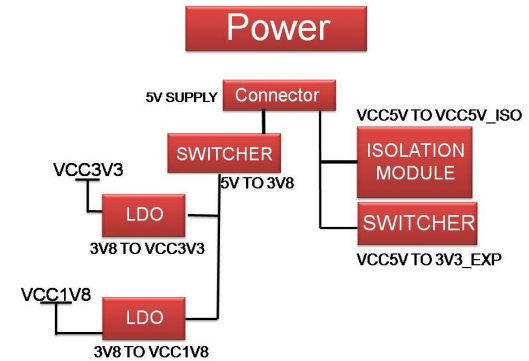
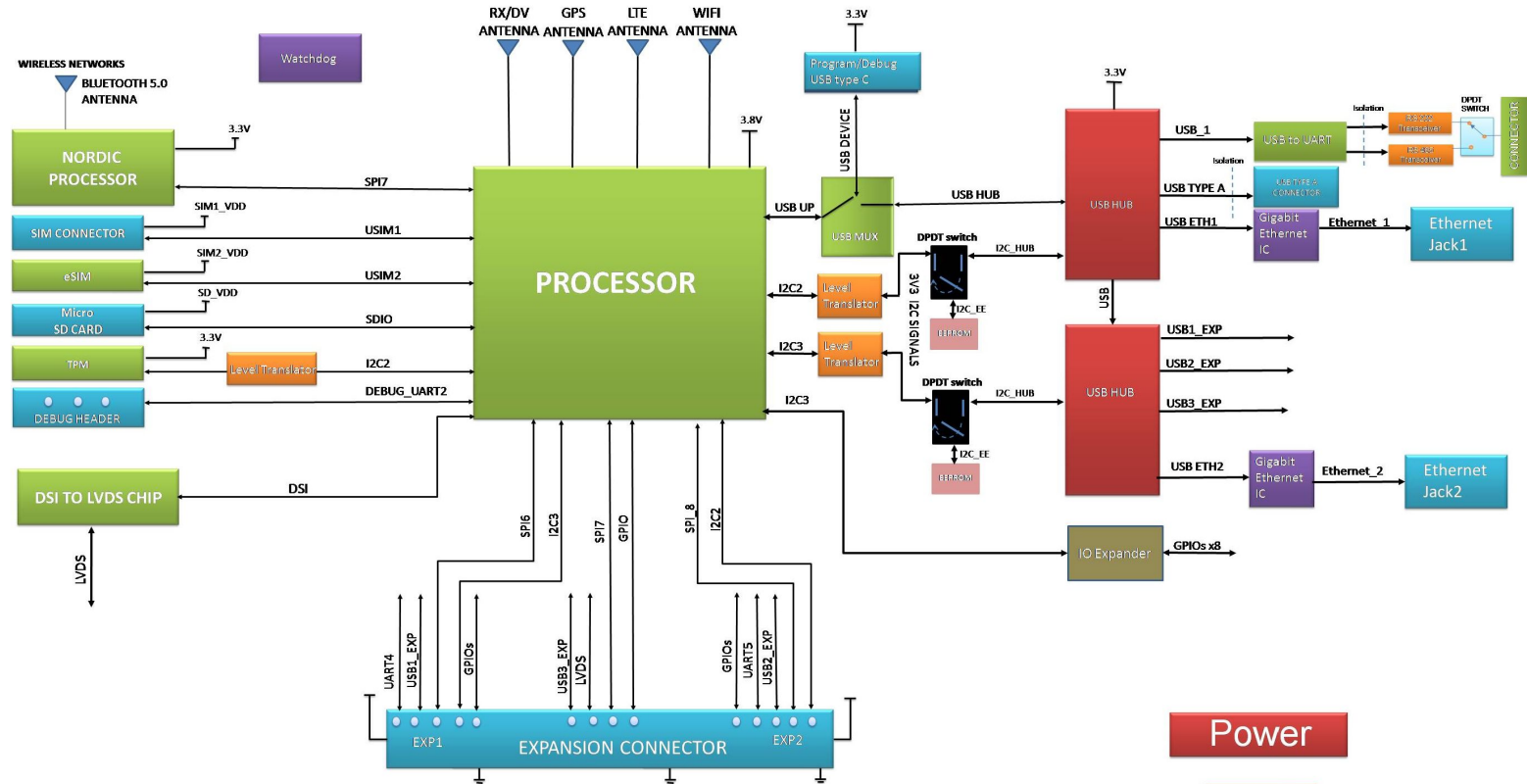


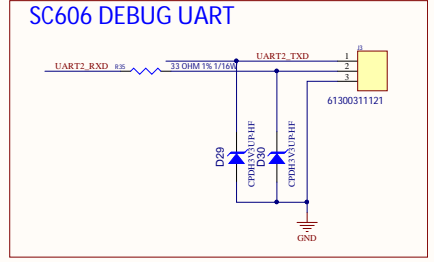
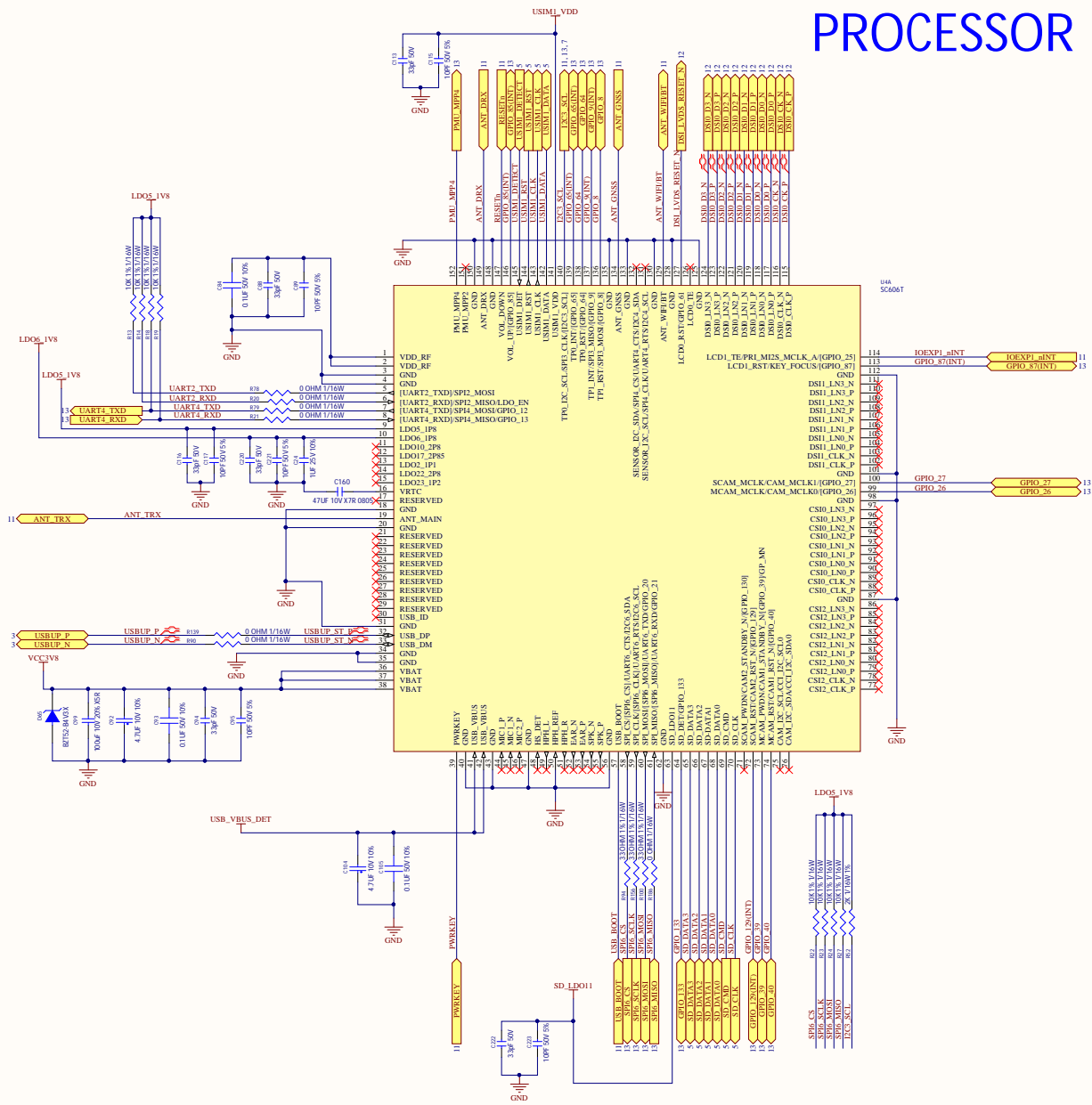
REV.	DATE	DESCRIPTION	ENGINEER
A2.2	6/9/2022		H.K.

SC606 CPU CARD

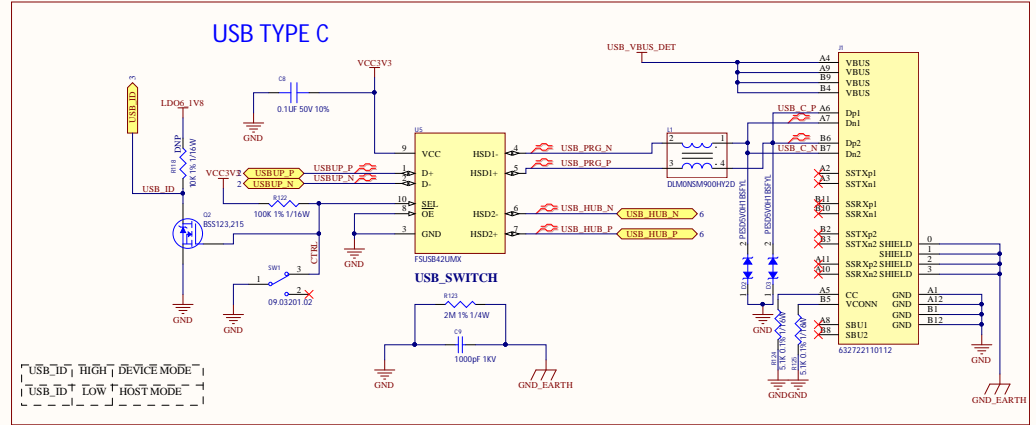
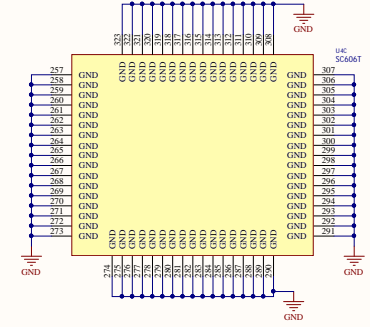
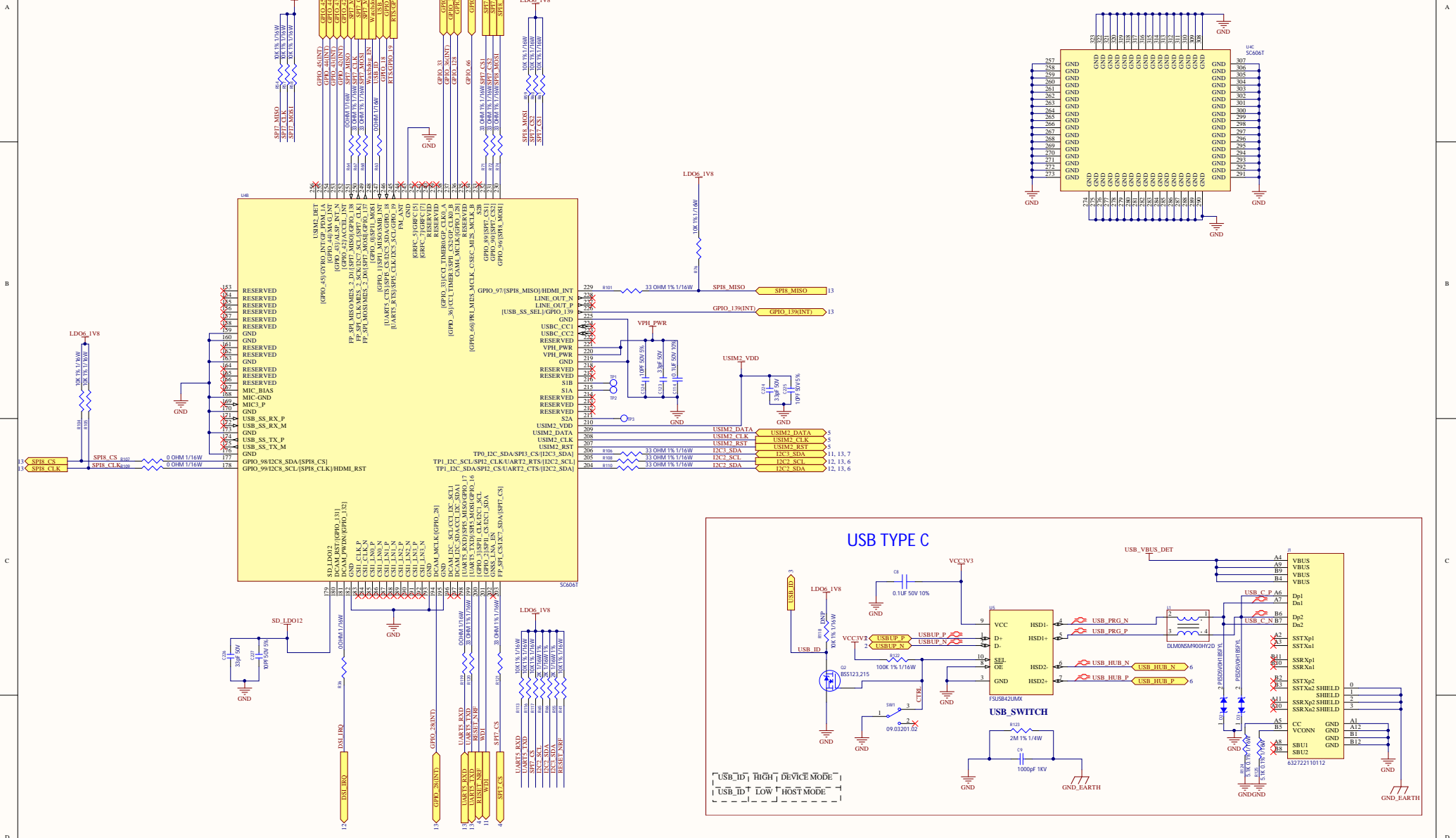


WINDROCK, INC. 1822 MIDWAY ROAD, SUITE 102 KNOXVILLE, TN 37921		TITLE: SC606 CPU CARD	SCALE: DO NOT SCALE PRINT
CODE: OE3P9	PRODUCT FAMILY: Smart-IO HW	DRAWING NO: A4XXX XX XXXX	REV: A2.2
PROPRIETARY NOTICE: THE DATA CONTAINED HEREIN IS PROPRIETARY TO WINDROCK, INCORPORATED AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS FURNISHED WITHOUT THE EXPRESS PERMISSION OF WINDROCK INCORPORATED.		OWNER: WINDROCK, INC.	SHEET SIZE: 0-CAD-C
		ENGINEER: H.K.	DATE: 6/9/2022
			SHEET: 1 OF 15

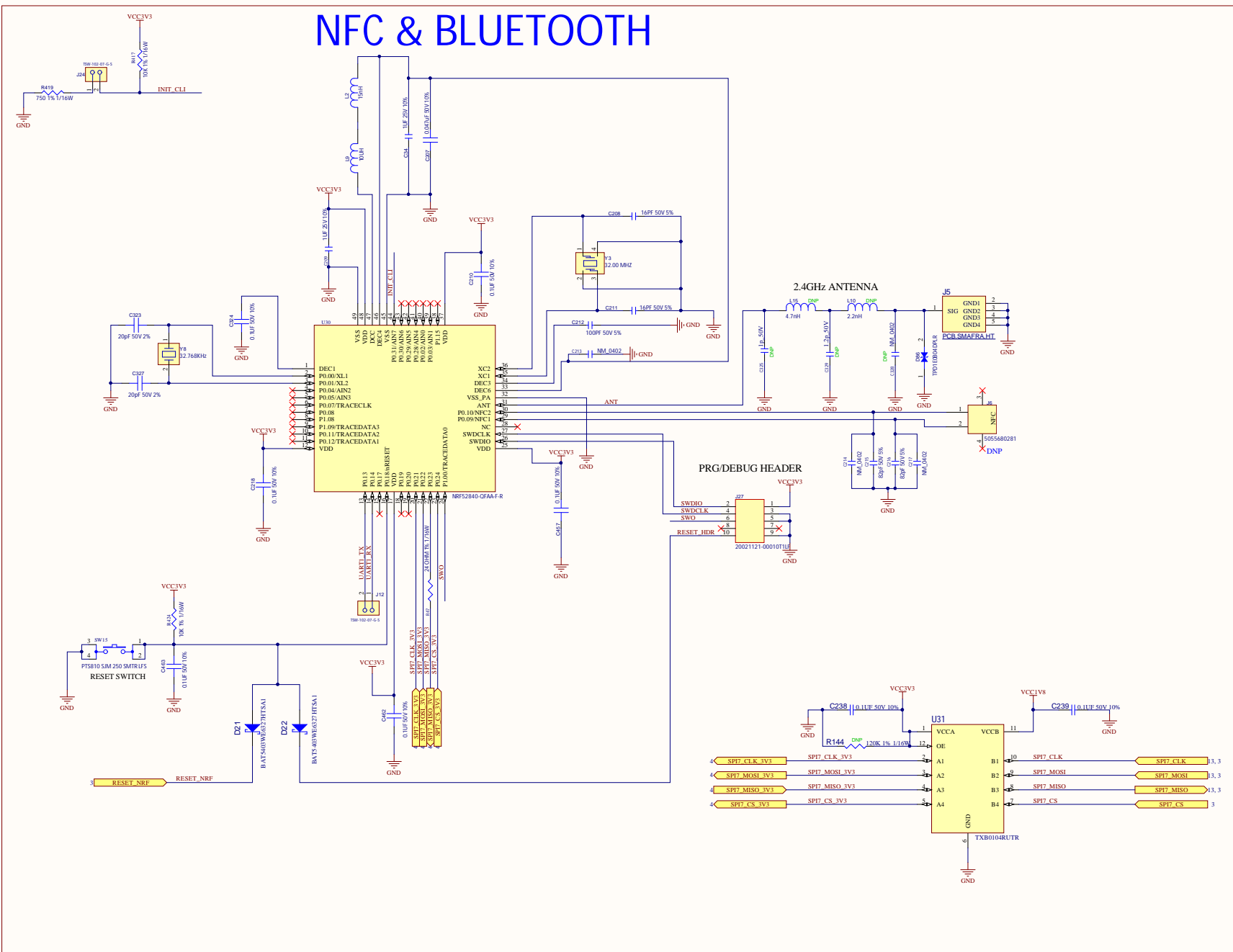
PROCESSOR



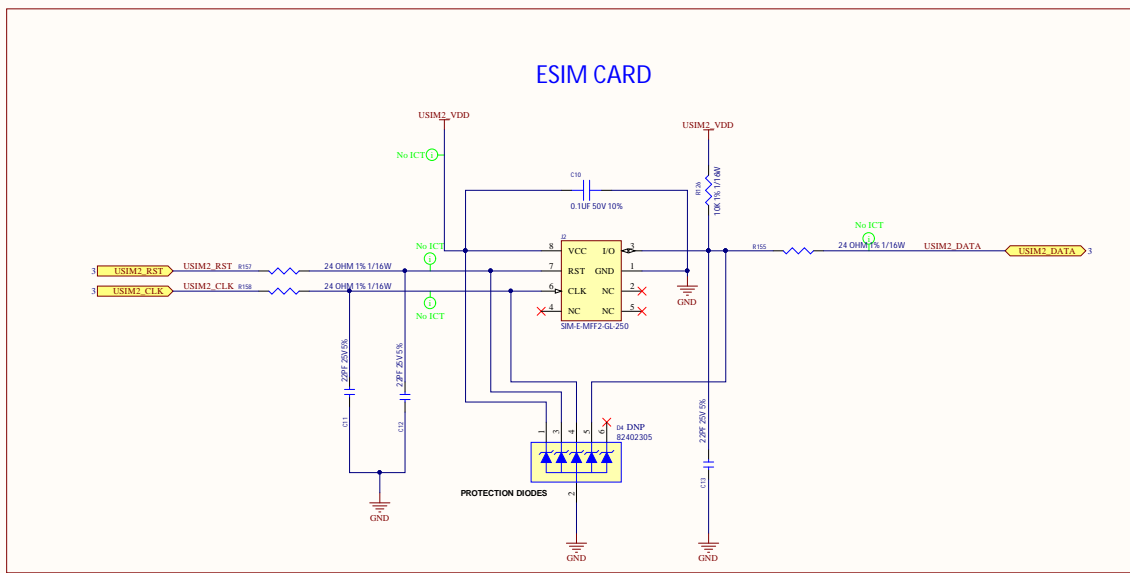
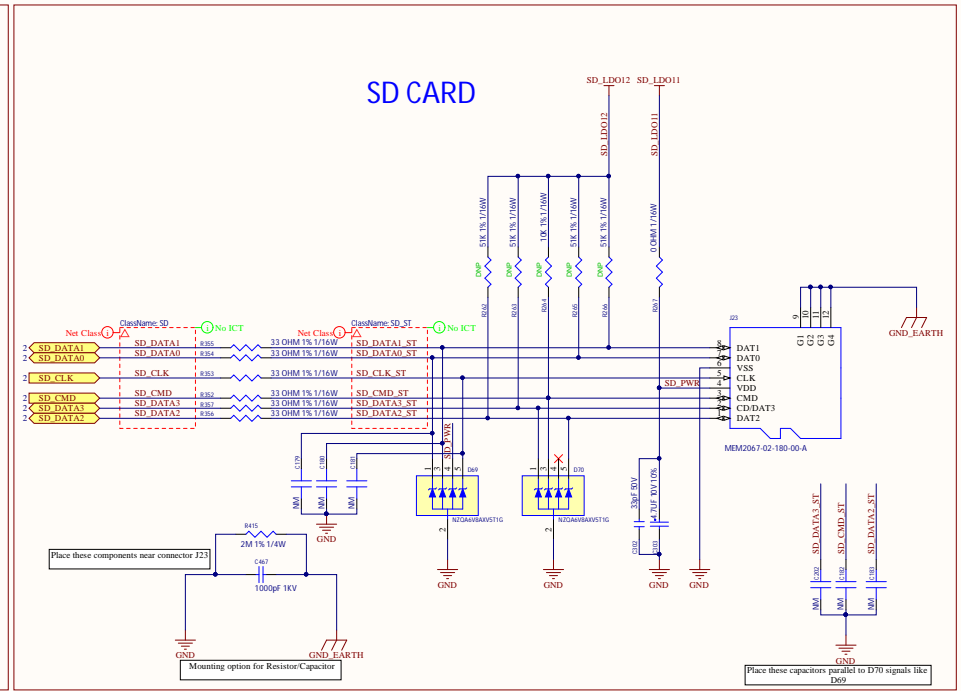
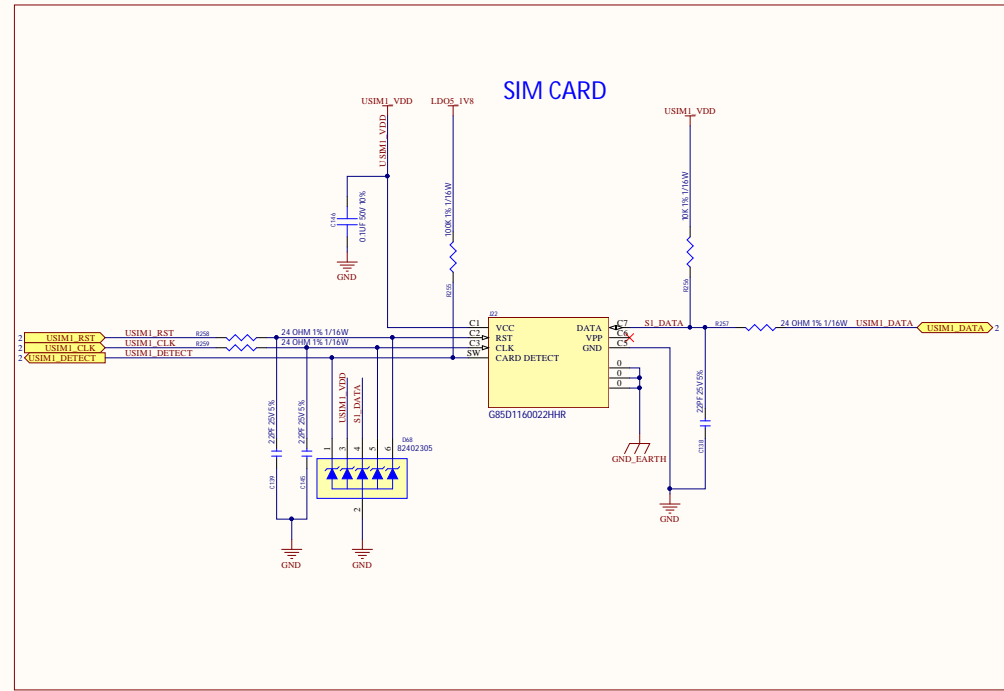
PROCESSOR IO



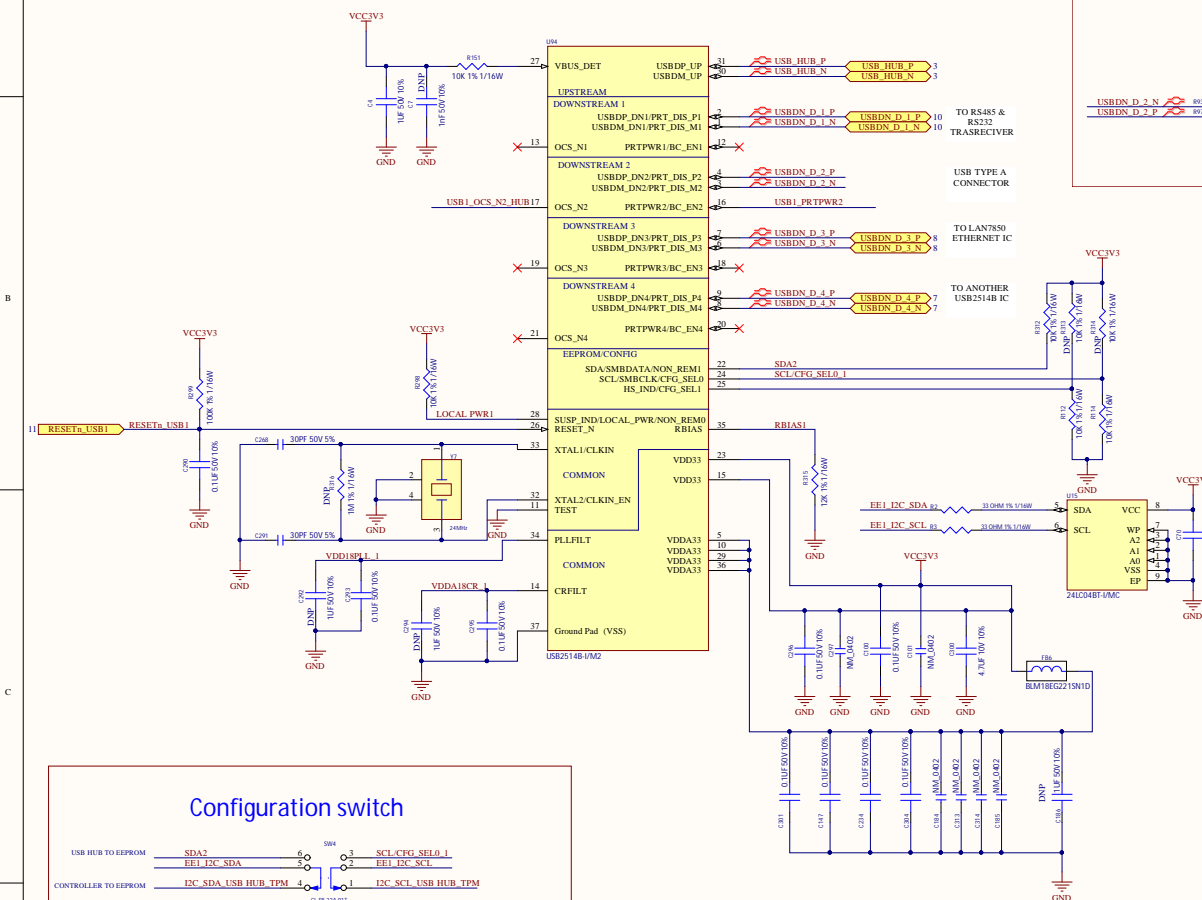
NFC & BLUETOOTH



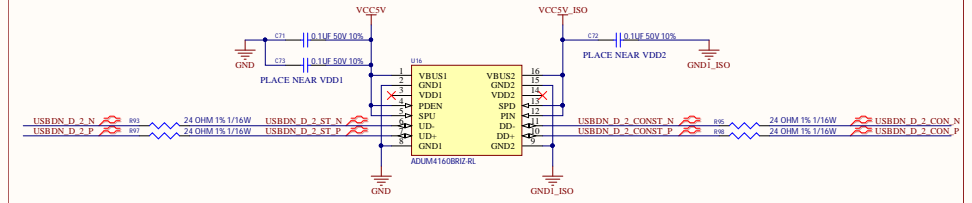
WINDROCK, INC. 1522 MIDWAY ROAD, SUITE 102 KNOXVILLE, TN 37921		TITLE: SC66 CPU CARD	SCALE: DO NOT SCALE PRINT
CODE: OE3P9	PRODUCT FAMILY: Smart-IO HW	DRAWING NO: A-XXXX XX XXXX	REV: A2.2
PROPRIETARY NOTICE - THE DATA CONTAINED HEREIN IS PROPRIETARY TO WINDROCK, INCORPORATED AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS FURNISHED WITHOUT THE EXPRESS PERMISSION OF WINDROCK INCORPORATED.		OWNER: WINDROCK, INC.	SHEET SIZE: D-CAD-C
ENGINEER: HJK		DATE: 6/9/2022	SHEET: 4 OF 15



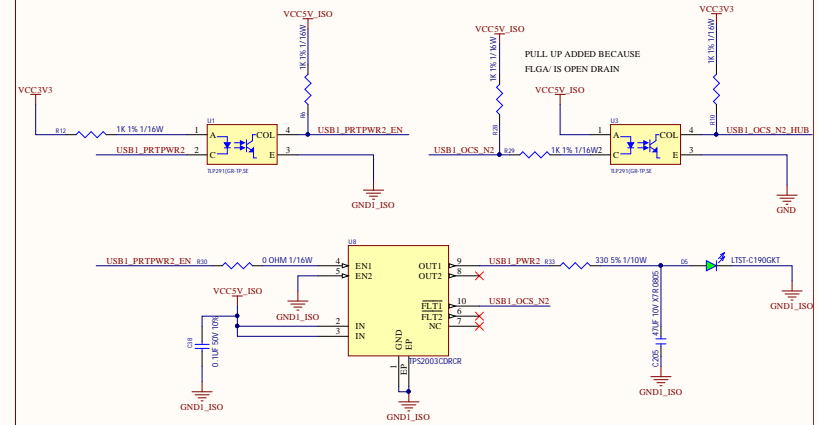
USB HUB_1



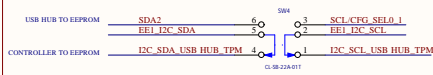
USB SIGNAL ISOLATION



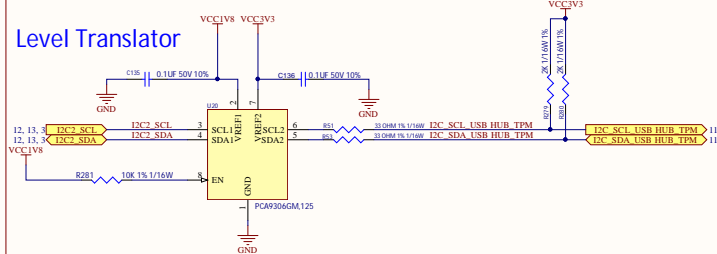
OPTOCOUPLER & PWR SWITCH



Configuration switch



Level Translator



STRAP OPTIONS

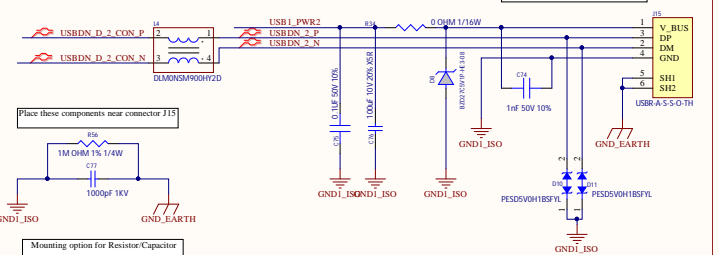
NON_REM(1:0) : 01 : PORT 1 IS NON REMOVABLE

NAME	VALUE	Default	Description
NON_REM0	0	0	Port 1 is non-removable
NON_REM1	1	1	Port 2 is non-removable

CFG_SEL(1:0) : 00 : DEFAULT CONFIG
 USE I2C FROM EP 10 TO CONFIGURE EEPROM REGISTER SETTINGS
 MAKE CFG_SEL(1:0) : 11 FOR EEPROM CONFIG STRAP OPTION

CFG_SEL2	CFG_SEL1	Description
0	0	Default configuration: - Self-powered operation enabled - Individual power switching - Individual over-current sensing - This hub is configured externally over 200k Ohm on 500k Ohm when device is powered
1	0	All options configured on device
1	1	Default configuration with the following overrides: - Self-powered operation - This hub is configured over 2-ohm PC EEPROM - All options configured by PC EEPROM

USB TYPE A



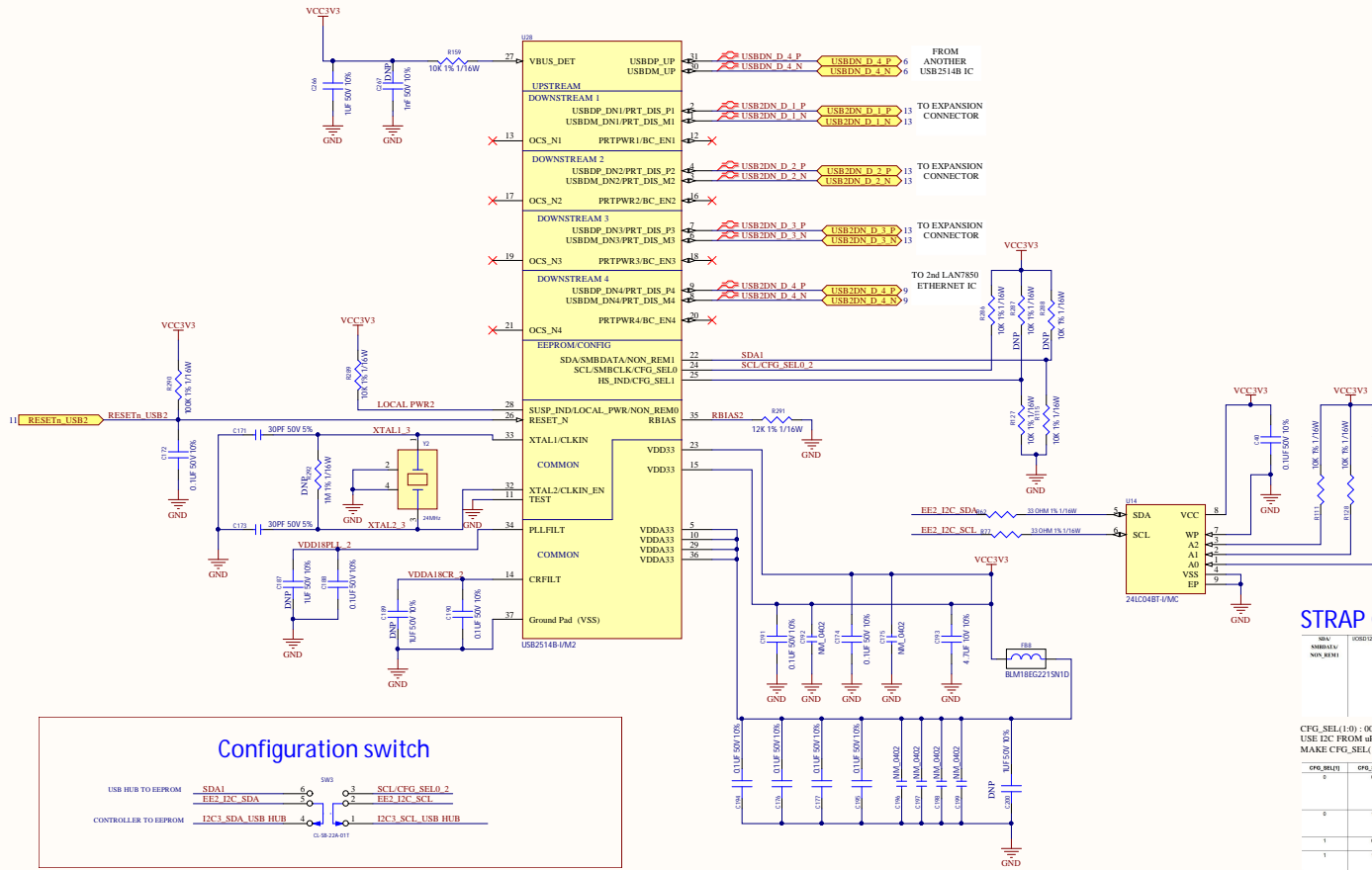
WINDROCK, INC.
 1622 HIGHWAY ROAD, SUITE 102
 KNOXVILLE, TN 37921

MODEL: OE3P9
 PRODUCT FAMILY: Smart-IO HW
 DRAWING NO: A-XXXX XX XXXX
 DATE: 6/9/2022

TITLE: SC606 CPU CARD
 DRAWING NO: A-XXXX XX XXXX
 DATE: 6/9/2022

SCALE: DO NOT SCALE PRINT
 REV: A2.2
 SHEET: 6 OF 15

USB HUB_2



STRAP OPTIONS

Same Data Signal

EEPROM: 24LC04B1-AMC

Configuration Register Settings:

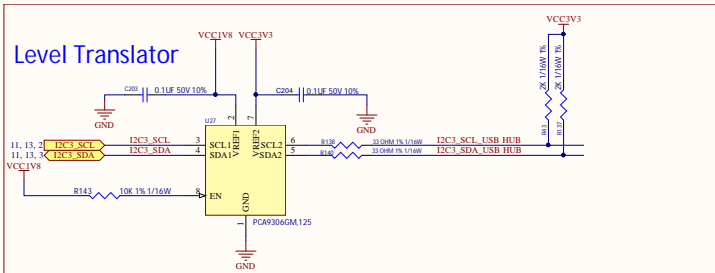
CFG_SEL(1:0) = 00 - DEFAULT CONFIG
 USE I2C FROM UP TO CONFIGURE EEPROM REGISTER SETTINGS
 MAKE CFG_SEL(1:0) = 11 FOR EEPROM CONFIG STRAP OPTION

CFG_SEL(1)	CFG_SEL(0)	Description
0	0	Default configuration: - Sleep options enabled - Background operations enabled - Individual power switching - Individual over-current sensing
0	1	The hub is configured internally over SMBus (as an SMIbus slave) (EEPROM)
1	0	- All registers configured over SMBus - Default configuration with the following exceptions: - Background operations - Sleep options disabled
1	1	The hub is configured over I2C EEPROM: - Sleep options disabled - All registers configured by I2C EEPROM

Configuration switch

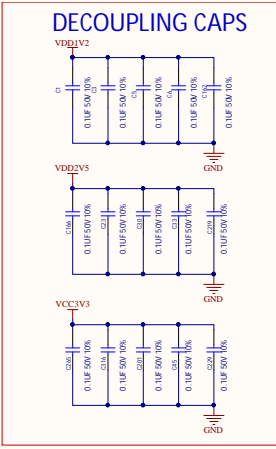
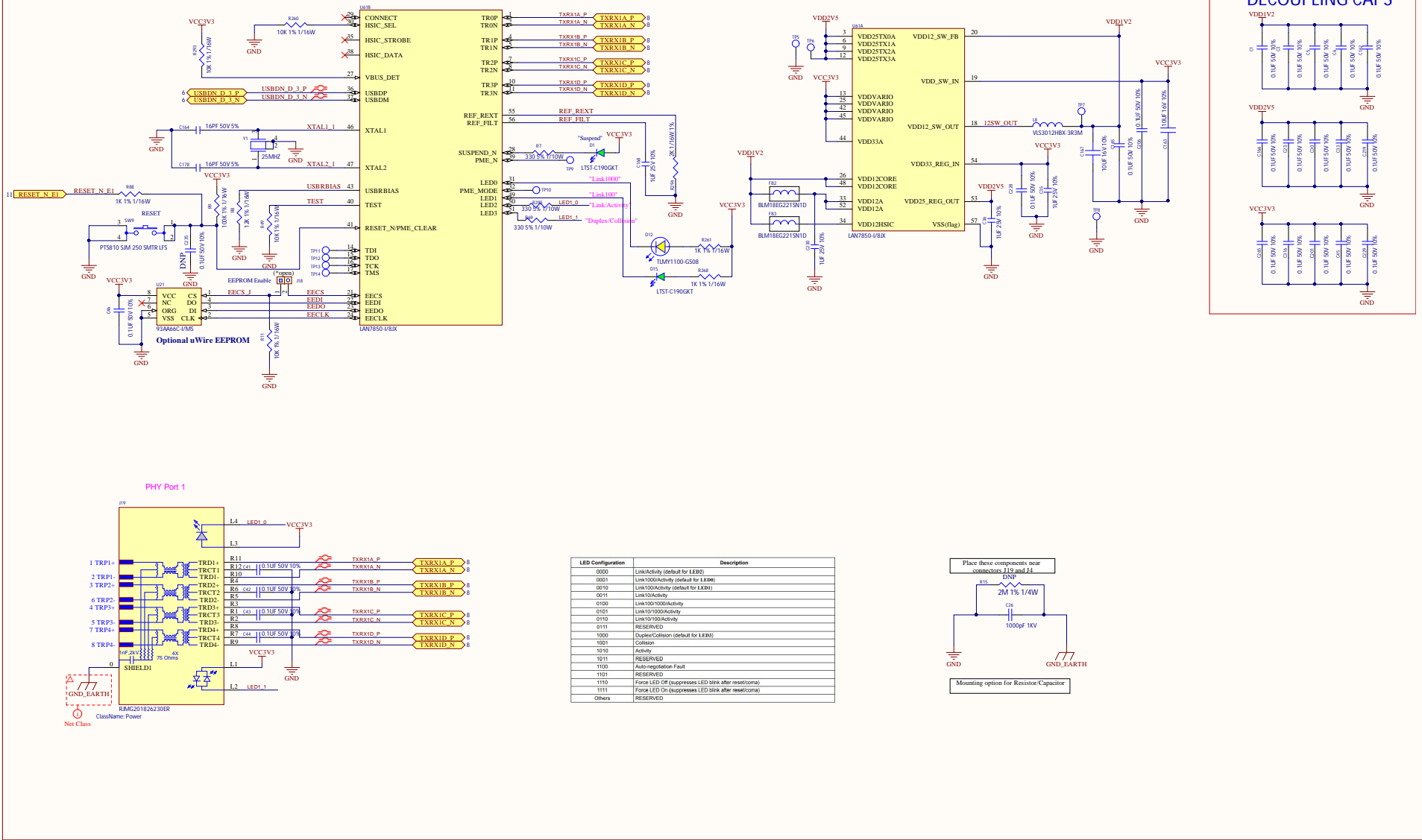


Level Translator

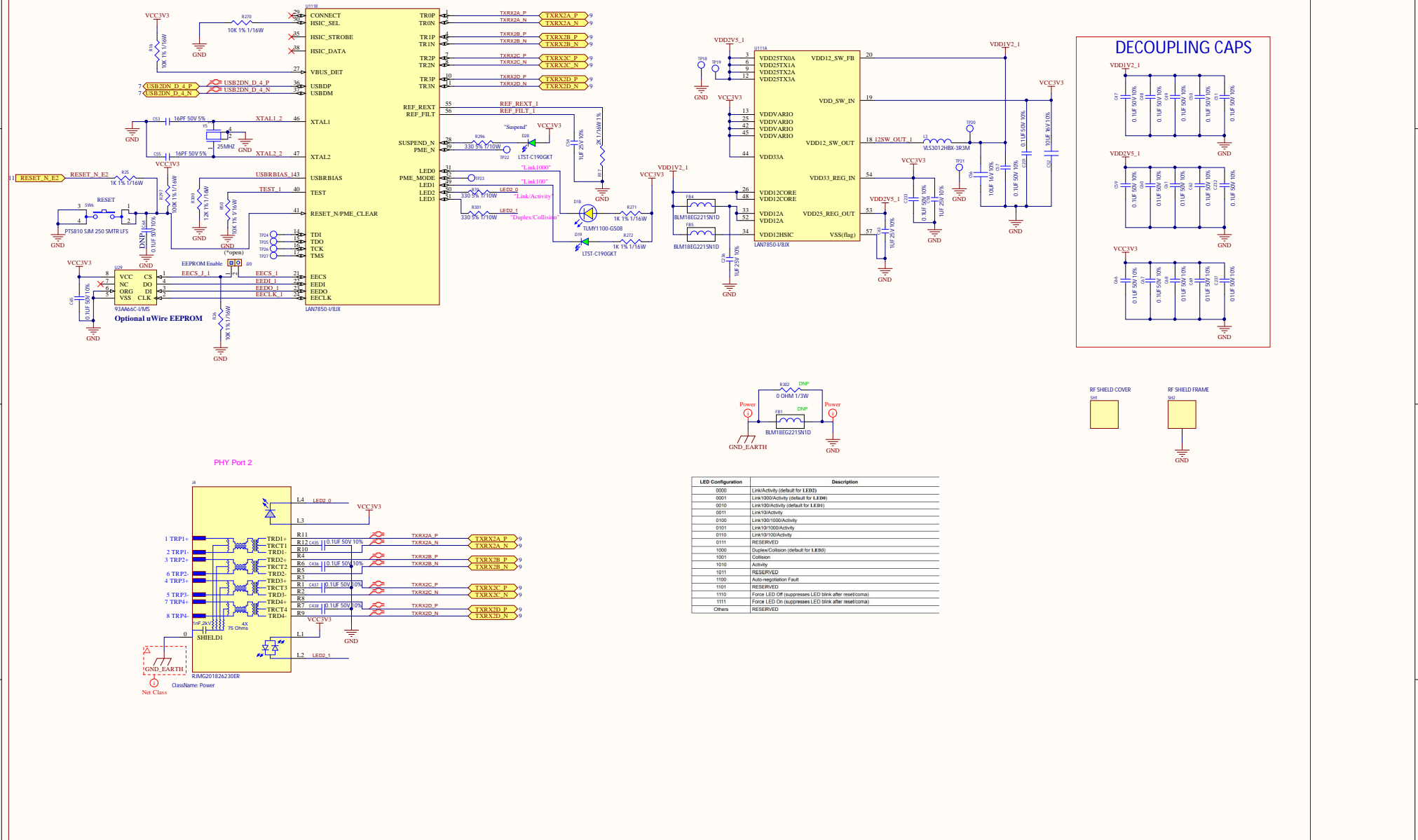


	WINDROCK, INC. 1522 BIRCHWOOD ROAD, SUITE 102 KNOXVILLE, TN 37921	TITLE: SC606 CPU CARD	SCALE: DO NOT SCALE PRINT
	CODE: OE3P9 PRODUCT FAMILY: Smart-IO HW	DRAWING NO: A-XXXX XX XXXX	REV: A2.2
PROPRIETARY NOTICE - THE DATA CONTAINED HEREIN IS PROPRIETARY TO WINDROCK INCORPORATED AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS FURNISHED WITHOUT THE EXPRESS PERMISSION OF WINDROCK INCORPORATED.		OWNER: WINDROCK, INC.	SHEET SIZE: 10x40 cm
		ENGINEER: HJK	DATE: 6/9/2022
			SHEET: 7 OF 15

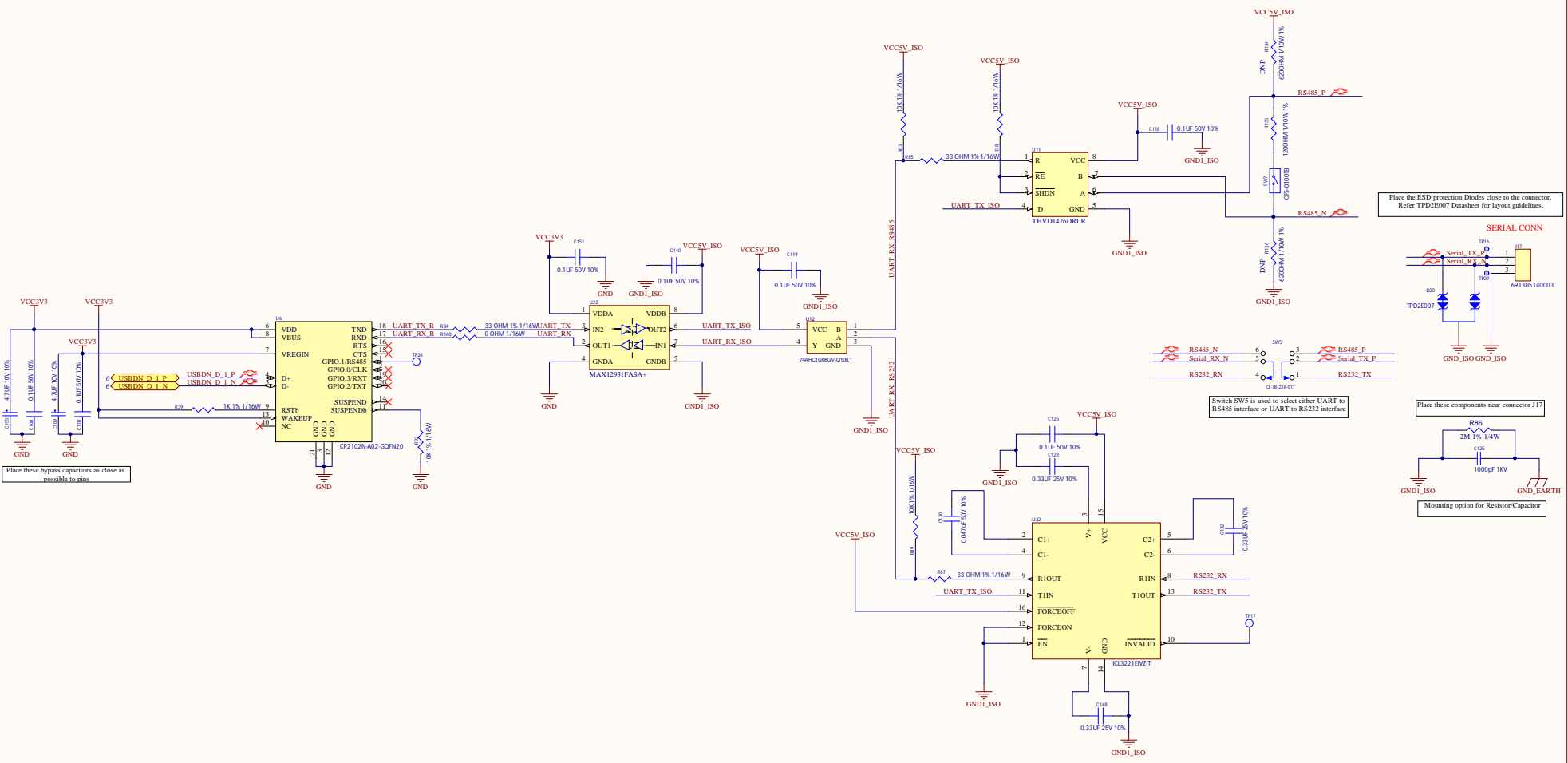
ETHERNET CONTROLLER



ETHERNET CONTROLLER

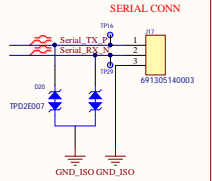


RS485/RS232

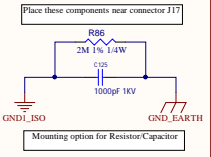


Place these bypass capacitors as close as possible to pins.

Place the ESD protection Diodes close to the connector. Refer TPD2E007 Datasheet for layout guidelines.

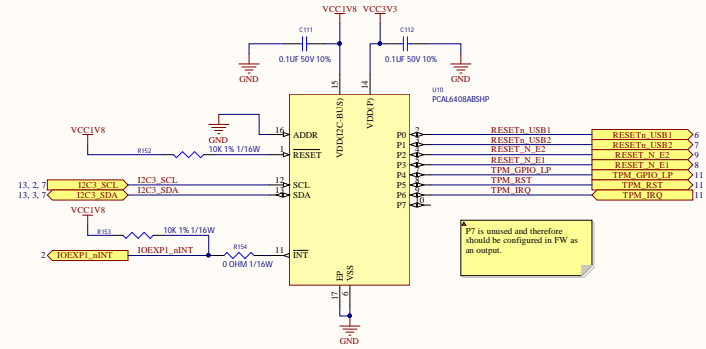


Switch SW5 is used to select either UART to RS485 interface or UART to RS232 interface

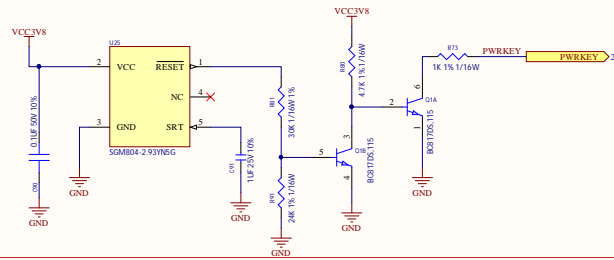


WINDROCK, INC. 1522 MIDWAY ROAD, SUITE 102 KNOXVILLE, TN 37921		TITLE: SC606 CPU CARD	SCALE: DO NOT SCALE PRINT
CODE: OE3P9	PRODUCT FAMILY: Smart-IO HW	DRAWING NO. A-XXXX XX XXXX	REV. A2.2
PROPRIETARY NOTICE - THE DATA CONTAINED HEREIN IS PROPRIETARY TO WINDROCK, INCORPORATED AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS FURNISHED WITHOUT THE EXPRESS PERMISSION OF WINDROCK INCORPORATED.		OWNER: WINDROCK, INC.	SHEET SIZE: 10x10-C
		ENGINEER: HJK	DATE: 6/9/2022 SHEET: 10 OF 15

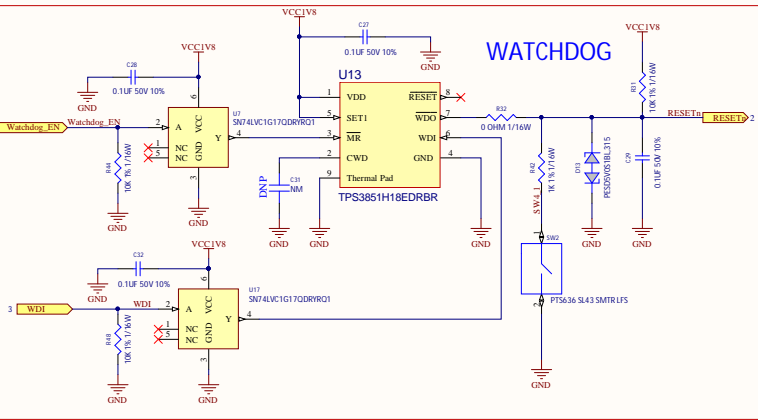
IO EXPANDER



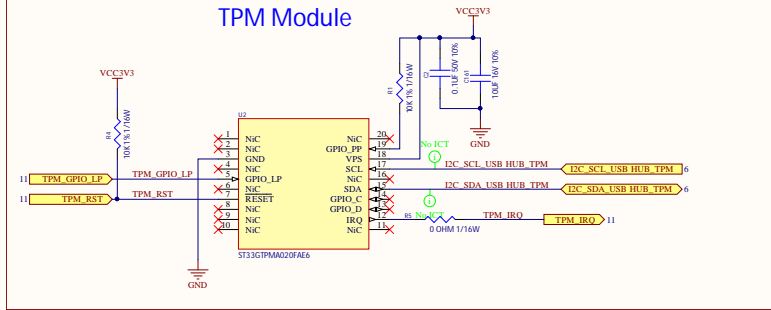
AUTOMATIC POWER ON CIRCUIT



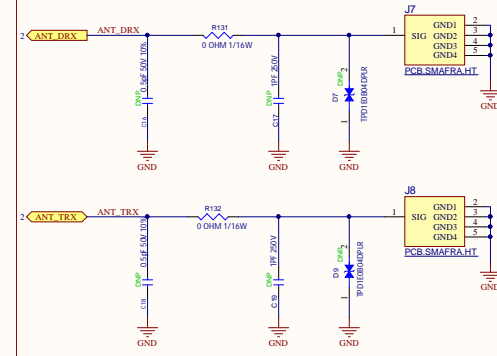
WATCHDOG



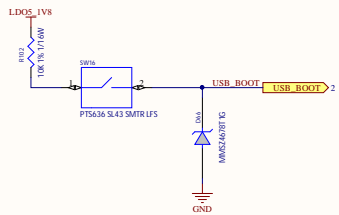
TPM Module



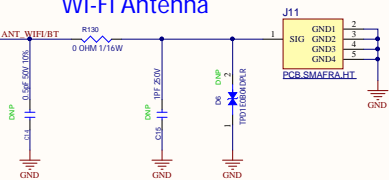
UMTS / LTE Antenna



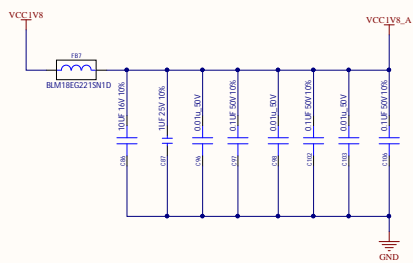
USB_BOOT SWITCH



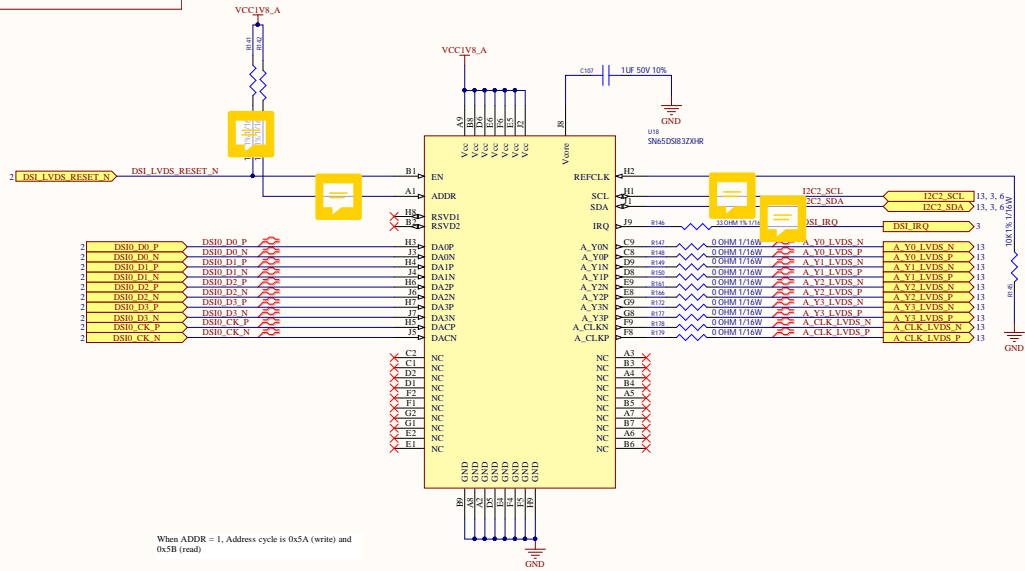
Wi-Fi Antenna



DECOUPLING CAPACITOR

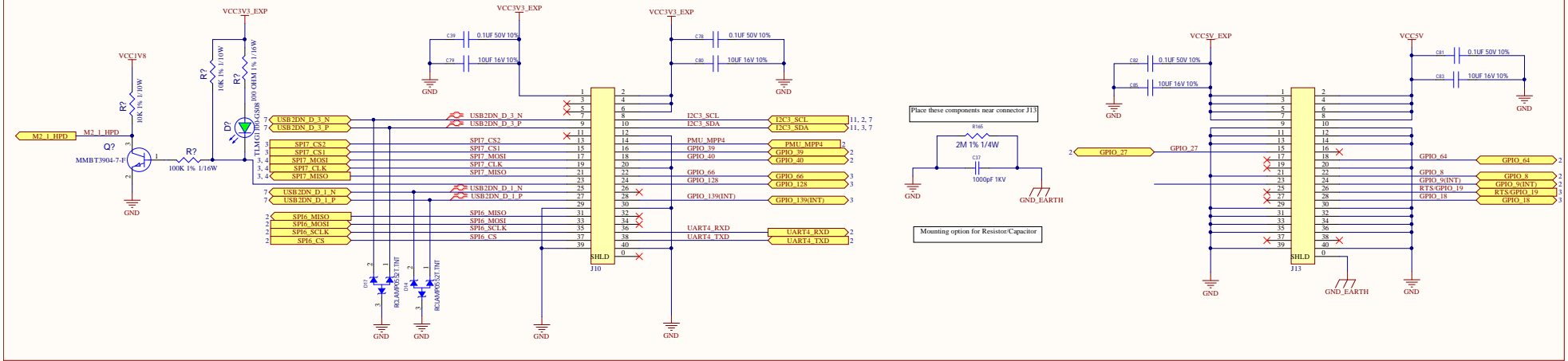


DSI TO LVDS

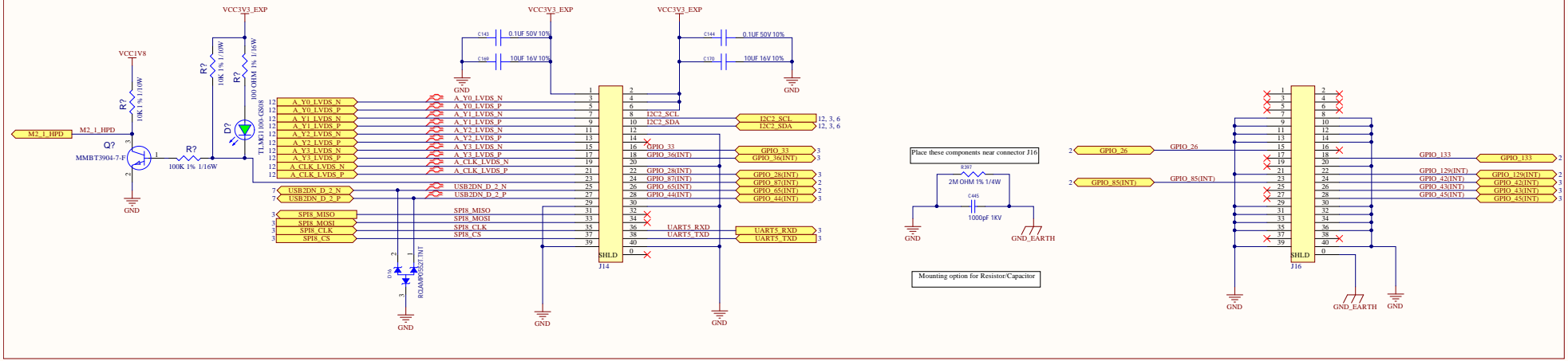


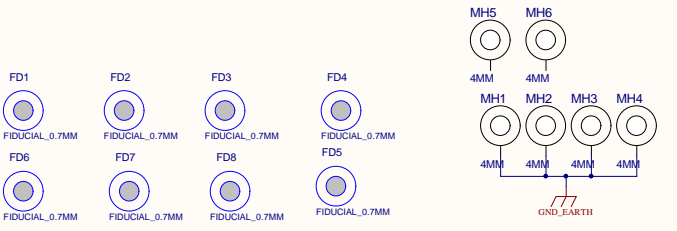
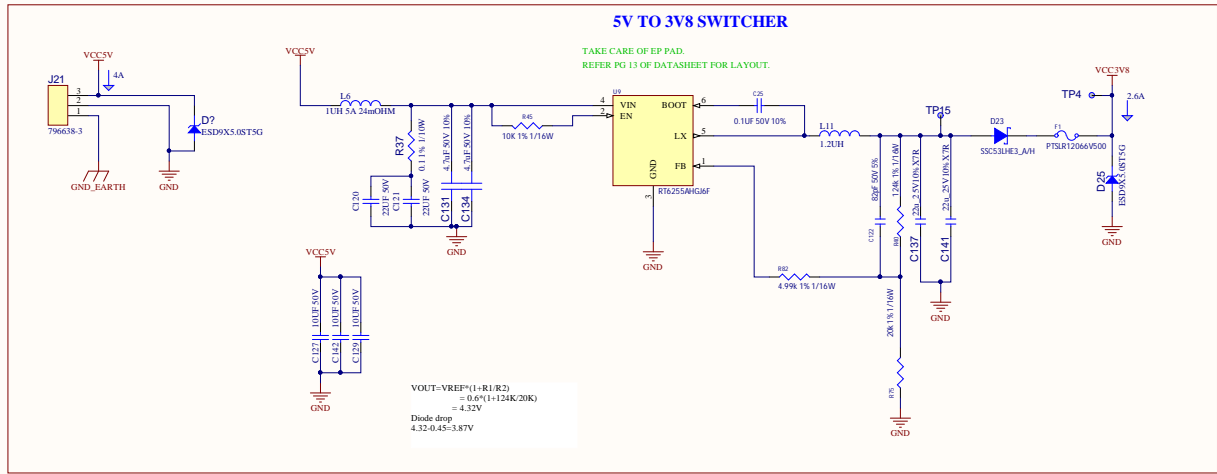
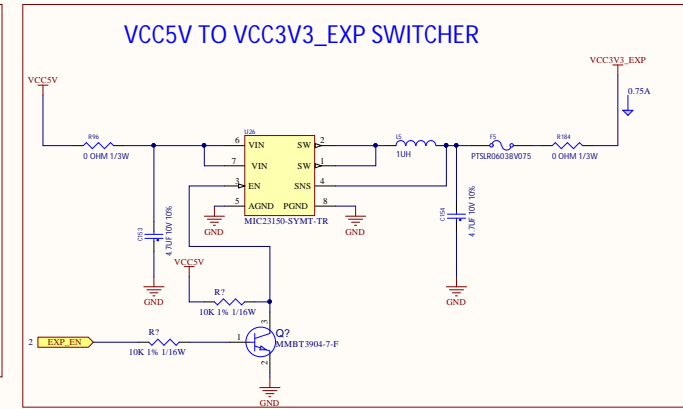
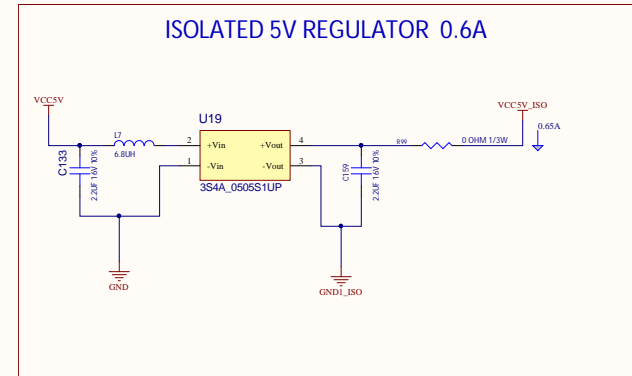
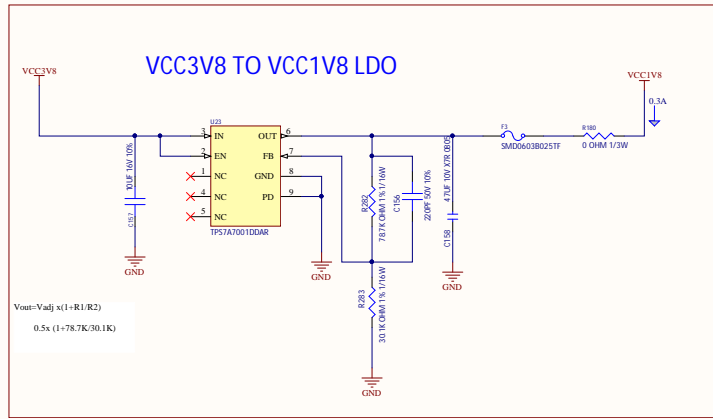
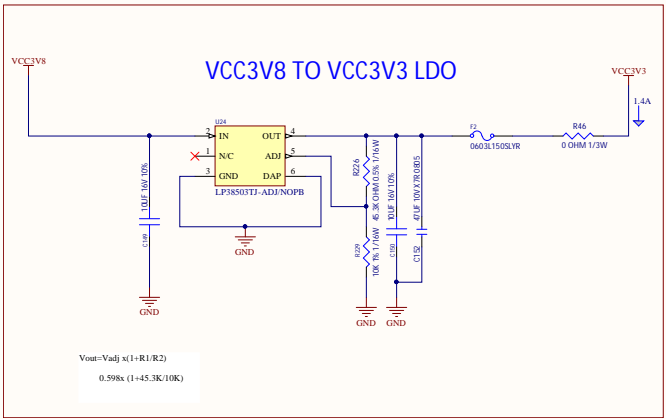
When ADDR = 1, Address cycle is 0x5A (write) and 0x5B (read)

EXPANSION BOARD_1



EXPANSION BOARD_2





WINDROCK, INC. 1522 MIDWAY ROAD, SUITE 102 KNOXVILLE, TN 37921		TITLE: SC66 CPU CARD	SCALE: DO NOT SCALE PRINT
CODE: OE3P9	PRODUCT FAMILY: Smart-IO HW	DRAWING NO: A-XXXX XX XXXX	REV: A2.2
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ENGINEER: HJK	DATE: 6/9/2022	SHEET: 14 OF 15	

Revision

CHANGES FROM REV1.0 TO REV2.0


- 1)SC606_1
WATCHDOG IC TPS3431SDRBR REPLACED WITH TPS3851H18EDRBR
ADDED R73 IN AUTOMATIC POWER ON CIRCUIT
ADDED DECAPS ON THE SUPPLY PINS
- 2)USB HUB_1
I2C TRANSLATOR TXB0302DQMR REPLACED WITH PCA9306
- 3)DSI TO LVDS
REMOVED U12 I2C TRANSLATOR TXB0302DQMR
- 4)IO EXPANDER
REMOVED BOTH 16BIT IO EXANDER IC.
U10 PCAL6416AHF,128 REPLACED WITH PCAL6408APWJ 8BIT IO EXAPANDER IC.
- 5)NRF52840
NORDIC IC NRF52840-QIAA-R REPLACED WITH NRF52840-QFAA-F-R
L15 VALUE CHANGED TO 2.7nH AND C329 VALUE CHANGED TO 1PF
- 6)ETHERNET_1&2
REMOVED R170 AND R269
L8 AND L3 B82462G4332M000 REPLACED WITH VLS3012HBX-3R3M
- 7)DSI TO LVDS
REMOVED R143 AND R144

CHANGES FROM REV2.0 TO REV2.1

- 1)RS232 RS485
Added RS232 and RS485 CIRCUIT
REMOVED USB TO UART
- 2)POWER SUPPLY
5V TO 3V8 (U9) REPLACED WITH RT6255AHGJ6F
- 3)REMOVED USB PD SHEET
- 4)EXPANSION CONNECTOR
J10,J13,J14 AND J16 REPLACED WITH LSHM-120-06.0-F-DV-A-S-K-TR

CHANGES FROM REV 2.1 TO REV 2.2

- 1) USB HUB_1 & 2
Changed U8 GND to GND1_ISO
VDD1 of U16 is disconnected from VCCSV
Removed Spark Gap from project
Added translator to put both EEPROM on separate I2C
Added 47uF at output of power switch U8
Added DNP label on R316 and R292
Added expose pad for EEPROM (U14 and U15)
Added ferrite bead between VDD33 and VDDA33 of usb hub
Changed crystal capacitors of usb hub to 30pF
Changed pull up resistor on pin 28 of usb hub 100k to 10k ohm
Added the 10k series resistor on VBUS_DET pin of usb hub IC
- 2)ETHERNET_1 & 2
Added decoupling capacitros on pin 44, 54, 19 and 53 of LAN7850
Added 1uF on pin 33 and 52 of LAN7850
- 3)RS485 RS232
Added test point at GPIO.1/RS485 pin of U6
Changed C128, C130, C132 and C148 as per VCCSV of U32
Added termination circuit to RS485 section
Connected VBUS of U6 to VCC3V3

	WINDROCK, INC. <small>1522 MIDWAY ROAD, SUITE 102 KNOXVILLE, TN 37921</small>		TITLE: SC06 CPU CARD	SCALE: DO NOT SCALE PRINT
	CODE: OE3P9	PRODUCT FAMILY: Smart-40 HW	DRAWING NO: A-XXXX XX XXXX	REV: A2.2
<small>PROPRIETARY NOTICE - THE DATA CONTAINED HEREIN IS PROPRIETARY TO WINDROCK INCORPORATED AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS FURNISHED WITHOUT THE EXPRESS PERMISSION OF WINDROCK INCORPORATED.</small>				SHEET SIZE: 10x10-C SHEET: 15 OF 15
ENGINEER: HJK	DATE: *			