SMARC Eval 2.0

Schematics are for reference only.

Refer to ERP BOM and assembly instruction for build values.

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SMARC-Eval2 Evaluation Carrier for SMARC 2.0

	TABLE OF CONTENT	
PAGE	DESCRIPTION	
1	Cover	
2	Block Diagram	
3	Power Diagram	
4	SMARC Carrier Connector	
5	DP Connector	
6	HDMI Connector	
7	LVDS Connector	
8	LVDS Backlight Connector	
9	eDP Connector	
10	Ethernet Connectors	
11	USB 3.0 Connectors	
12	USB 2.0 OTG Connector and USB 2.0 header	
13	CAN Transeivers	
14	mPCIe Connectors	
15	PCIe Connectors	
16	mSATA Connector	
17	uSD Connector	
18	High Speed Serial Ports	
19	SPI Flash Socket, I2C Expander	
20	Audio - HDA Codec	
21	Audio - I2S Codec	
22	Audio - Con + Mux	
23	GPIO Headers	
24	eSPI Header, Power Management Header, CSI	
25	Buttons	
26	Power Input connectors	
27	Power 5V0, 3V3	
28	Power 1V8, 1V5	
29	Power Discharge, LEDs, RTC	
30	Mechanics	

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DRAWING REVISION HISTORY							
REV	DESCRIPTION	YYYY-MM-DD	APPROVED				
0.1	Preliminary schematic	2016-10-06					
1.0	Rev 1100 - A00	2016-11-14					
2.0	Rev 1200 - B00	2017-04-07					
3.0	Rev 1300 - C00	2017-07-26					
4.0	Rev 1400 - D00	2017-11-17					

NOTES

- 1. All resistor values are in Ohms. Tolerance shown for less than 1%
- 2. All capacitor values are in Farads.
- 3. A "NONE" next to a reference designator indicates a part that should not be installed.
- 4. A "#" in a signal name or pin name indicates an active logic level low.
- 5. Differential signal name are recognized by a trailing "+" for positive and "-" for negative pair members.
- 6. All voltage supply rails shall begin with the characters "V_". Grounding connections shall begin with "GND".
- 7. The following symbols represent global signals. Note that multiple instances of, for example, GND will append a trailing index as a visible netname for each isolated rail.



are analog ground (GNDA);

are chassis ground (SHIELD);

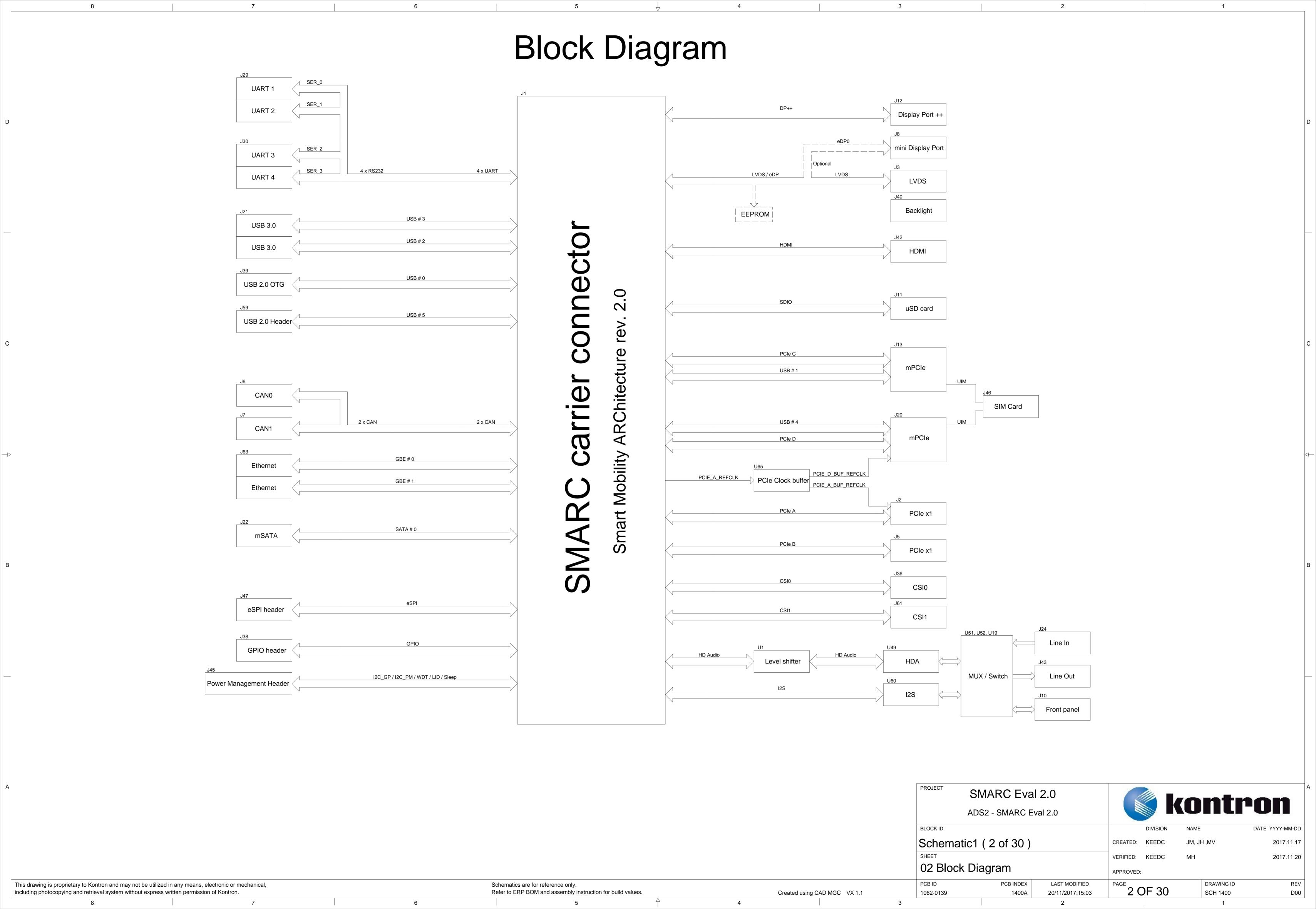
V_xVx are specific voltage supply.

ZNL20
This symbol highlighting the layout recommendation.

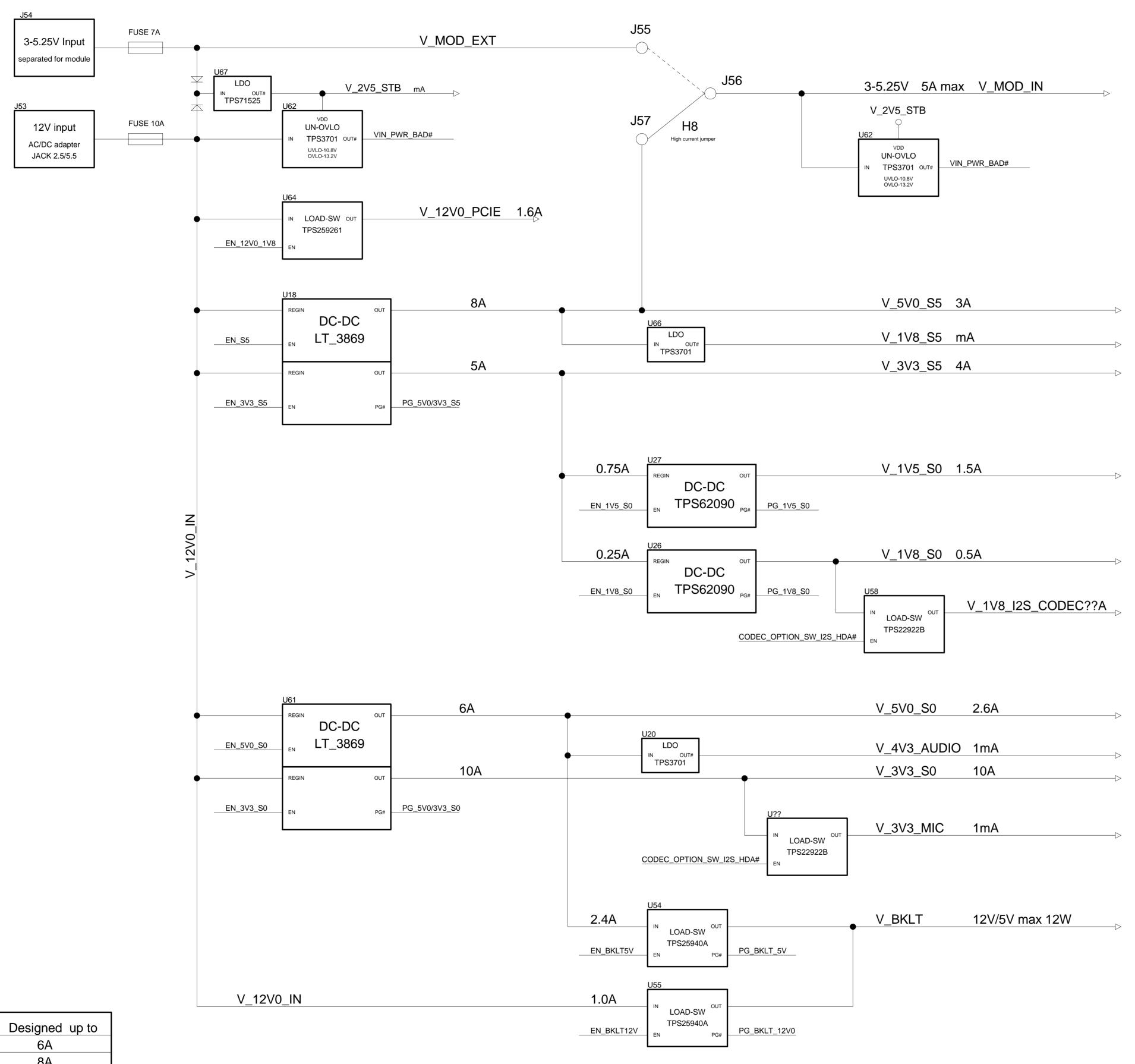
This symbol highlighting configuration informations.

I2C Bus Signal	Ref Des	Address (7 bit)	Description
I2C GP	U53 U60	0x20 0x1A	IO Expander I2S Audio Codec
I2C PM	U78 U69 U74 J13 J20 J5 J2 U65 J22 J45	0x57 0x22 0x24 Device Device Device Device 0x6D Device Device	General Purposse EEPROM IO Expander IO Expander mPCIe Connector A mPCIe Connector B PCIe x1 Connector PCIe x1 Connector PCIe Clock Buffer mSATA Connector Power Management Header
I2C CAM0	J60	Device	CSI0 Camera Connector
I2C CAM1	J61	Device	CSI1 Camera Connector
I2C LCD	J3 U72	Device 0x50	LVDS Connector LVDS EEPROM

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Power Diagram



> V_		- 1V5
	_3V3_S5 (1.1A)	
	, , , , , , ,	- 3V3
		J13 mPCle
_ V_	_1V5_S0 (0.375A)	
/	3V3_S5 (1.1A)	1V5
> - -	(3V3
		J20 mPCle
_ V_	_1V5_S0 (0.375A)	
	_3V3_S5 (1.1A)	1V5
> -		- 3V3
		J2 PCIe x
$\sqrt{V_{\perp}}$	_12V0_PCIE (0.83A)	
/	_3V3_S0 (3.0A)	12V0
/		3V3
\	_3V3_S5 (0.375A)	3V3_AUX
	40\/0 POIE (0.00A)	J5 PCle x
	_12V0_PCIE (0.83A)	12V0
> <u>V</u> _	_3V3_S0 (3.0A)	3V3
<u></u>	_3V3_S5 (0.375A)	3V3_AUX
		3V3_AUX
		J21 USB 3
V	_5V0_S5 (2x0.9A)	
\		5V0
		J39 USB 2
_ V_	_5V0_S5 (0.5A)	5V0
_ _		370
		J59 USB 2
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_5V0_S5 (0.5A)	5V0
/		
		J40 LVDS
\overline{V}_{-}	_BKLT (U54+U55 12W)	V_BKLT_CON
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_5V0_S0 (0.6A)	5V0/3V3 (3W)
< V_	_3V3_S0 (0.9A)	
		<u>J60</u> CS
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_3V3_S0 (0.75A)	3V3
•		
	0)/0, 00 (0.771)	J61 CS
> <u>V</u> _	_3V3_S0 (0.75A)	3V3
\ \/	_12V0_IN1A	J62 FAN
/	Y	V_S0_FAN
> <u>v</u> -	_5V0_S0	
		IGALIC CAN
、 V	5V0 S0 (1A)	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_5V0_S0 (1A)	J6+U6 CAN 5V0
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_5V0_S0 (1A)	5V0
	_5V0_S0 (1A) _5V0_S0 (1A)	5V0 _{J7+U5} CAN
		5V0
		J7+U5 CAN 5V0
> <u>V_</u>		J7+U5 CAN 5V0 J42+U43 HDM
> <u>V_</u>	_5V0_S0 (1A)	J7+U5 CAN 5V0
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_5V0_S0 (1A) _5V0_S0 (0.1A)	5V0 J7+U5 CAN 5V0 J42+U43 HDM 5V0
> V_ > V_	_5V0_S0 (1A)	5V0 J7+U5 CAN 5V0 J42+U43 HDM 5V0
> V_ > V_ > V_	_5V0_S0 (1A) _5V0_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3
> V_ > V_ > V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDF 3V3 1V8
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDF 3V3 1V8
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDF 3V3 1V8
V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3
V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A)	5V0 J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD
V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3
V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD
V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3
V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD
V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3
V_ V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3 1V8 J11 SD_care
V_ V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3 1V8
V_ V_ V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _3V3_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3 1V8 J11 SD_care
V_ V_ V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3 1V8 J11 SD_care VDD
V_ V_ V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _3V3_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3 1V8 J11 SD_care VDD
V_ V_ V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _3V3_S0 (0.1A) _3V3_S0 (0.1A) _3V3_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDR 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3 1V8 J11 SD_care VDD
V_ V_ V_ V_ V_ V_ V_	_5V0_S0 (1A) _5V0_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _1V8_S0 (0.1A) _3V3_S0 (0.1A) _3V3_S0 (0.1A)	J7+U5 CAN 5V0 J42+U43 HDM 5V0 J45 PM_HDF 3V3 1V8 J47 eSPI_HD 3V3 1V8 J38 GPIO_HD 3V3 1V8 J11 SD_can VDD J8 eD 3V3

V_1V5_S0 (0.375A)

Rail	Designed up to		EN_BKLT12V	TPS25940A EN PG#	PG_BKLT_12V0	
V_5V0_S0	6A		L			
V_5V0_S5	8A					
V_3V3_S0	10A					
V_3V3_S5	5A					
V_1V8_S0	0.5					
V_1V5_S0	1.5					

Schematics are for reference only.

Refer to ERP BOM and assembly instruction for build values.

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3

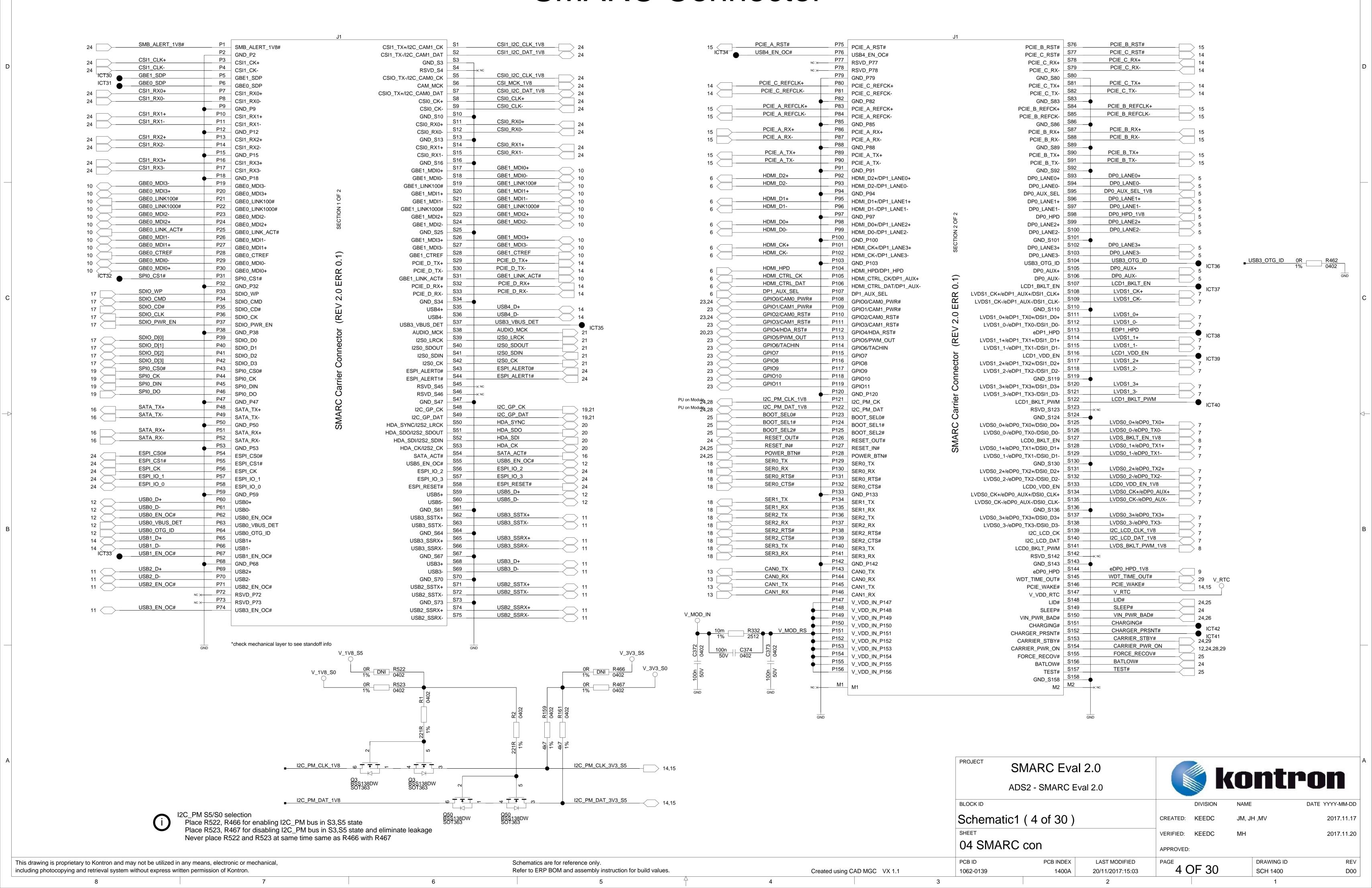
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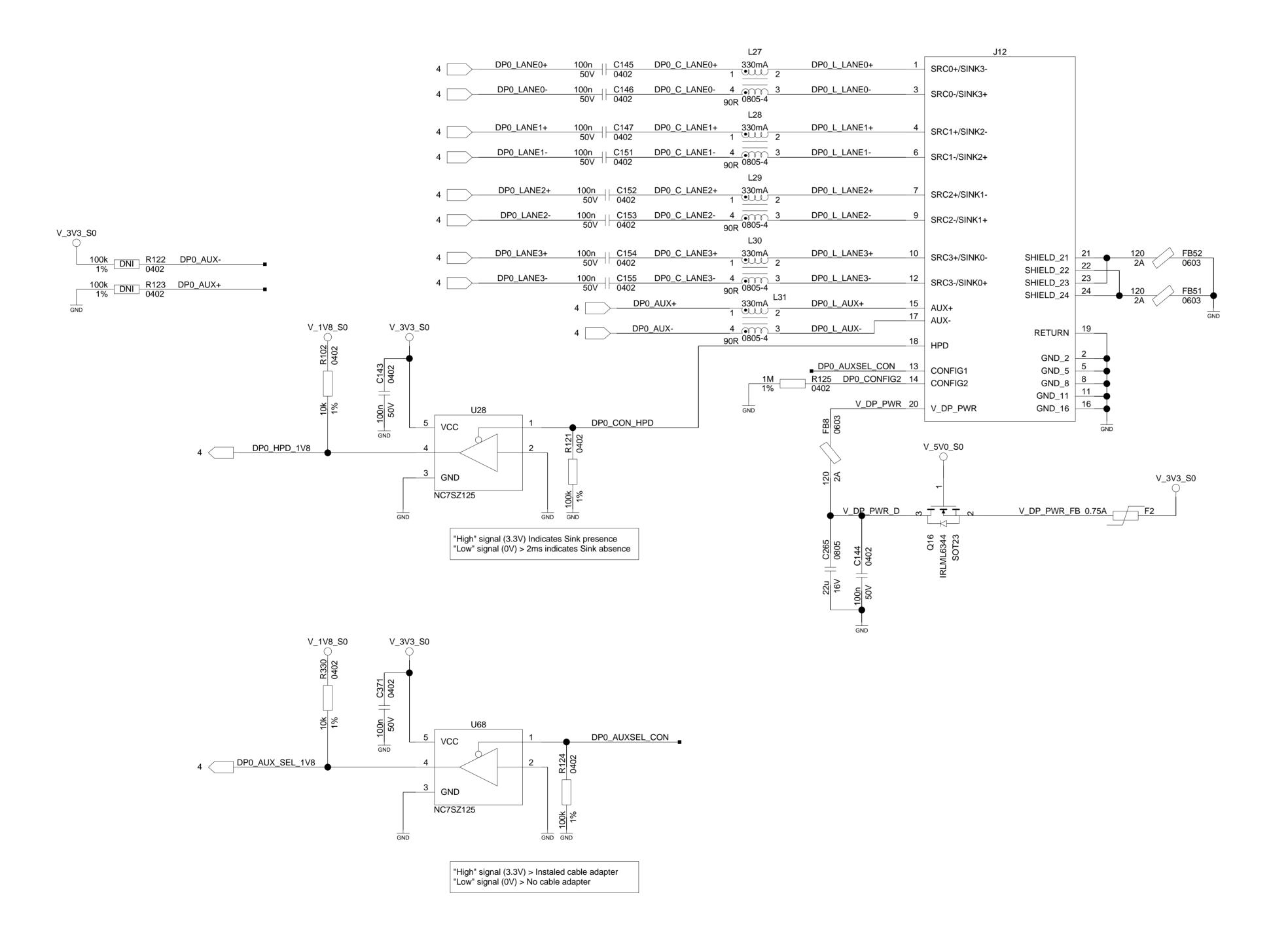
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SHEET			VERIFIED:	KEEDC	MH		2017.11.20
03 Power D	Diagram		APPROVED	:			
PCB ID	PCB INDEX	LAST MODIFIED	PAGE	3 5 6 6		DRAWING ID	REV
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2

SMARC Connector



DP connector



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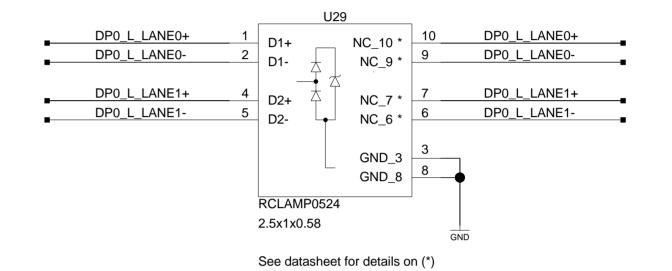
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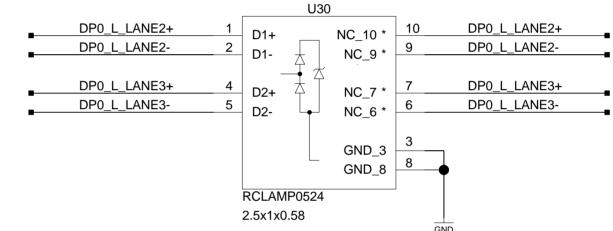
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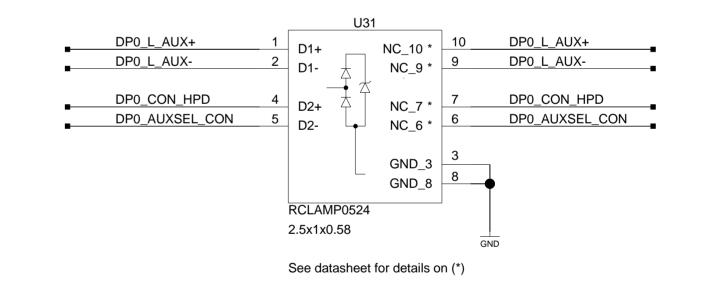
ESD protection





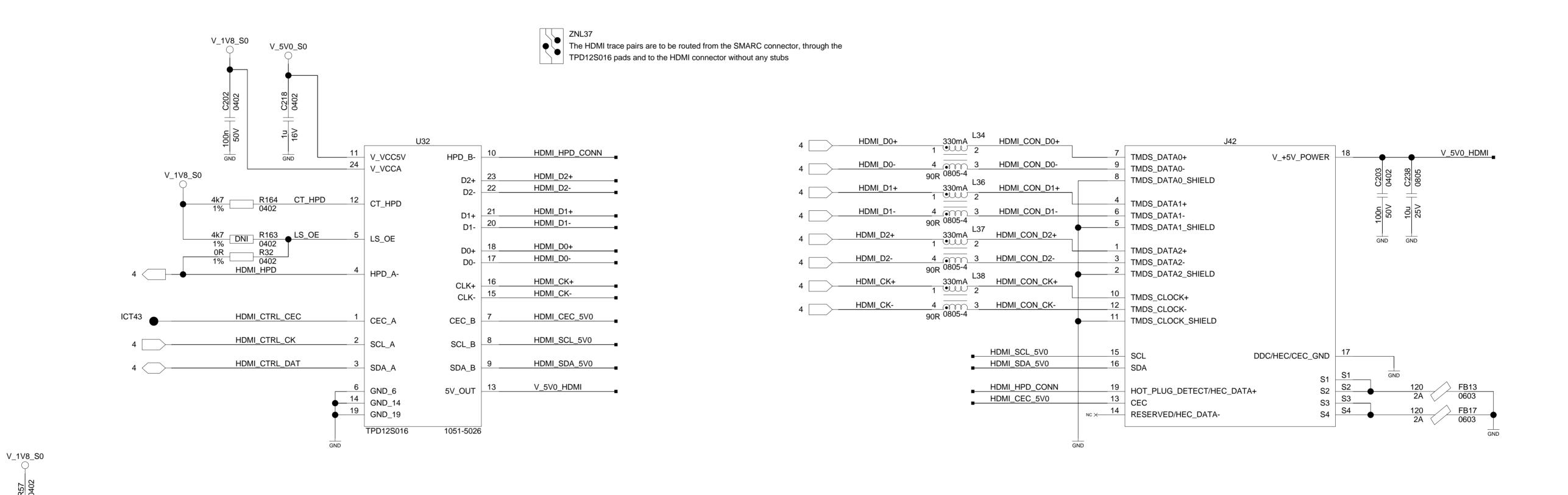


See datasheet for details on (*)



SMARC Eval 2.0 ADS2 - SMARC Eval 2.0 DATE YYYY-MM-DD DIVISION Schematic1 (5 of 30) 2017.11.17 2017.11.20 VERIFIED: KEEDC 05 DP con APPROVED: PCB ID PCB INDEX LAST MODIFIED DRAWING ID 20/11/2017:15:03 SCH 1400 1062-0139 D00

HDMI Connector



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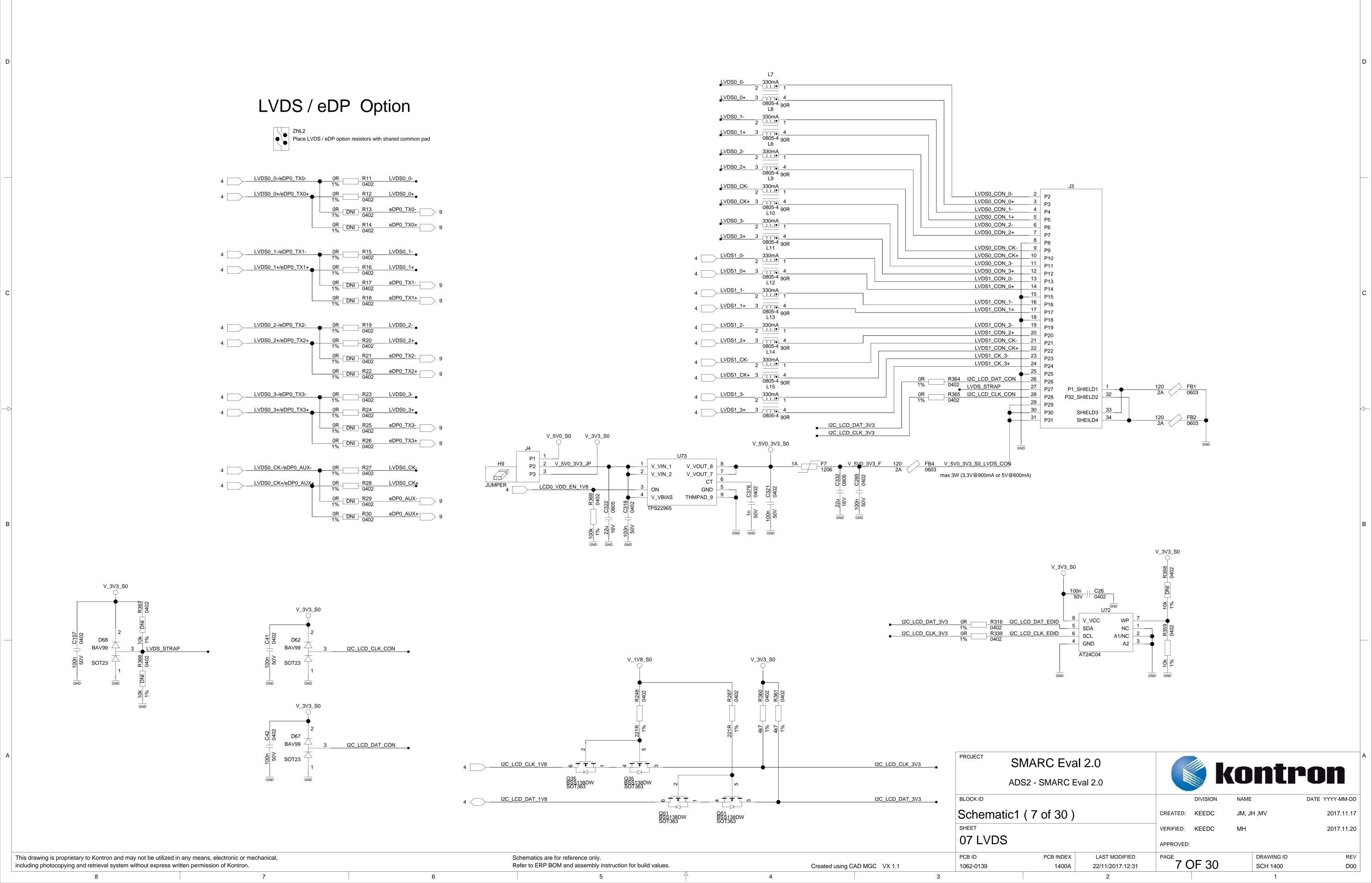
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DP1_AUX_SEL setting: HIGH: HDMI operation LOW: DP1 operation

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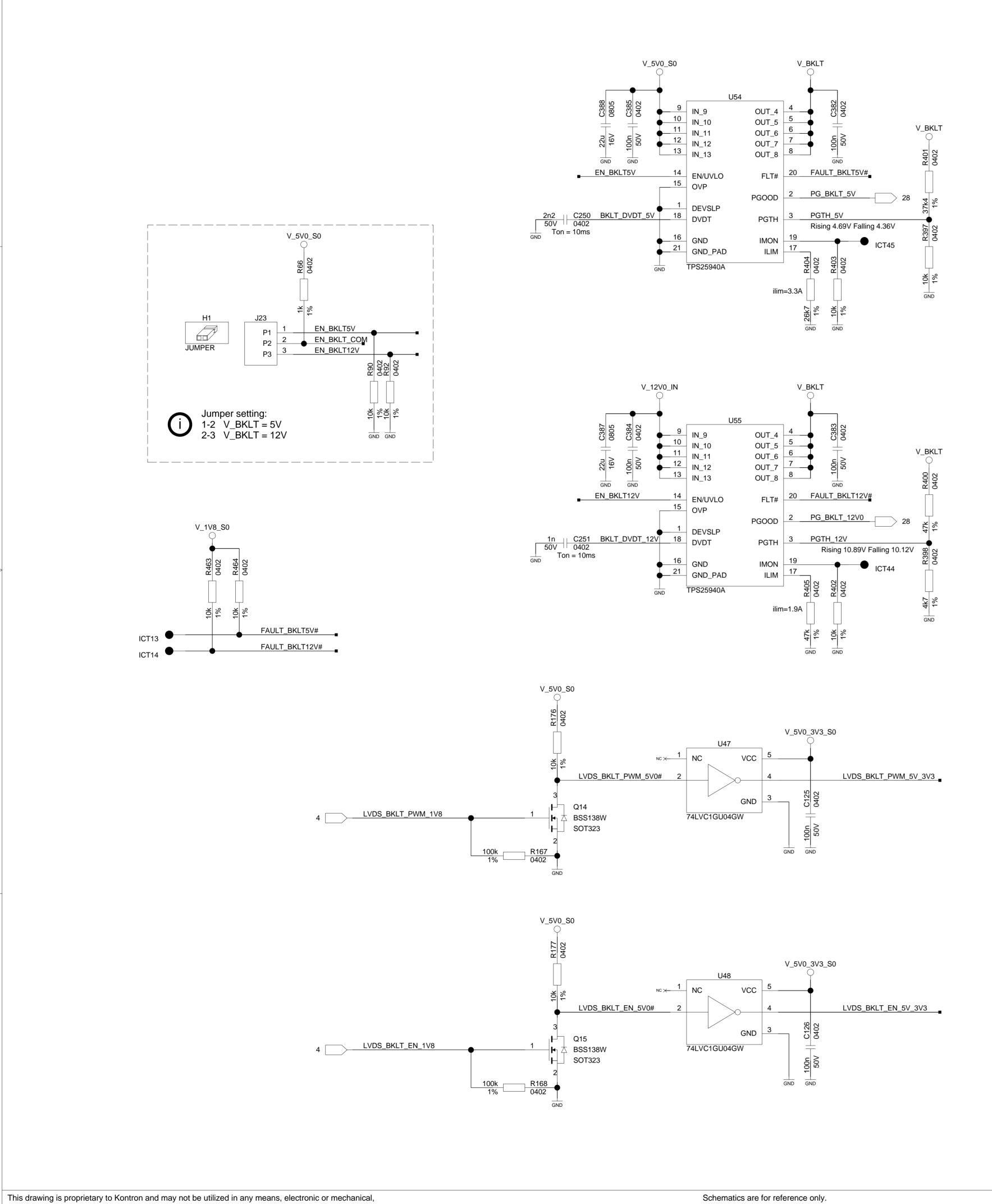
LVDS Data

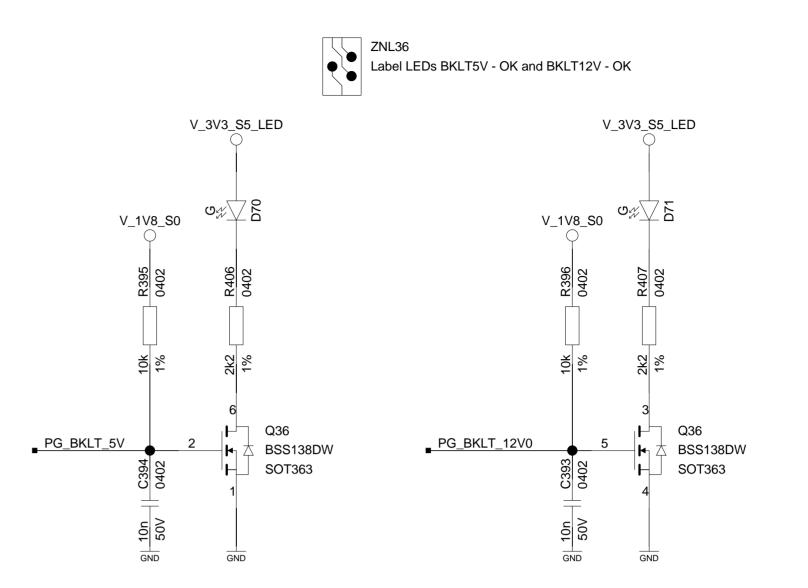


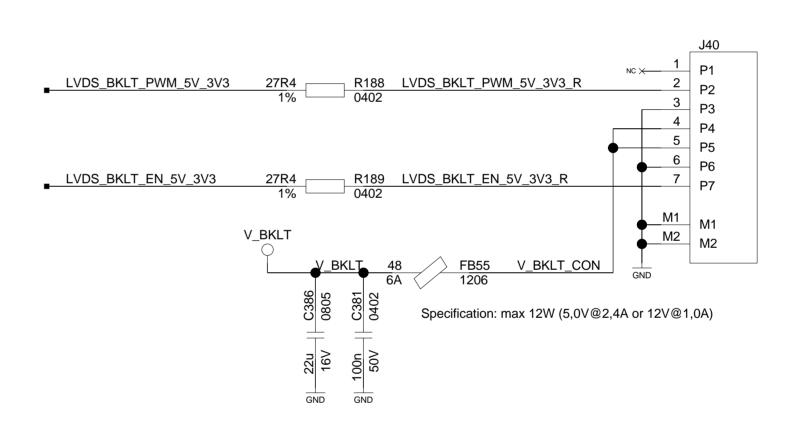
LVDS Backlight

Refer to ERP BOM and assembly instruction for build values.

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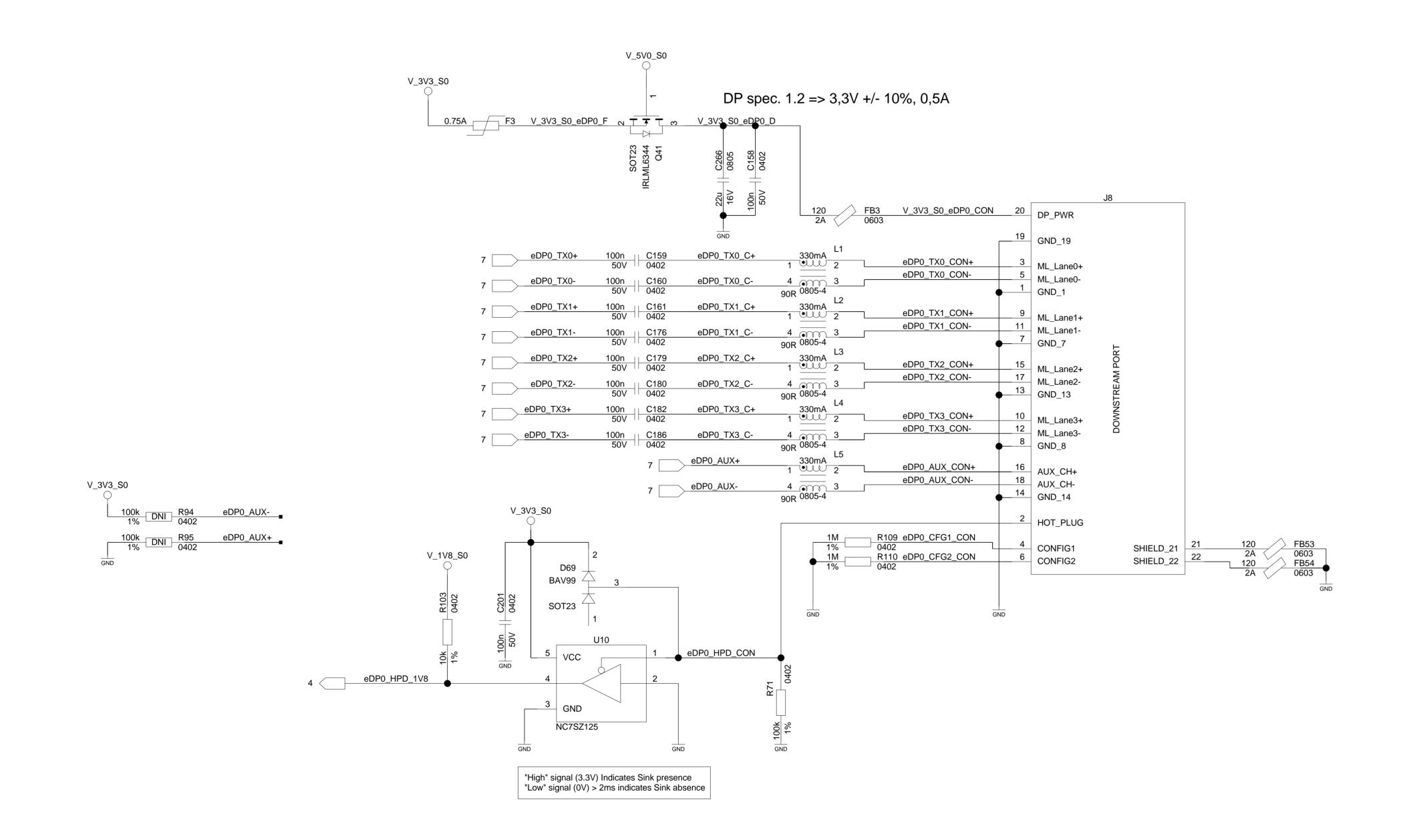






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Schematic1	(8 of 30)		CREATED:	KEEDC	JM, JI	H ,MV	2017.11.17
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08 LVDS Backlight			APPROVED				
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1062-0139	1400A	20/11/2017:15:03	8 (OF 30		SCH 1400	D00

eDP connector



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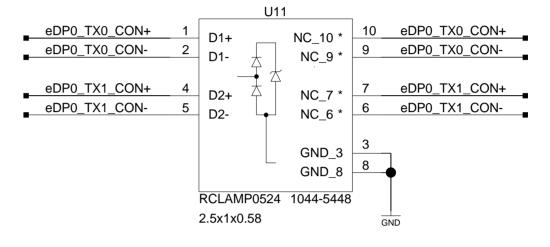
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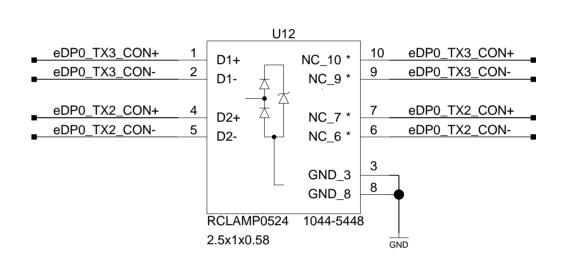
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ESD protection



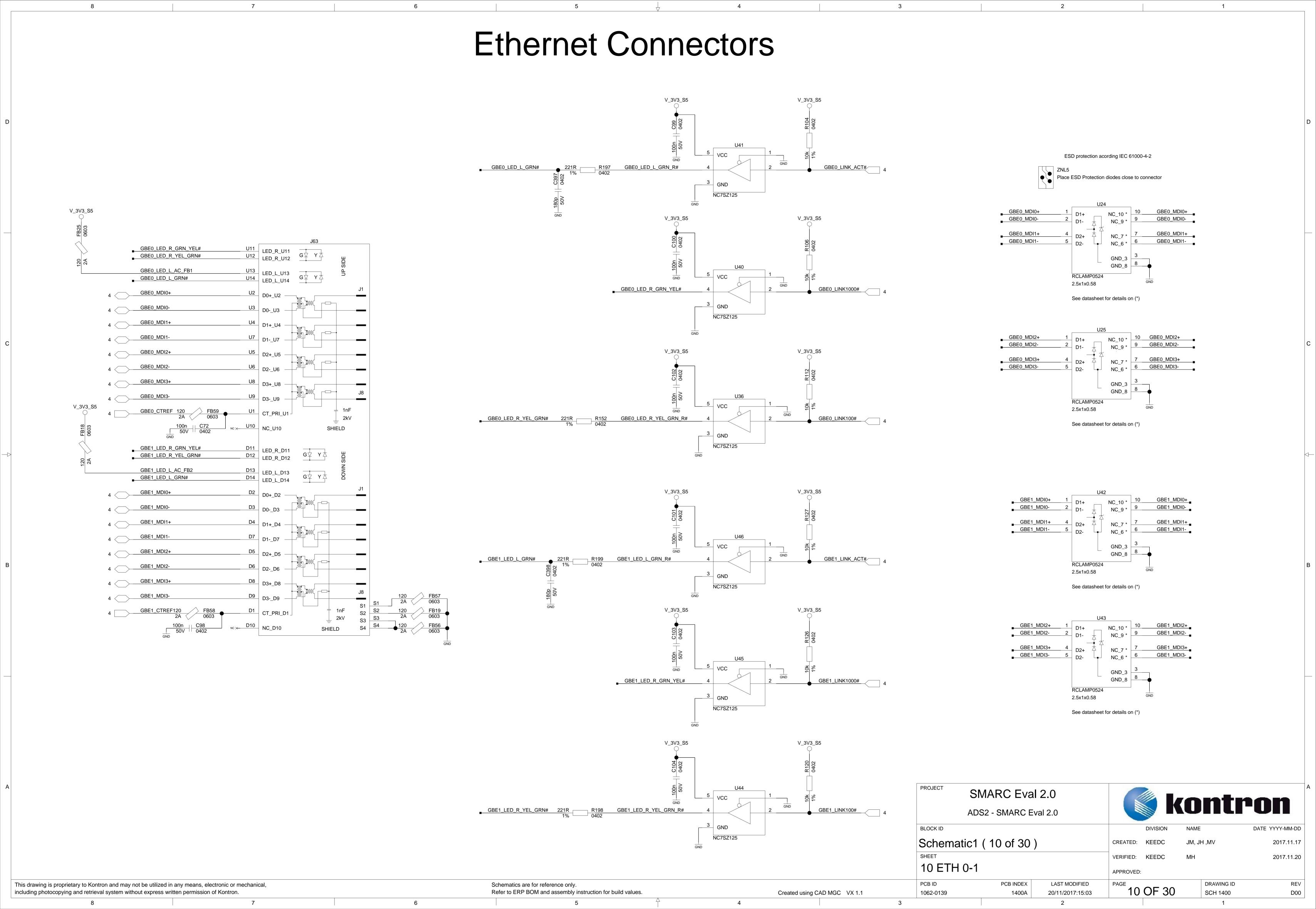


See datasheet for details on (*)

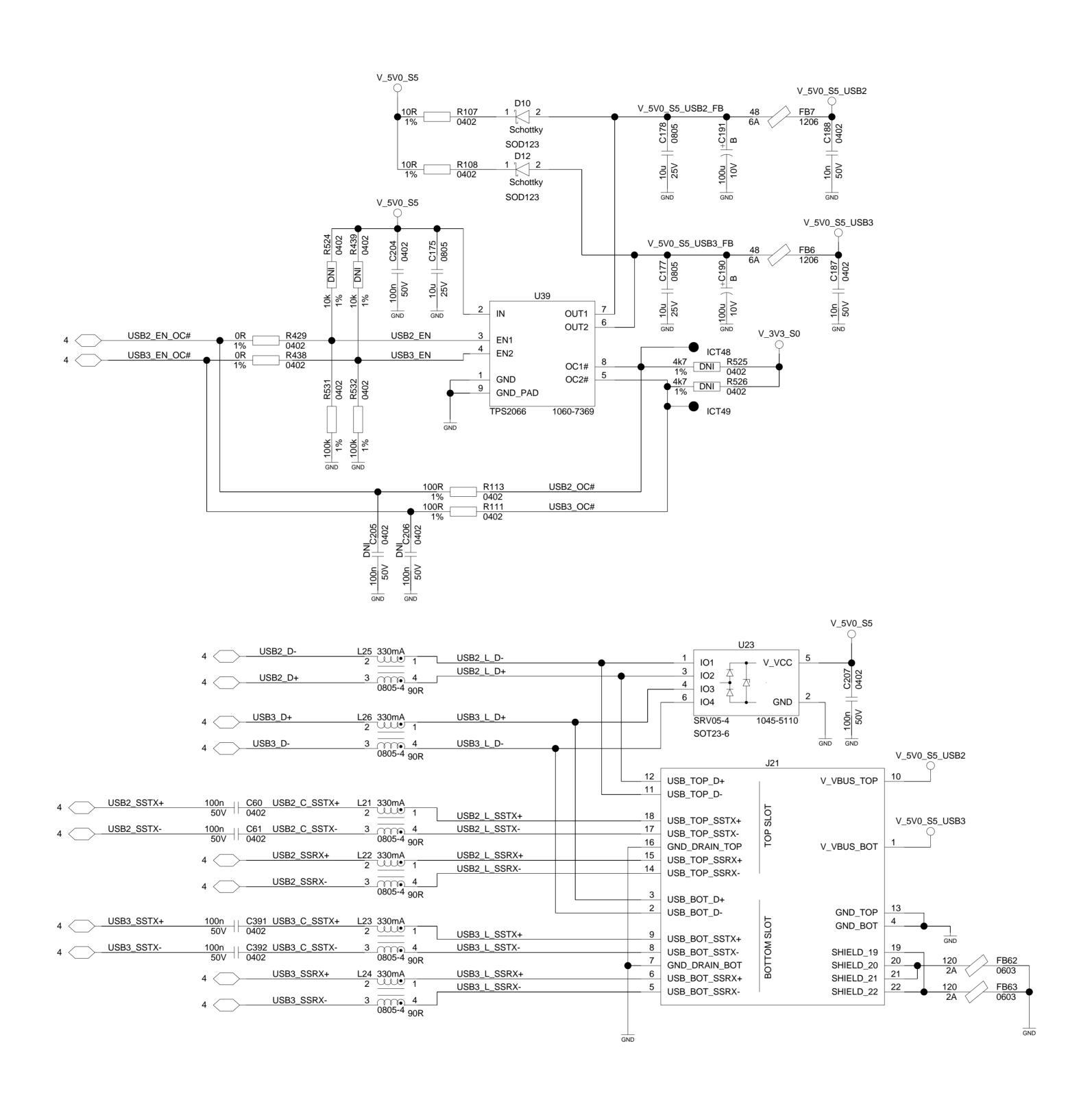


See datasheet for details on (*)

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BLOCK ID			DIVISION	NAME		DATE YYYY-MM-DD	1
Schematic1 (9 of 30)		CREATED:	KEEDC	JM, JI	H ,MV	2017.11.17	
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USB 3.0 Connectors



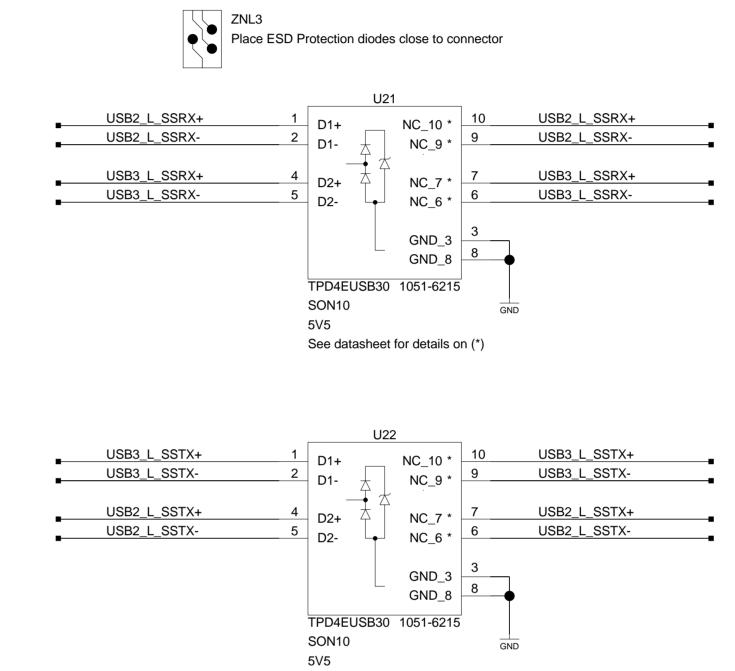
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ESD protection



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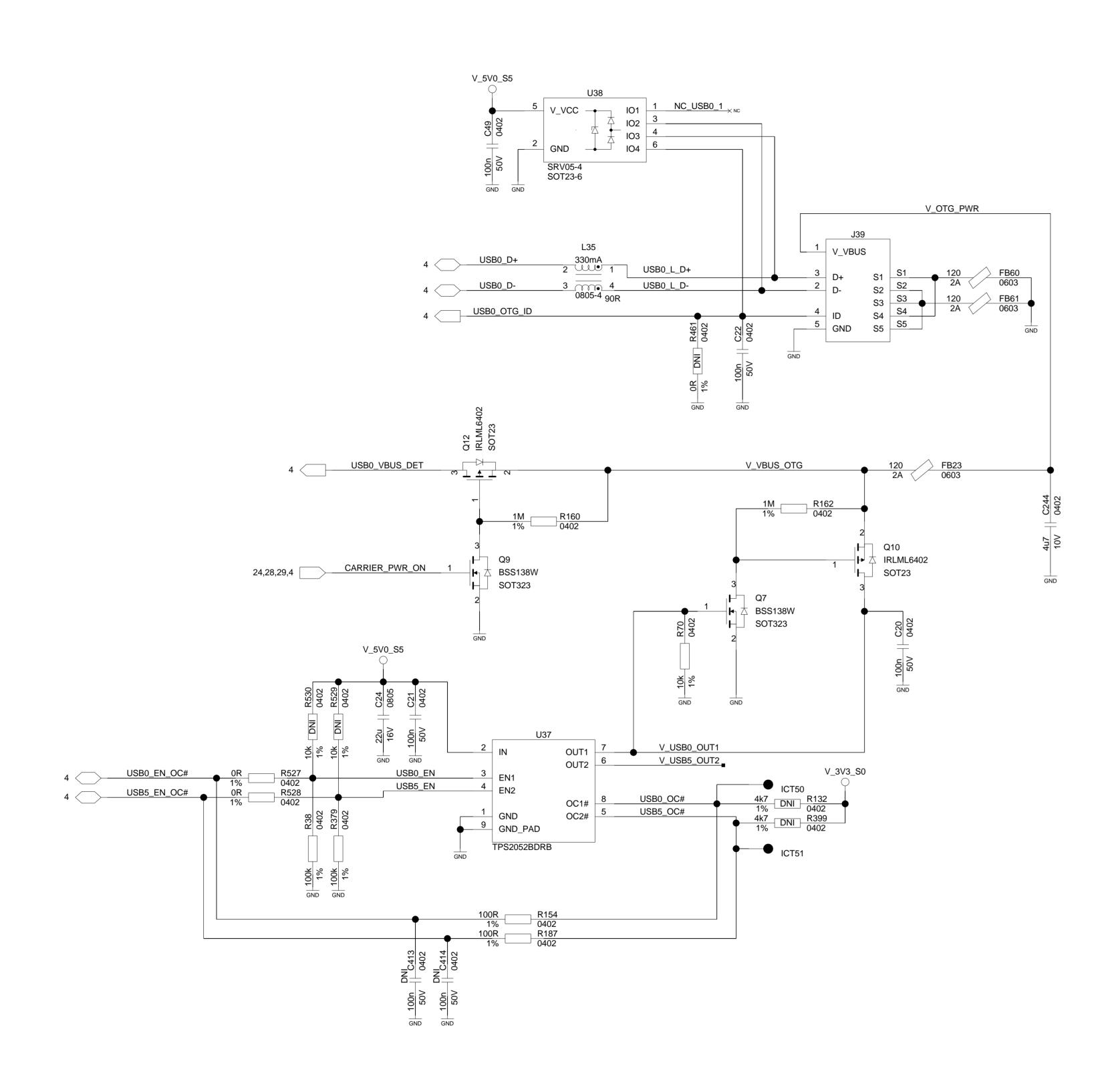
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2

USB 2.0 OTG Connector

USB 2.0 Header



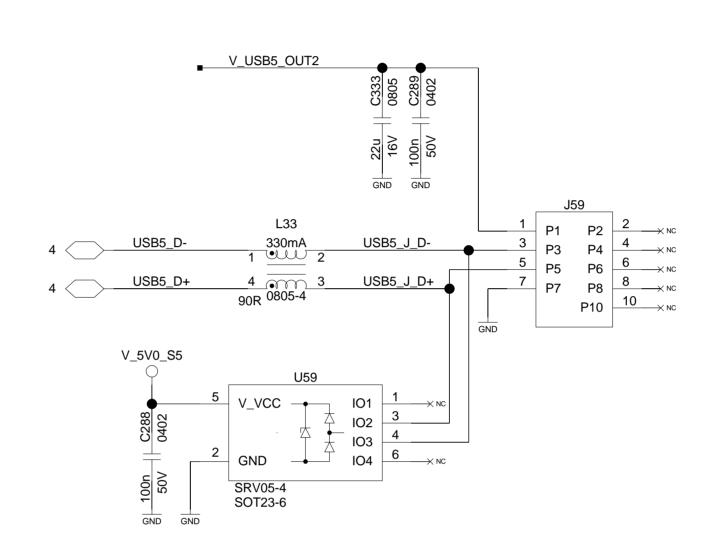
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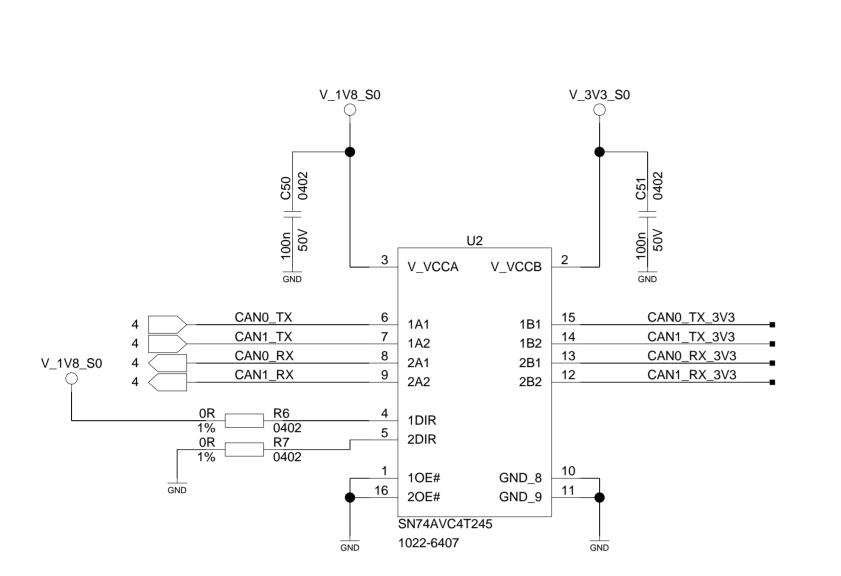
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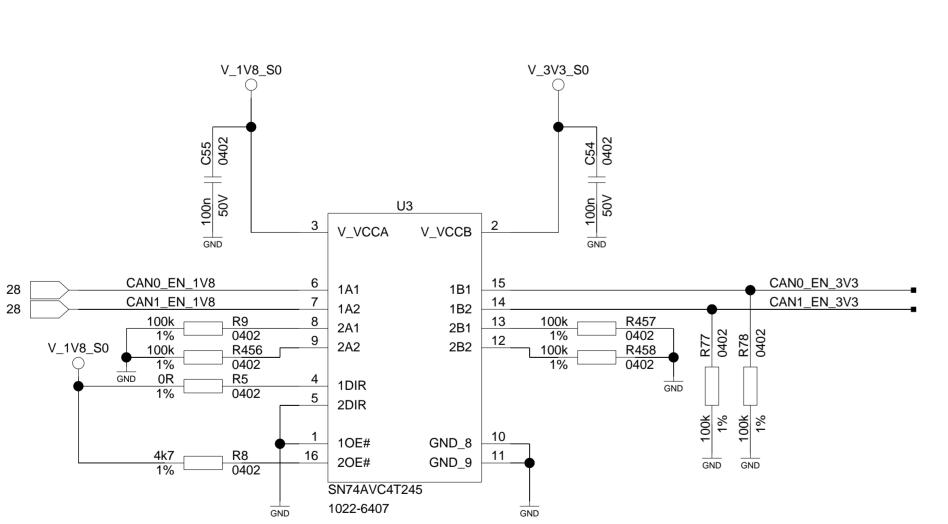
Created using CAD MGC VX 1.1



PROJECT SI	MARC Eva	ıl 2.0			7		2012
AD	S2 - SMARC E	Eval 2.0			U		on
BLOCK ID				DIVISION	NAME		DATE YYYY-MM-DD
Schematic1	(12 of 30)	CREATED:	KEEDC	JM, J	H ,MV	2017.11.17
SHEET			VERIFIED:	KEEDC	MH		2017.11.20
12 USB 20			APPROVED:	:			
PCB ID	PCB INDEX	LAST MODIFIED	PAGE	0=00		DRAWING ID	REV
1062-0139	1400A	20/11/2017:15:03	12	OF 30		SCH 1400	D00
		_				4	

CAN Transceivers



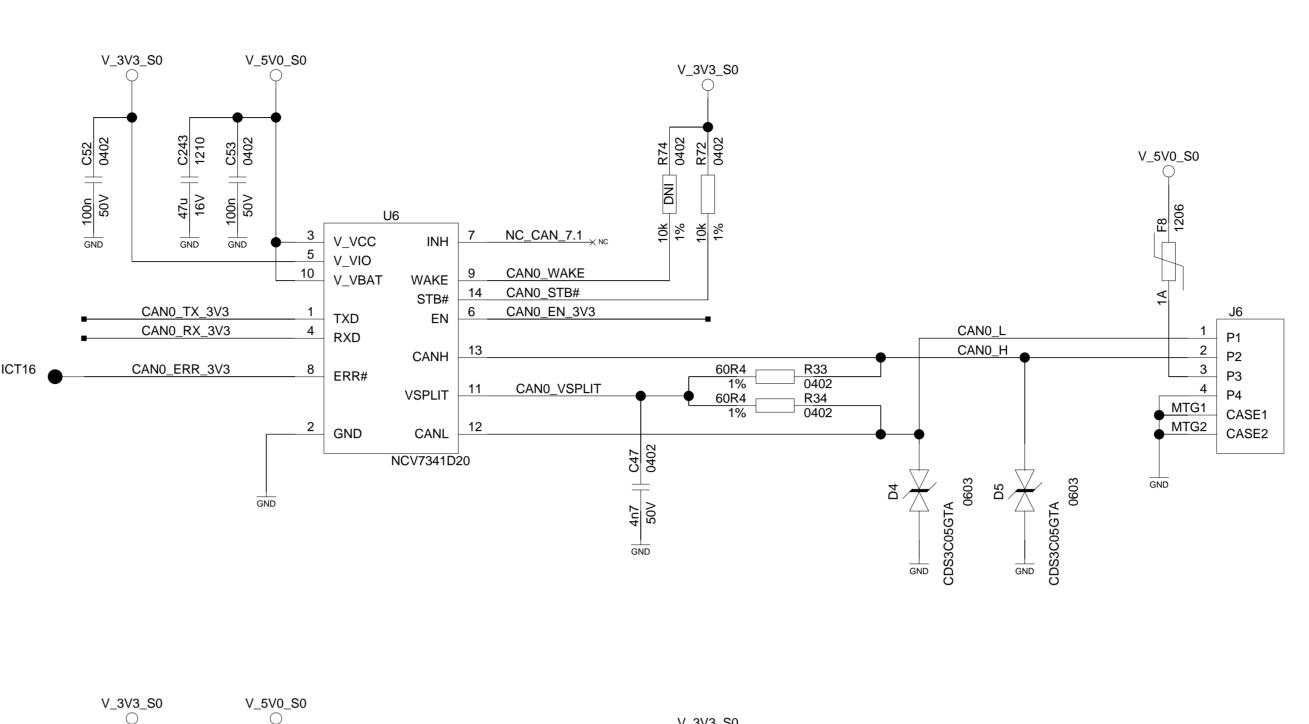


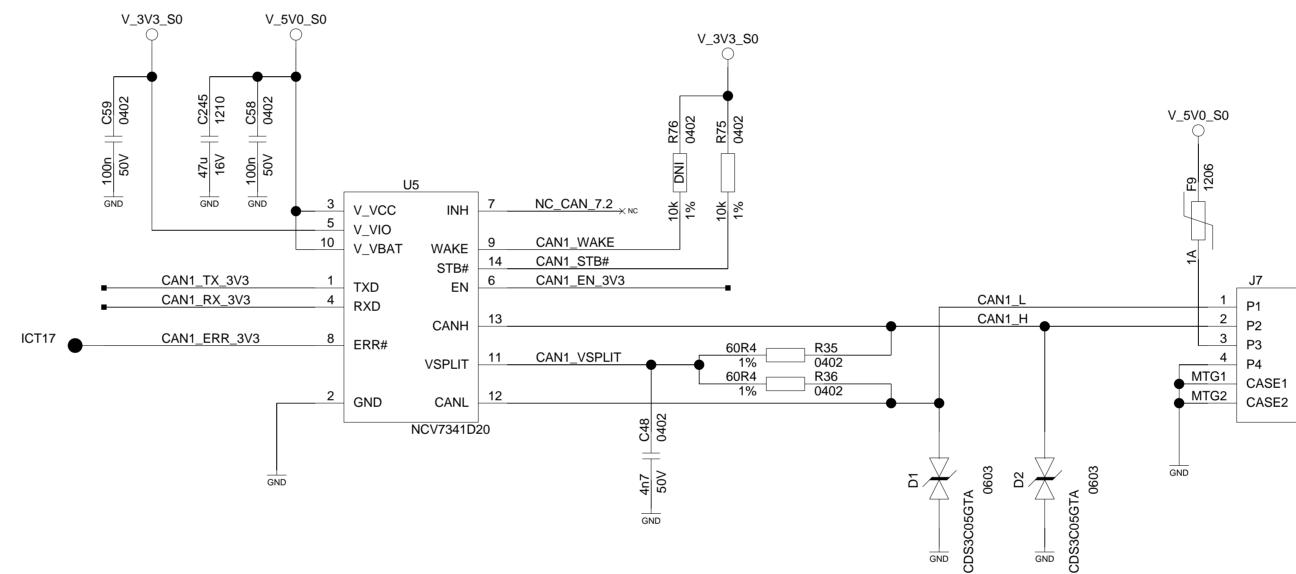
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Schematics are for reference only.

Refer to ERP BOM and assembly instruction for build values.



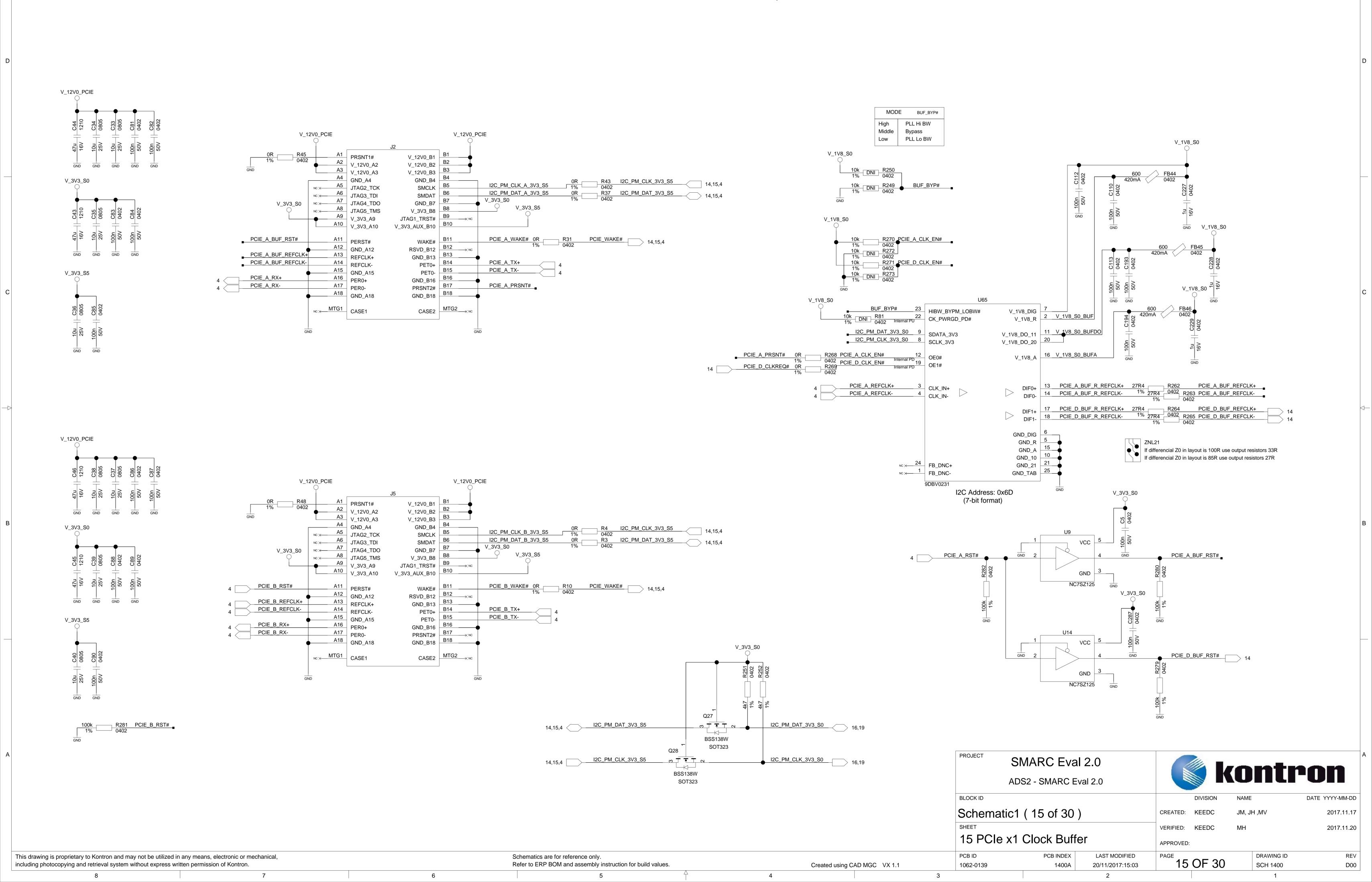


Created using CAD MGC VX 1.1

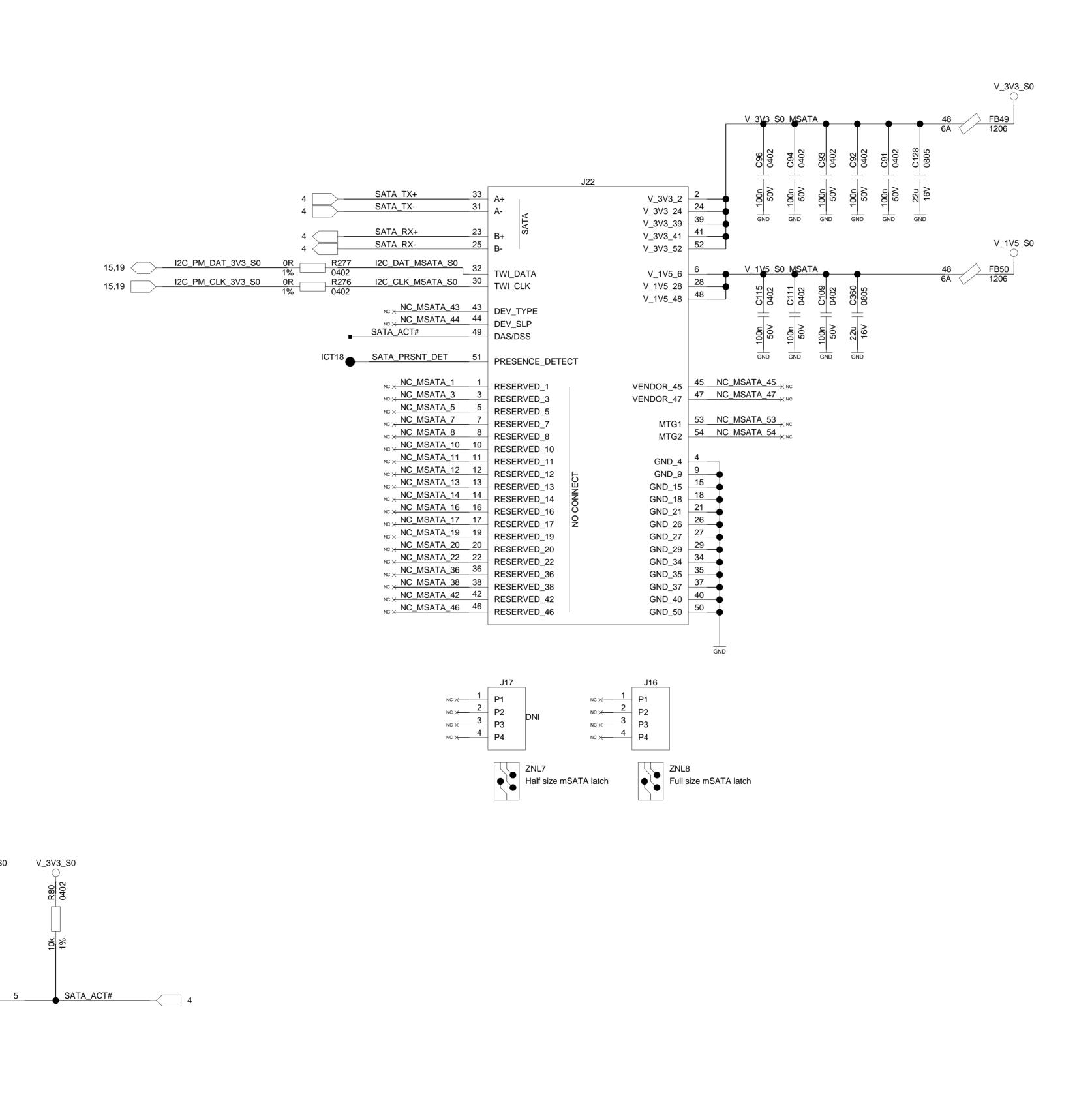
SMARC Eval 2.0 ADS2 - SMARC Eval 2.0					KO	ntr	on
BLOCK ID				DIVISION	NAME		DATE YYYY-MM-DD
Schematic1	(13 of 30)	CREATED:	KEEDC	JM, J	H ,MV	2017.11.17
SHEET			VERIFIED:	KEEDC	МН		2017.11.20
13 CAN con			APPROVED	:			
PCB ID	PCB INDEX	LAST MODIFIED	PAGE	05.00		DRAWING ID	REV
1062-0139	1400A	20/11/2017:15:03	13	OF 30		SCH 1400	D00

mPCle Connectors V_3V3_S5_LED PCIE_C_REFCLK+ 13 REFCLK+ ZNL14 Place close to mPCle con. A Label LEDs as WPAN-A, WLAN-A, WWAN-A V_3V3_AUX_24 V_3V3_AUX_39 V_3V3_AUX_41 V_1V5_S0 MPCIEA_WPAN# V_3V3_AUX_52 PCIE_C_TX-V_1V5_28 28 MPCIEA_WWAN# V_1V5_48 PCIe_CLKREQ# not supported with SMARC v. 2.0 specification NC_PCIE_C_CLKREQ# 7 CLKREQ# 47 NC_MPCI_A_47 RESERVED_49 NC_MPCI_A_49 3 NC_MPCI_A_3 × NC 5 NC_MPCI_A_5 ZNL11 Full size mPCle latch UIM_PWR 10k DNI R227UIM_SPU 0402 53 NC_MPCI_A_53 R228UIM_DATA LED_WPAN# GND_4 GND_9 MPCIEA_WWAN# 750R GND_15 15 ZNL10 Half size mPCle latch A_W_DISABLE1# 20 W_DISABLE1# GND_18 GND_21 NC × 3 P3 GND_27 UIM_PWR GND_29 14 UIM_RESET GND_34 10 UIM_DATA GND_35 35 12 UIM_CLK GND C5 Active low signal: Disable radio operation. GND_40 GND_43 43 _____19 UIM_IC_D+ __UIM_IC_D+ UIM_IC_D- 17 UIM_IC_D-GND_50 50 Never use two mPCIe cards in both slots using UIM interface at same time! SIM Card is directly shared between both slots V_3V3_S5_LED PCIE_D_BUF_REFCLK+ 13 REFCLK+ V_3V3_AUX_2 2 V_3V3_AUX_24 V_3V3_AUX_39 V_3V3_AUX_41 V_3V3_AUX_52 V_1V5_S0 MPCIEB_WPAN# V_1V5_28 V_1V5_48 MPCIEB_WWAN# PCIE_D_BUF_RST# 22 PCIE_D_CLKREQ# 45 NC_MPCI_B_45 RESERVED_47 47 NC_MPCI_B_47 NC_MPCI_B_47 RESERVED_49 49 NC_MPCI_B_49 NC 3 NC_MPCI_B_3 × NC 5 NC_MPCI_B_5 ZNL13 Full size mPCle latch MTG1 53 NC_MPCI_B_53 × NC NC × 3 P3 54 NC_MPCI_B_54 LED_WPAN# GND_4 MPCIEB_WWAN# 750R GND_9 GND_15 15 ZNL12 Half size mPCle latch B_W_DISABLE1# 20 W_DISABLE1# GND_18 18 B_W_DISABLE2# 51 W_DISABLE2# GND_21 21 GND_26 GND_27 GND_29 ____14 UIM_RESET GND_34 10 UIM_DATA GND_35 GND_37 GND_40 GND_43 43 __UIM_IC_D+ 17 UIM_IC_D-GND_50 50 __UIM_IC_D-SMARC Eval 2.0 ADS2 - SMARC Eval 2.0 DIVISION DATE YYYY-MM-DD Schematic1 (14 of 30) 2017.11.17 2017.11.20 VERIFIED: KEEDC 14 mPCle APPROVED: PCB ID PCB INDEX LAST MODIFIED DRAWING ID Schematics are for reference only. This drawing is proprietary to Kontron and may not be utilized in any means, electronic or mechanical, 14 OF 30 Refer to ERP BOM and assembly instruction for build values. 01/12/2017:10:39 including photocopying and retrieval system without express written permission of Kontron. SCH 1400 D00 Created using CAD MGC VX 1.1 1062-0139 2

PCIe x1 Connectors, Clock Buffer



mSATA Connector



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V_3V3_S5_LED

BSS138DW SOT363

BSS138DW Z

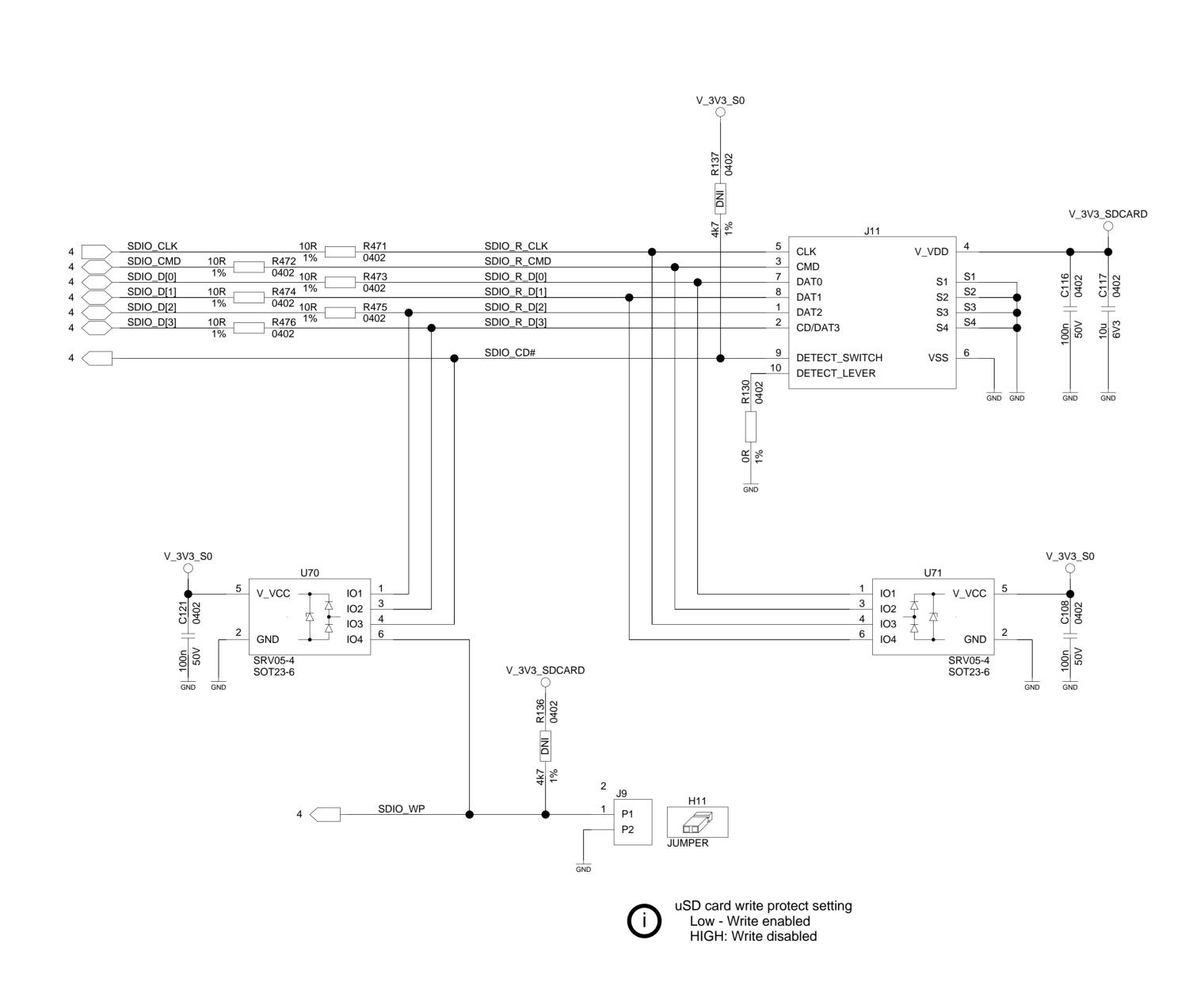
ZNL6

Mark diode in layout as SATA Activity

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SMARC Eval 2.0					70	mtr	on
ADS2 - SMARC Eval 2.0				-UII			
BLOCK ID				DIVISION	NAME		DATE YYYY-MM-DD
Schematic1 (16 of 30)			CREATED:	KEEDC	JM, J	H ,MV	2017.11.17
SHEET			VERIFIED:	KEEDC	MH		2017.11.20
16 mSATA	4		APPROVED:				
PCB ID	PCB INDEX	LAST MODIFIED	PAGE	05 00		DRAWING ID	REV
1062-0139	1400A	20/11/2017:15:03	16	OF 30		SCH 1400	D00

uSD Connector

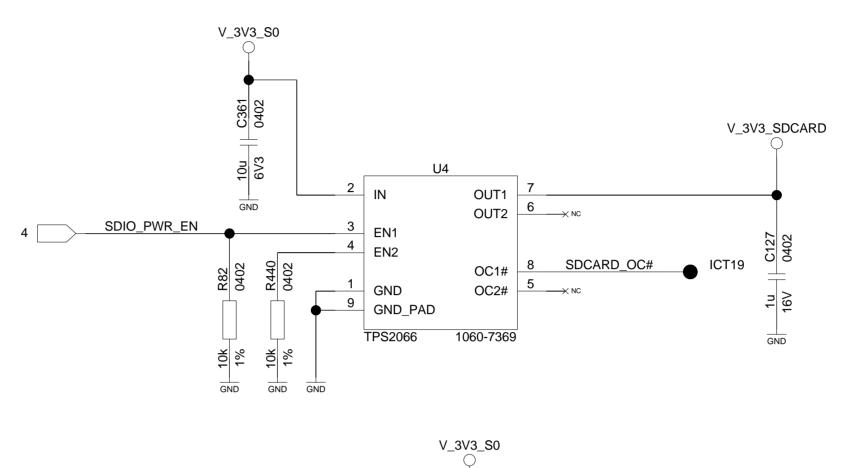


Schematics are for reference only.

Refer to ERP BOM and assembly instruction for build values.

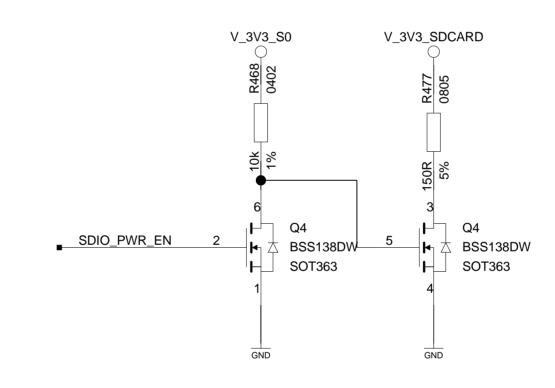
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V_3V3_S0 10k R441 SDCARD_OC# 1% 0402

DISCHARGE

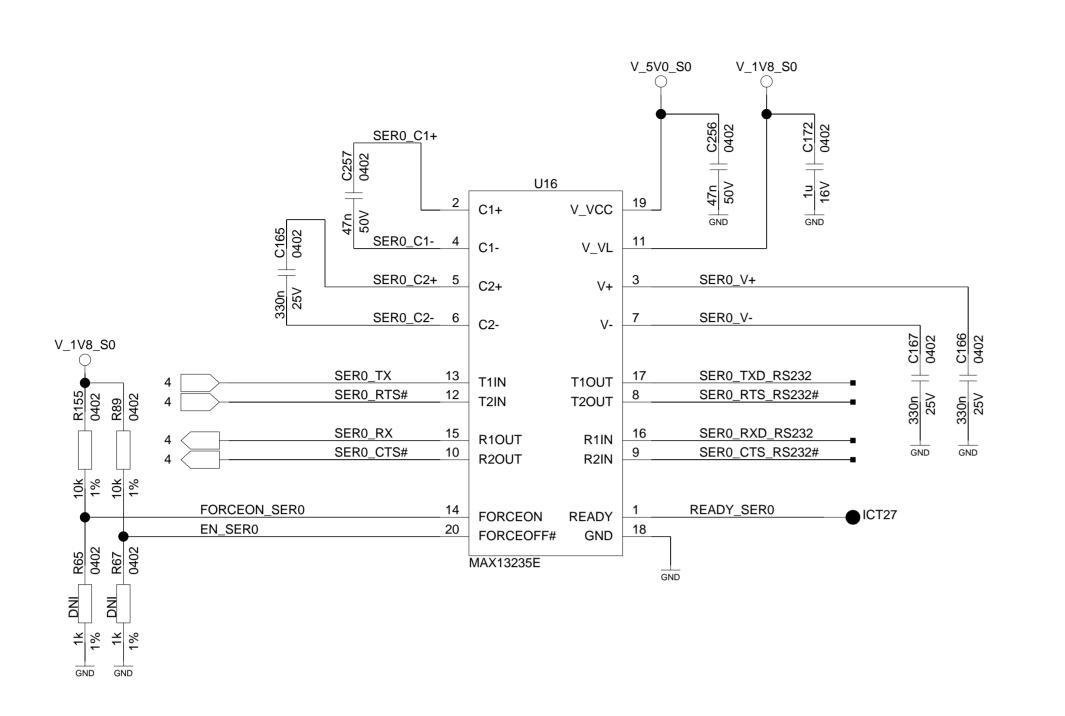


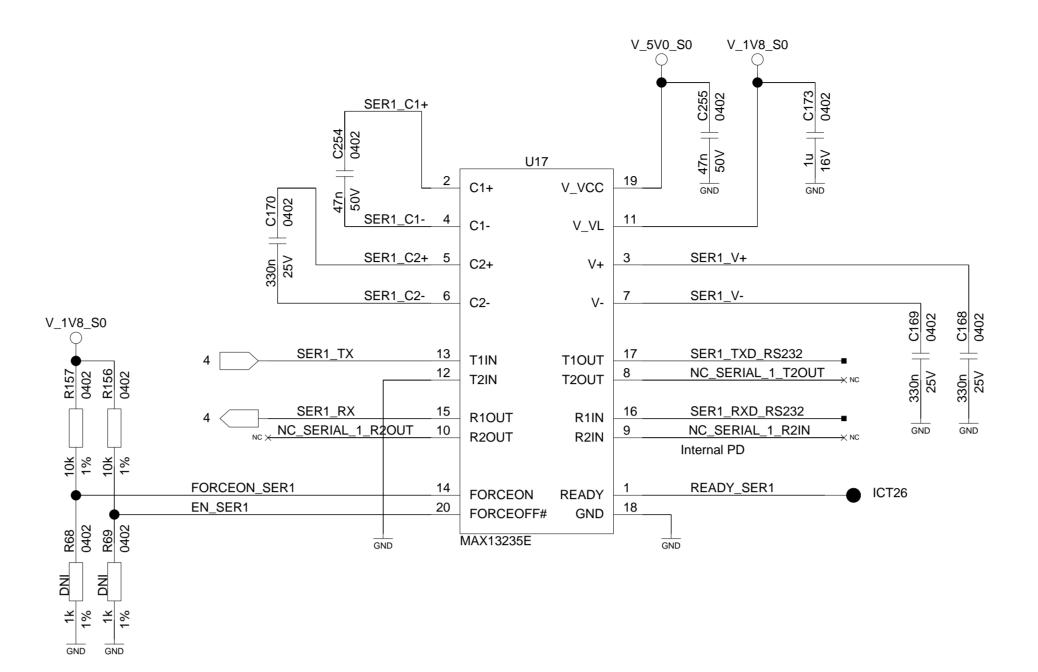
Created using CAD MGC VX 1.1

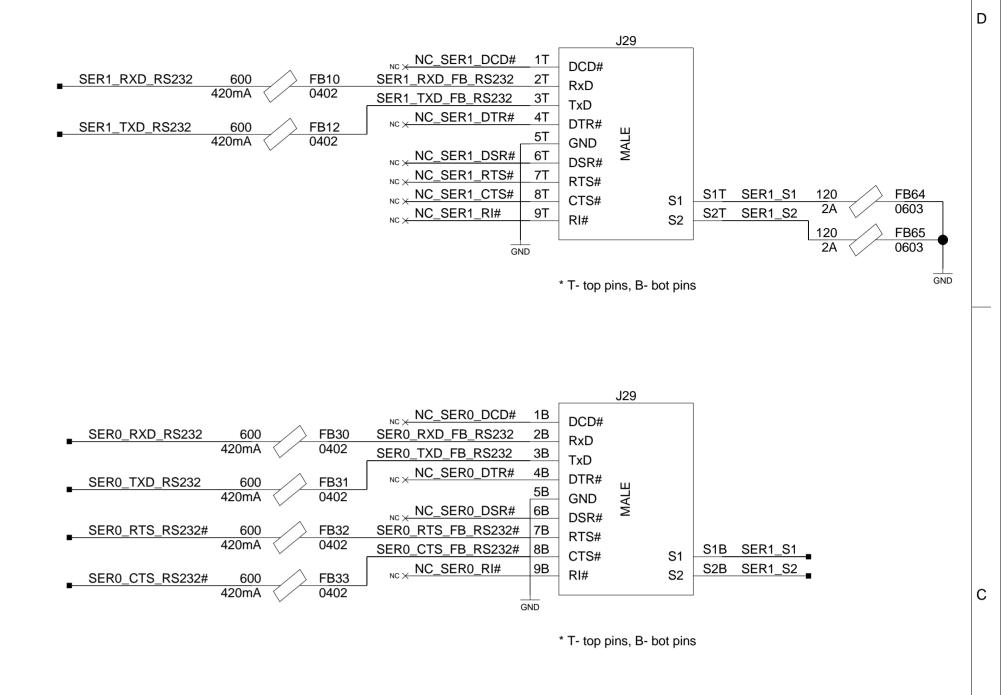
SMARC Eval 2.0 ADS2 - SMARC Eval 2.0 DIVISION DATE YYYY-MM-DD Schematic1 (17 of 30) 2017.11.17 VERIFIED: KEEDC 2017.11.20 17 uSD APPROVED: PCB ID LAST MODIFIED DRAWING ID PCB INDEX 17 OF 30 SCH 1400 1062-0139 20/11/2017:15:03 D00

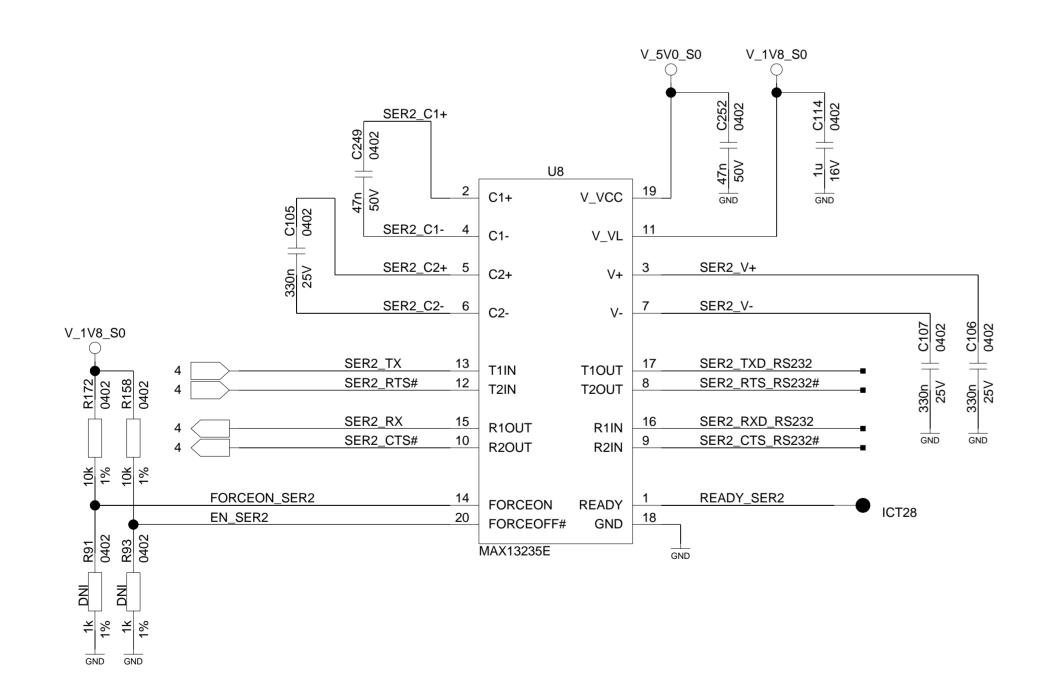
2

High Speed Serial Ports



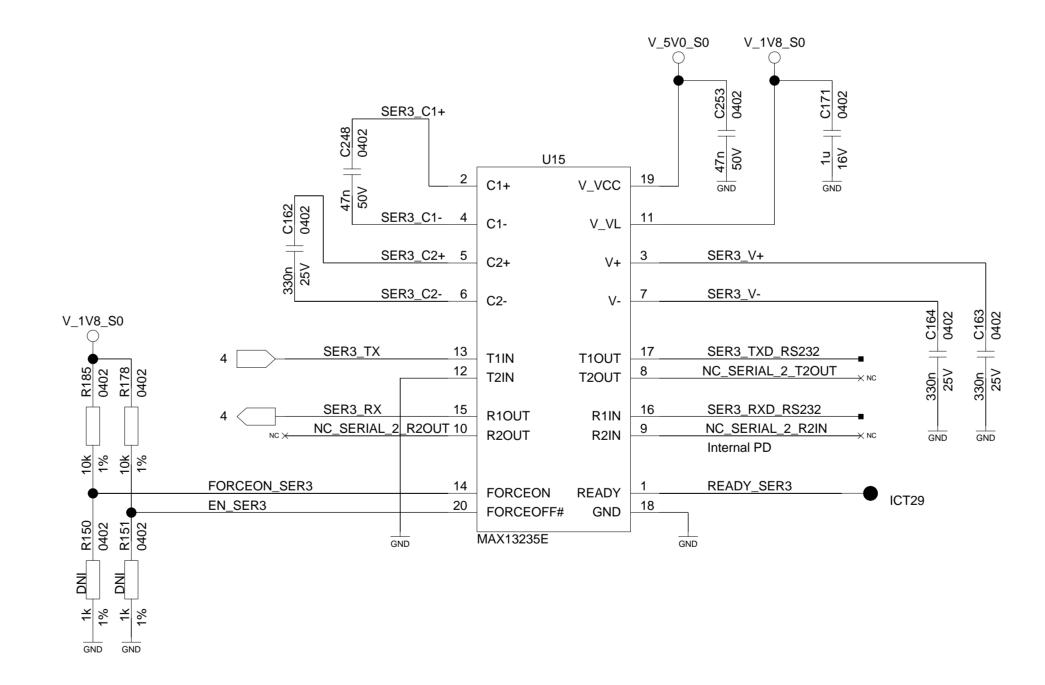






This drawing is proprietary to Kontron and may not be utilized in any means, electronic or mechanical,

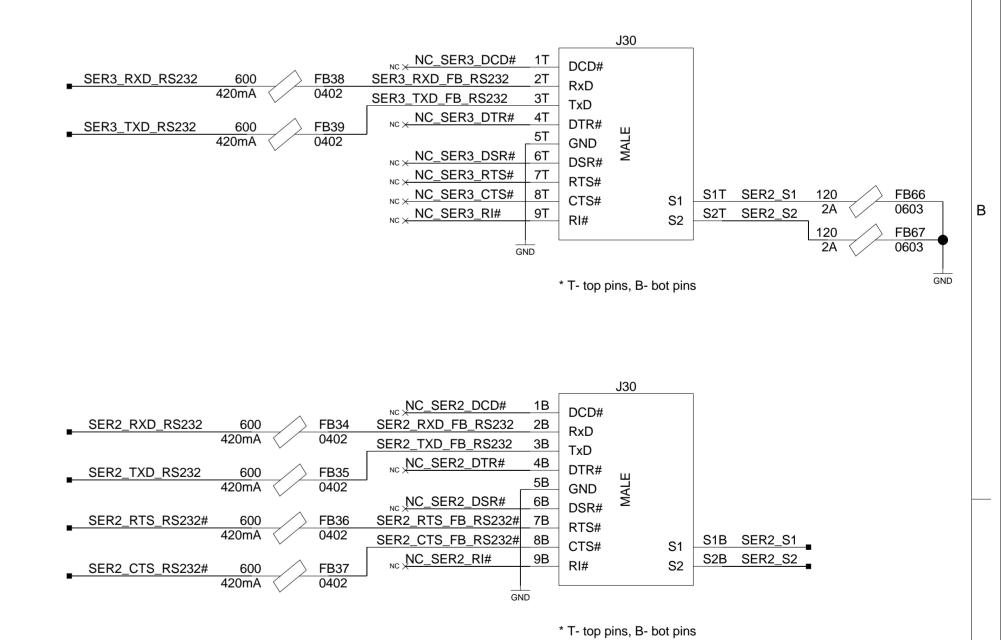
including photocopying and retrieval system without express written permission of Kontron.



Created using CAD MGC VX 1.1

Schematics are for reference only.

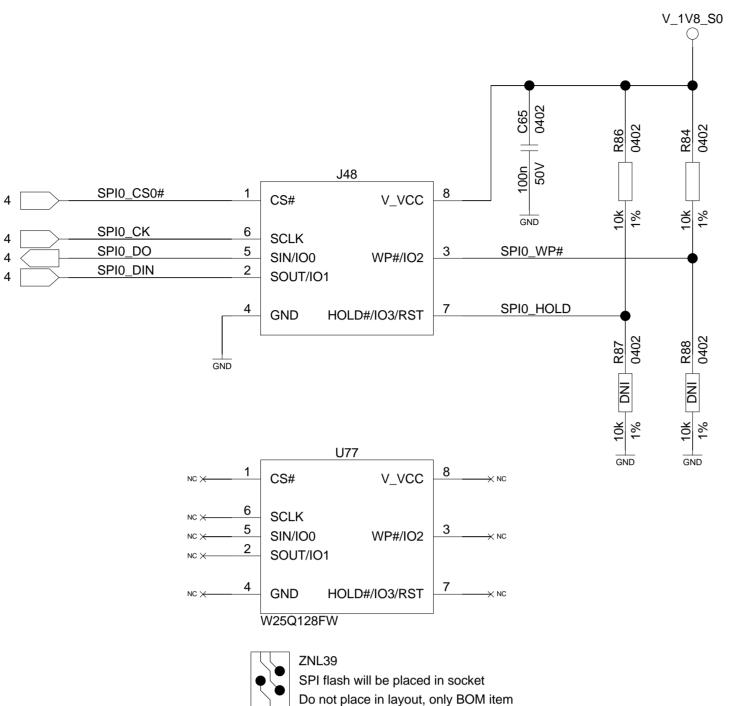
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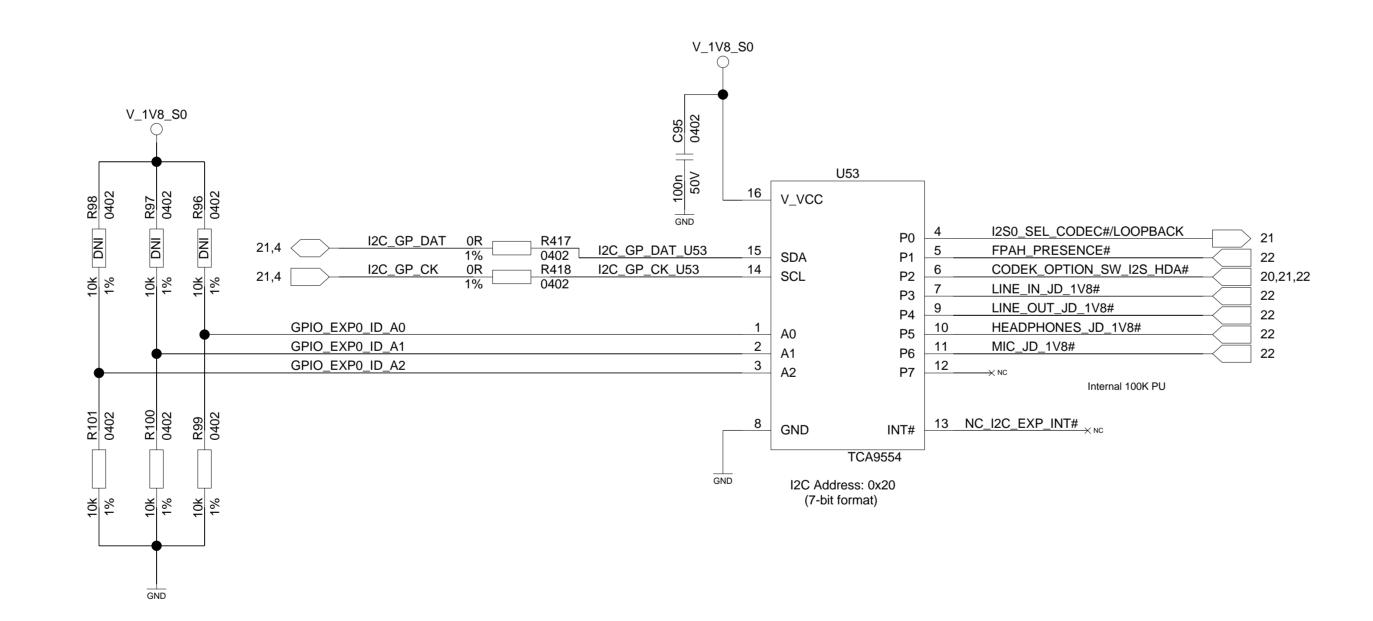
	MARC Eva				KO	ntr	on
BLOCK ID				DIVISION	NAME		DATE YYYY-MM-DD
Schematic1	(18 of 30)	CREATED:	KEEDC	JM, J	H ,MV	2017.11.17
SHEET			VERIFIED:	KEEDC	MH		2017.11.20
18 High Speed Serial Ports			APPROVED				
PCB ID	PCB INDEX	LAST MODIFIED	PAGE	05.00		DRAWING ID	REV
1062-0139	1400A	20/11/2017:15:03	18	OF 30		SCH 1400	D00

SPI Flash Socket

General Purposed I2C EEPROM V_1V8_S0



12C Expander



Schematic1 (19 of 30) CREATED: KEEDC JM, JH ,MV 2017.11.17 SHEET VERIFIED: KEEDC MH 2017.11.20								
BLOCK ID Schematic1 (19 of 30) SHEET DIVISION NAME DATE YYYY-MM-DD CREATED: KEEDC JM, JH ,MV 2017.11.17 VERIFIED: KEEDC MH 2017.11.20	SMARC Eval 2.0							
Schematic1 (19 of 30) CREATED: KEEDC JM, JH ,MV 2017.11.17 SHEET VERIFIED: KEEDC MH 2017.11.20	ADS2 - SMARC Eval 2.0					U		'UII
SHEET VERIFIED: KEEDC MH 2017.11.20	BLOCK ID				DIVISION	NAME	 E	DATE YYYY-MM-DD
VERMILES. NEEDS IVIII	Schematic1 (19 of 30)		CREATED:	KEEDC	JM, J	H ,MV	2017.11.17	
40 CDI Flools Cooket IOO Francisco	SHEET			VERIFIED:	KEEDC	МН		2017.11.20
19 SPI Flash Socket I2C Epander APPROVED:	19 SPI Flash Socket I2C Epander			APPROVED:				
	PCB ID	PCB INDEX	LAST MODIFIED		05.00		DRAWING ID	REV
1062-0139 1400A 20/11/2017:15:03 19 OF 30 SCH 1400 D00	1062-0139	1400A	20/11/2017:15:03	19	OF 30		SCH 1400	D00

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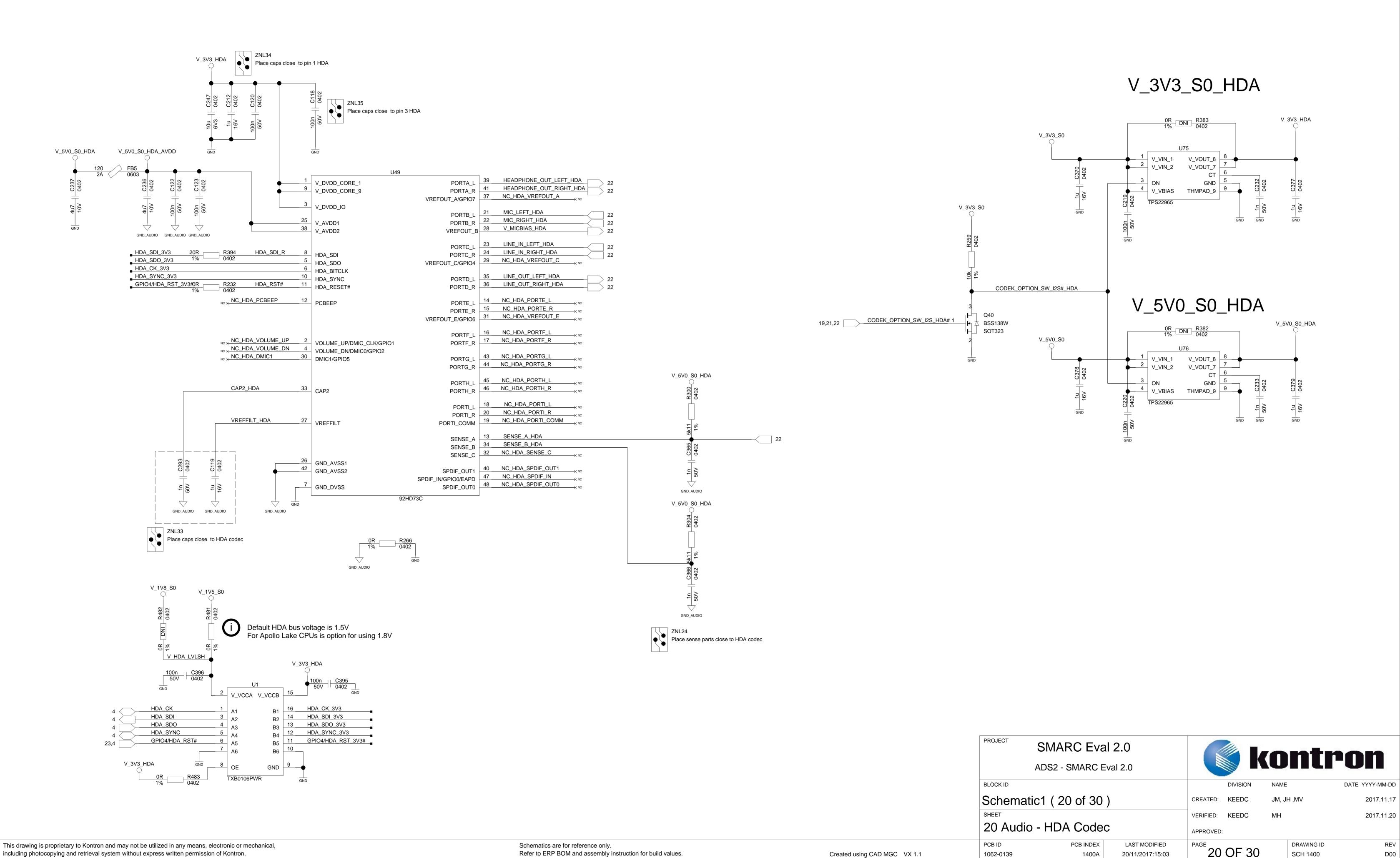
Schematics are for reference only.

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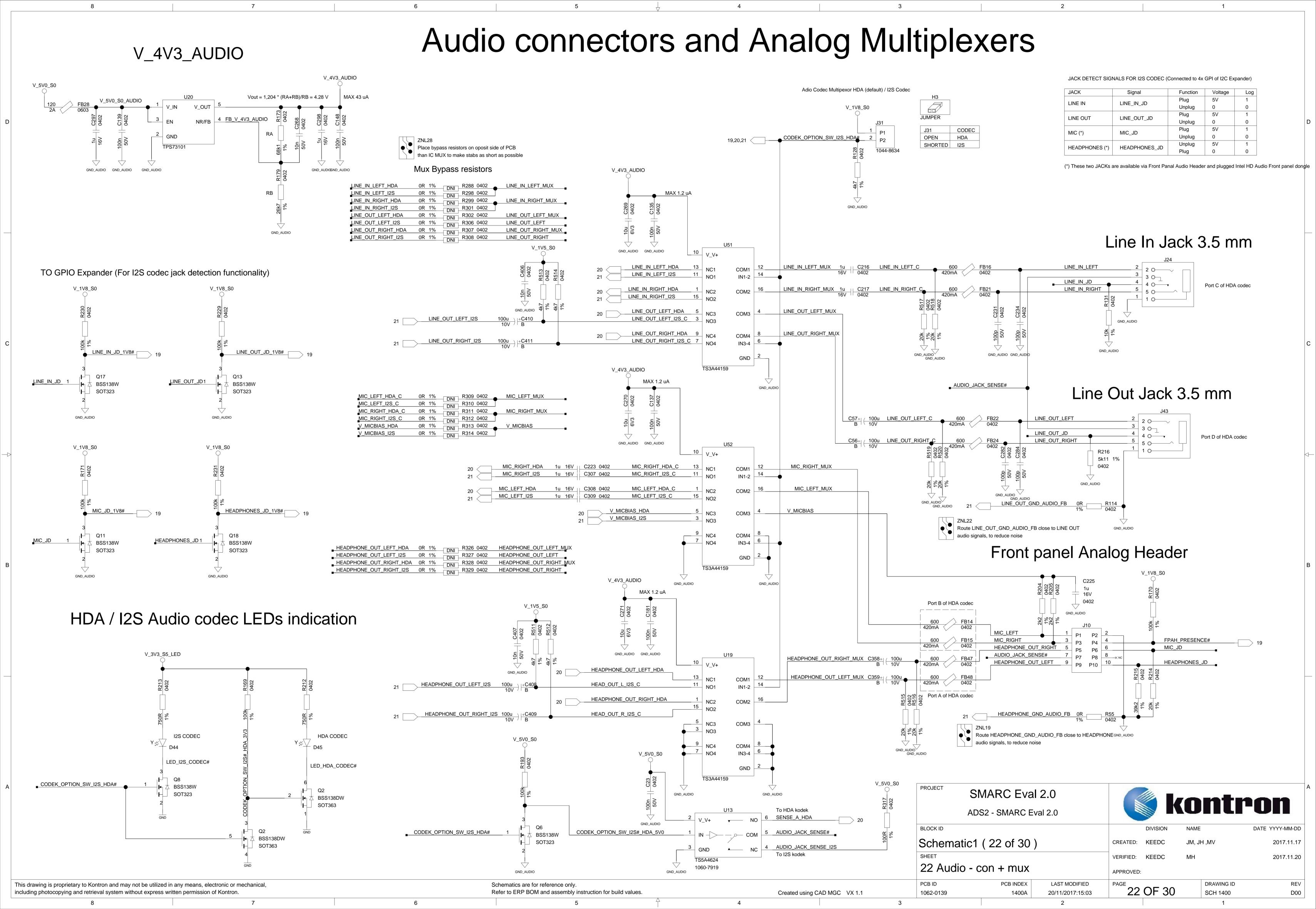
I2C Address: 0x57

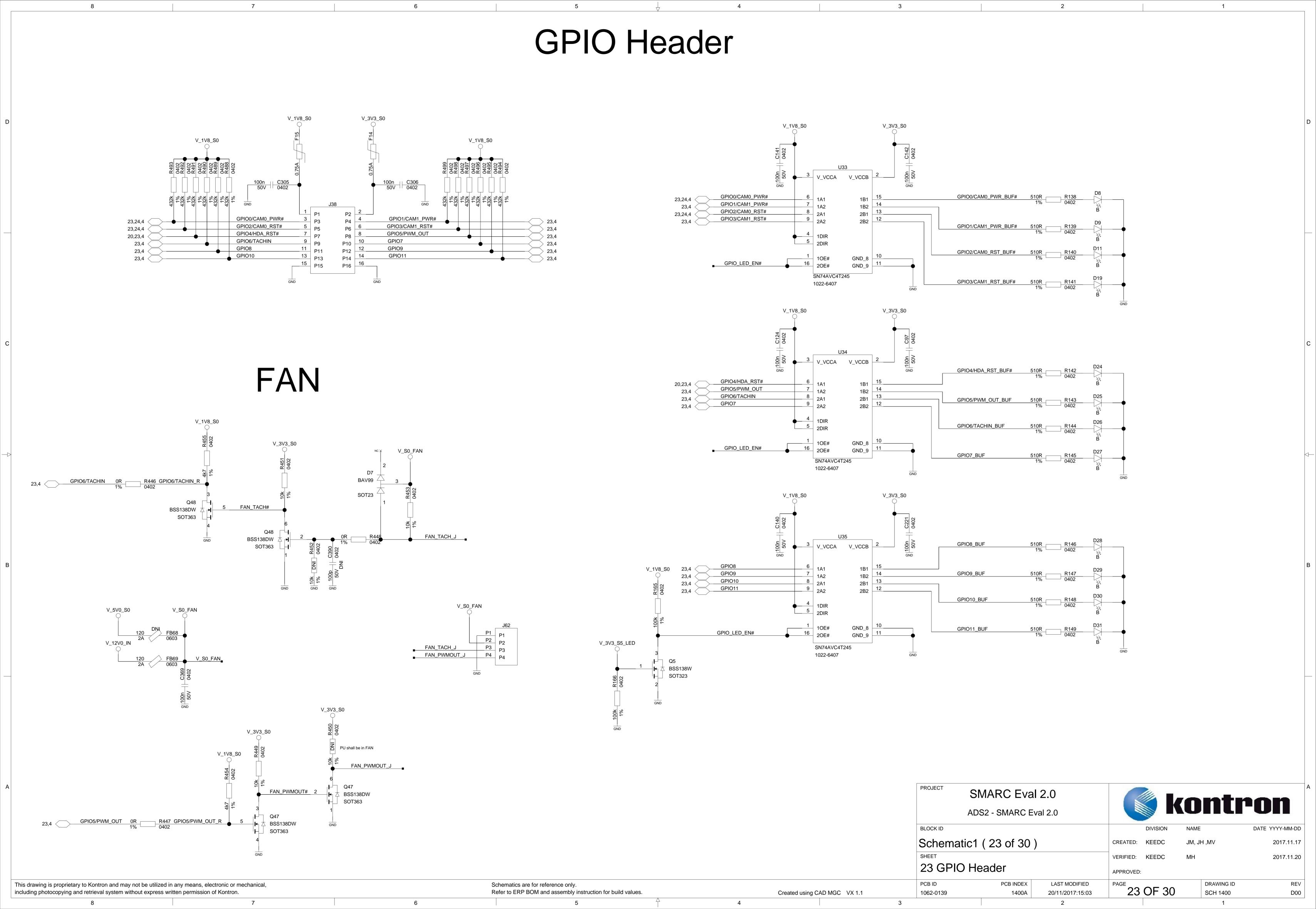
(7-bit format)

Audio HDA Codec

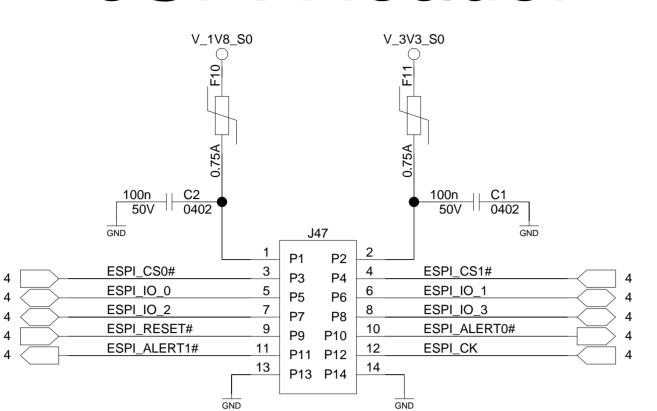


Audio I2S Codec WM8904 V_3V3_MIC V_1V8_S0_I2S_CODEC 0R DNI R40 0402 V_3V3_MIC V_3V3_S0 V_VOUT_8 V_1V8_S0_I2S_CODEC V_1V8_S0_I2S_CODEC V_3V3_MIC V_VBIAS Place Microphone decoupling cap and FB as close as posible to codec WM8904 V_1V8_S0_I2S_CODEC 7 CPVDD V_DCVDD __23 AVDD V_DBVDD V_1V8_S0 V_1V8_S0_I2S_CODEC Place Both Microphone decoupling caps as close as posible to codec WM8904 2 V_VIN_2 V_3V3_S0 **HPOUTR** V_VBIAS DGND CPGND AGND 22 GND_PAD 33 LINE OUT GND AUDIO FB I2C Address: 0x1A (reduce high frequency switching noise from charge pump) (7-bit format) Place ZOBEL Network as close as possible to codec ZNL9 Place Charge pump caps as close as posibe to Codec V_1V8_S0_I2S_CODEC V_1V8_S0_I2S_CODEC GND_AUDIO GND_AUDIO (reduce high frequency switching noise from charge pump) I2S Signal path loopback switch Place R295 and R315 with shared pad with minimum stub Audio loopback for test purposes V_1V8_S0_I2S_CODEC V_VCC OE# I2S0_SDOUT_SW HSD1+ I2S0_SDIN_SW HSD1-HSD2+ HSD2-I2C_WM8904_CK GND 1052-3639 SMARC Eval 2.0 I2C_WM8904_DAT ADS2 - SMARC Eval 2.0 To eliminate codec's driving of I2C bus, when doesn't have power DATE YYYY-MM-DD Schematic1 (21 of 30) 2017.11.17 2017.11.20 VERIFIED: 21 Audio - I2S Codec APPROVED: PCB ID PCB INDEX LAST MODIFIED DRAWING ID This drawing is proprietary to Kontron and may not be utilized in any means, electronic or mechanical, Schematics are for reference only. 21 OF 30 Refer to ERP BOM and assembly instruction for build values. including photocopying and retrieval system without express written permission of Kontron. Created using CAD MGC VX 1.1 20/11/2017:15:03 SCH 1400 1062-0139

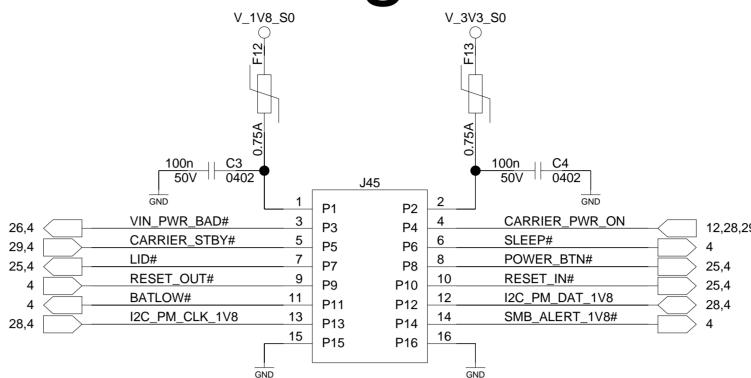




eSPI Header

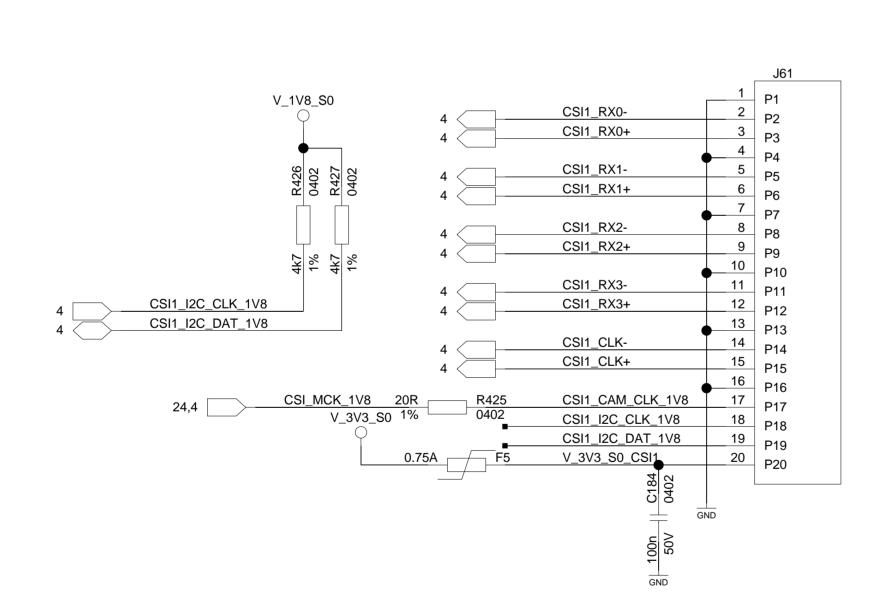


Power Management Header

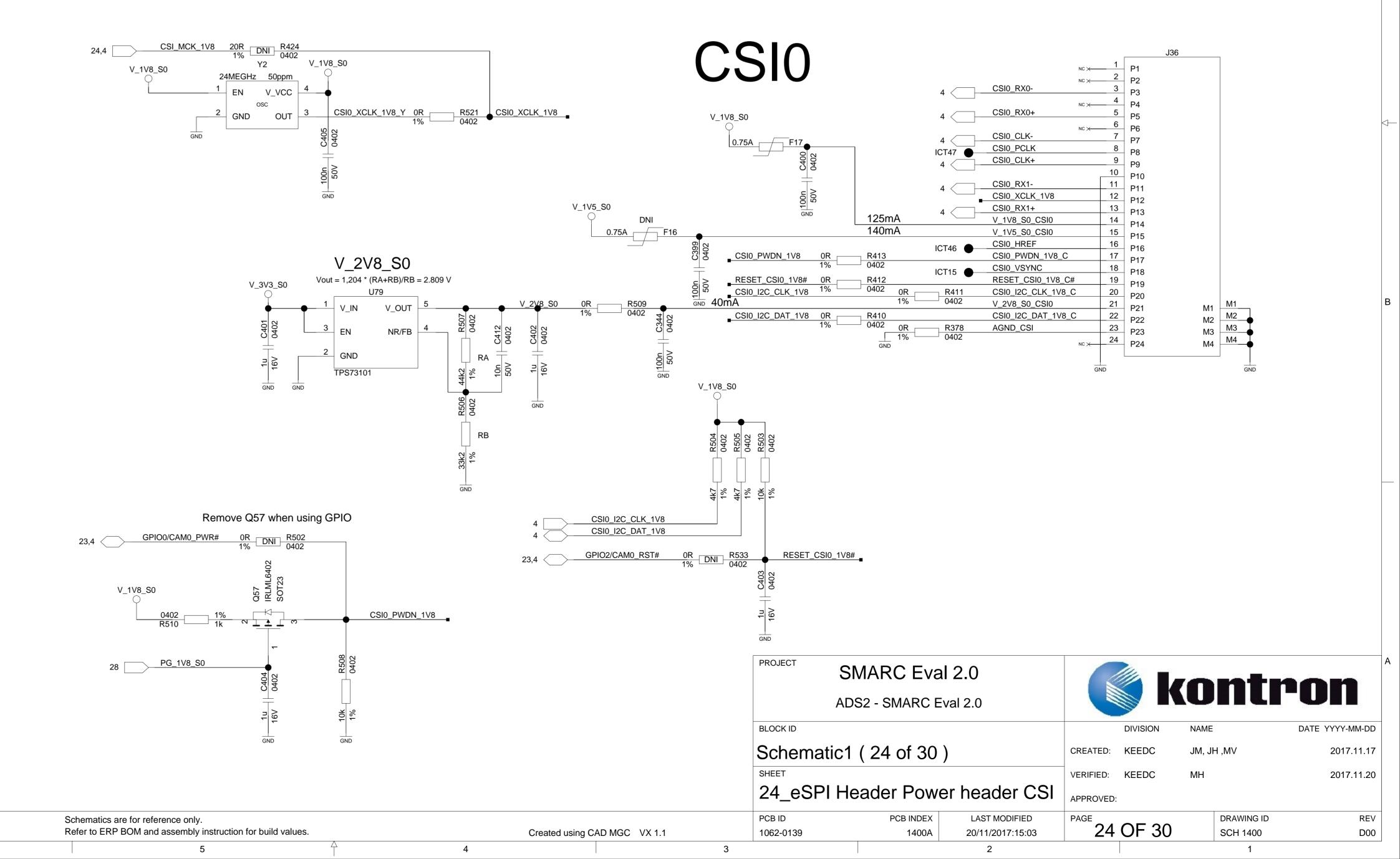


Camera Interface

CSI1



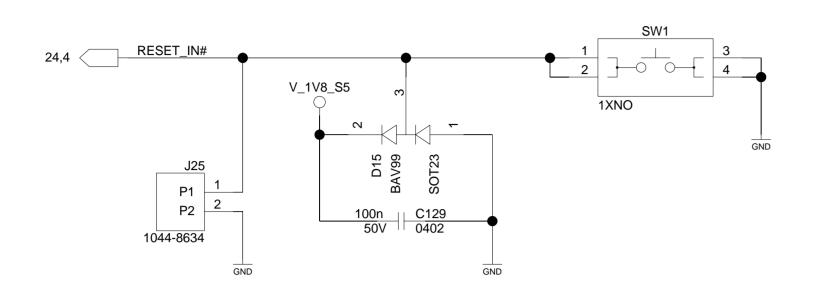
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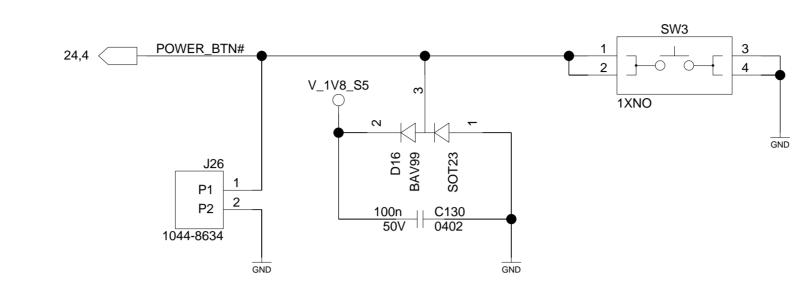


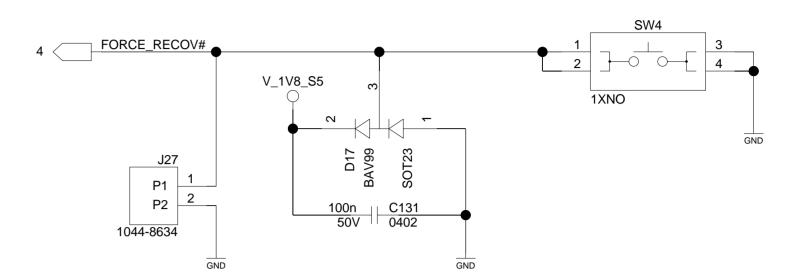
Reset

Power ON

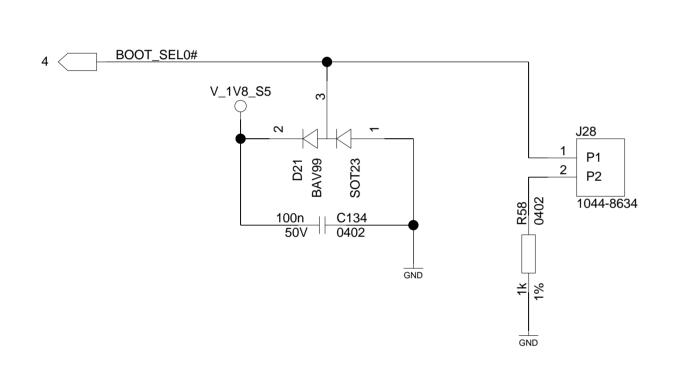
Force Recovery

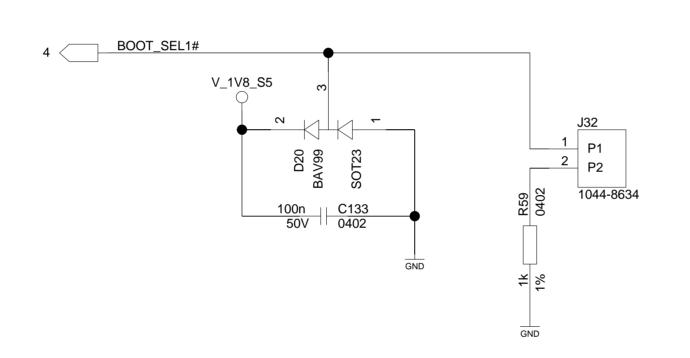


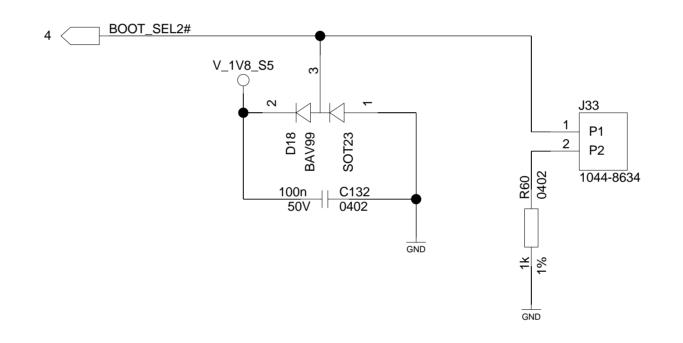




Boot Selection

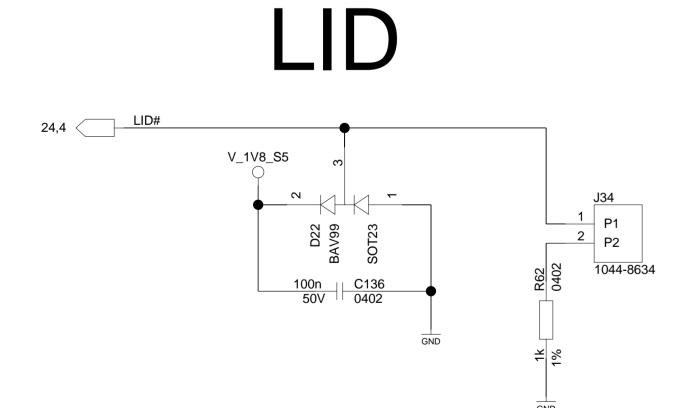






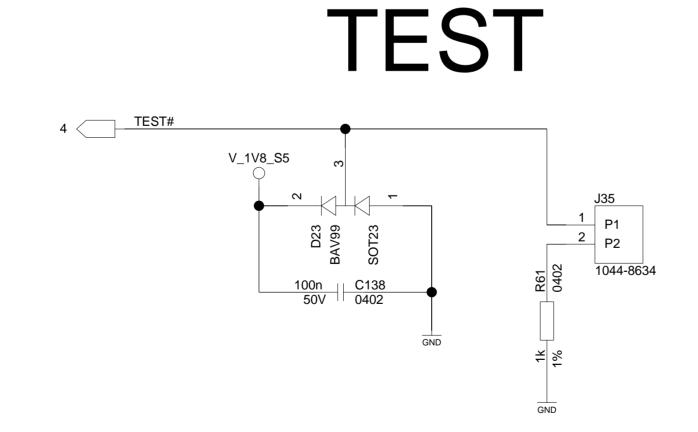
Created using CAD MGC VX 1.1

BOOT_SEL1#	BOOT_SEL0#	Boot Source
GND	GND	Carrier SATA
GND	Float	Carrier SD Card
Float	GND	Carrier eSPI (CS0#)
Float	Float	Carrier SPI (CS0#)
GND	GND	Module NAND/NOR Flash
GND	Float	Remote boot (GBE, serial)
Float	GND	Module eMMC Flash
Float	Float	Module SPI
	GND GND Float Float GND GND Float	GND GND GND Float Float GND Float GND GND GND GND GND GND Float Float GND



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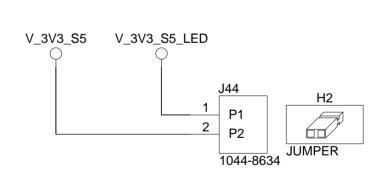
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Schematics are for reference only.

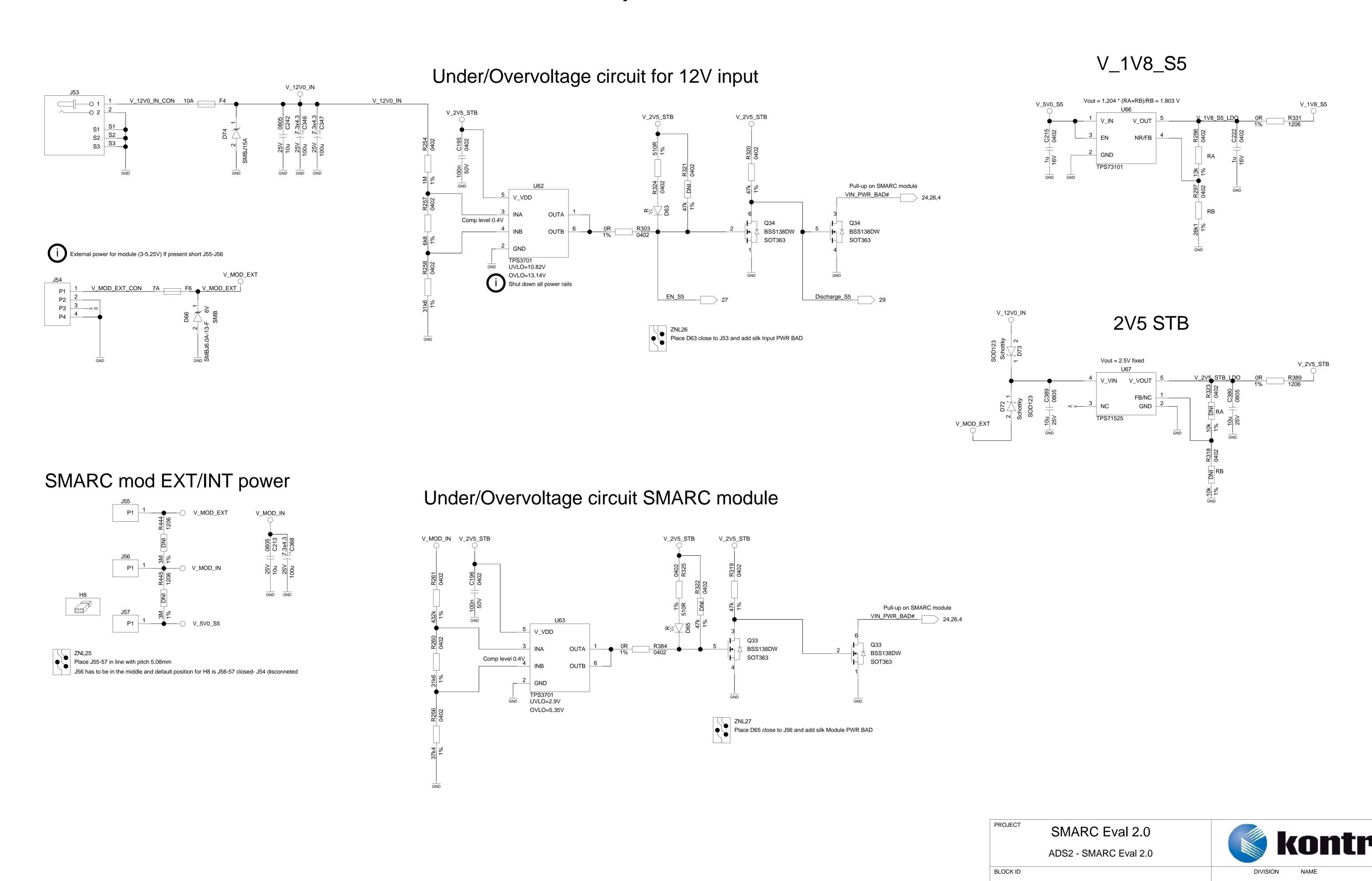
Refer to ERP BOM and assembly instruction for build values.

LEDs ENABLE



SMARC Eval 2.0 ADS2 - SMARC Eval 2.0							
					on		
BLOCK ID				DIVISION	NAME		DATE YYYY-MM-DD
Schematic1 (25 of 30)		CREATED:	KEEDC	JM, J	H ,MV	2017.11.17	
SHEET			VERIFIED:	KEEDC	МН		2017.11.20
25 Buttons			APPROVED:				
PCB ID	PCB INDEX	LAST MODIFIED	PAGE	0=00		DRAWING ID	REV
1062-0139	1400A	20/11/2017:15:03	25	OF 30		SCH 1400	D00

Input Power



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Schematic1 (26 of 30)

PCB INDEX

LAST MODIFIED

20/11/2017:15:03

APPROVED:

26 OF 30

26 Power

PCB ID

1062-0139

Created using CAD MGC VX 1.1

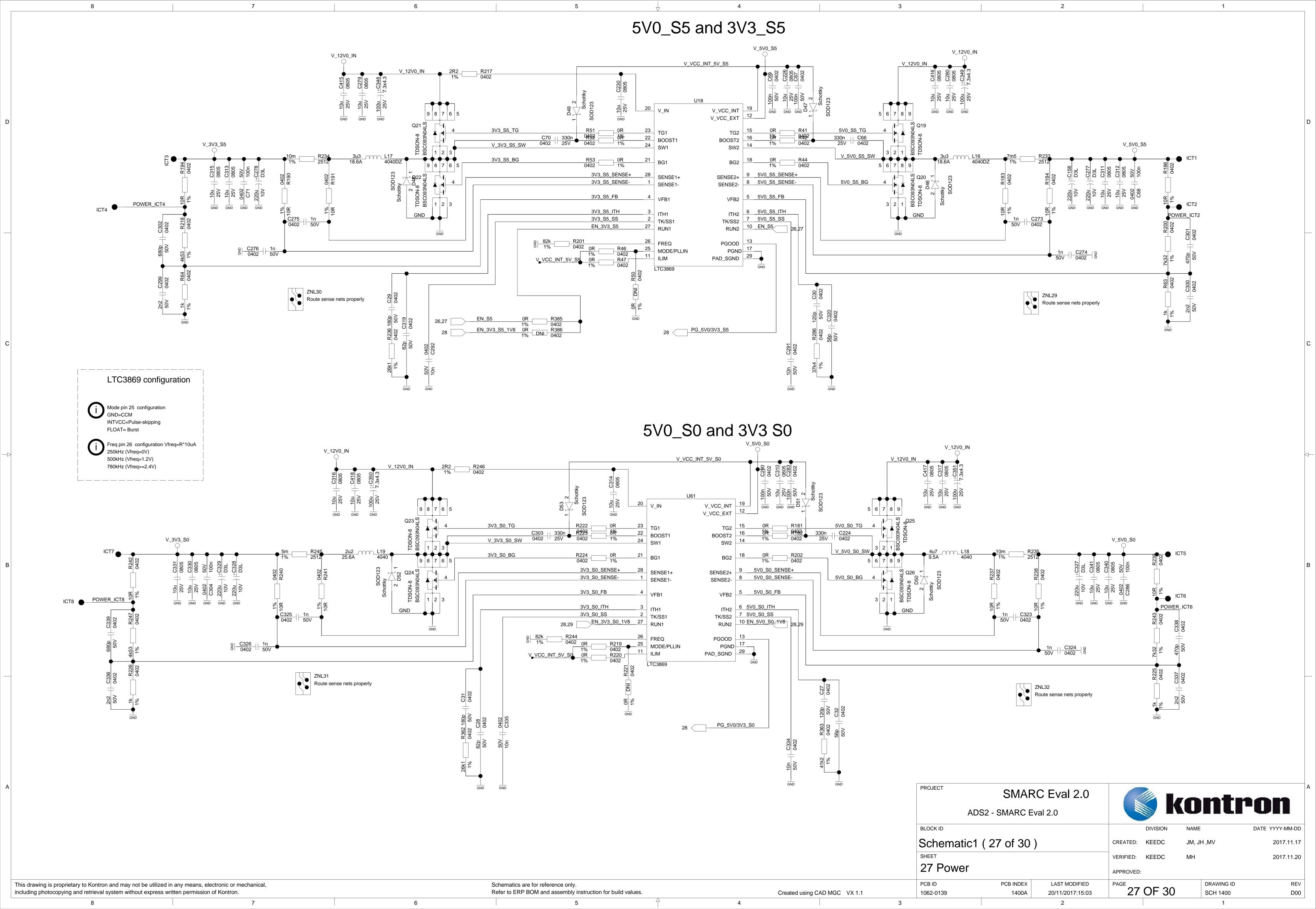
2017.11.17

2017.11.20

D00

DRAWING ID

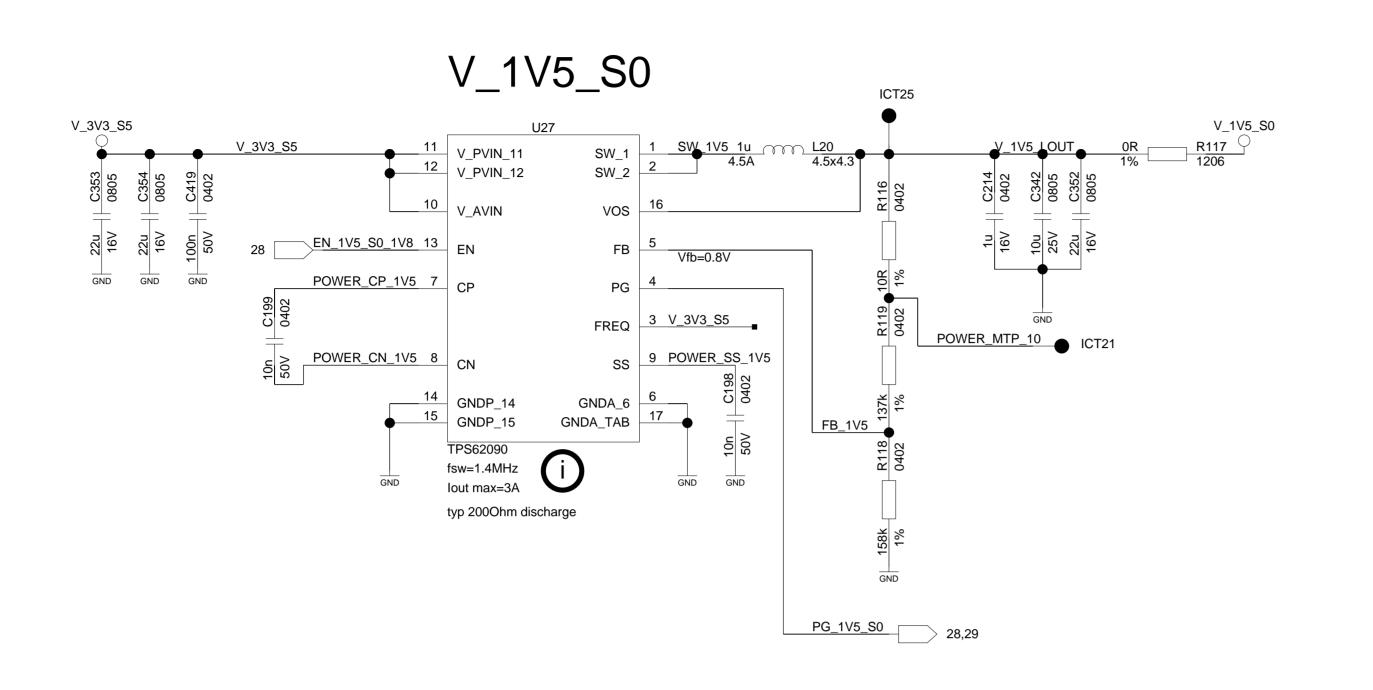
SCH 1400

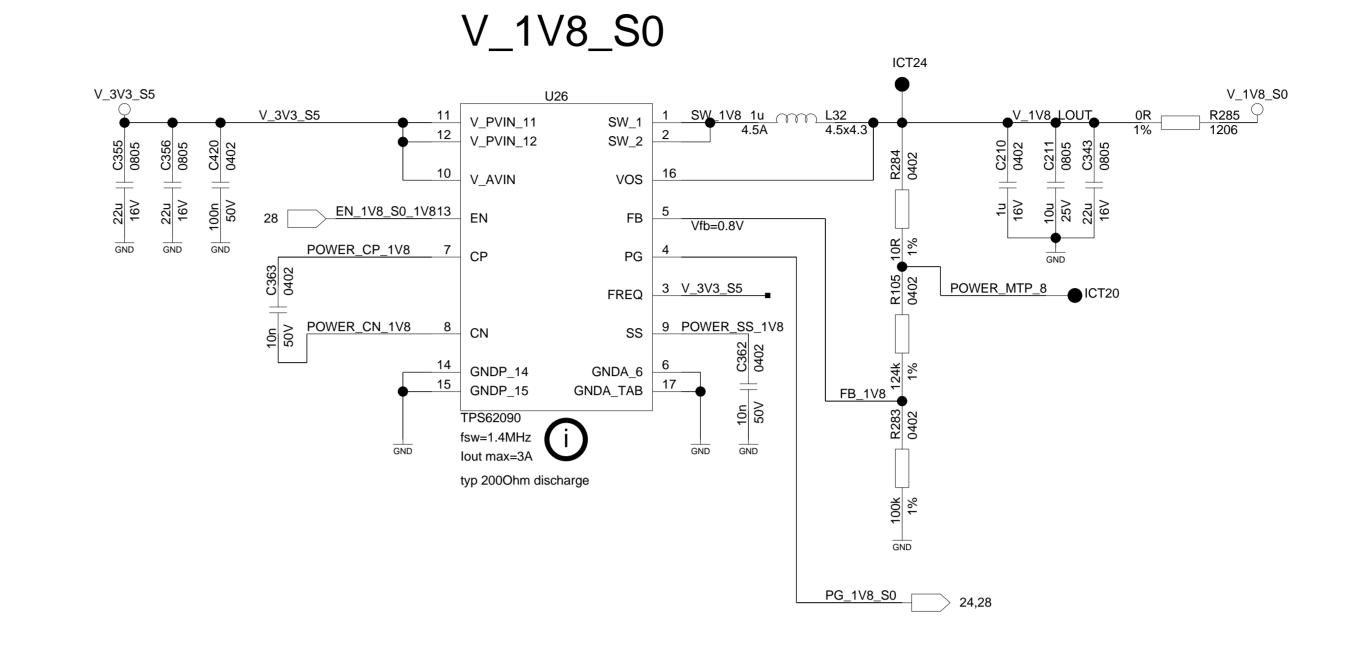


1V8 and 1V5 S0, PM GPIO

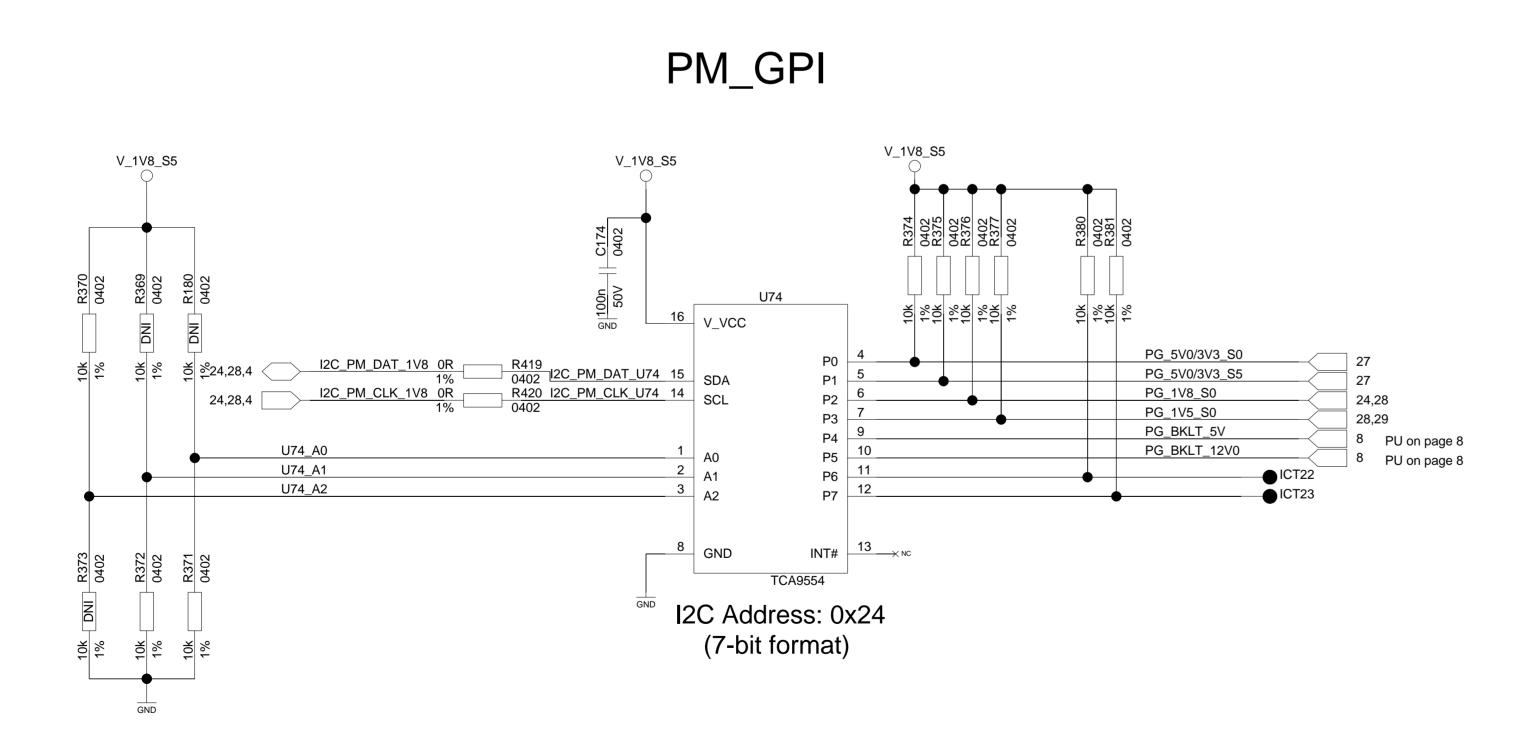
Schematics are for reference only.

Refer to ERP BOM and assembly instruction for build values.

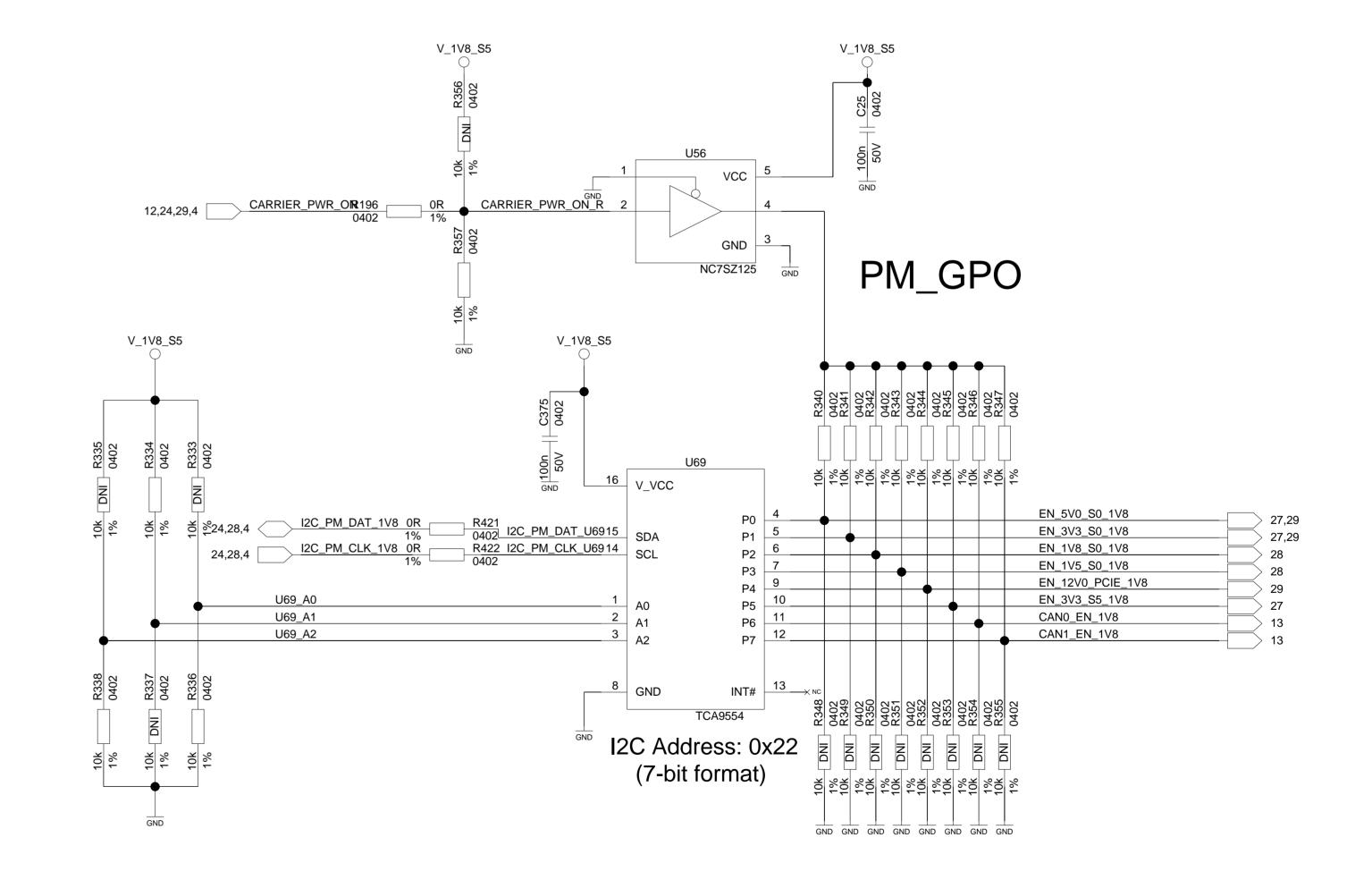




Created using CAD MGC VX 1.1



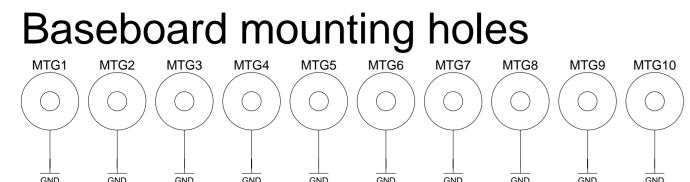
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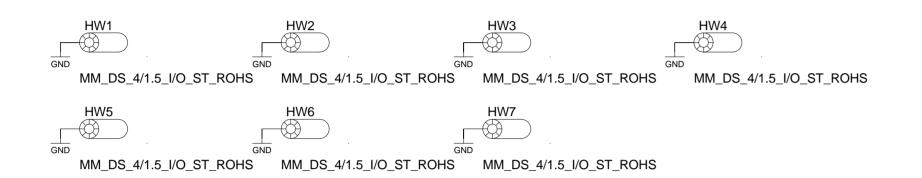
PROJECT	MARC Eva	I 2.0			-		
ADS	S2 - SMARC E	val 2.0			U	ЩЦ	on
BLOCK ID				DIVISION	NAME		DATE YYYY-MM-DD
Schematic1	(28 of 30)	CREATED:	KEEDC	JM, J	H ,MV	2017.11.17
SHEET			VERIFIED:	KEEDC	МН		2017.11.20
28 Power			APPROVED:				
PCB ID	PCB INDEX	LAST MODIFIED	PAGE	0=00		DRAWING ID	REV
1062-0139	1400A	20/11/2017:15:03	28	OF 30		SCH 1400	D00
		2			-	1	

LEDs, Discharge, RTC WDT LOAD switch for PCIE V_3V3_S5_LED V_3V3_S5_LED V_12V0_PCIE PWR LEDs Add silk desc. for all LEDs based on the UGS i.e D59 3V3_S5 ⊢_ SOT363 V_3V3_S5_LED V_5V0_S0 V_12V0_PCIE V_2V5_STB V_3V3_S5 BSS138DW SOT363 SOT363 SOT363 ⊢ SOT363 SOT363 **⊢** SOT363 SOT363 ⊢ SOT363 ⊢ SOT363 SOT363 RTC 0R DNI R442 1% 0402 - GND $\frac{2}{}$ DISCHARGE ABAV99 SOT23 Q37 SMARC Eval 2.0 SOT363 ADS2 - SMARC Eval 2.0 DATE YYYY-MM-DD Schematic1 (29 of 30) 2017.11.20 29 Power APPROVED: DRAWING ID PCB ID PCB INDEX LAST MODIFIED This drawing is proprietary to Kontron and may not be utilized in any means, electronic or mechanical, Schematics are for reference only. 29 OF 30 including photocopying and retrieval system without express written permission of Kontron. Refer to ERP BOM and assembly instruction for build values. SCH 1400 Created using CAD MGC VX 1.1 1062-0139 20/11/2017:15:03

Mechanics



Module mounting holes



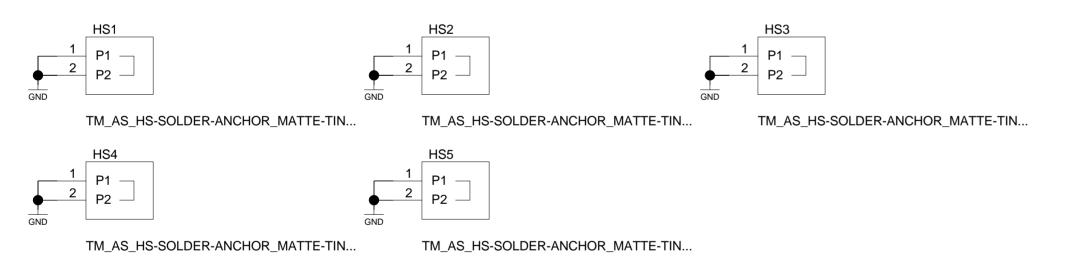
Rubber feet bumper

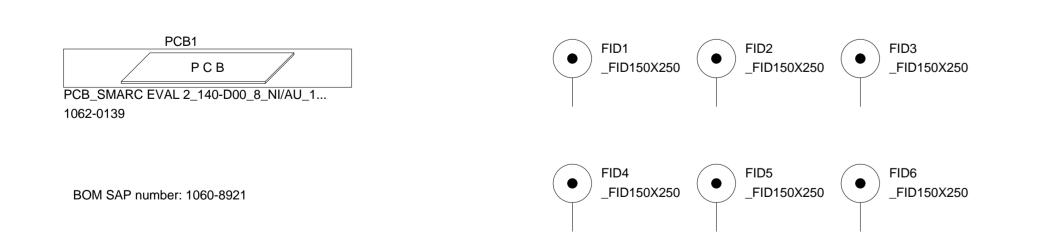


Ground connection

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SMARC Eval 2.0					70		2011
ADS2 - SMARC Eval 2.0				on			
BLOCK ID				DIVISION	NAME		DATE YYYY-MM-DD
Schematic1 (30 of 30)			CREATED:	CREATED: KEEDC JM, JH ,MV 2			2017.11.17
SHEET			VERIFIED:	KEEDC	MH		2017.11.20
30 Mecha	nics		APPROVED	:			
PCB ID	PCB INDEX	LAST MODIFIED	PAGE	05 00		DRAWING ID	REV
1062-0139	1400A	20/11/2017:15:04	30	OF 30		SCH 1400	D00