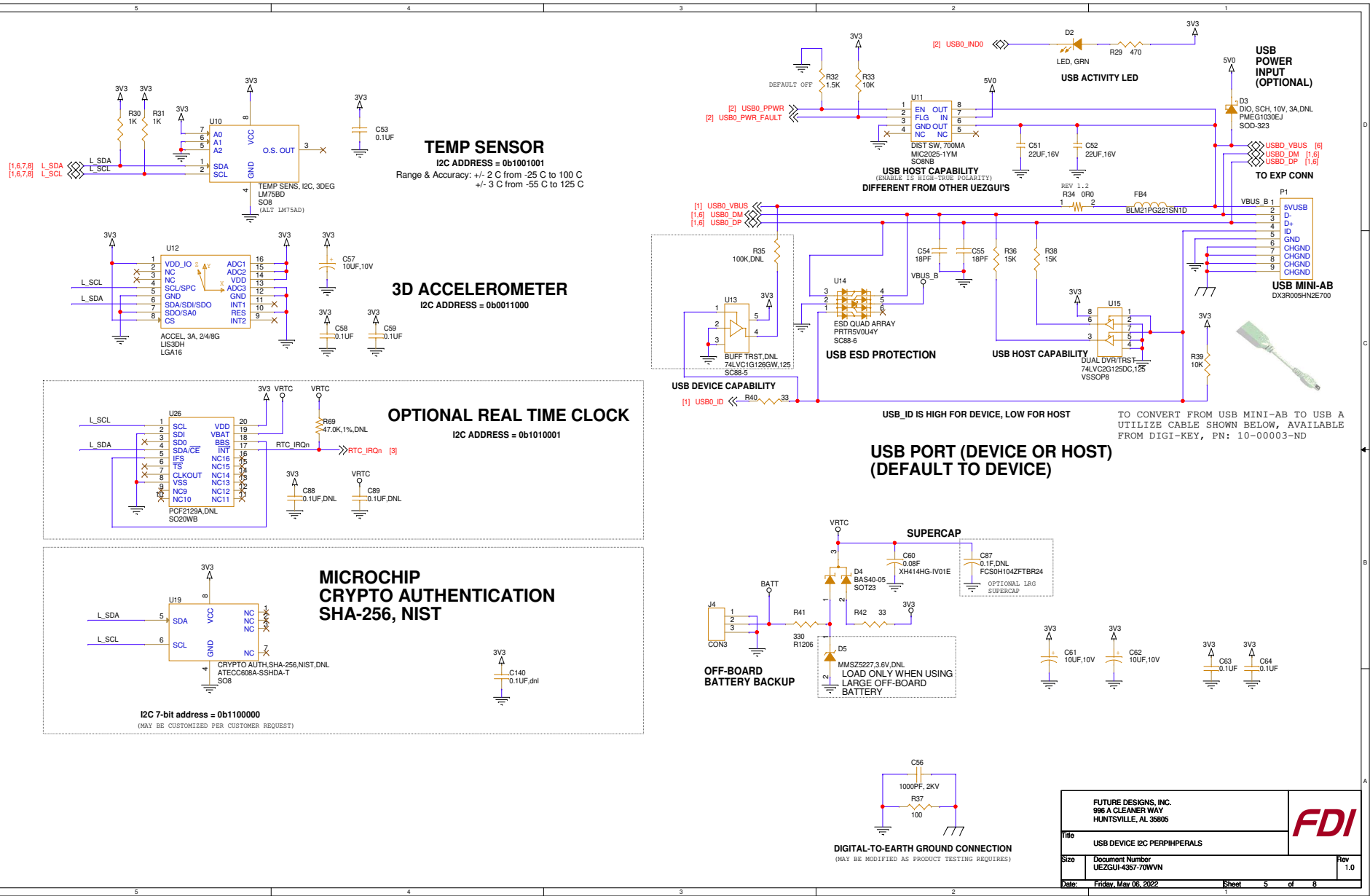
Title	SDRAM QSPI FLASH
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Size B	Document Number UEZGUI-4357-70WVN
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Date: Tuesday, May 03, 2022

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FDI



TEMP SENSOR

I2C ADDRESS = 0b1001001
Range & Accuracy: +/- 2 C from -25 C to 100 C
+/- 3 C from -55 C to 125 C

3D ACCELEROMETER

I2C ADDRESS = 0b0011000

OPTIONAL REAL TIME CLOCK

I2C ADDRESS = 0b1010001

MICROCHIP CRYPTO AUTHENTICATION SHA-256, NIST

I2C 7-bit address = 0b1100000

(MAY BE CUSTOMIZED PER CUSTOMER REQUEST)

USB PORT (DEVICE OR HOST) (DEFAULT TO DEVICE)

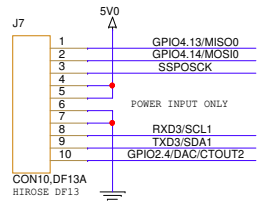
DIGITAL-TO-EARTH GROUND CONNECTION
(MAY BE MODIFIED AS PRODUCT TESTING REQUIRES)

FUTURE DESIGNS, INC. 996 A CLEANER WAY HUNTSVILLE, AL 35805		FDI
File	USB DEVICE I2C PERIPHERALS	
Size	Document Number UEZGUI-4357-70WVN	Rev 1.0
Date	Friday, May 06, 2022	Sheet 5 of 8

[3] GPIO7.19/ADC1.4/U3_UCLK/SSP1_SSEL
[3] GPIO7.20/ADC1.3/U3_DIR/SSP1_MISO
[3] GPIO7.22/ADC0.2/U0_CLK/CTIN2
[2] GPIO3.12/CTOUT13/ADC0.4
[2] GPIO3.13/CTOUT12/ADC0.3

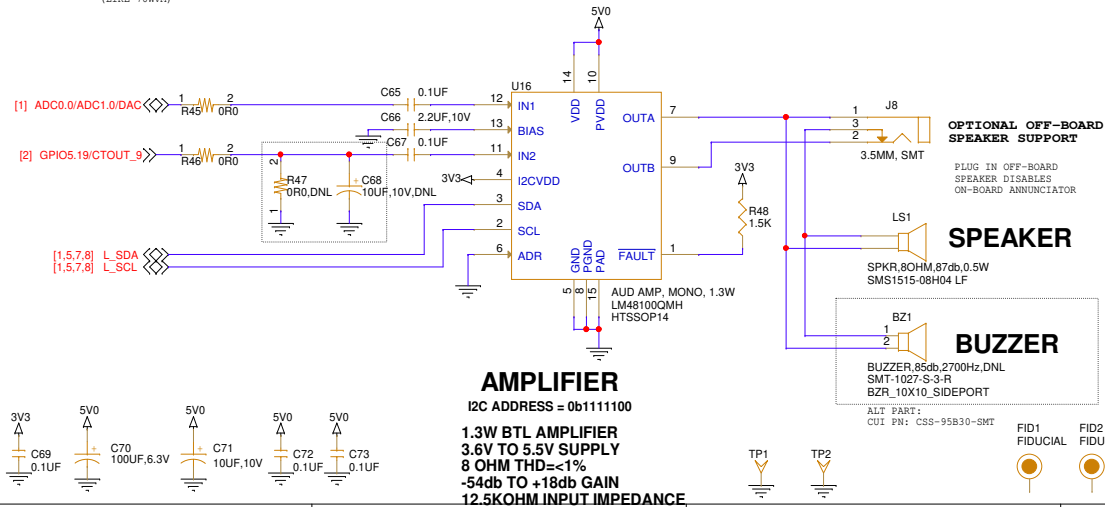
[2] GPIO4.8/QEI_IDX/TXD2
[2] GPIO4.9/QEI_PHB/RXD2
[2] GPIO4.15/MCOA0/TXD3
[2] GPIO5.17/MCOB0/RXD3
[3] GPIO6.24/CTIN1
[3] GPIO6.25/CTOUT14
[3] GPIO6.27/CTOUT10
[3] GPIO6.28/CTOUT11
[2] GPIO4.10/QEI_PHA
[3] GPIO6.30/CTOUT12

SECONDARY EXPANSION CONNECTOR



ALTERNATE POWER & COMM INTERFACE

(LIKE 70WVN)



AMPLIFIER

I2C ADDRESS = 0b11111100

1.3W BTL AMPLIFIER
3.6V TO 5.5V SUPPLY
8 OHM THD<1%
-54db TO +18db GAIN
12.5KOHM INPUT IMPEDANCE

OPTIONAL OFF-BOARD SPEAKER SUPPORT

PLUG IN OFF-BOARD SPEAKER DISEMBLES ON-BOARD ANNUNCIATOR

SPEAKER

SPKR,8OHM,87db,0.5W
SMS1515-08H04 LF

BUZZER

BUZZER,85db,2700Hz,DNL
SMT-1027-S-3-R
BZR_10X10_SIDEPORT

ALT PART:
CUI PN: CSS-95B30-SMT

FID1 FIDUCIAL FID2 FIDUCIAL FID3 FIDUCIAL FID4 FIDUCIAL FID5 FIDUCIAL

[5] USB0_VBUS
[1,5] USB0_DM
[1,5] USB0_DP
[3] GPIO7.24/TXD0
[3] GPIO7.25/RXD0
[3] GPIO7.4/NMI

[2] GPIO0.13/ENET_TXD0/U2_DIR/T0_MAT3/CAN1_RD
[2] GPIO0.15/ENET_TXD1/SSP1_SEL/T0_CAP2
[2] GPIO0.1/ENET_TXEN/SSP1_MOSI
[2] GPIO0.3/ENET_CRSDV/U2_RXD/T0_MAT0
[2] GPIO0.2/ENET_RXD0/U2_TXD/T0_MAT1
[2] GPIO0.0/ENET_RXD1/SSP1_MISO

[3] GPIO6.8/ENET_RX_ER/T3_MAT2
[2] ENET_REFCLK/SSP1_SCK

[3] GPIO6.0/ENET_MDC/T3_CAP0/U1_RI
[2] GPIO0.12/ENET_MDIO/U2_UCLK/T0_CAP3/CAN1_TD
[2] GPIO2.1/ADC0.1/CTOUT1
[2] GPIO2.4/DAC/CTOUT2

[1,4,8] RESET_OUTn
[1] RESET_INn

[2] I2SRX_SCK
[2] GPIO5.8/I2SRX_WS/CAN0RD
[2] GPIO5.9/I2SRX_SDA/CAN0TD
[2] I2STX_SCK/SSP0SCK
[2] GPIO4.13/MCOA2/I2STX_WS/MISO0
[2] GPIO4.14/MCOB2/I2STX_SDA/MOSI0

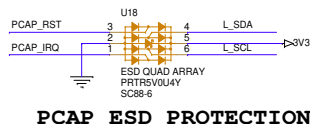
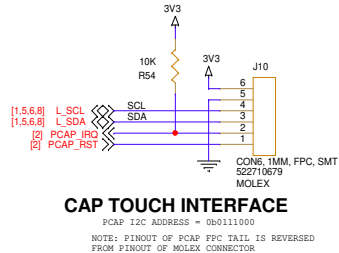
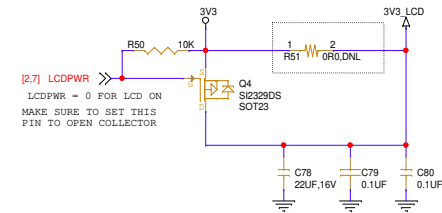
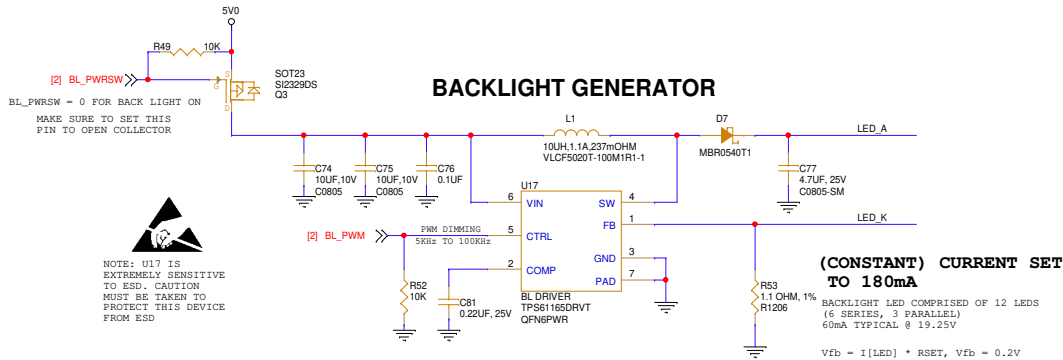
[2] GPIO5.18/MCOA1/USB1H_PPWR/TXD0
[2] GPIO4.11/MCOB1/USB1H_OVC/RXD0
[2] GPIO5.5/CTIN2/T3_MAT/USB1_VBUS
[1] USB1_DP
[1] USB1_DM

[3] GPIO6.12/TXD1
[3] GPIO6.13/RXD1
[3] GPIO6.1/CTI1
[3] GPIO6.2/RTS1/ADC1.0
[2] GPIO3.8/CT_OUT14

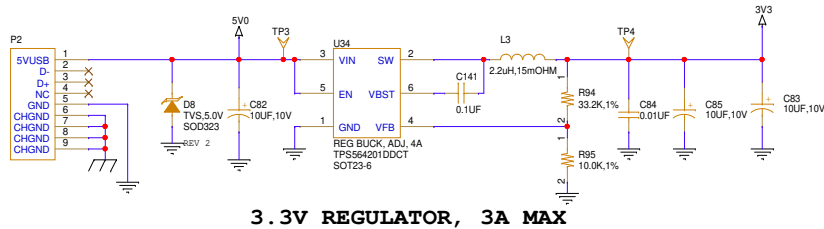
[2,8] GPIO5.3/I2C1_SDA/TXD3/CTIN1/T3_MAT0
[2,8] GPIO5.4/I2C1_SCL/RXD3/CTIN0/T3_MAT1

PRIMARY EXPANSION CONNECTOR

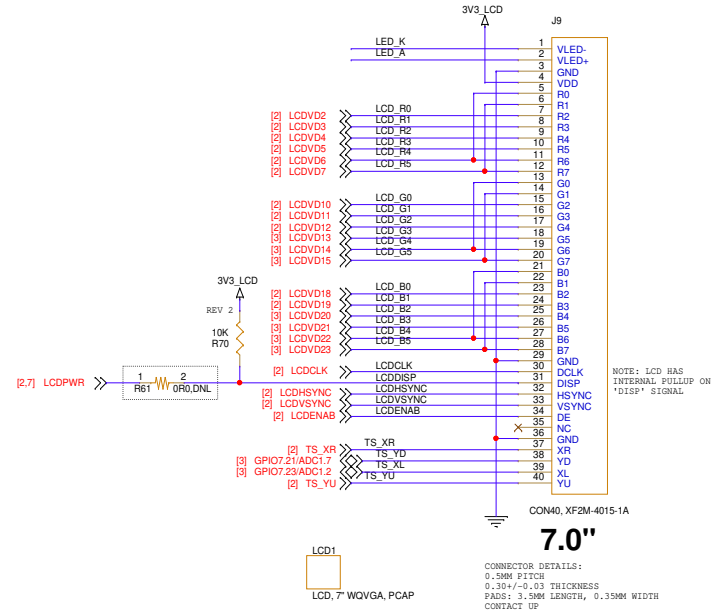
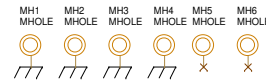
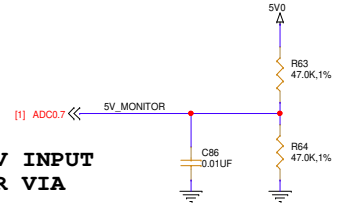
FUTURE DESIGNS, INC. 996 A CLEANER WAY HUNTSVILLE, AL 35805		
Title IO CONN SPKR		
Size	Document Number UEZGUI-4357-70WVN	Rev 1.
Date:	Thursday, December 16, 2021	Sheet 6 of 8



ALTERNATIVE POWER INPUT 1.2A MIN

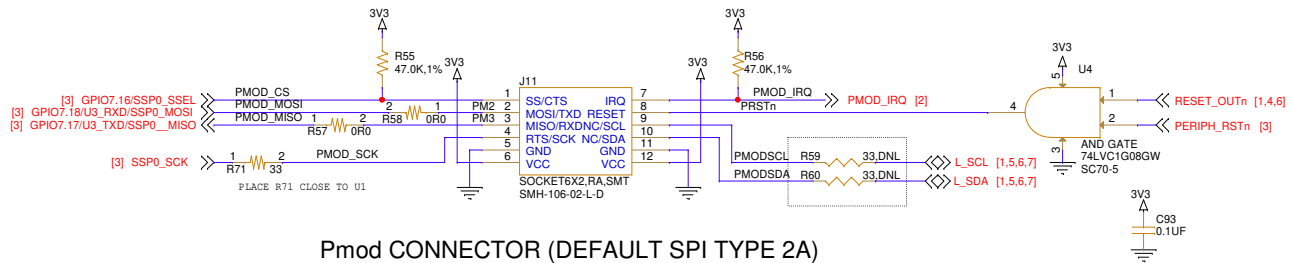


WALL 5V INPUT MONITOR VIA ADC



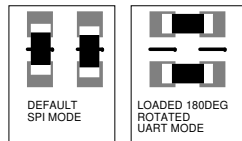
FUTURE DESIGNS, INC. 996 A CLEANER WAY HUNTSVILLE, AL 35805		
File	LCD TP BL, PMOD, VREG	
Size	Document Number UEZGII-4357-70WVN	Rev 1.0
Date:	Tuesday, May 03, 2022	Sheet 7 of 8

FDI



Pmod CONNECTOR (DEFAULT SPI TYPE 2A)

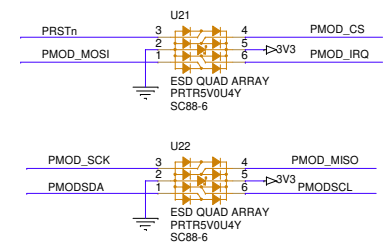
R57 / R58 CONFIGURATION



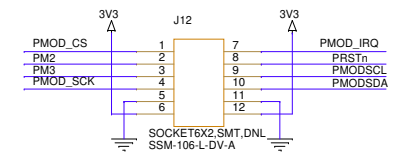
TO USE PMOD IN UART TYPE 4A:
ROTATE R57/R58 TO CONNECT RXD/TXD
PROPERLY

RIGHT ANGLE SMT

NOTE: TO SUPPORT I2C;
LOAD R59/R60
DO NOT LOAD R57/R58/R71



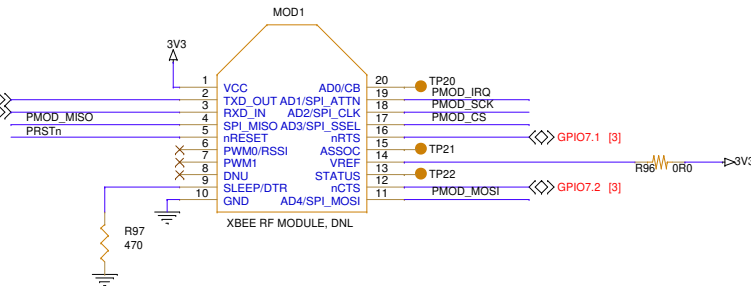
Pmod ESD PROTECTION



OPTIONAL STRAIGHT SMT

SIGNALS SHARED WITH
PRIMARY EXPANSION
CONNECTOR

[2,6] GPIO5.4/I2C1_SCL/RXD3/CTIN0/T3_MAT1
[2,6] GPIO5.3/I2C1_SDA/TXD3/CTIN1/T3_MAT0



XBEE SOCKET FOR WIRELESS MODULES

CAUTION: DO NOT EXCEED MAXIMUM 3.3V CURRENT AVAILABLE
MAY NEED EXPANSION BOARD 3.3V REGULATOR

FUTURE DESIGNS, INC. 996 A CLEANER WAY HUNTSVILLE, AL 35805		
Title PMOD AND XBEE SOCKET		
Size	Document Number UEZGUI-4357-70WVN	Rev 1.0
Date:	Tuesday, September 28, 2021	Sheet 8 of 8