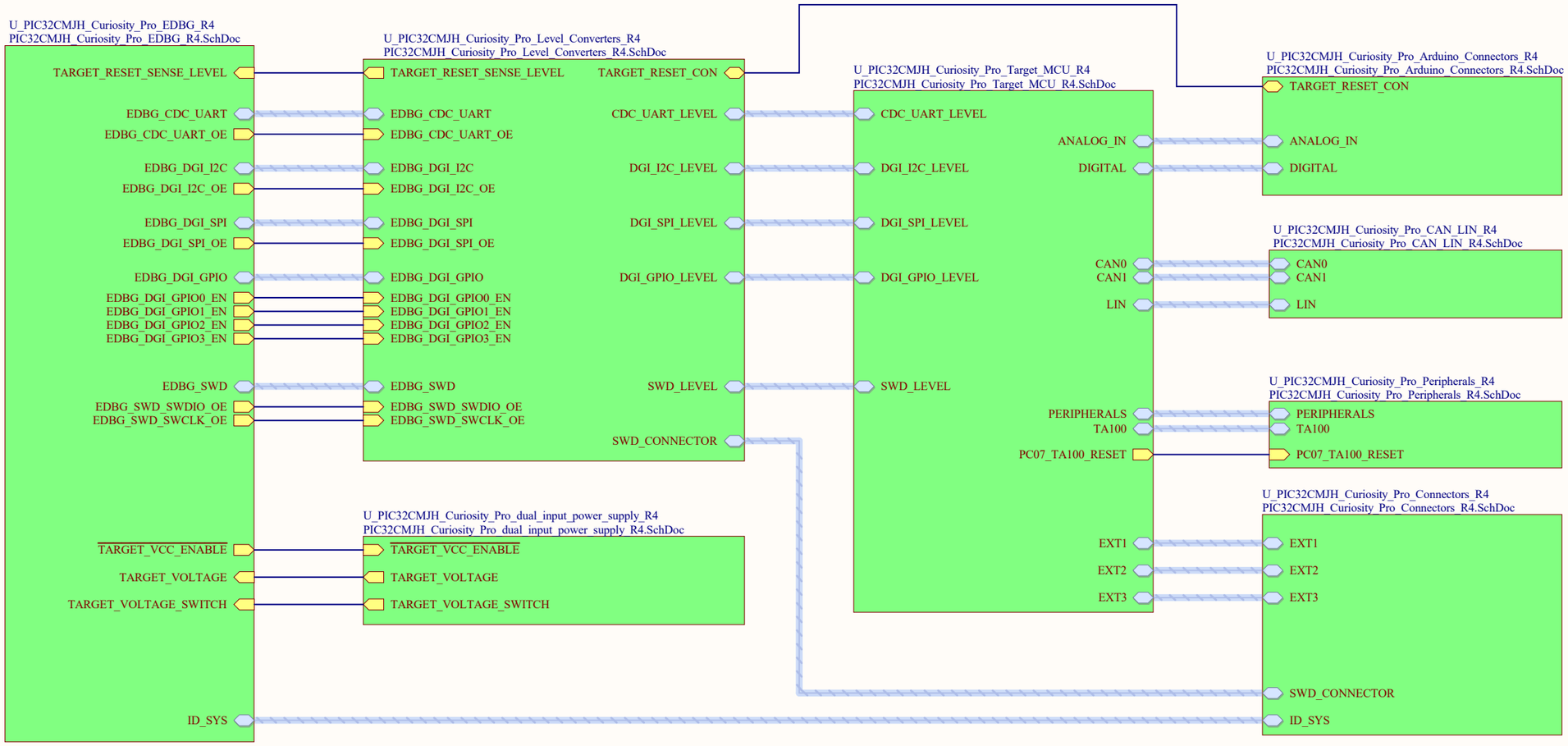
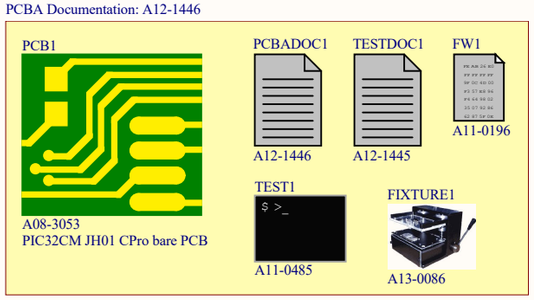
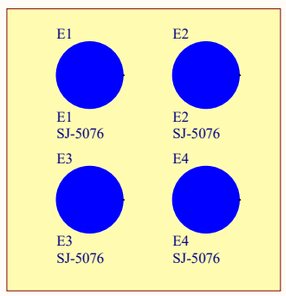


EV81X90A
Project Level: A09-3364
PCBA in Bag wLabel: A09-3363
PCBA: A09-3362
PCBA Documentation: A12-1446



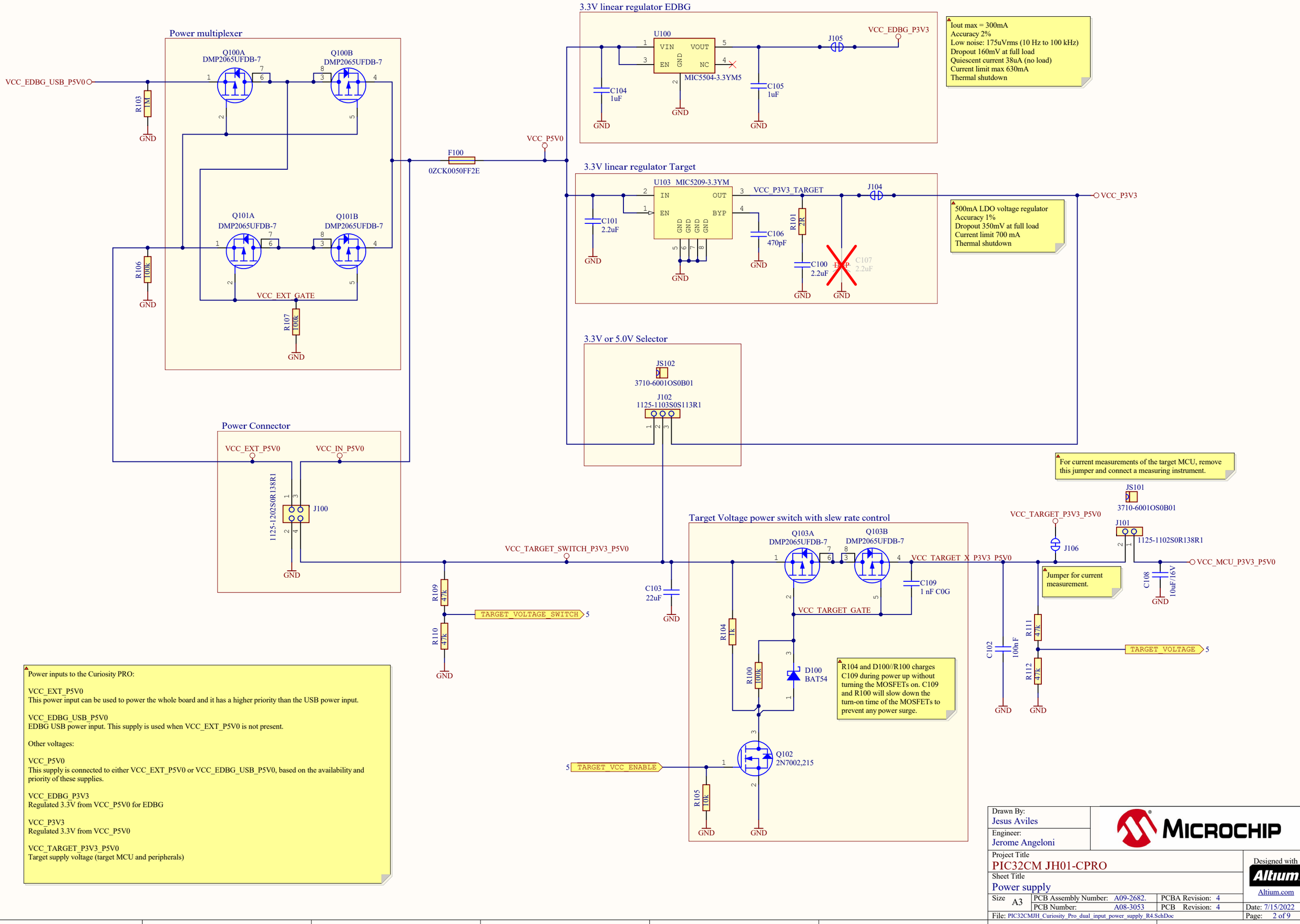


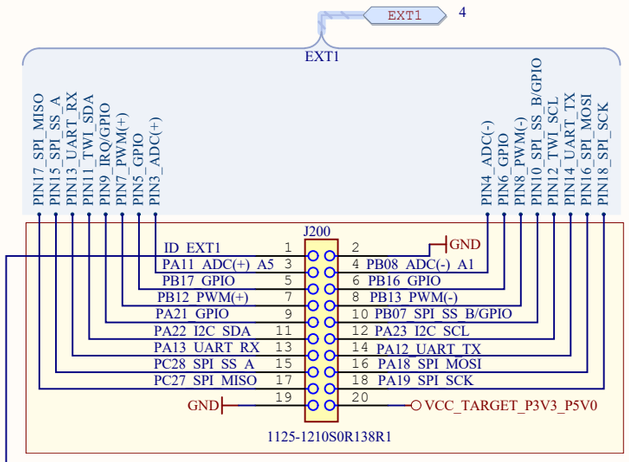
LABEL1

Product number/revision
Serial number

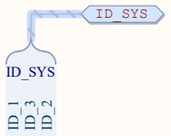
Label PCBA: A09-0611

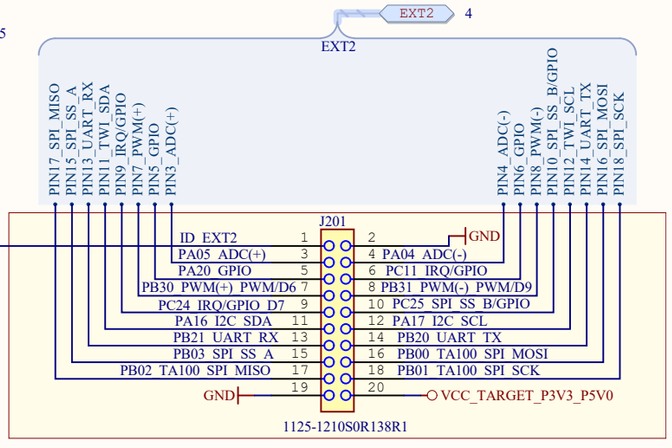
Drawn By: Jesus Aviles			
Engineer: Jerome Angeloni			
Project Title: PIC32CM JH01-CPRO			Designed with Altium — Altium.com
Sheet Title: Top Level Schematics			
Size A3	PCB Assembly Number: A09-2682.	PCBA Revision: 4	Date: 7/15/2022
	PCB Number: A08-3053	PCB Revision: 4	Page: 1 of 9
File: PIC32CMJH_Curiosity_Pro_TopLevel_R4.SchDoc			


Power multiplexer
Q100A
DMP2065UFDB-7
Q100B
DMP2065UFDB-7
Q101A
DMP2065UFDB-7
Q101B
DMP2065UFDB-7
VCC_EDBG_USB_P5V0
R103
1M
R106
100k
R107
100k
VCC_EXT_GATE
GND
F100
0ZCK0050FF2E
VCC_P5V0
3.3V linear regulator EDBG
U100
VIN
VOUT
EN
GND
NC
MIC5504-3.3YM5
C104
1uF
C105
1uF
J105
VCC_EDBG_P3V3
Iout max = 300mA
Accuracy 2%
Low noise: 175uVrms (10 Hz to 100 kHz)
Dropout 160mV at full load
Quiescent current 38uA (no load)
Current limit max 630mA
Thermal shutdown
3.3V linear regulator Target
U103_MIC5209-3.3YM
IN
OUT
EN
BYP
VCC_P3V3_TARGET
J104
VCC_P3V3
C101
2.2uF
C106
470pF
R101
2R
C100
2.2uF
C107
2.2uF
500mA LDO voltage regulator
Accuracy 1%
Dropout 350mV at full load
Current limit 700 mA
Thermal shutdown
3.3V or 5.0V Selector
JS102
3710-6001OS0B01
J102
1125-1103S0S113R1
For current measurements of the target MCU, remove this jumper and connect a measuring instrument.
JS101
3710-6001OS0B01
Power Connector
VCC_EXT_P5V0
VCC_IN_P5V0
1125-1202S0R138R1
J100
VCC_TARGET_SWITCH_P3V3_P5V0
R109
47k
R110
47k
TARGET_VOLTAGE_SWITCH
C103
22uF
Target Voltage power switch with slew rate control
Q103A
DMP2065UFDB-7
Q103B
DMP2065UFDB-7
VCC_TARGET_X_P3V3_P5V0
C109
1 nF C0G
VCC_TARGET_GATE
R104
1k
R100
100k
D100
BAT54
R104 and D100//R100 charges C109 during power up without turning the MOSFETs on. C109 and R100 will slow down the turn-on time of the MOSFETs to prevent any power surge.
TARGET_VCC_ENABLE
Q102
2N7002,215
R105
10k
VCC_TARGET_P3V3_P5V0
J106
Jumper for current measurement.
J101
1125-1102S0R138R1
VCC_MCU_P3V3_P5V0
C108
10uF/16V
C102
100nF
R111
47k
R112
47k
TARGET_VOLTAGE
Power inputs to the Curiosity PRO:
VCC_EXT_P5V0
This power input can be used to power the whole board and it has a higher priority than the USB power input.
VCC_EDBG_USB_P5V0
EDBG USB power input. This supply is used when VCC_EXT_P5V0 is not present.
Other voltages:
VCC_P5V0
This supply is connected to either VCC_EXT_P5V0 or VCC_EDBG_USB_P5V0, based on the availability and priority of these supplies.
VCC_EDBG_P3V3
Regulated 3.3V from VCC_P5V0 for EDBG
VCC_P3V3
Regulated 3.3V from VCC_P5V0
VCC_TARGET_P3V3_P5V0
Target supply voltage (target MCU and peripherals)
Drawn By: Jesus Aviles
Engineer: Jerome Angeloni
MICROCHIP
Project Title: PIC32CM JH01-CPRO
Sheet Title: Power supply
Size A3
PCB Assembly Number: A09-2682.
PCBA Revision: 4
PCB Number: A08-3053
PCB Revision: 4
File: PIC32CMJH_Curiosity_Pro_dual_input_power_supply_R4.SchDoc
Designed with Altium
Altium.com
Date: 7/15/2022
Page: 2 of 9



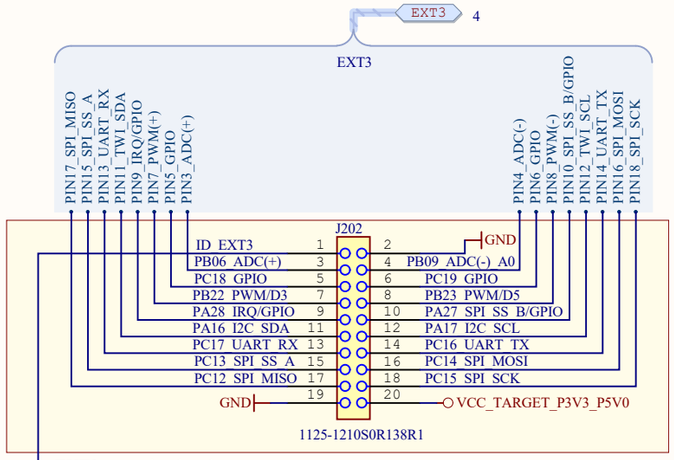
EXT1 extension header





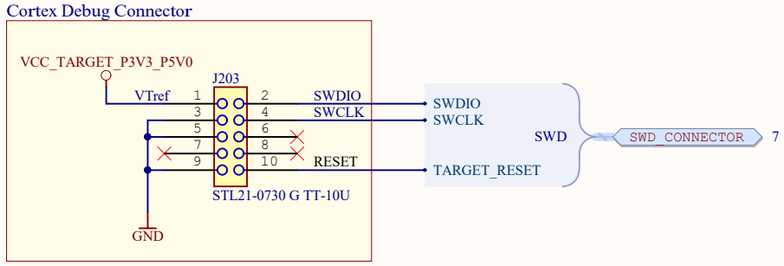
EXT2 extension header

Check Voltage compatability (3.3V vs 5.0V) on Extension Board before plugging in.
J102, pins 1-2 shorted = 5.0V operation.
J102, pin 2-3 shorted = 3.3V operation.

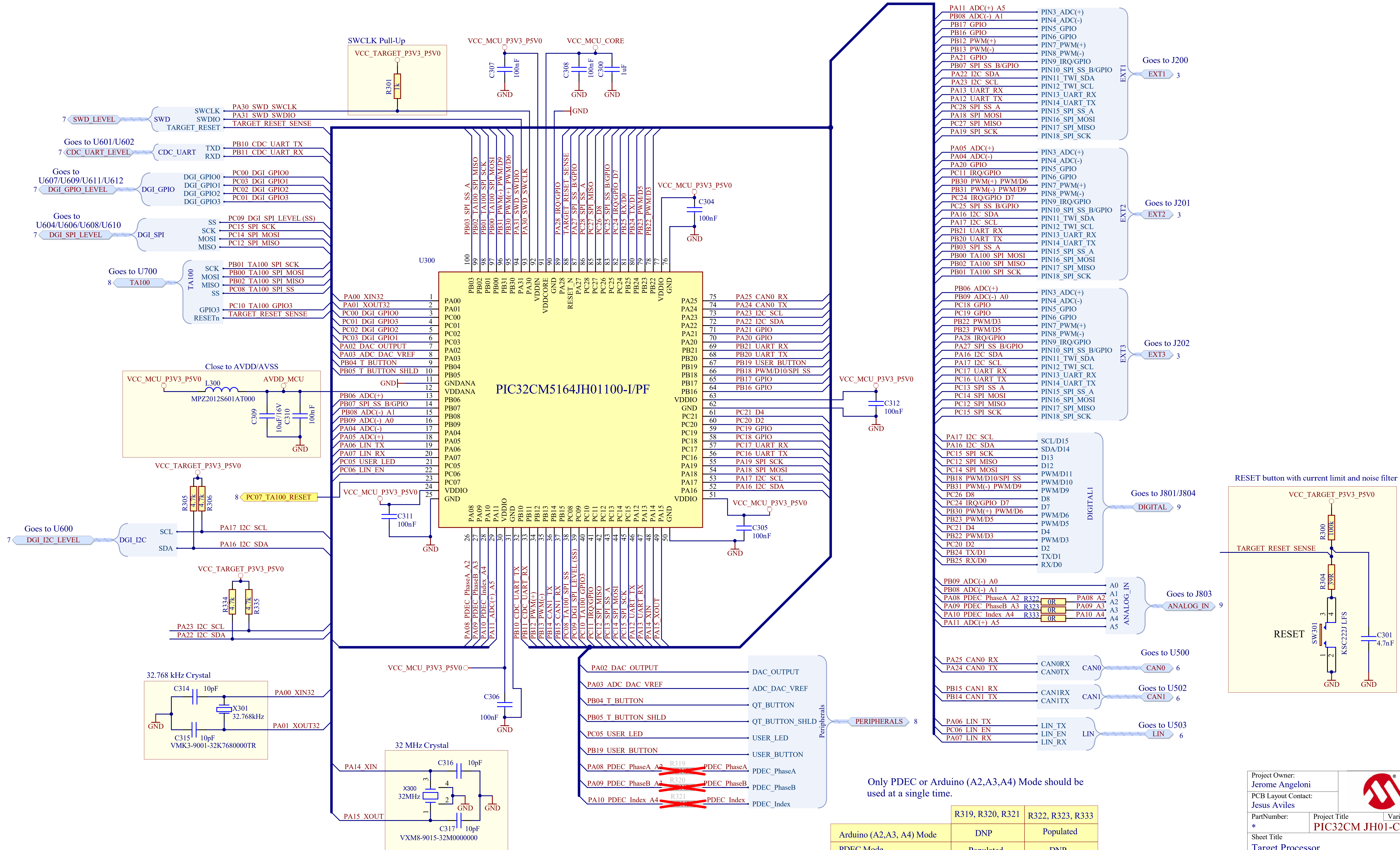


EXT3 extension header

Cortex Debug Connector



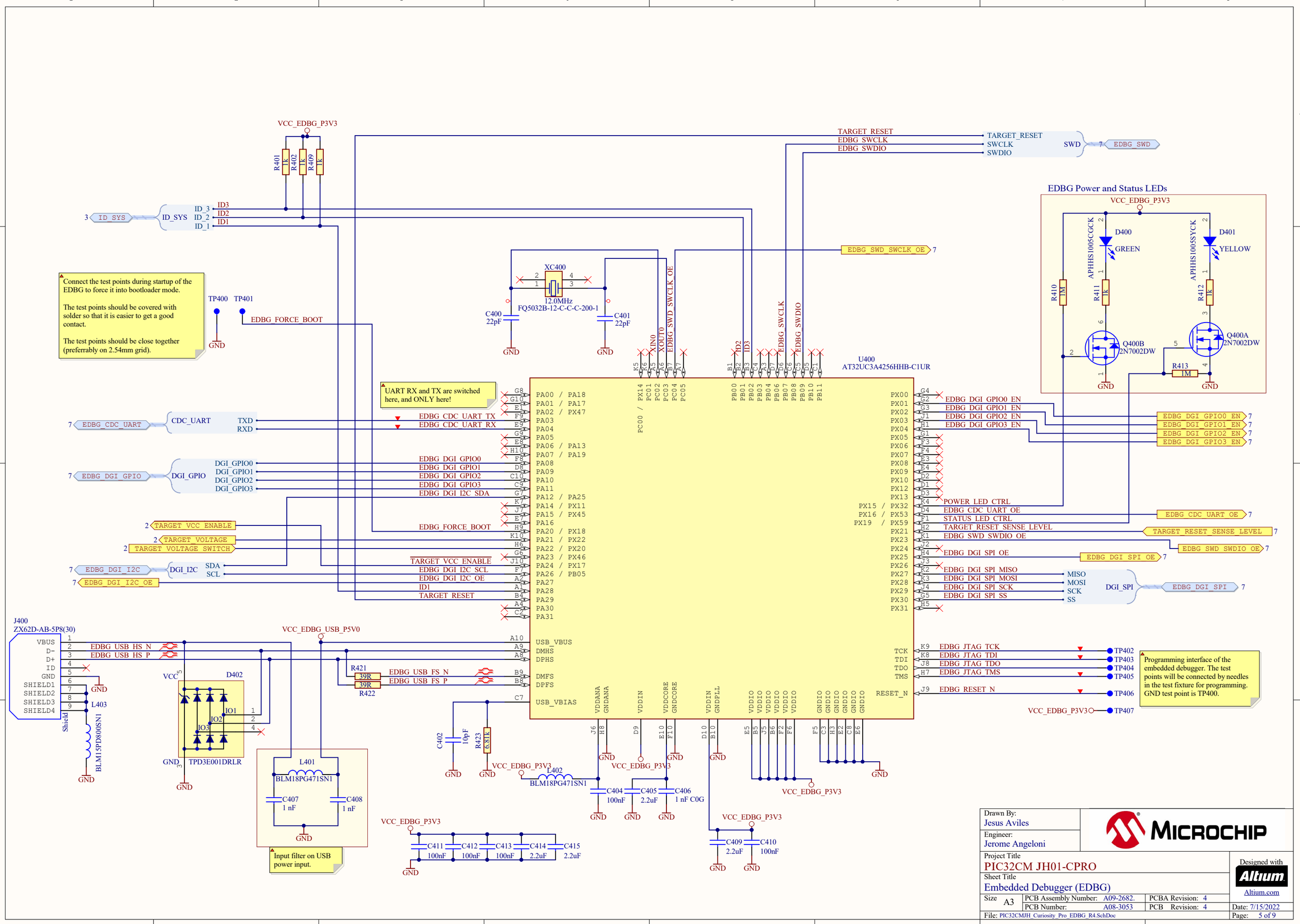
Drawn By: Jesus Aviles			
Engineer: Jerome Angeloni			
Project Title: PIC32CM JH01-CPRO			Designed with Altium — Altium.com
Sheet Title: Extension connectors			
Size: A3	PCB Assembly Number: A09-2682.	PCBA Revision: 4	Date: 7/15/2022
	PCB Number: A08-3053	PCB Revision: 4	Page: 3 of 9
File: PIC32CMJH_Curiosity_Pro_Connectors_R4.SchDoc			

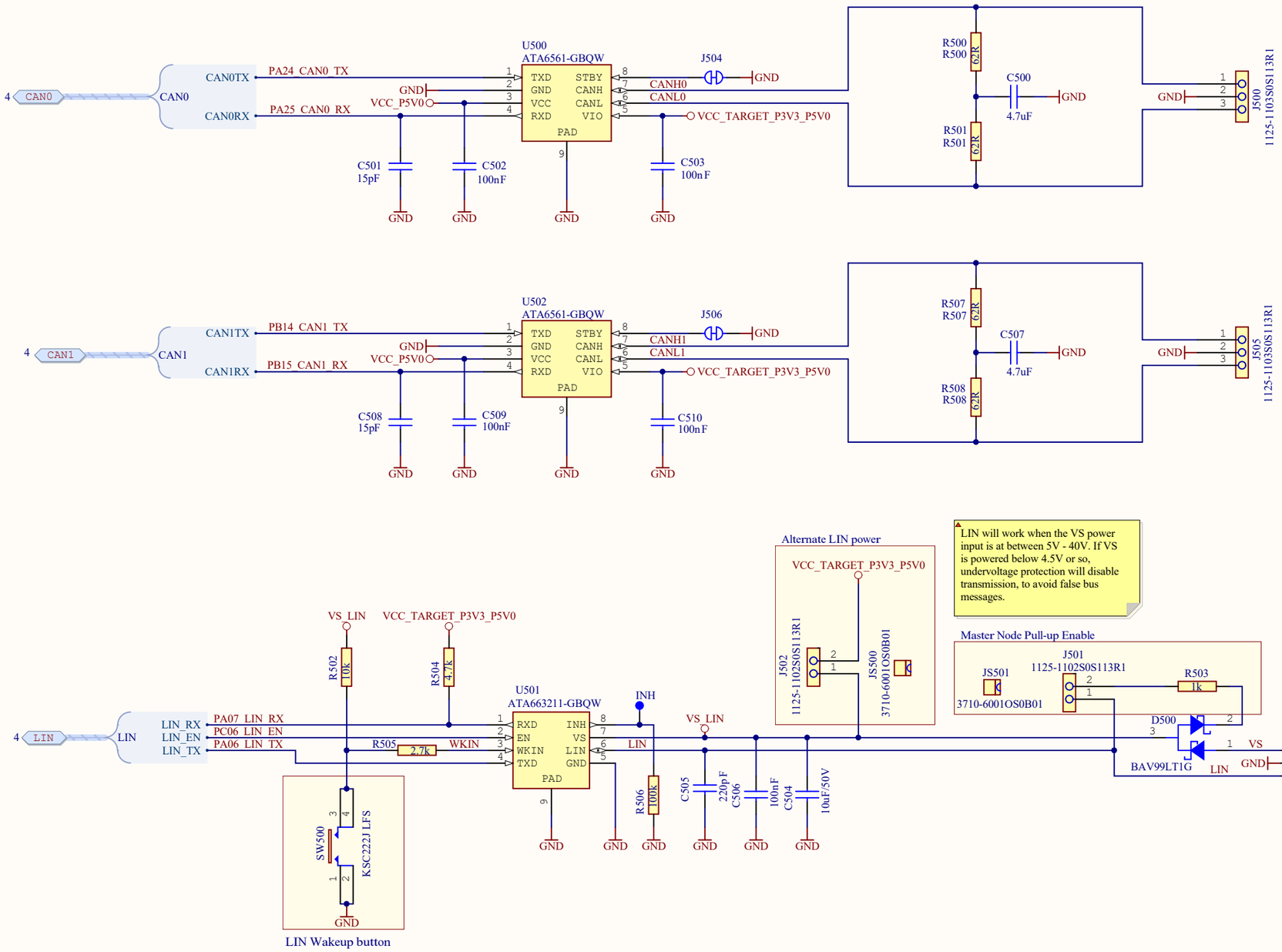


Only PDEC or Arduino (A2,A3,A4) Mode should be used at a single time.

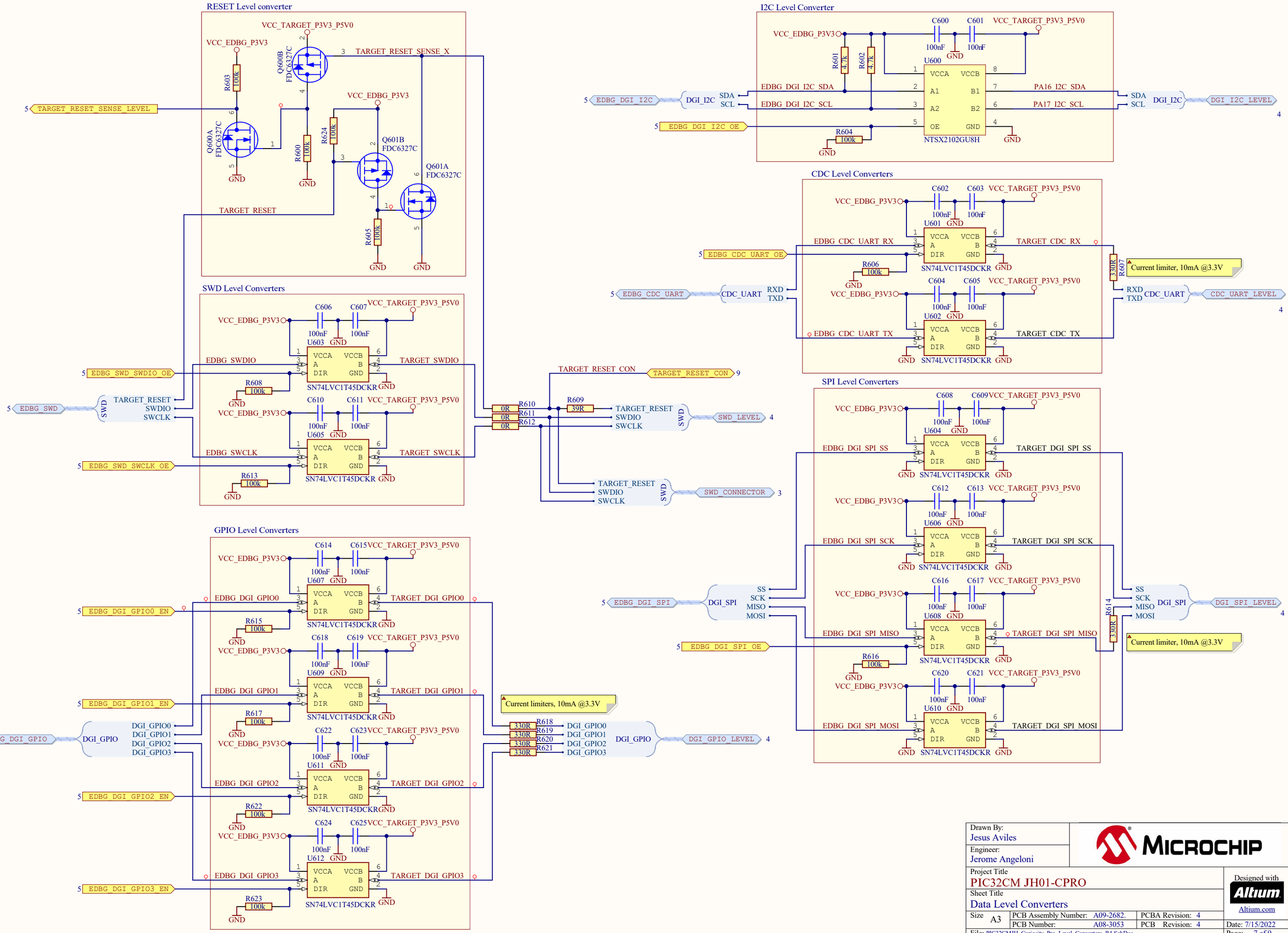
	R319, R320, R321	R322, R323, R333
Arduino (A2,A3, A4) Mode	DNP	Populated
PDEC Mode	Populated	DNP

Project Owner: Jerome Angeloni
PCB Layout Contact: Jesus Aviles
PartNumber: *
Project Title: PIC32CM JH01-CPRO
Variant: PIC32CMJH_Curiosity_Pro_R4
Sheet Title: Target Processor
Size: C
SCH #: 03-A09-2682 Rev: 4
PCB #: 04-A08-3053 Rev: 4
Date: 7/15/2022
Sheet 4 of 9
File: PIC32CMJH_Curiosity_Pro_Target_MCU_R4.SchDoc
Designed with Altium
Altium.com


VCC_EDBG_P3V3
R401 1k
R402 1k
R409 1k
TARGET_RESET
EDBG_SWCLK
EDBG_SWDIO
TARGET_RESET
SWCLK
SWDIO
SWD
7 EDBG_SWD
EDBG Power and Status LEDs
VCC_EDBG_P3V3
APHHS1005CGCK
D400
GREEN
APHHS1005SYCK
D401
YELLOW
R410 1M
R411 1k
R412 1k
R413 1M
Q400B 2N7002DW
Q400A 2N7002DW
GND
3 ID_SYS
ID_SYS
ID_3
ID_2
ID_1
ID3
ID2
ID1
EDBG_SWD_SWCLK_OE
7
XC400
12.0MHz
FQ5032B-12-C-C-C-200-1
C400 22pF
C401 22pF
XIN0
XOUT0
EDBG_SWD_SWCLK_OE
ID2
ID3
EDBG_SWCLK
EDBG_SWDIO
U400
AT32UC3A4256HHB-C1UR
Connect the test points during startup of the EDBG to force it into bootloader mode.
The test points should be covered with solder so that it is easier to get a good contact.
The test points should be close together (preferrably on 2.54mm grid).
TP400
TP401
EDBG_FORCE_BOOT
GND
UART RX and TX are switched here, and ONLY here!
7 EDBG_CDC_UART
CDC_UART
TXD
RXD
EDBG_CDC_UART_TX
EDBG_CDC_UART_RX
PA00 / PA18
PA01 / PA17
PA02 / PX47
PA03
PA04
PA05
PA06 / PA13
PA07 / PA19
PA08
PA09
PA10
PA11
PA12 / PA25
PA14 / PX11
PA15 / PX45
PA16
PA20 / PX18
PA21 / PX22
PA22 / PX20
PA23 / PX46
PA24 / PX17
PA26 / PB05
PA27
PA28
PA29
PA30
PA31
PC00 / PX14
PC01
PC02
PC03
PC04
PC05
PB00
PB01
PB02
PB03
PB04
PB06
PB07
PB08
PB09
PB10
PB11
PX00
PX01
PX02
PX03
PX04
PX05
PX06
PX07
PX08
PX09
PX10
PX12
PX13
PX15 / PX32
PX16 / PX53
PX19 / PX59
PX21
PX23
PX24
PX25
PX26
PX27
PX28
PX29
PX30
PX31
EDBG_DGI_GPIO0_EN
EDBG_DGI_GPIO1_EN
EDBG_DGI_GPIO2_EN
EDBG_DGI_GPIO3_EN
7 EDBG_DGI_GPIO
DGI_GPIO
DGI_GPIO0
DGI_GPIO1
DGI_GPIO2
DGI_GPIO3
EDBG_DGI_GPIO0
EDBG_DGI_GPIO1
EDBG_DGI_GPIO2
EDBG_DGI_GPIO3
EDBG_DGI_I2C_SDA
POWER_LED_CTRL
EDBG_CDC_UART_OE
STATUS_LED_CTRL
TARGET_RESET_SENSE_LEVEL
EDBG_SWD_SWDIO_OE
EDBG_DGI_SPI_OE
EDBG_DGI_SPI_MISO
EDBG_DGI_SPI_MOSI
EDBG_DGI_SPI_SCK
EDBG_DGI_SPI_SS
2 TARGET_VCC_ENABLE
2 TARGET_VOLTAGE
2 TARGET_VOLTAGE_SWITCH
7 EDBG_DGI_I2C
DGI_I2C
SDA
SCL
7 EDBG_DGI_I2C_OE
TARGET_VCC_ENABLE
EDBG_DGI_I2C_SCL
EDBG_DGI_I2C_OE
ID1
TARGET_RESET
EDBG_CDC_UART_OE
TARGET_RESET_SENSE_LEVEL
EDBG_SWD_SWDIO_OE
EDBG_DGI_SPI_OE
MISO
MOSI
SCK
SS
DGI_SPI
EDBG_DGI_SPI
J400
ZX62D-AB-5P8(30)
VBUS
D-
D+
ID
GND
SHIELD1
SHIELD2
SHIELD3
SHIELD4
Shield
EDBG_USB_HS_N
EDBG_USB_HS_P
L403
BLM15PD800SN1
VCC_EDBG_USB_P5V0
D402
TPD3E001DRLR
IO1
IO2
IO3
R421 39R
R422 39R
EDBG_USB_FS_N
EDBG_USB_FS_P
USB_VBUS
DMHS
DPHS
DMFS
DPFS
USB_VBIAS
L401
BLM18PG471SN1
C407 1 nF
C408 1 nF
Input filter on USB power input.
C402 10pF
R423 6.81k
L402
BLM18PG471SN1
C404 100nF
C405 2.2uF
C406 1 nF C0G
C409 2.2uF
C410 100nF
C411 100nF
C412 100nF
C413 100nF
C414 2.2uF
C415 2.2uF
VDDANA
GNDANA
VDDIN
VDDCORE
GNDCORE
VDDIN
GNDPLL
VDDIO
GNDIO
RESET_N
TCK
TDI
TDO
TMS
EDBG_JTAG_TCK
EDBG_JTAG_TDI
EDBG_JTAG_TDO
EDBG_JTAG_TMS
EDBG_RESET_N
TP402
TP403
TP404
TP405
TP406
TP407
VCC_EDBG_P3V3
Programming interface of the embedded debugger. The test points will be connected by needles in the test fixture for programming. GND test point is TP400.
Drawn By: Jesus Aviles
Engineer: Jerome Angeloni
MICROCHIP
Project Title
PIC32CM JH01-CPRO
Sheet Title
Embedded Debugger (EDBG)
Designed with Altium
Altium.com
Size A3
PCB Assembly Number: A09-2682.
PCBA Revision: 4
PCB Number: A08-3053
PCB Revision: 4
Date: 7/15/2022
File: PIC32CMJH_Curiosity_Pro_EDBG_R4.SchDoc
Page: 5 of 9



Drawn By: Jesus Aviles	MICROCHIP
Engineer: Jerome Angeloni	
Project Title: PIC32CM JH01-CPRO	Designed with Altium — Altium.com
Sheet Title: CAN & LIN Interface	
Size: A3	PCB Assembly Number: A09-2682. PCBA Revision: 4
	PCB Number: A08-3053 PCB Revision: 4
File: PIC32CMJH_Curiosity_Pro_CAN_LIN_R4.SchDoc	Date: 7/15/2022
	Page: 6 of 9



Drawn By:	Jesus Aviles
Engineer:	Jerome Angeloni
Project Title	PIC32CM JH01-CPRO
Sheet Title	Data Level Converters
Size	A3
PCB Assembly Number:	A09-2682.
PCBA Revision:	4
PCB Number:	A08-3053
PCB Revision:	4
File:	PIC32CMJH_Curiosity_Pro_Level_Converters_R4.SchDoc
Date:	7/15/2022
Page:	7 of 9

MICROCHIP

Designed with Altium

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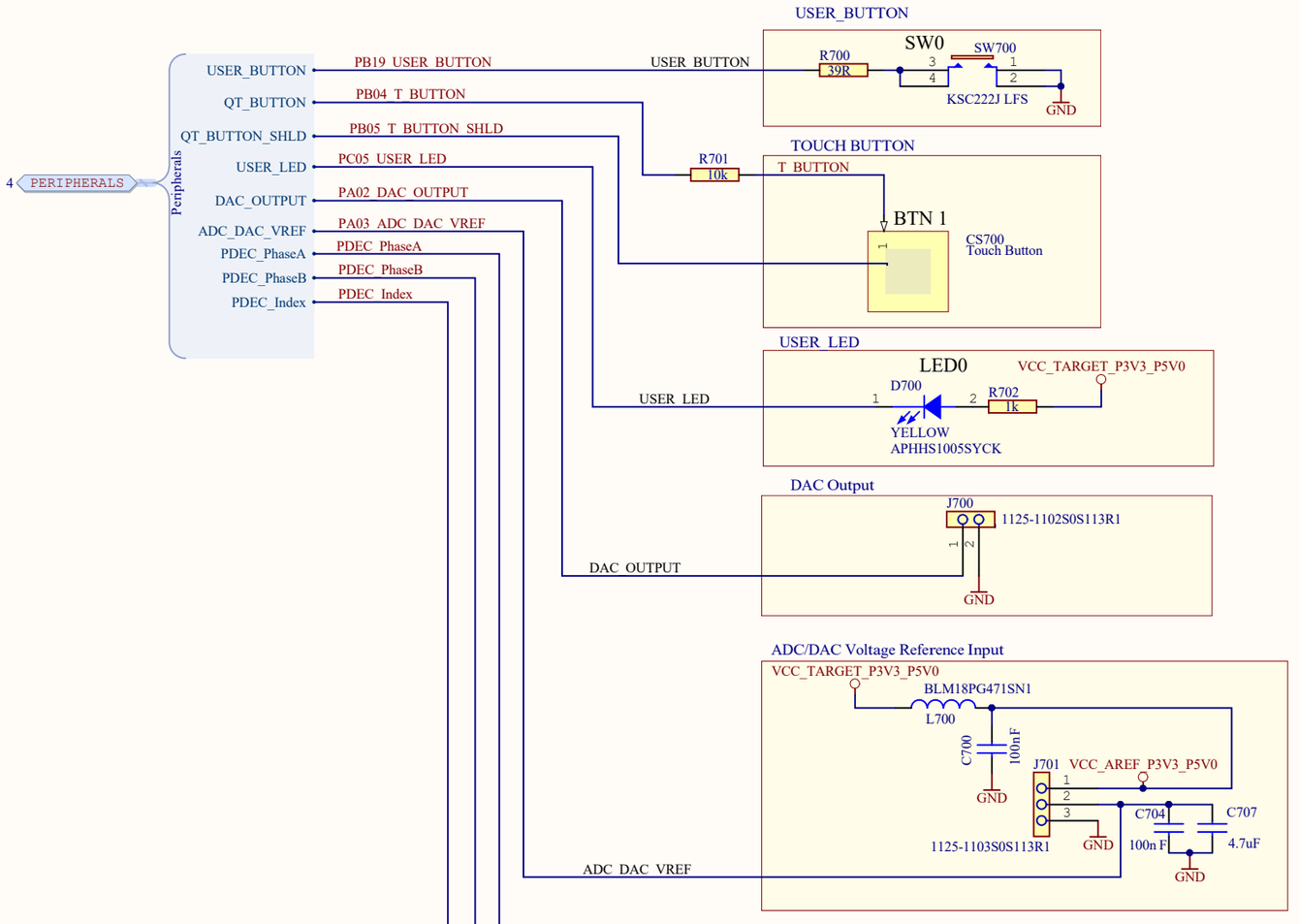
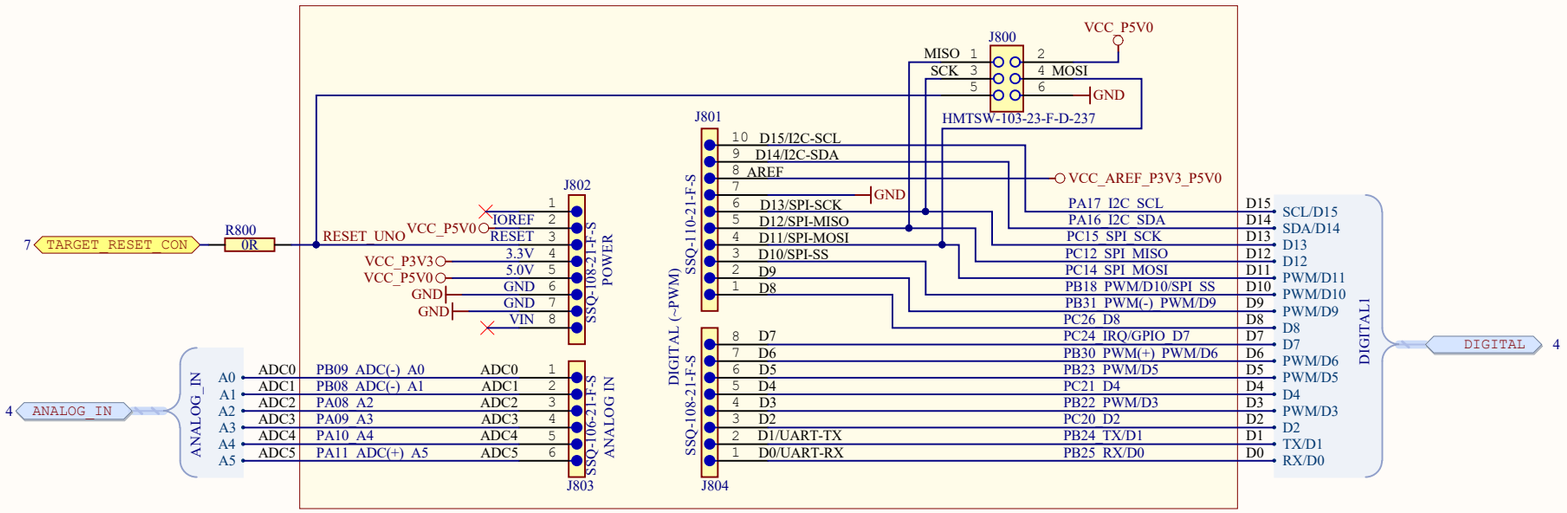


Drawn By: Jesus Aviles			
Engineer: Jerome Angeloni			
Project Title: PIC32CM JH01-CPRO			Designed with Altium — Altium.com
Sheet Title: Peripherals			
Size: A3	PCB Assembly Number: A09-2682.	PCBA Revision: 4	Date: 7/15/2022
	PCB Number: A08-3053	PCB Revision: 4	Page: 8 of 9
File: PIC32CMJH_Curiosity_Pro_Peripherals_R4.SchDoc			

ARDUINO UNO COMPATIBLE HEADERS



Drawn By: Jesus Aviles	MICROCHIP
Engineer: Jerome Angeloni	
Project Title: PIC32CM JH01-CPRO	Designed with Altium — Altium.com
Sheet Title: Arduino Uno interface connectors	
Size: A3	PCB Assembly Number: A09-2682. PCBA Revision: 4
	PCB Number: A08-3053 PCB Revision: 4
File: PIC32CMJH_Curiosity_Pro_Arduino_Connectors_R4.SchDoc	Date: 7/15/2022 Page: 9 of 9