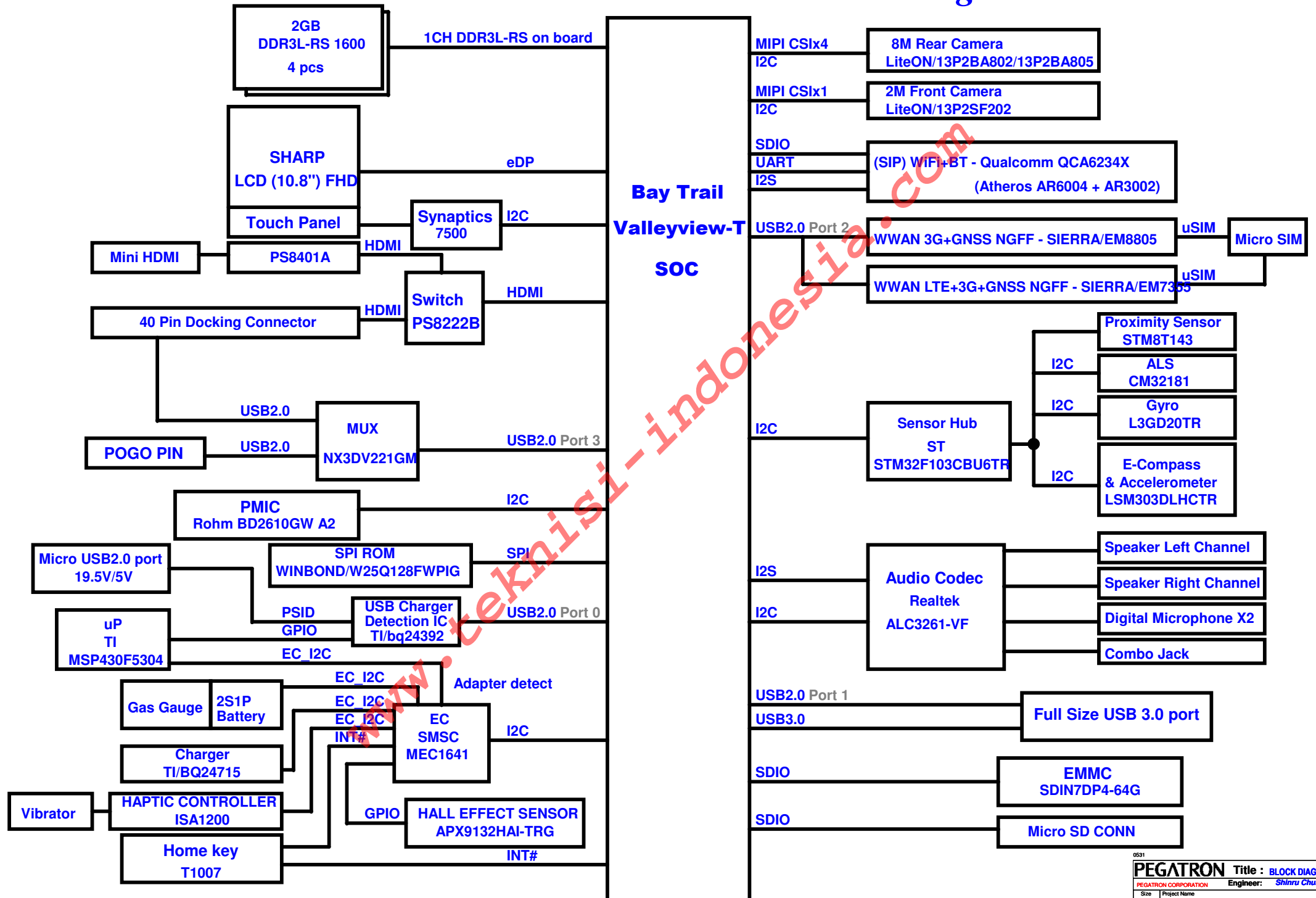


MIDLAND DDR3L Block Diagram



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Micro USB Charge Port

USB3.0 & Debug

USB WWAN

Dock USB (for Keyboard Dock)

52	USB2_P0_CHG_DP	52	USB2_P0_CHG_DN
70	USB2_P1_IO_DP	70	USB2_P1_IO_DN
54	USB2_P2_WWAN_DP	54	USB2_P2_WWAN_DN
64	USB2_P3_DOCK_DP	64	USB2_P3_DOCK_DN

U0301E	USB_ULPI_CLK/GPIO_S5_31
U9	USB_ULPI_DATA0/GPIO_S5_32
T6	USB_ULPI_DATA1/GPIO_S5_33
W9	USB_ULPI_DATA2/GPIO_S5_34
T8	USB_ULPI_DATA3/GPIO_S5_35
W7	USB_ULPI_DATA4/GPIO_S5_36
T2	USB_ULPI_DATA5/GPIO_S5_37
U3	USB_ULPI_DATA6/GPIO_S5_38
U5	USB_ULPI_DATA7/GPIO_S5_39
T10	USB_ULPI_DIR/GPIO_S5_40
V8	USB_ULPI_NXT/GPIO_S5_41
T12	USB_ULPI_STP/GPIO_S5_42
C13	USB_ULPI_REFCLK/GPIO_S5_43

ICLK_USB3DEV_TERM	ICLK_USB3DEV_TERM
ICLK_USB3DEV_TERM	ICLK_USB3DEV_TERM
USB3_REXT0	USB3_REXT0
USB3_RX_SS0#	USB3_RX_SS0#
USB3_TX_SS0#	USB3_TX_SS0#

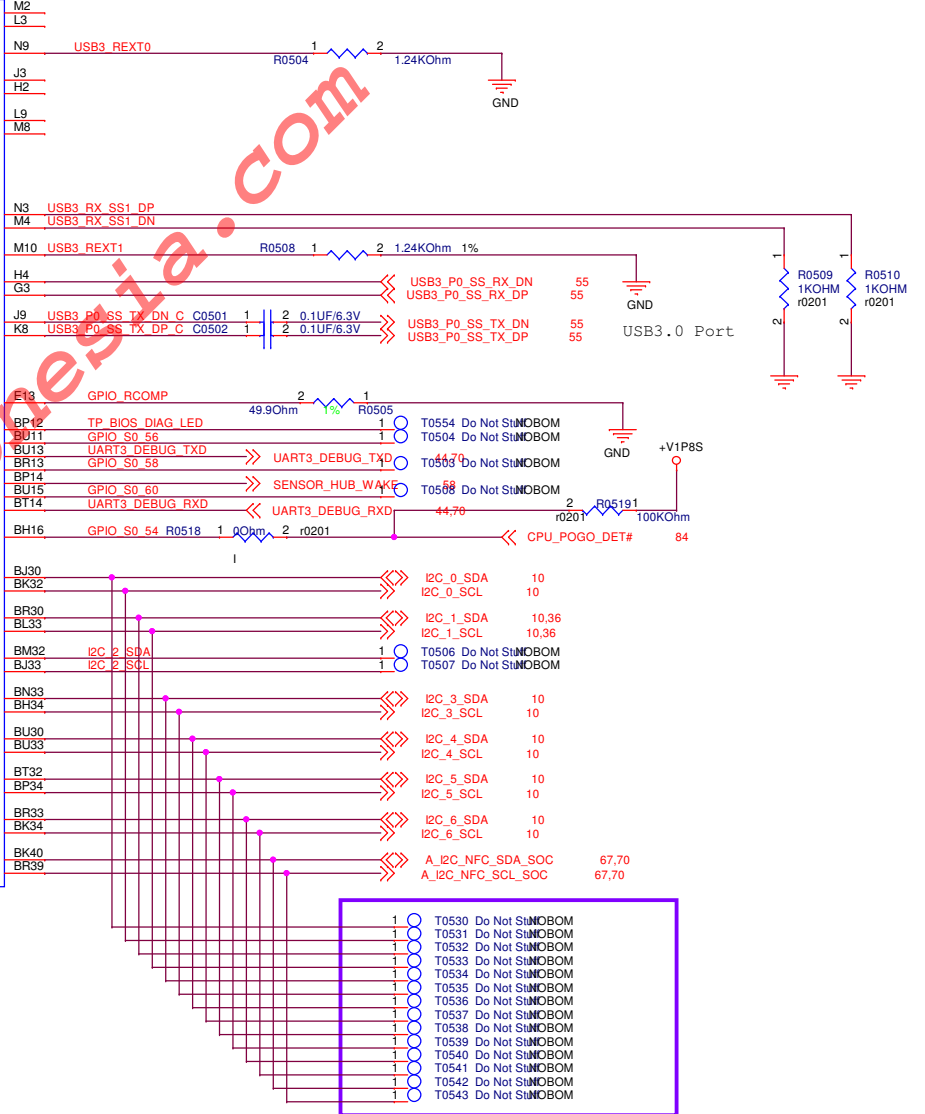
ICLK_USB3_TERM	ICLK_USB3_TERM
USB3_REXT1	USB3_REXT1
USB3_RX_SS1#	USB3_RX_SS1#
USB3_TX_SS1#	USB3_TX_SS1#

RCOMP18	RCOMP18
GPIO_S0_55	GPIO_S0_55
GPIO_S0_56	GPIO_S0_56
GPIO_S0_57	GPIO_S0_57
GPIO_S0_58	GPIO_S0_58
GPIO_S0_59	GPIO_S0_59
GPIO_S0_60	GPIO_S0_60
GPIO_S0_61	GPIO_S0_61
GPIO_S0_54	GPIO_S0_54

SIO_I2C0_SDA/GPIO_S0_78	SIO_I2C0_SDA/GPIO_S0_78
SIO_I2C0_SCL/GPIO_S0_79	SIO_I2C0_SCL/GPIO_S0_79
SIO_I2C1_SDA/GPIO_S0_80	SIO_I2C1_SDA/GPIO_S0_80
SIO_I2C1_SCL/GPIO_S0_81	SIO_I2C1_SCL/GPIO_S0_81
SIO_I2C2_SDA/GPIO_S0_82	SIO_I2C2_SDA/GPIO_S0_82
SIO_I2C2_SCL/GPIO_S0_83	SIO_I2C2_SCL/GPIO_S0_83
SIO_I2C3_SDA/GPIO_S0_84	SIO_I2C3_SDA/GPIO_S0_84
SIO_I2C3_SCL/GPIO_S0_85	SIO_I2C3_SCL/GPIO_S0_85
SIO_I2C4_SDA/GPIO_S0_86	SIO_I2C4_SDA/GPIO_S0_86
SIO_I2C4_SCL/GPIO_S0_87	SIO_I2C4_SCL/GPIO_S0_87
SIO_I2C5_SDA/GPIO_S0_88	SIO_I2C5_SDA/GPIO_S0_88
SIO_I2C5_SCL/GPIO_S0_89	SIO_I2C5_SCL/GPIO_S0_89
SIO_I2C6_SDA/GPIO_S0_90	SIO_I2C6_SDA/GPIO_S0_90
SIO_I2C6_SCL/GPIO_S0_91	SIO_I2C6_SCL/GPIO_S0_91
SIO_I2C_NFC_SDA/GPIO_S0_92	SIO_I2C_NFC_SDA/GPIO_S0_92
SIO_I2C_NFC_SCL/GPIO_S0_93	SIO_I2C_NFC_SCL/GPIO_S0_93

GPIO_S0_51	GPIO_S0_51
GPIO_S0_52	GPIO_S0_52
GPIO_S0_53	GPIO_S0_53

Do Not Stuff



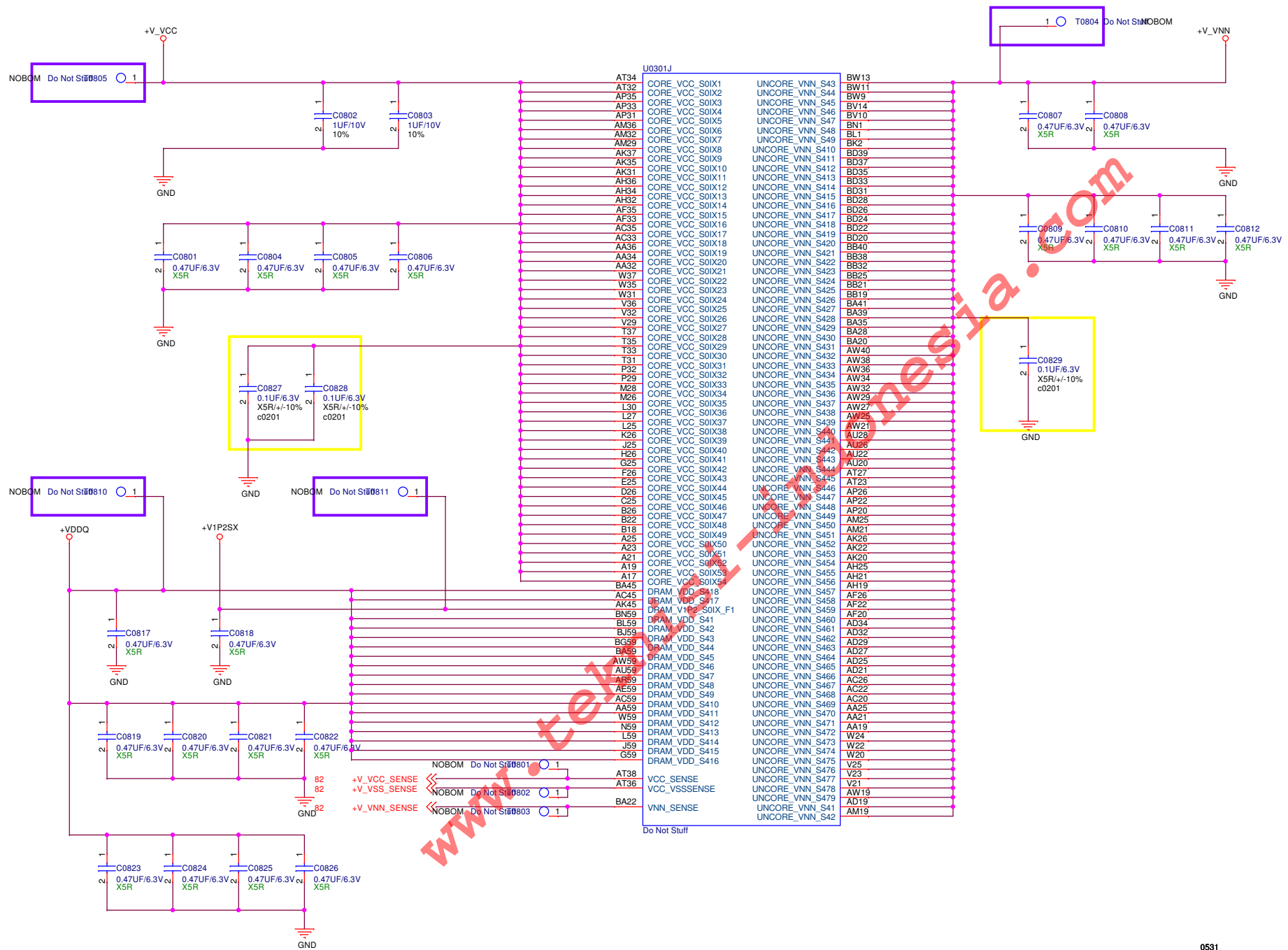
0531

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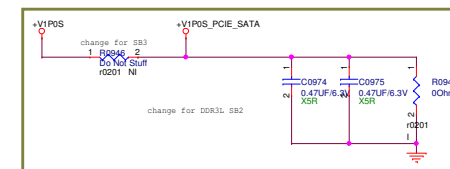
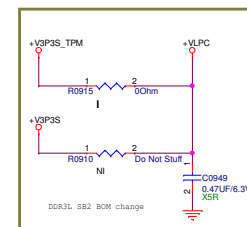
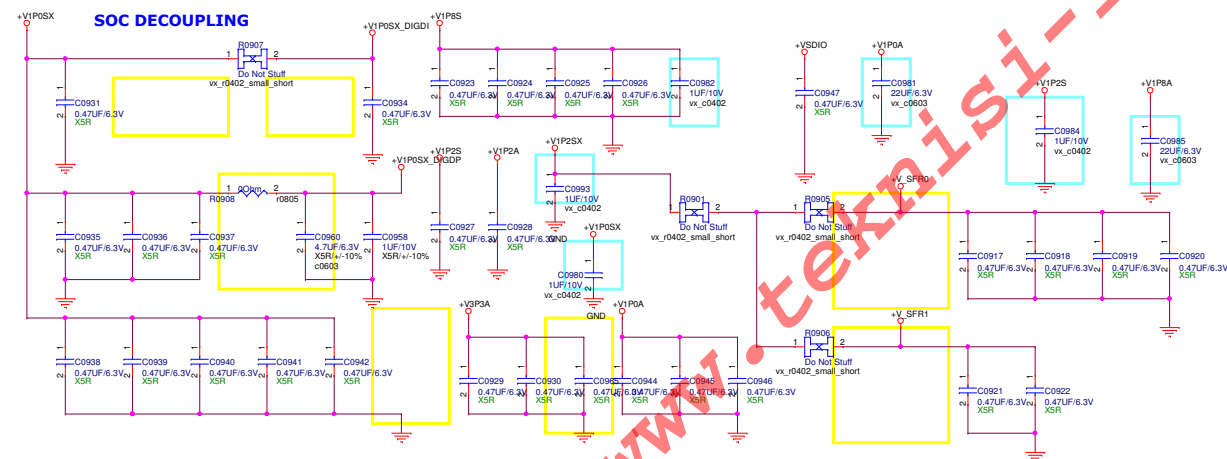
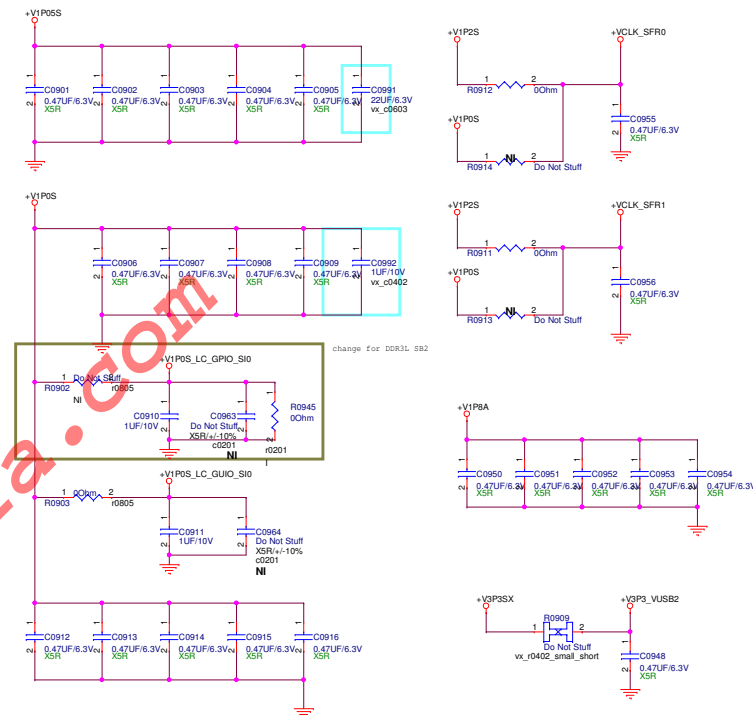
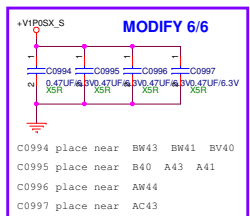
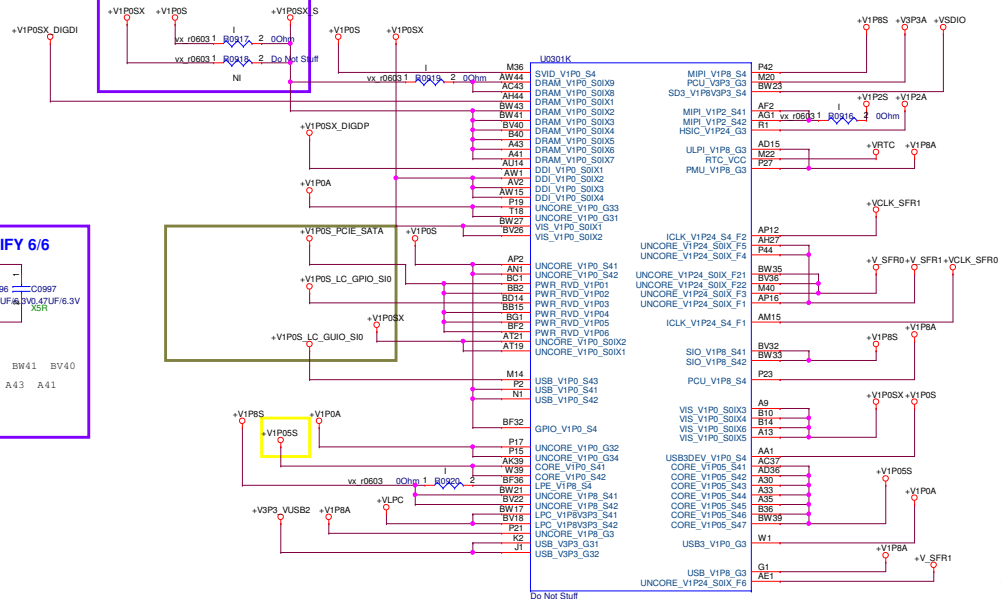
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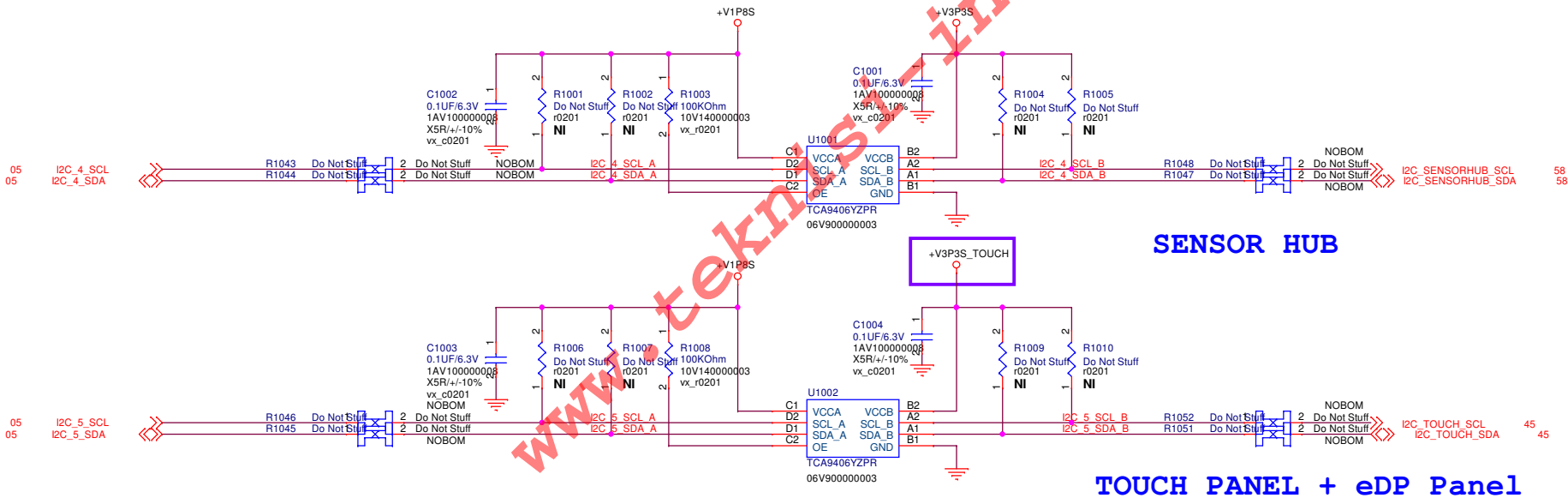
05 I2C_0_SCL >> I2C_0_SCL 1% r0201 R1025 1 2 220HM I2C_SMSC_SCL_SOC >> I2C_SMSC_SCL_SOC
05 I2C_0_SDA << I2C_0_SDA 1% r0201 R1026 1 2 220HM I2C_SMSC_SDA_SOC << I2C_SMSC_SDA_SOC

remove DOCKING EC

05 I2C_3_SCL >> I2C_3_SCL 1% r0201 R1031 1 2 220HM I2C_CAM_2M_SCL_3 >> I2C_CAM_2M_SCL_3
05 I2C_3_SDA << I2C_3_SDA 1% r0201 R1032 1 2 220HM I2C_CAM_2M_SDA_3 << I2C_CAM_2M_SDA_3
1% r0201 R1033 1 2 220HM I2C_CAM_8M_SCL_3 >> I2C_8MP_CAM_SCL
1% r0201 R1034 1 2 220HM I2C_CAM_8M_SDA_3 << I2C_8MP_CAM_SDA

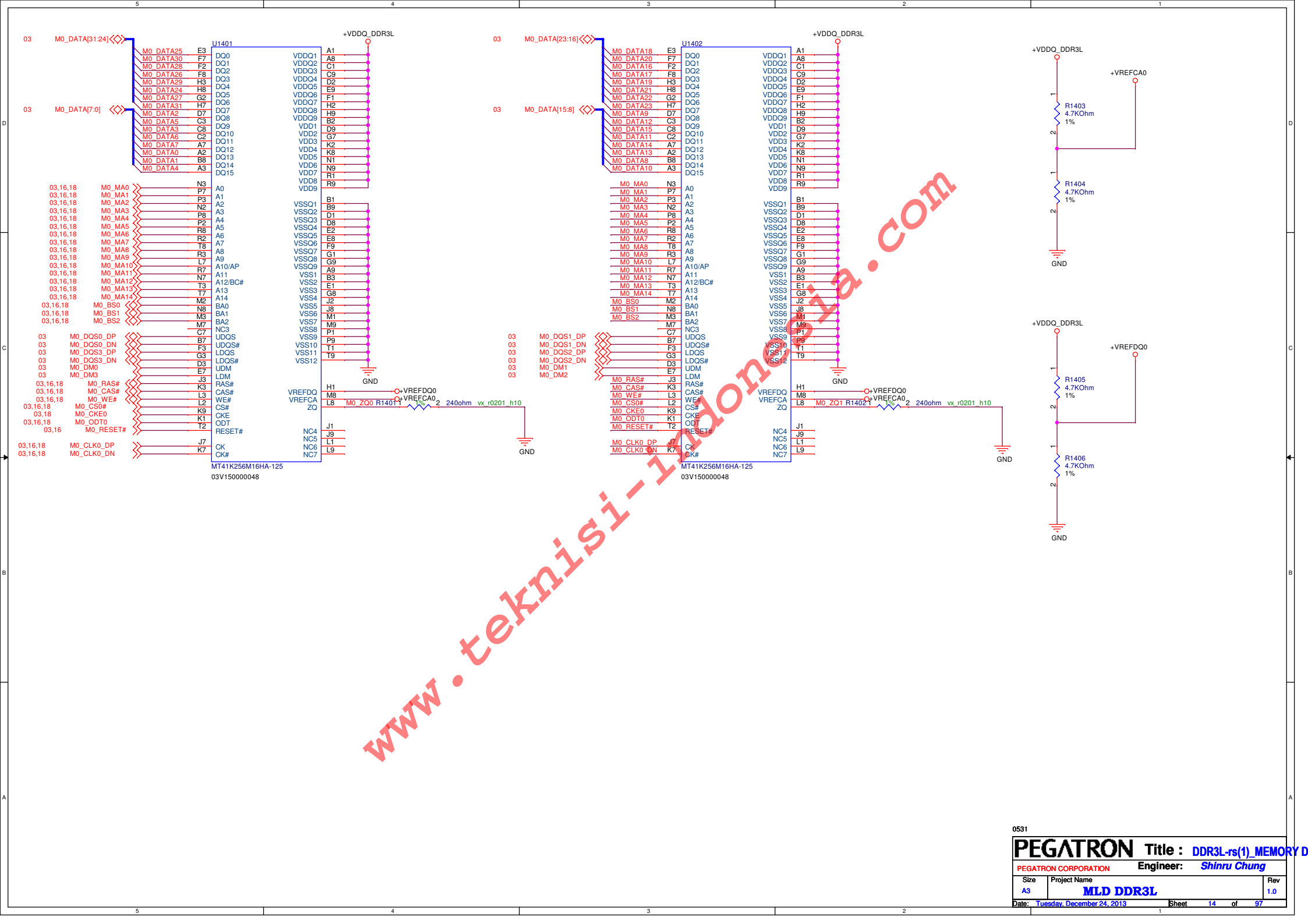
remove camera flash LED FLASH

05 I2C_6_SCL >> R1041 1 2 Do Not Stuff I2C_PMIC_SCL >> I2C_PMIC_SCL
05 I2C_6_SDA << R1042 1 2 Do Not Stuff I2C_PMIC_SDA << I2C_PMIC_SDA

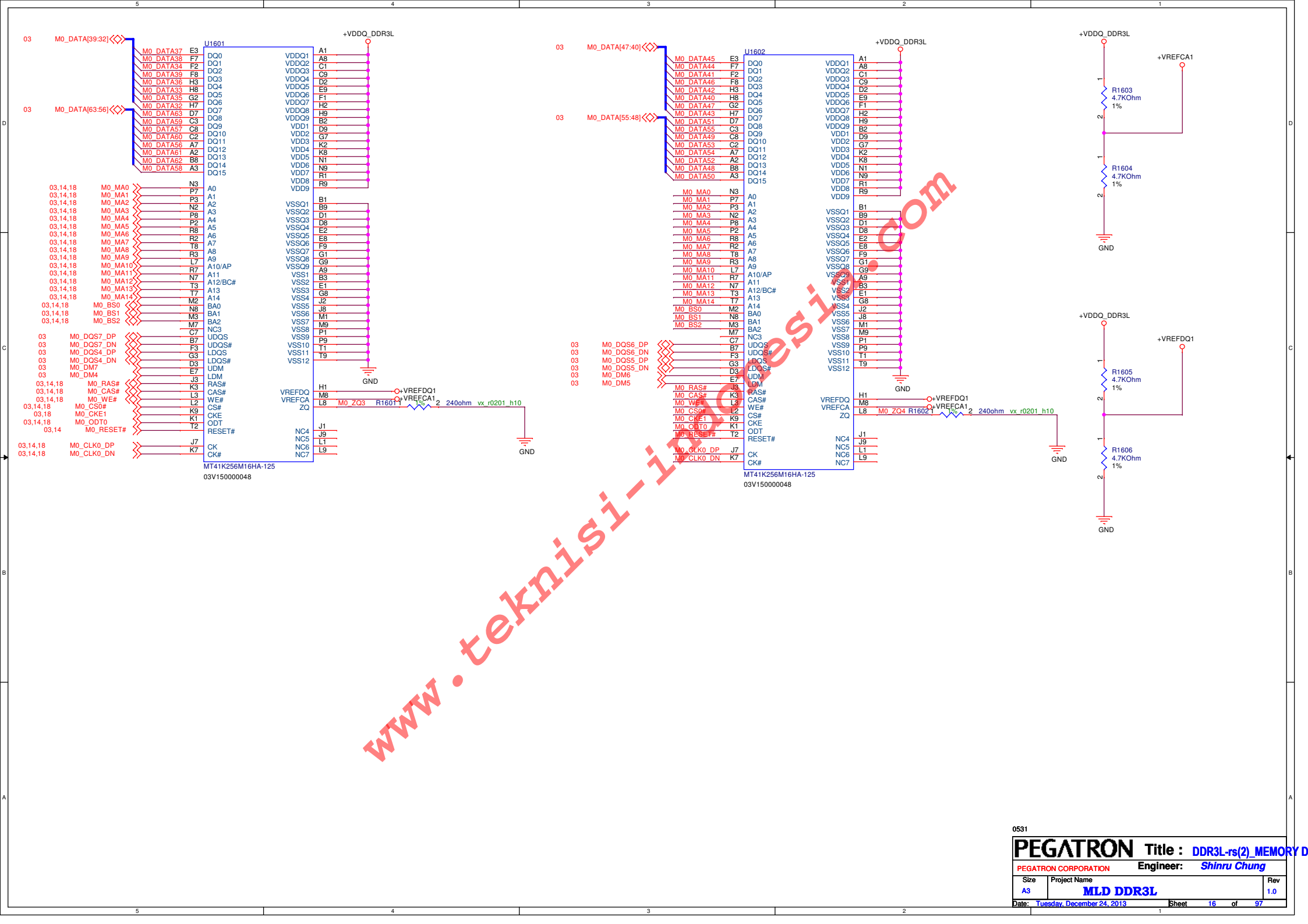


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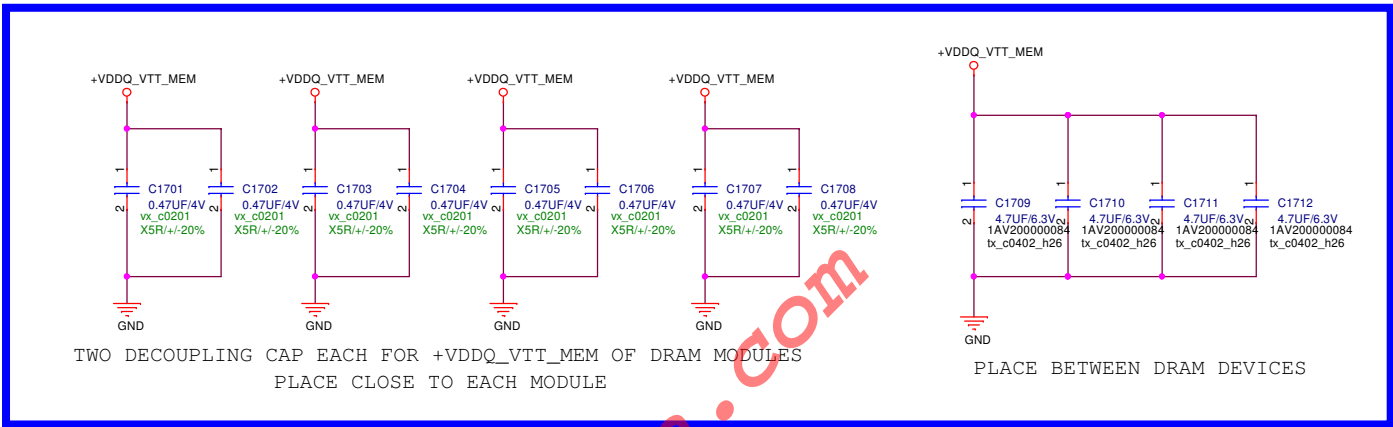
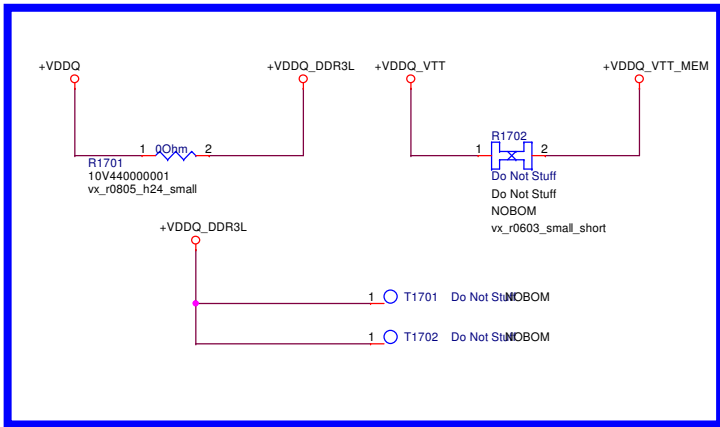


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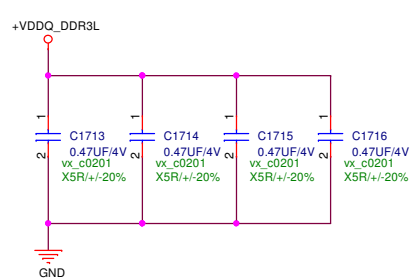


0531

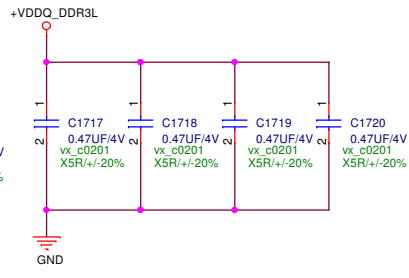
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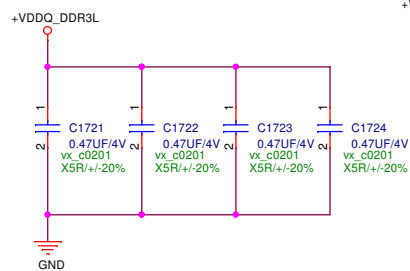
DDR DECOUPLING CAPACITORS



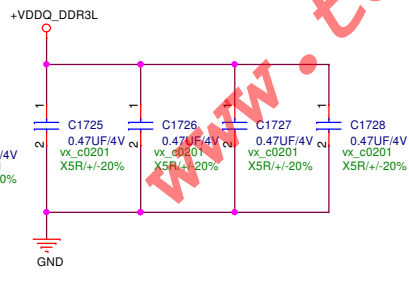
PLACE CLOSE TO FIRST MODULE



PLACE CLOSE TO SECOND MODULE

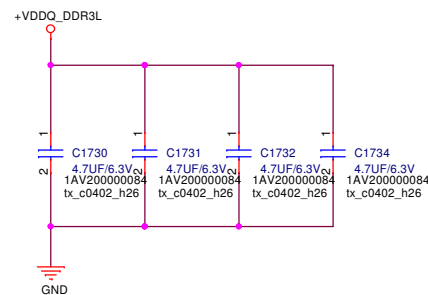
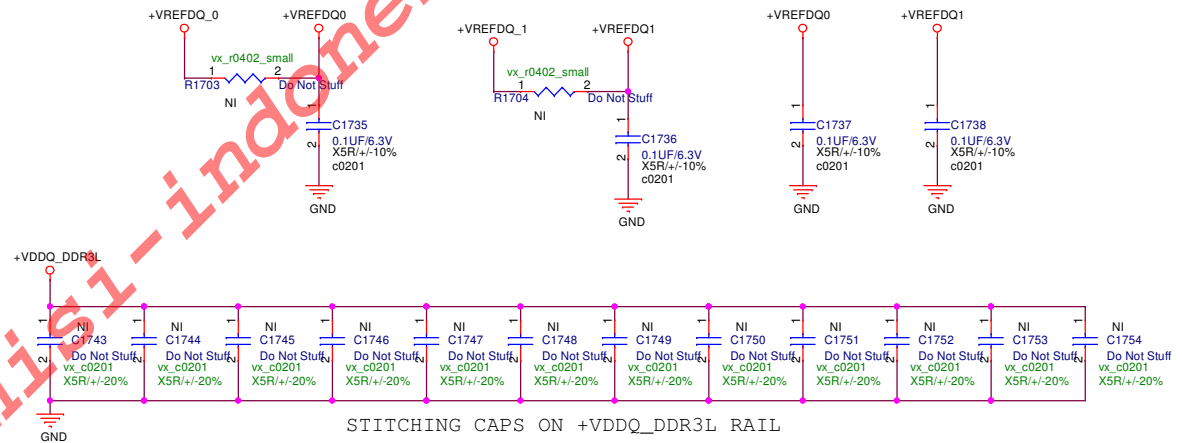


PLACE CLOSE TO THIRD MODULE

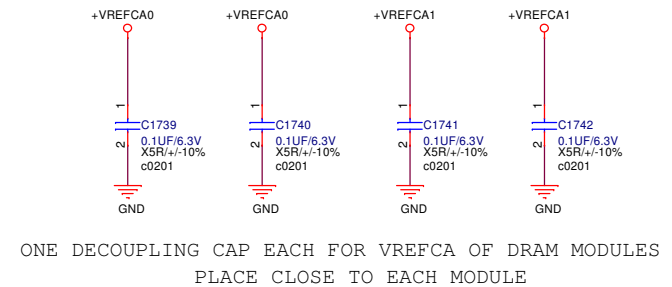


PLACE CLOSE TO FOURTH MODULE

ONE DECOUPLING CAP EACH FOR VREFDQ OF DRAM MODULES, PLACE CLOSE TO EACH MODULE



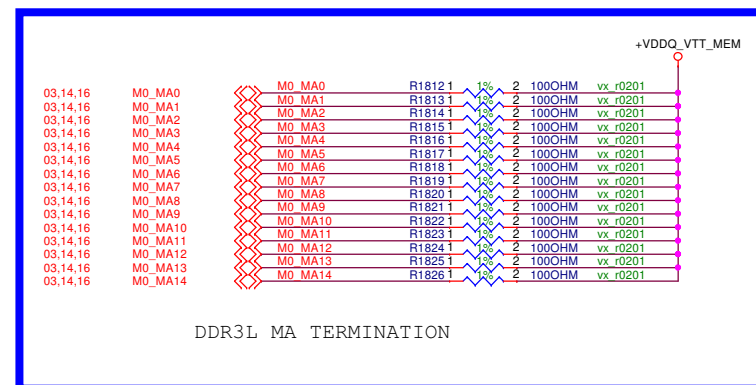
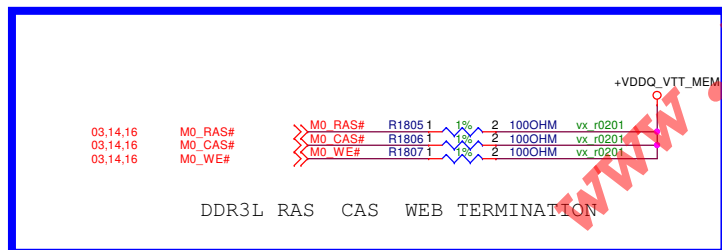
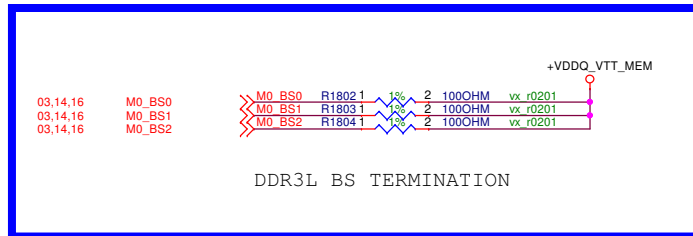
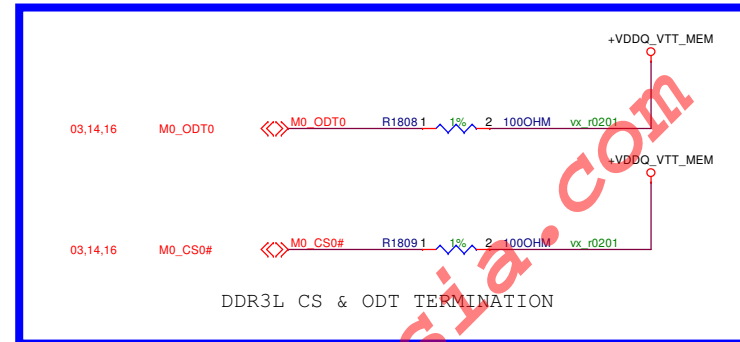
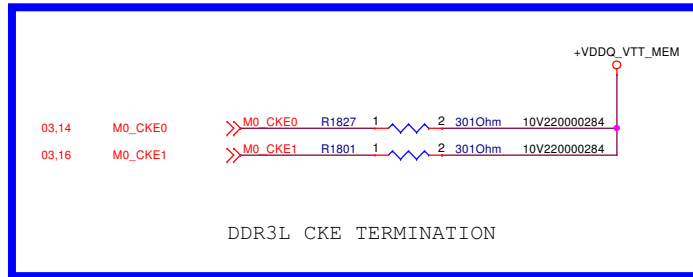
PLACE BETWEEN DRAM DEVICES



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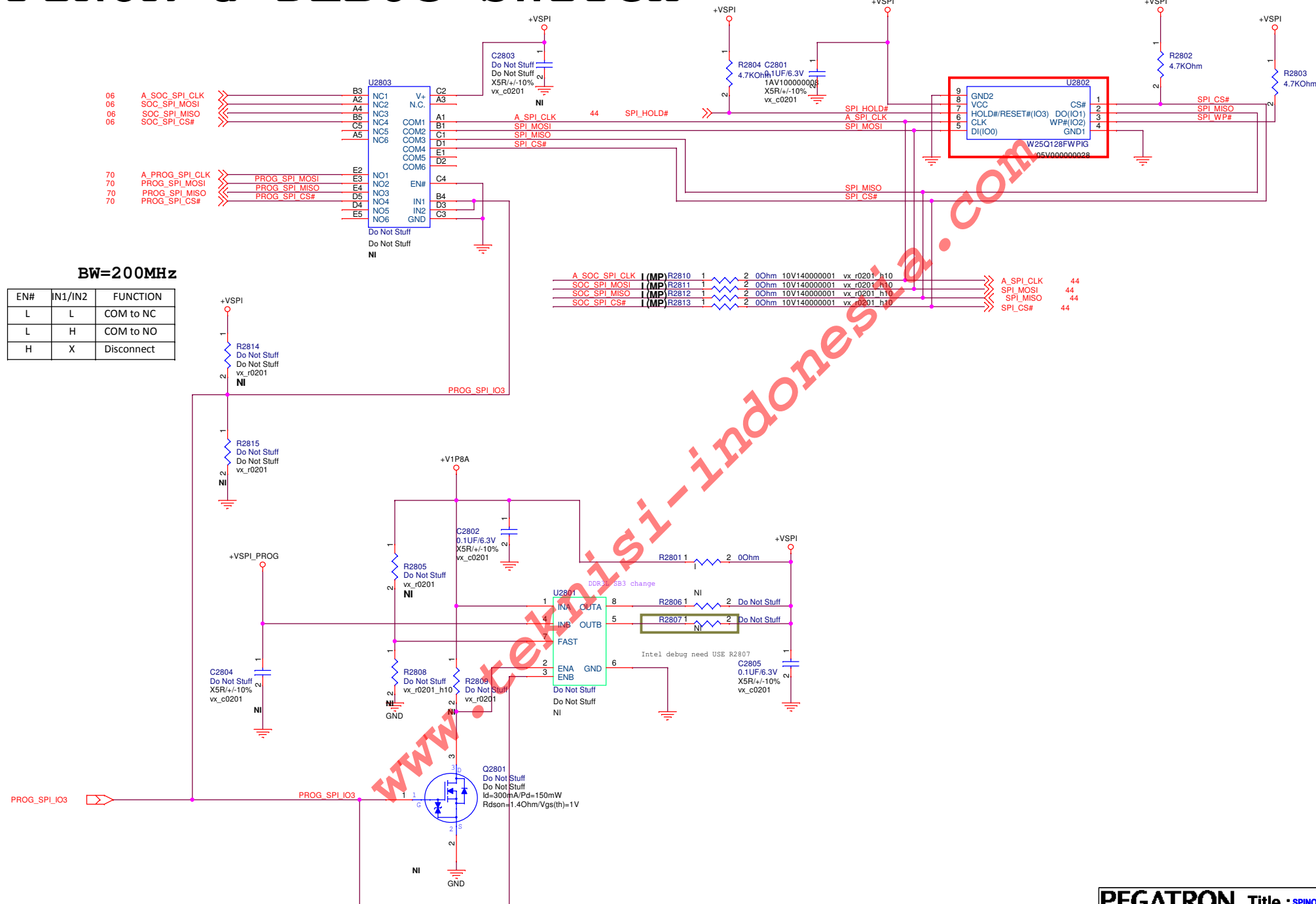
DDR3L TERMINATIONS



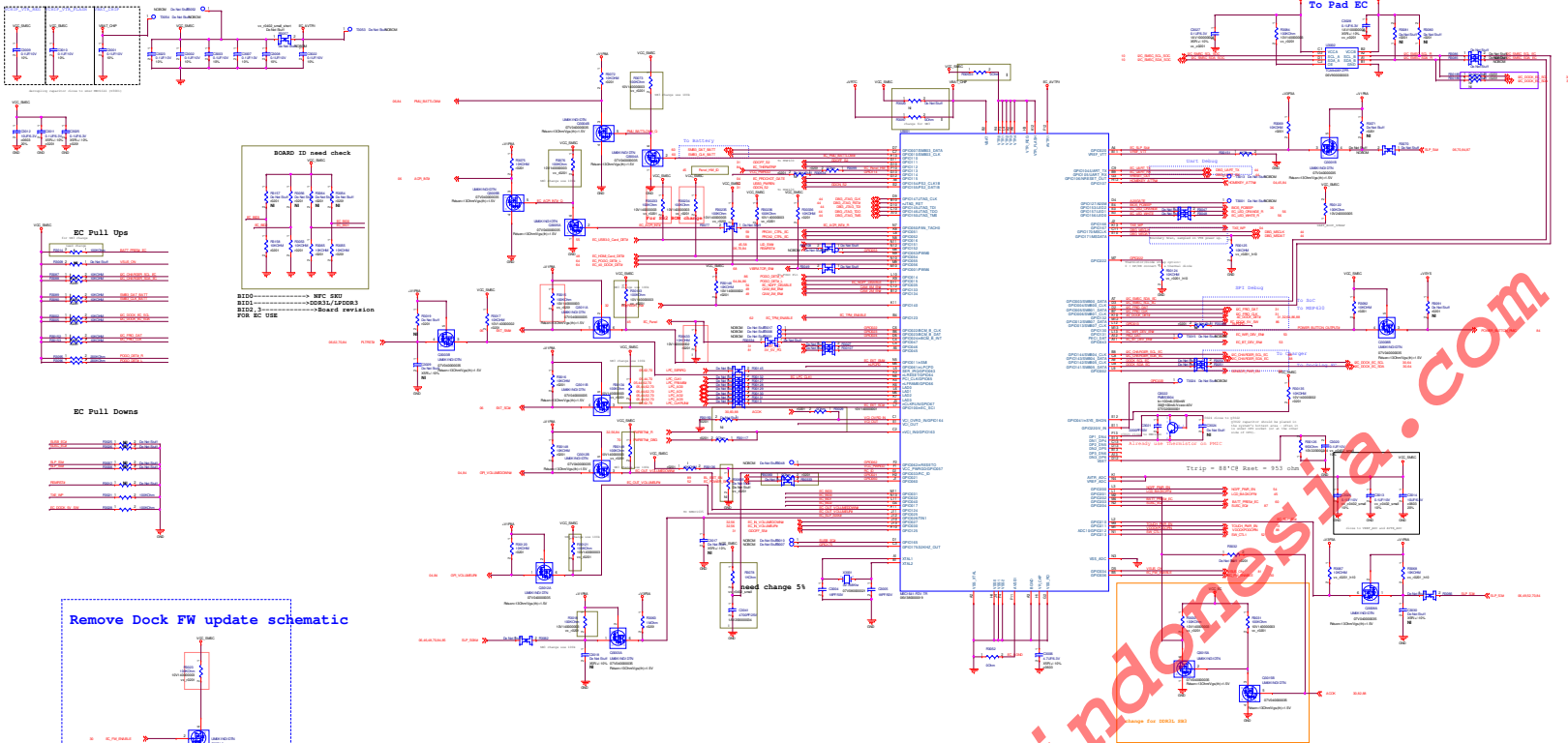
0531

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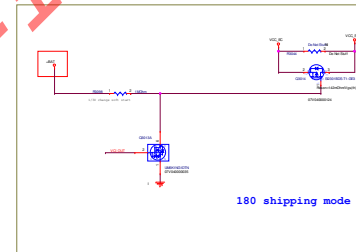
SPINOR & DEBUG SWITCH



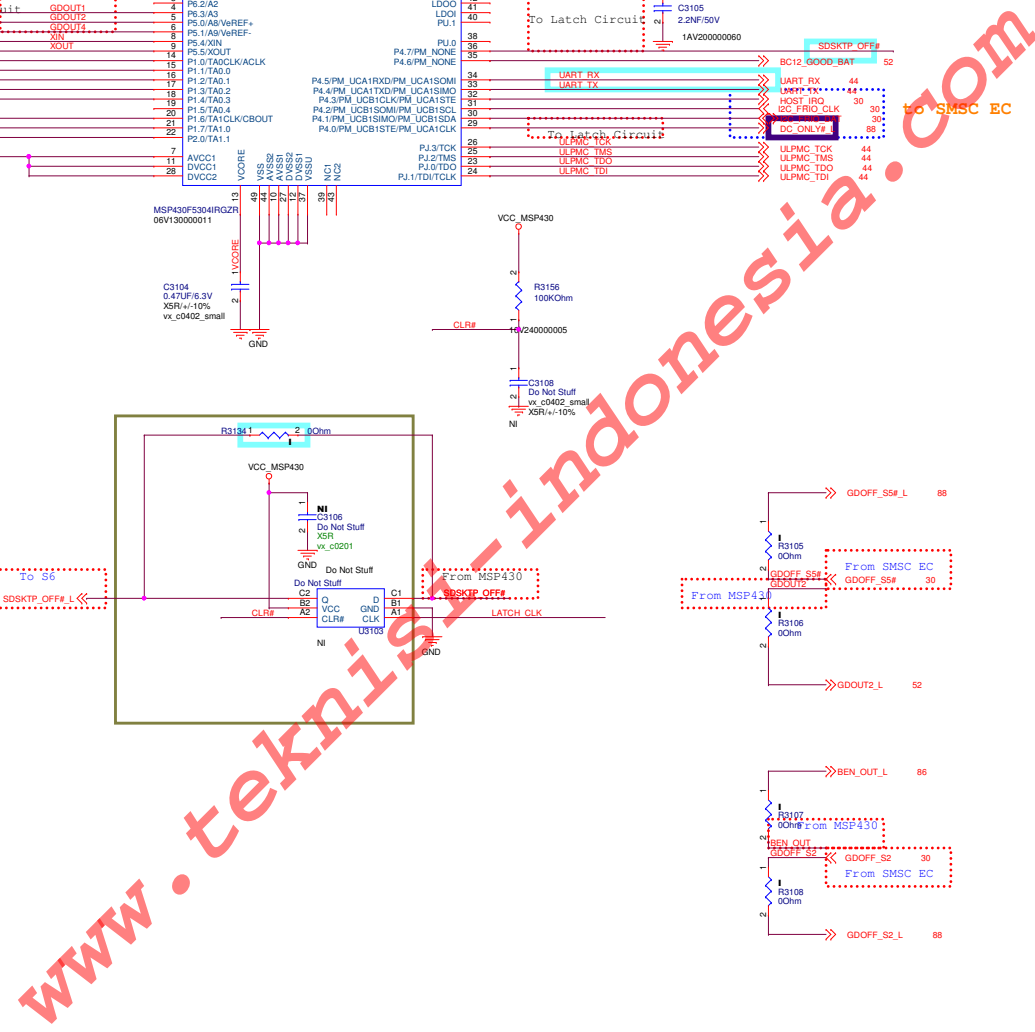
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RCID		
R(K)	C(pF)	EC FW version
10%	5%	
1	4700	
2	4700	
4.3	4700	
8.2	4700	
33	4700	
62	4700	
130	4700	
240	4700	

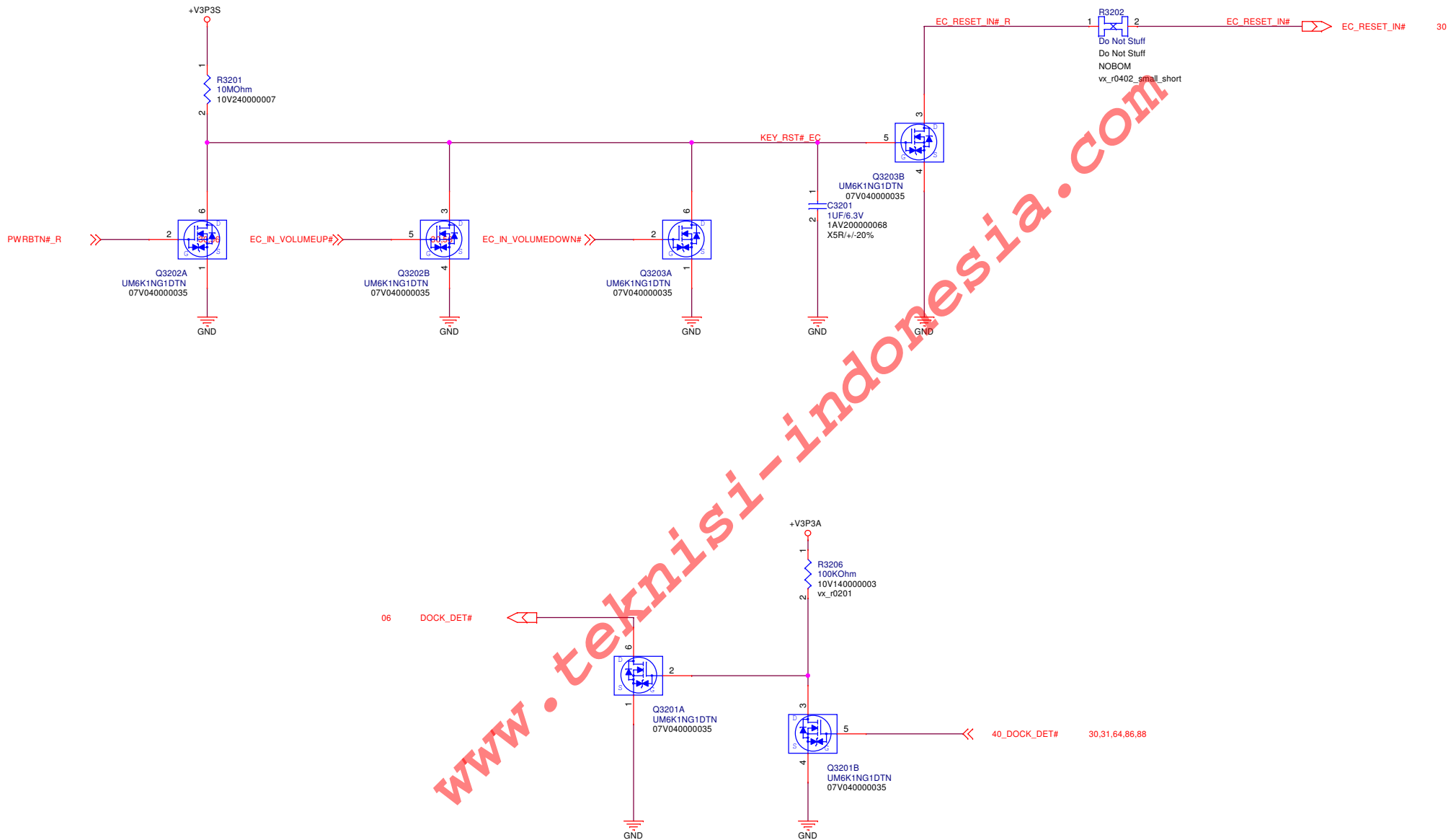


Place Test Point on TOP side with Silkscreen description



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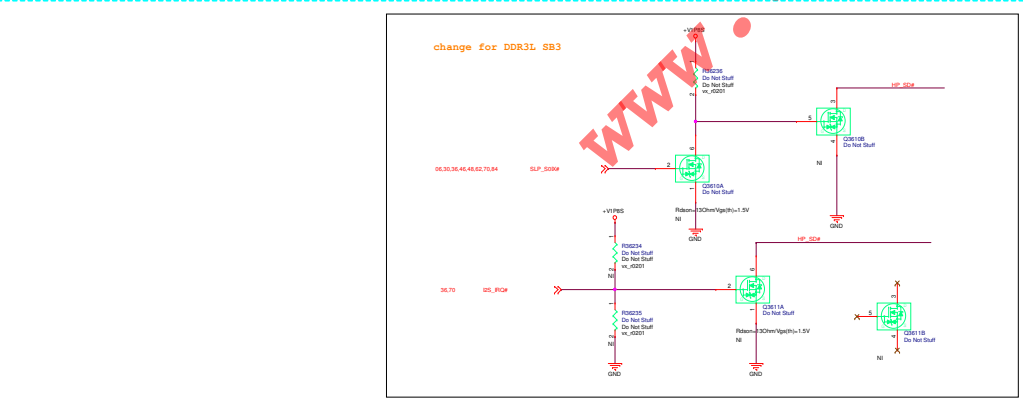
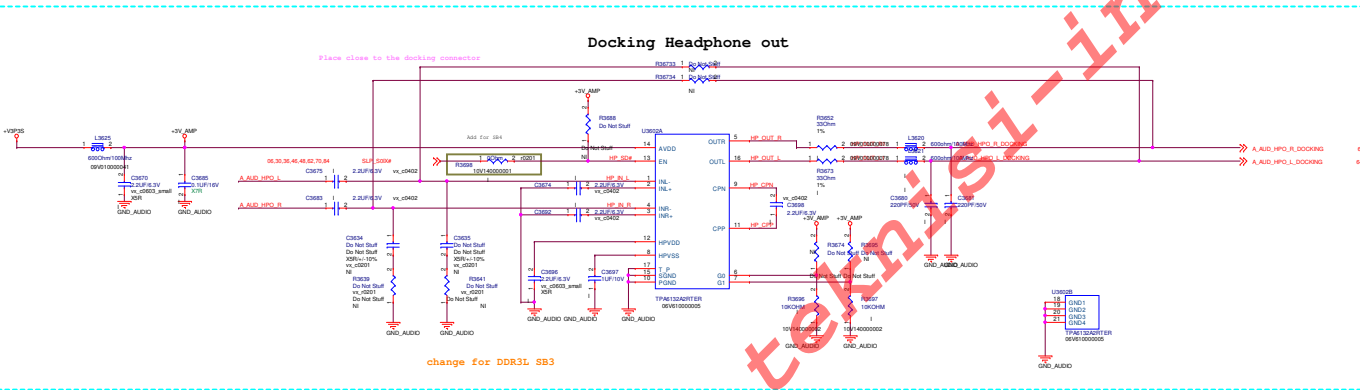
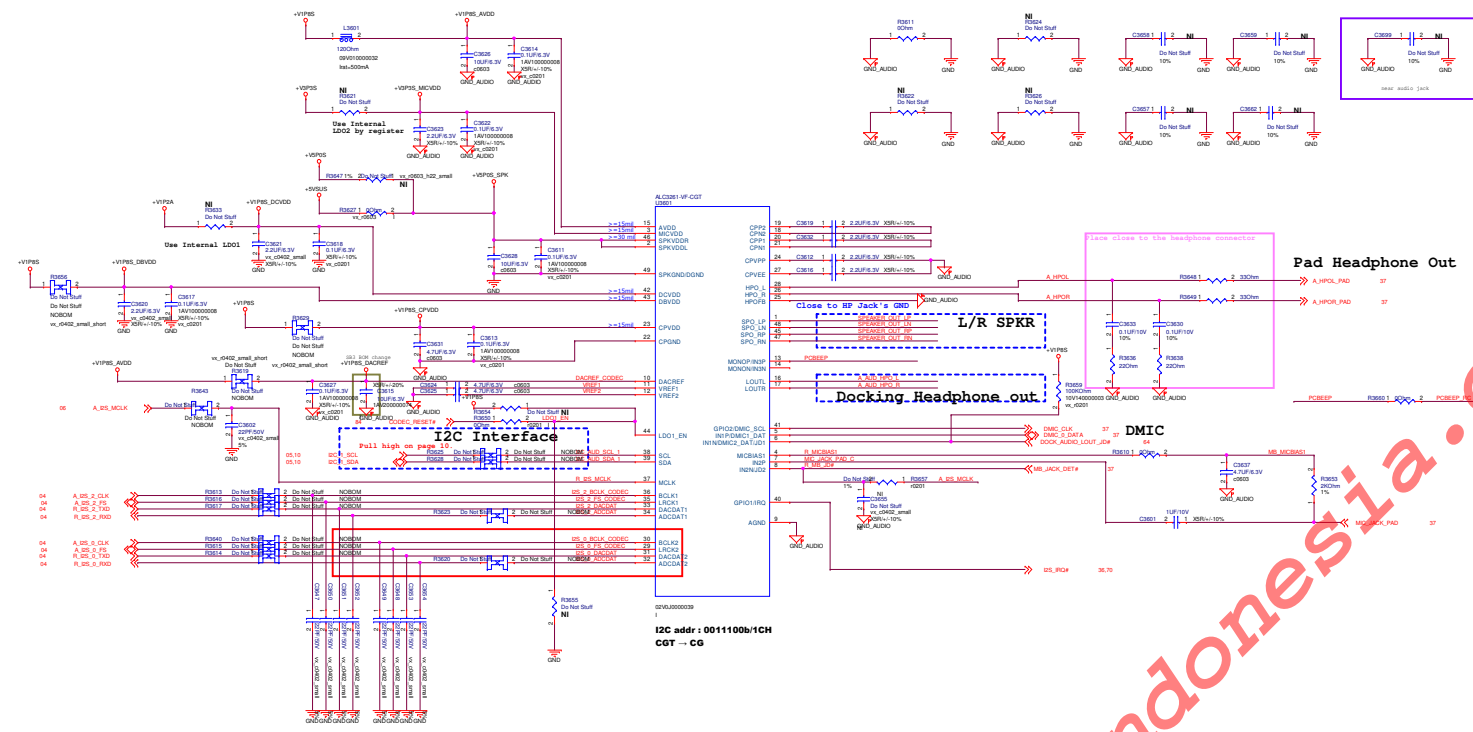
RESET Key



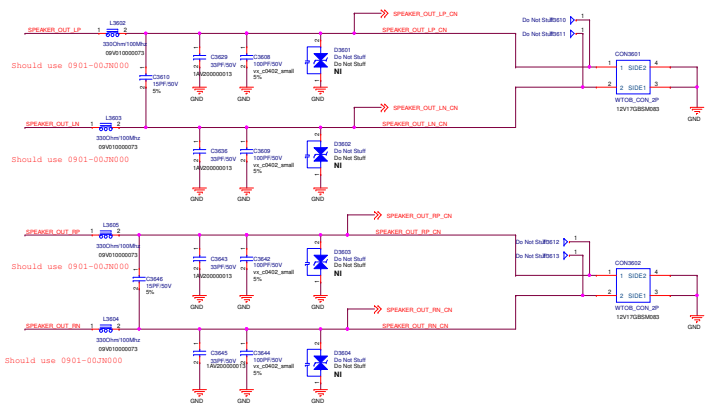
0531

PEGATRON		Title : 32. RESET IC	
PEGATRON CORPORATION		Engineer: Shinru Chung	
Size A3	Project Name MIDLAND DDR3L	Date: Tuesday, December 24, 2013	Rev R1.0
Sheet 32 of 97			

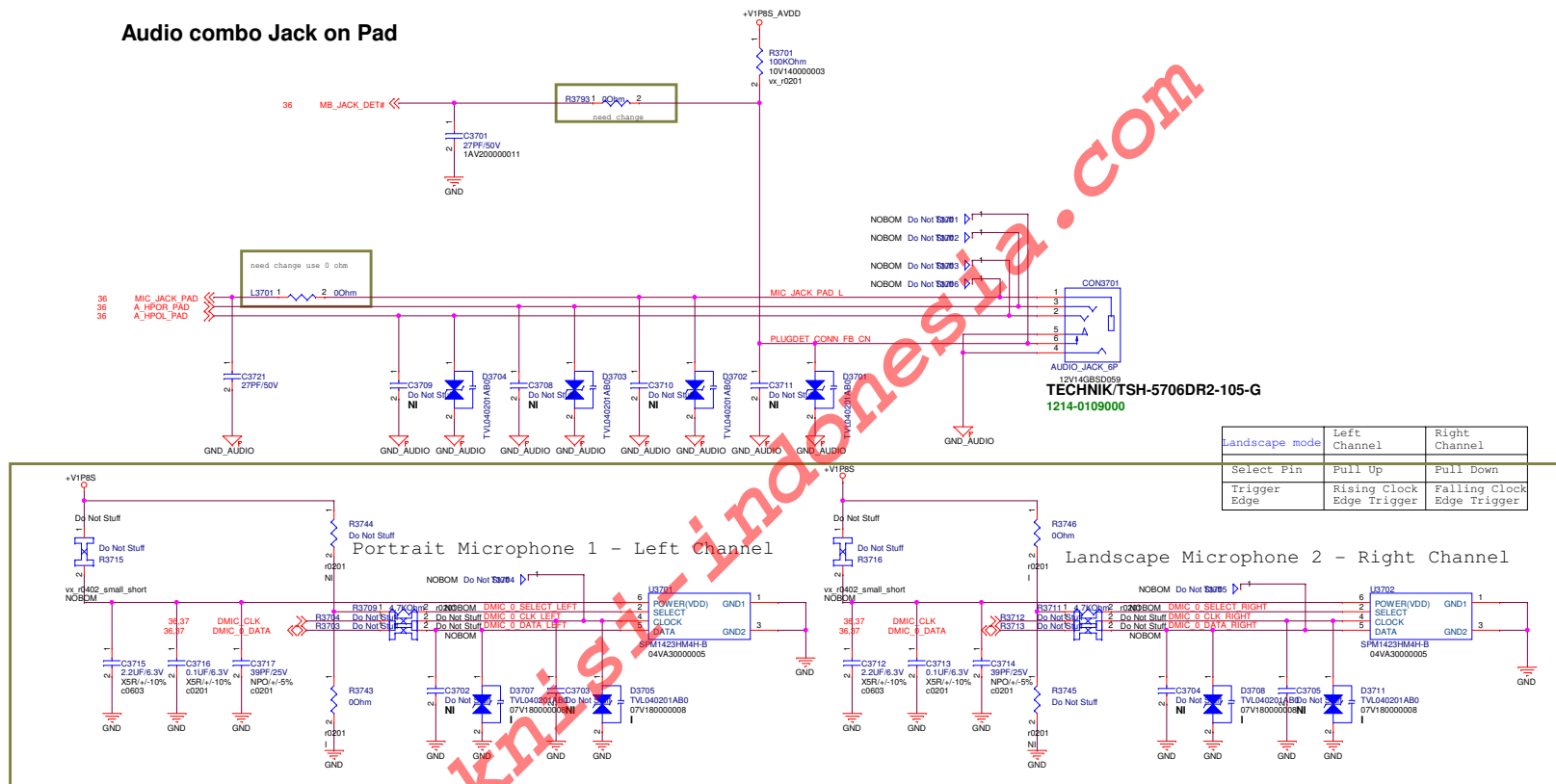
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Speaker connector



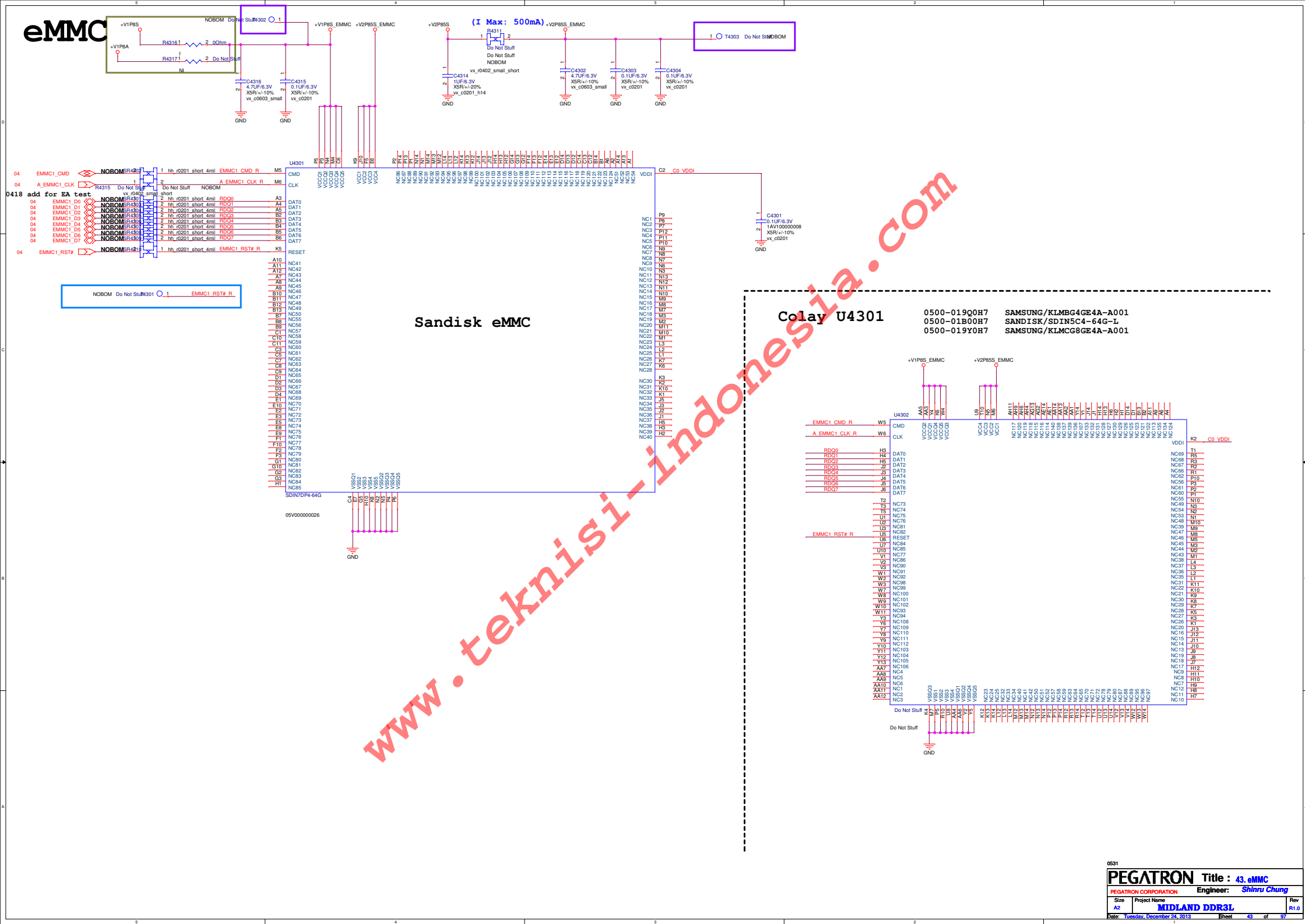
Audio combo Jack on Pad



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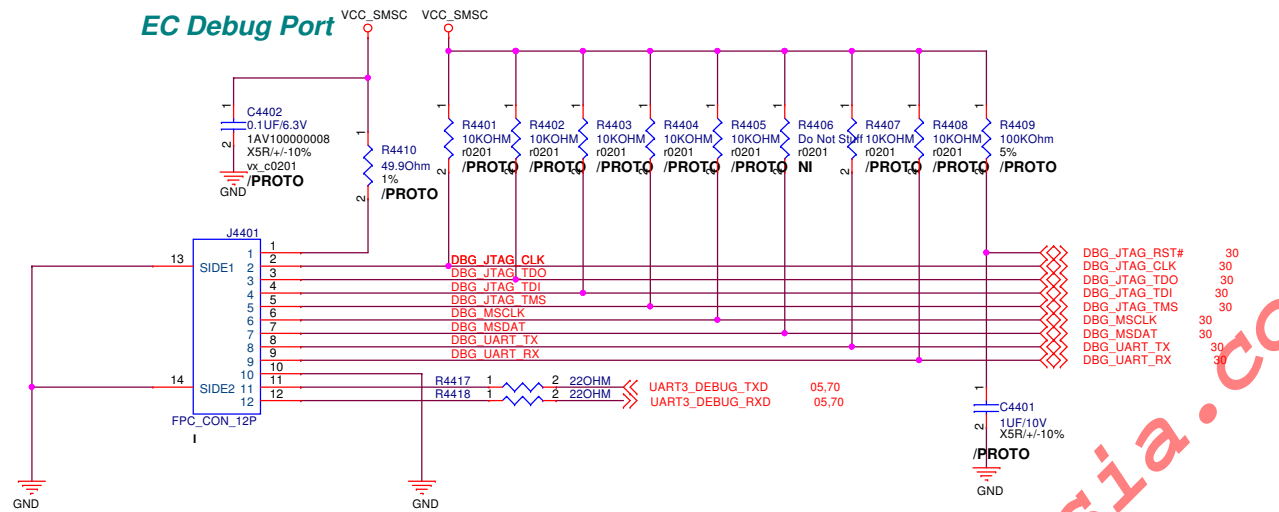
www.teknisi-indonesia.com

eMMC

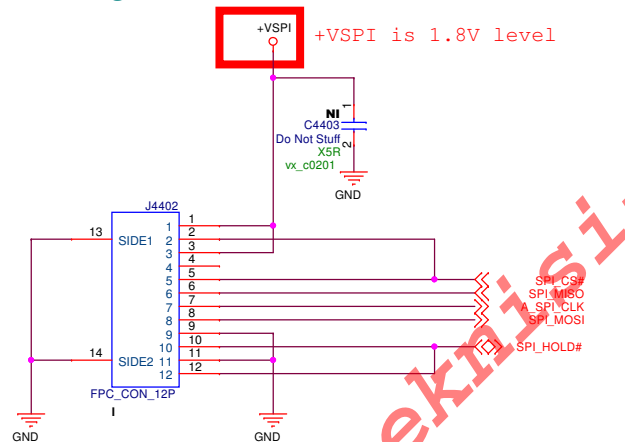


www.teknisi-indonesia.com

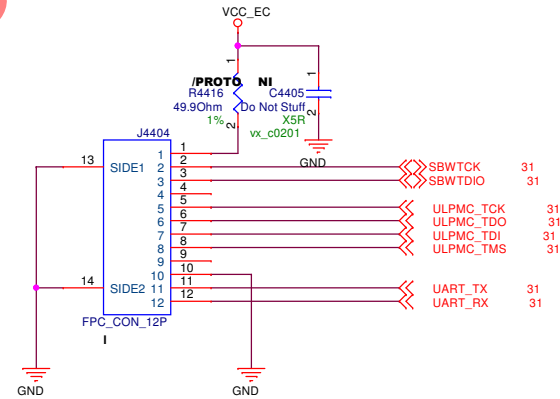
EC Debug Port



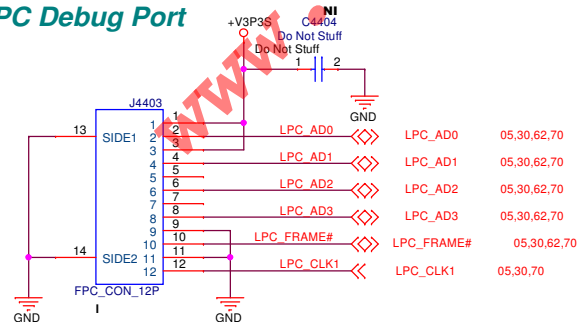
SPI Debug Port



FRIO Debug Port



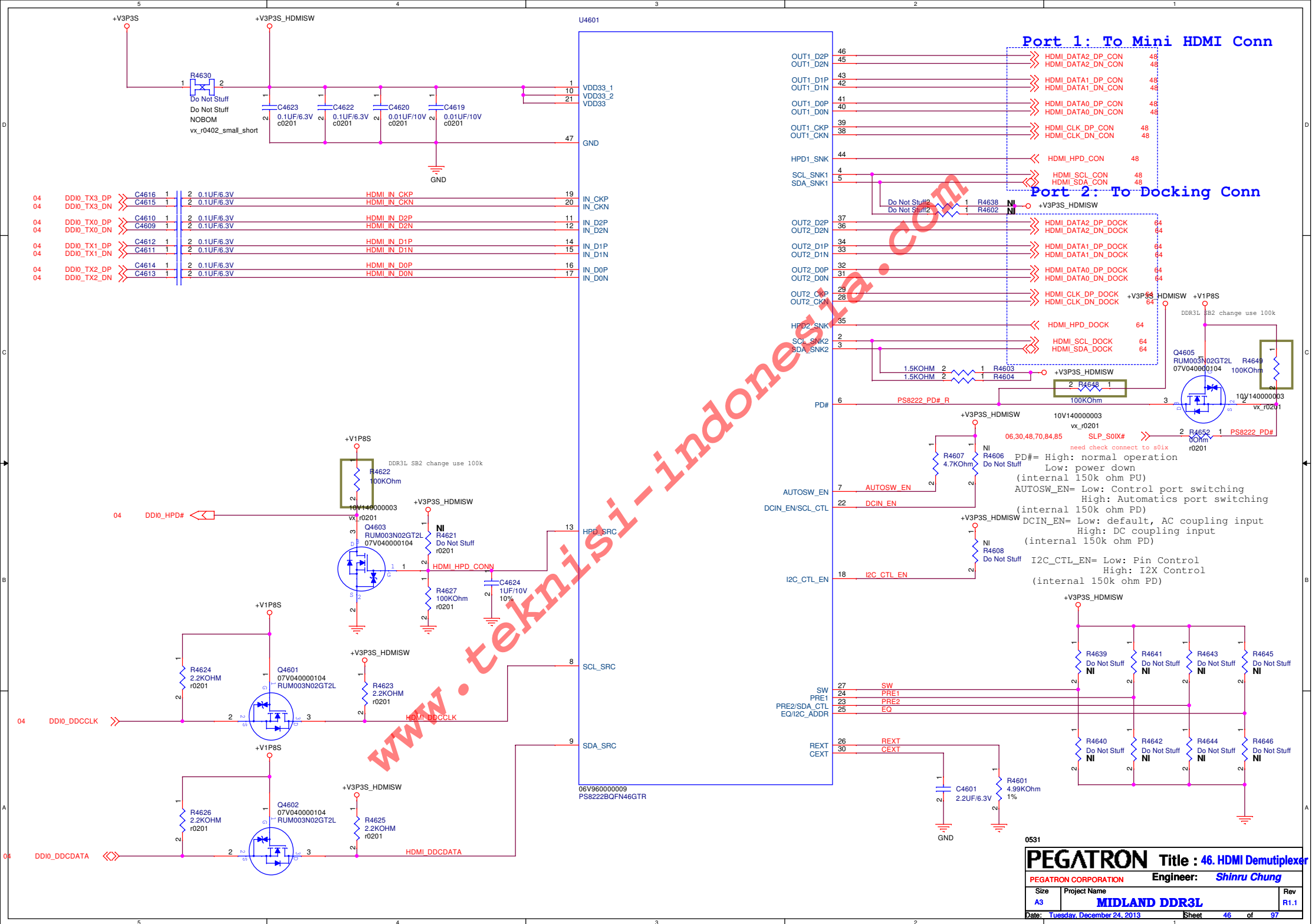
LPC Debug Port



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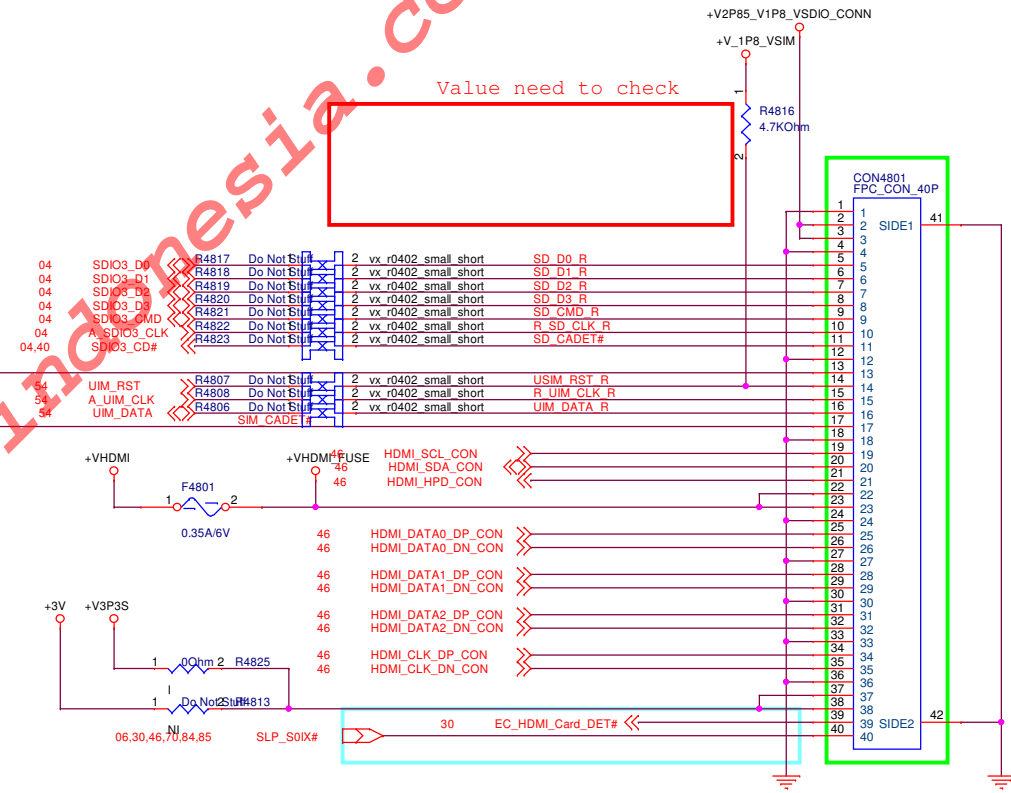
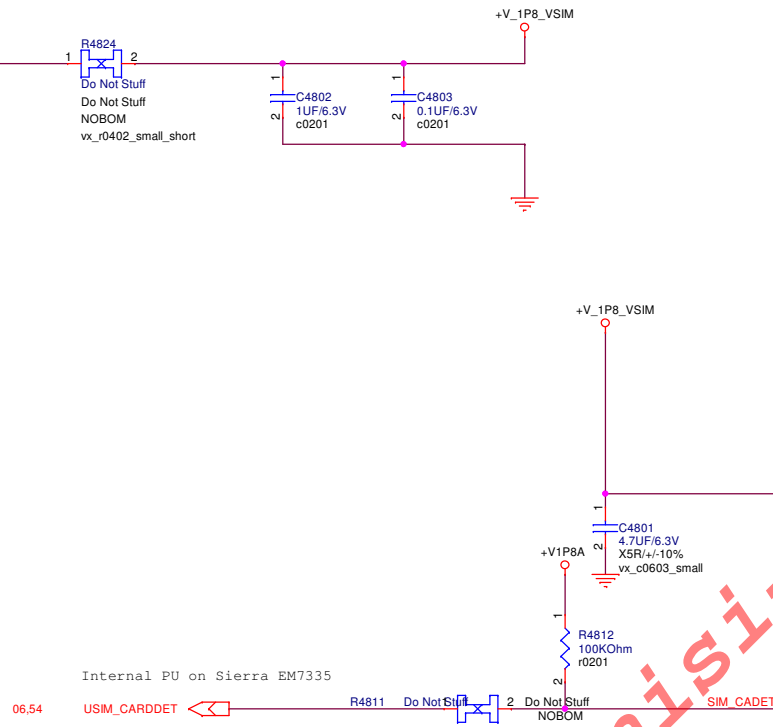
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From WWAN Module

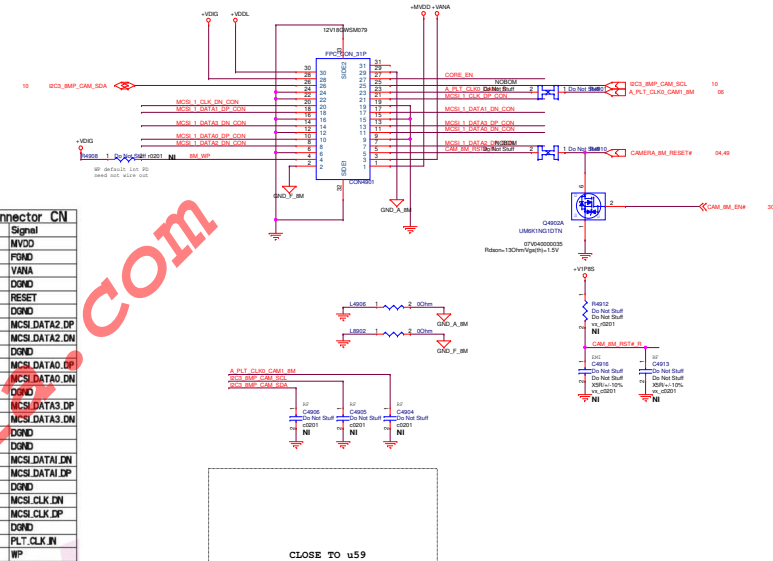
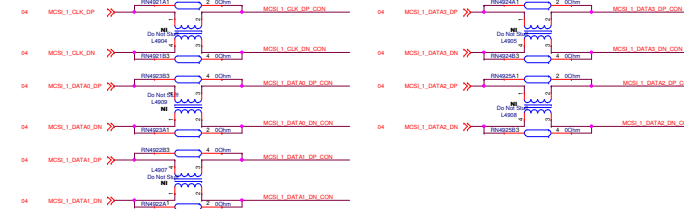
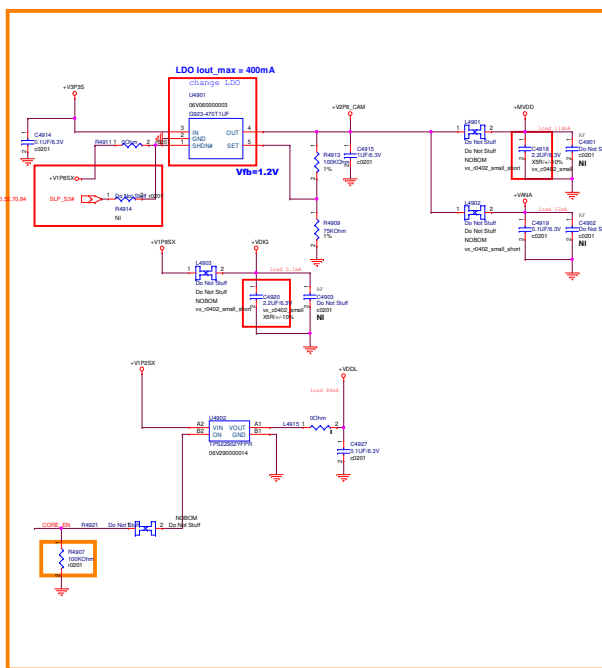
SIM Card Power



0531

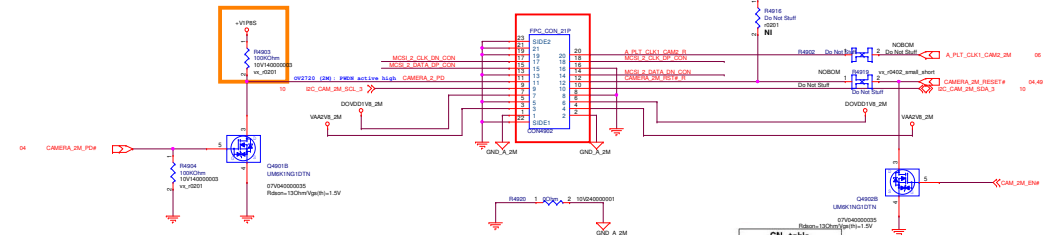
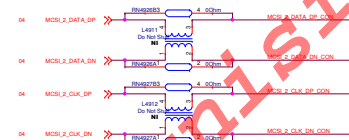
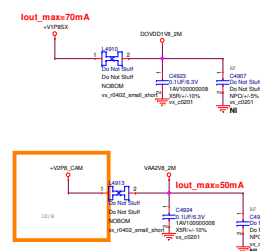
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Rear CAM

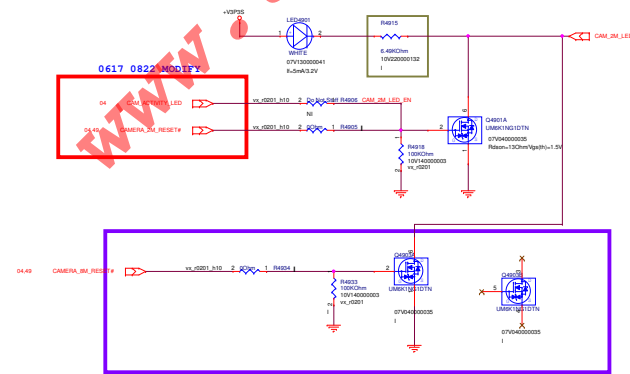


Connector CN	
No.	Signal
1	INVD
2	FM0
3	YANA
4	DQND
5	RESET
6	DQND
7	MCSDA2A
8	MCSDA2A
9	DQND
10	MCSDA2A
11	MCSDA2A
12	DQND
13	MCSDA3A
14	MCSDA3A
15	DQND
16	DQND
17	MCSDA2A
18	MCSDA2A
19	DQND
20	MCSDA2A
21	MCSDA2A
22	DQND
23	PLT CLK IN
24	WP
25	12C_SCL
26	12C_SDA
27	CORE_EN
28	VDIO
29	AGND
30	VDDL

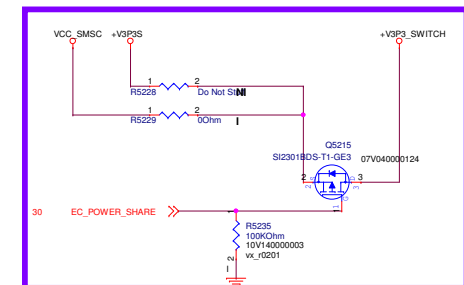
Front Camera



CN table	
1	DGND
2	MCLK
3	DGND
4	MCP
5	MCN
6	DGND
7	MDPO
8	MDNO
9	DGND
10	CAM_RESE
11	CAM_PWDN
12	SDA
13	SCL
14	DGND
15	DVDD
16	DVDD
17	DGND
18	VAA28
19	VAA28
20	AGND
21	AGND

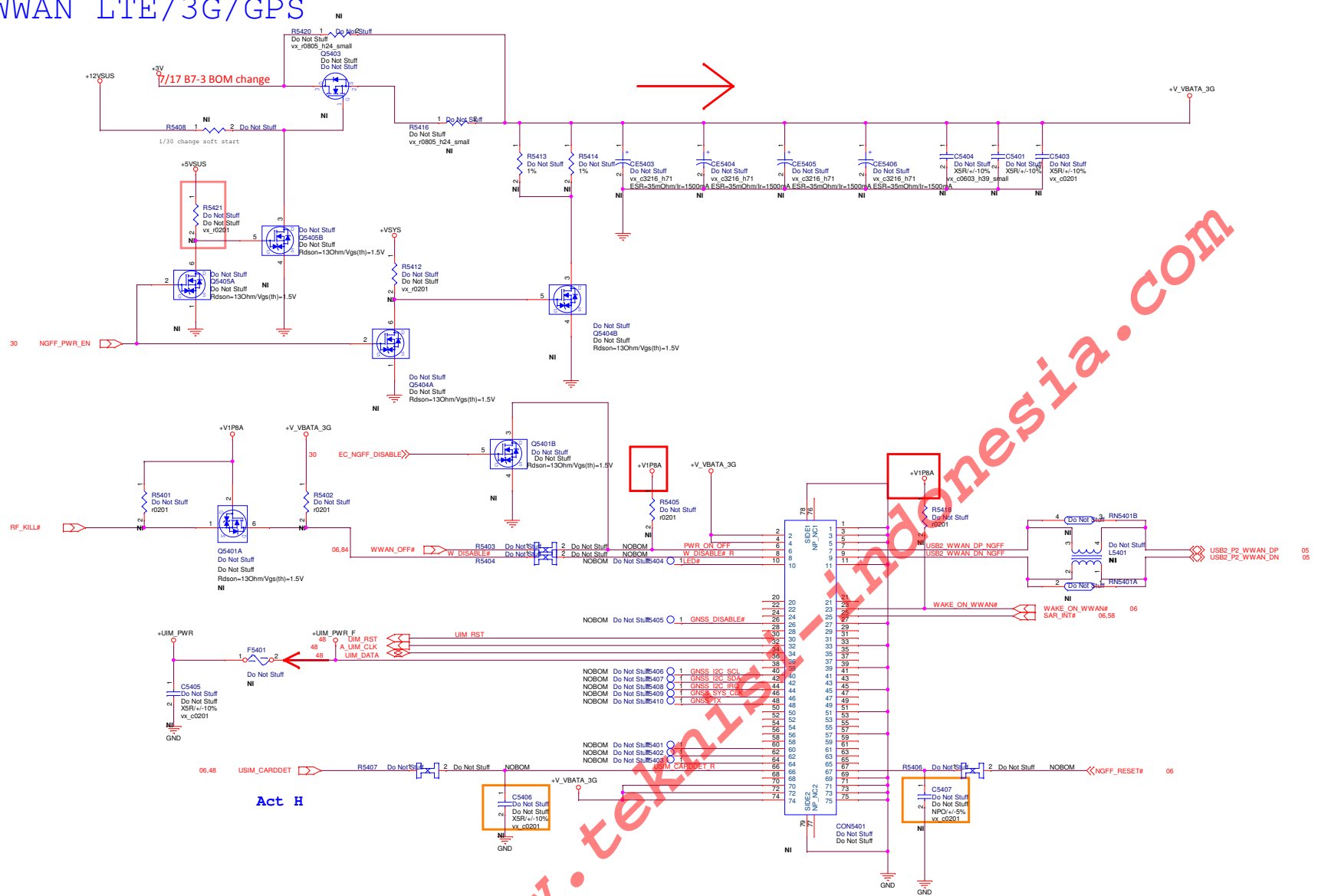


USB CHARGING DETECT



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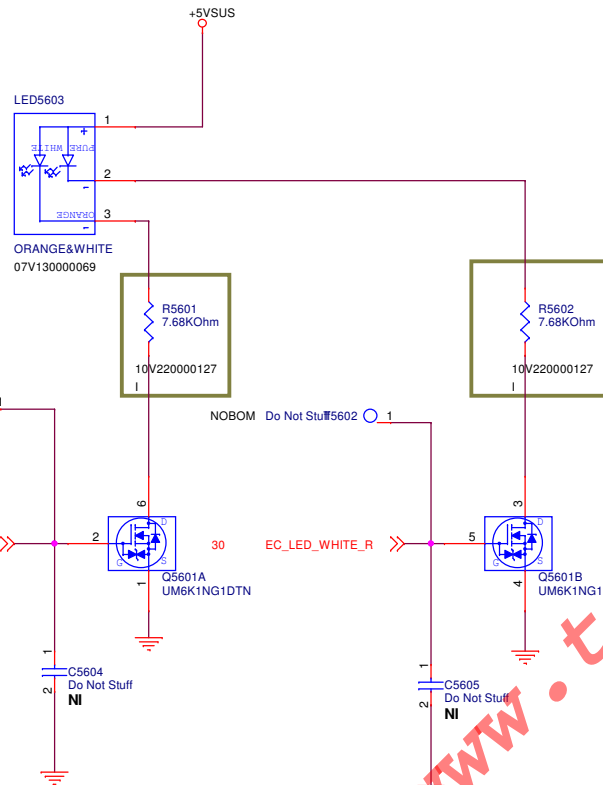
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[illegible]

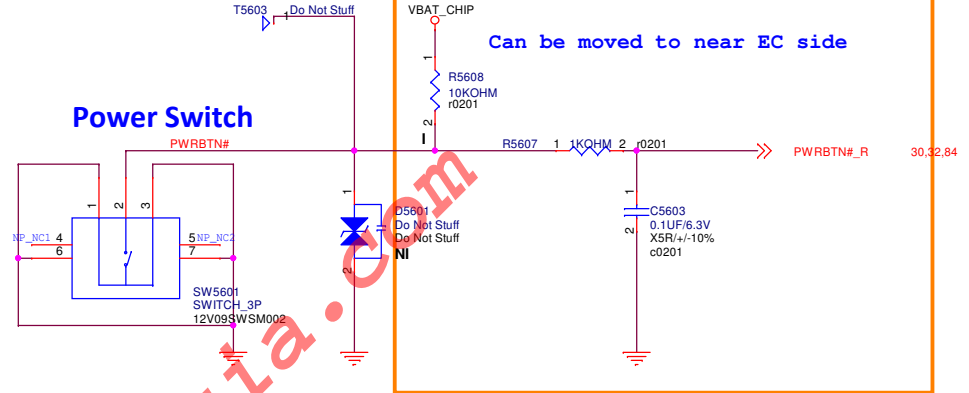
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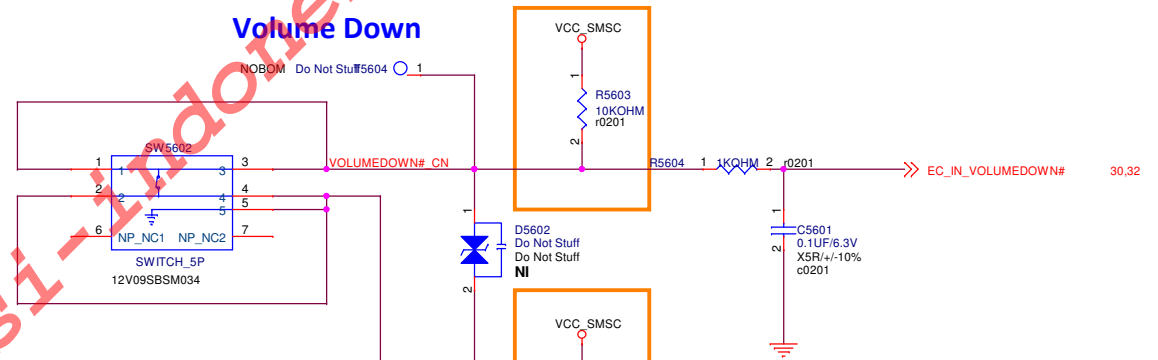
Power/Charging Indicator LED



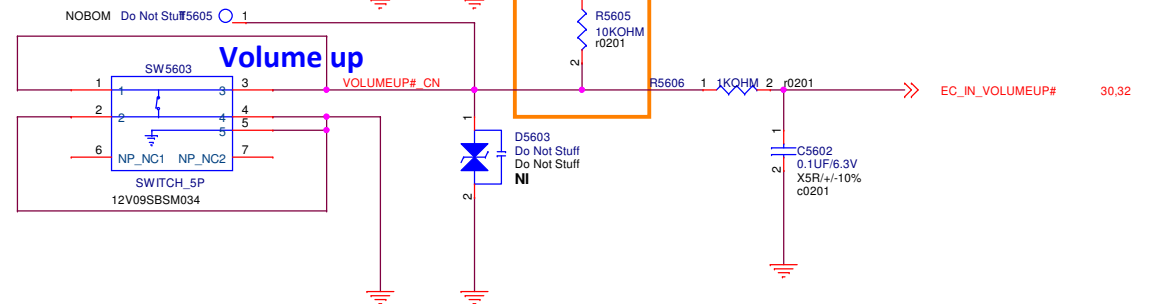
Power Switch



Volume Down



Volume up



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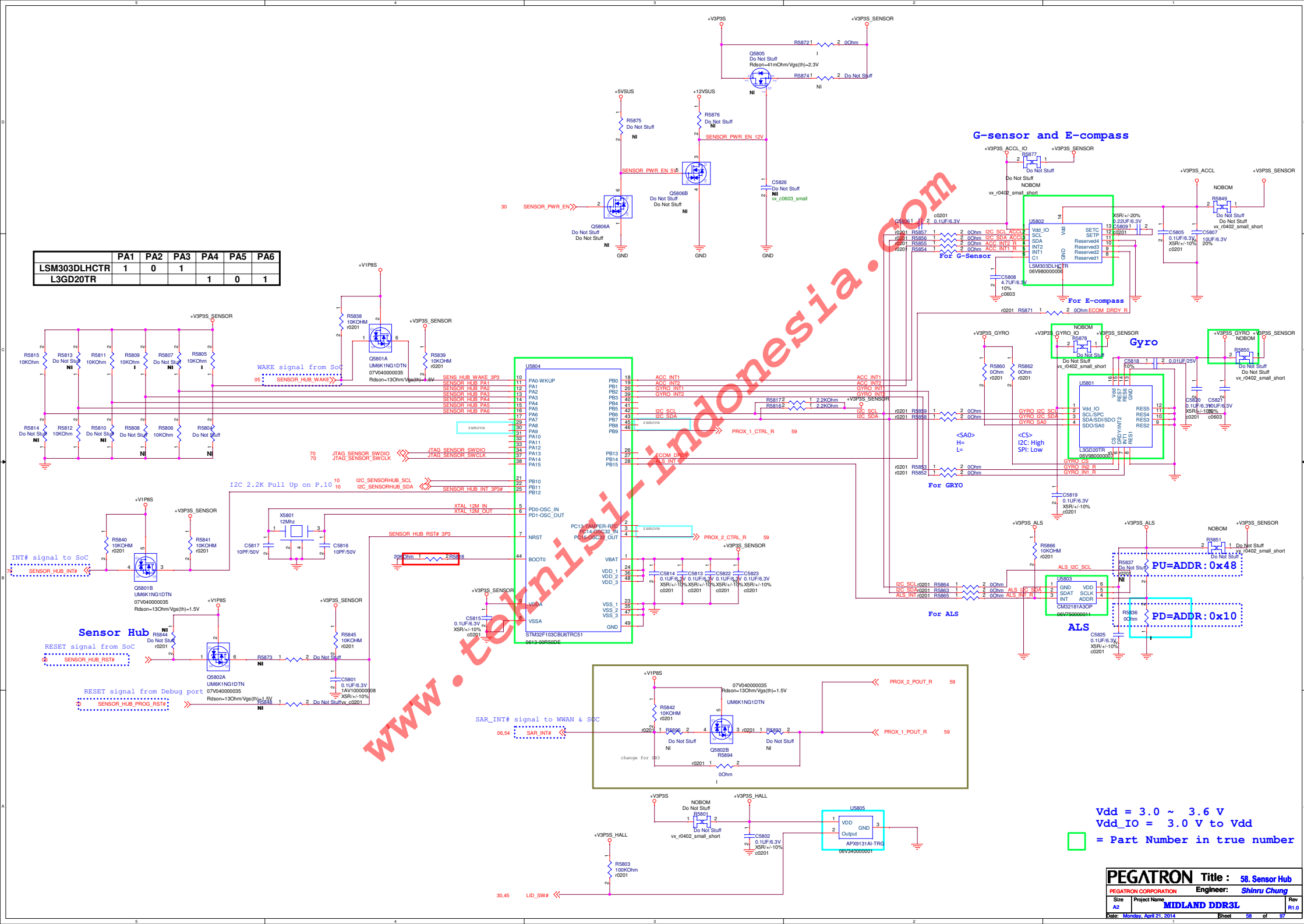
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0531

PEGATRON		Title : 57. SMSC USB HUB	
PEGATRON CORPORATION		Engineer: Shinru Chung	
Size A3	Project Name MIDLAND DDR3L		Rev R1.0
Date: Tuesday, December 24, 2013		Sheet 57 of 97	

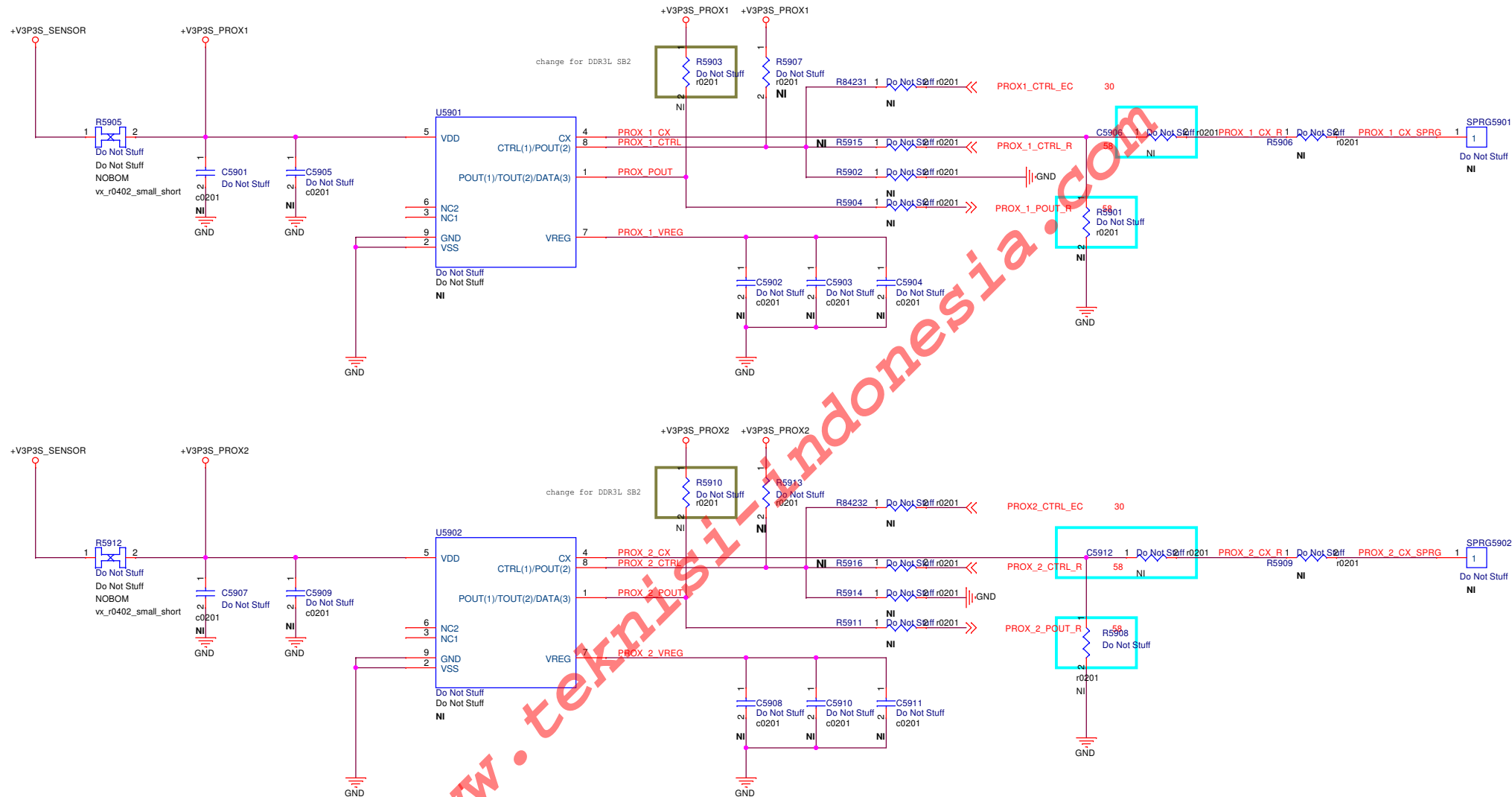
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	PA1	PA2	PA3	PA4	PA5	PA6
L3GD20TR	1	0	1			
L3GD20TR				1	0	1



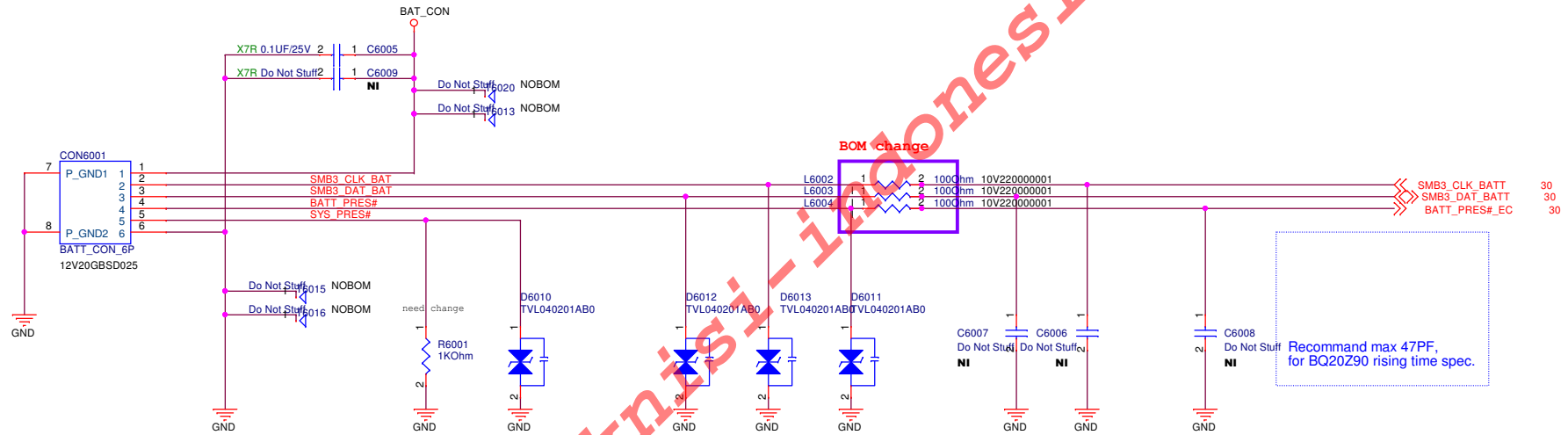
```
Vdd = 3.0 ~ 3.6 V
Vdd_IO = 3.0 V to Vdd
= Part Number in true number
```


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Battery Connector



0531

PEGATRON		Title : 60. BAT CONN	
PEGATRON CORPORATION		Engineer: Shinru Chung	
Size	Project Name	Rev	
A3	MIDLAND DDR3L	R1.0	
Date: Tuesday, December 24, 2013		Sheet 60 of 97	

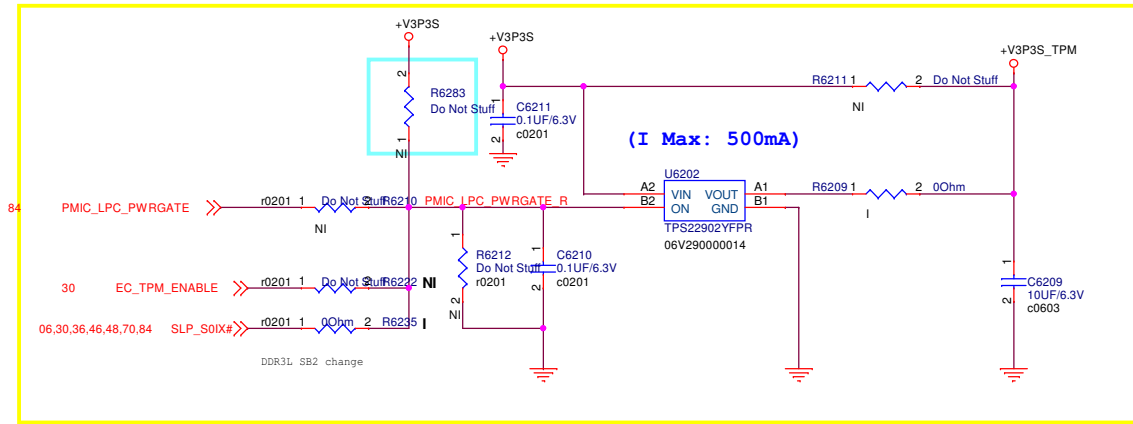
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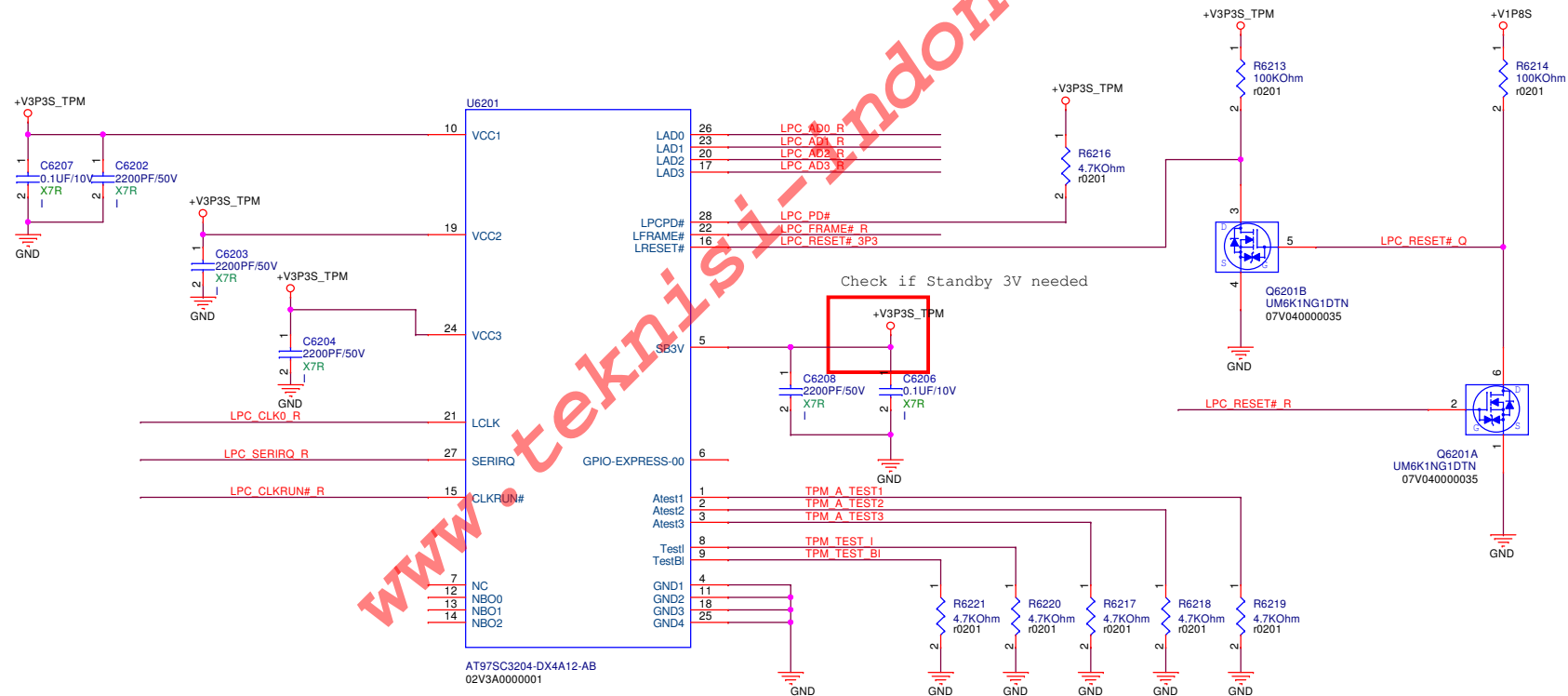
0531

PEGATRON		Title : 61. Smart Card Reader	
PEGATRON CORPORATION		Engineer: <i>Shinru Chung</i>	
Size A3	Project Name MIDLAND DDR3L	Rev R1.0	
Date: <i>Tuesday, December 24, 2013</i>		Sheet	61 of 97

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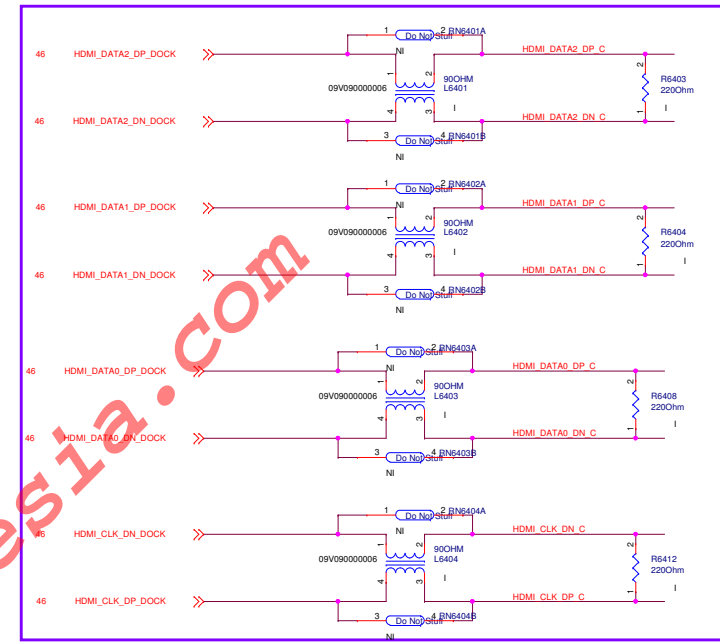
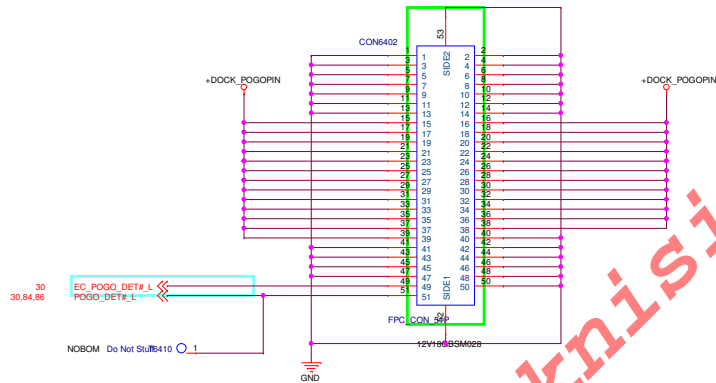
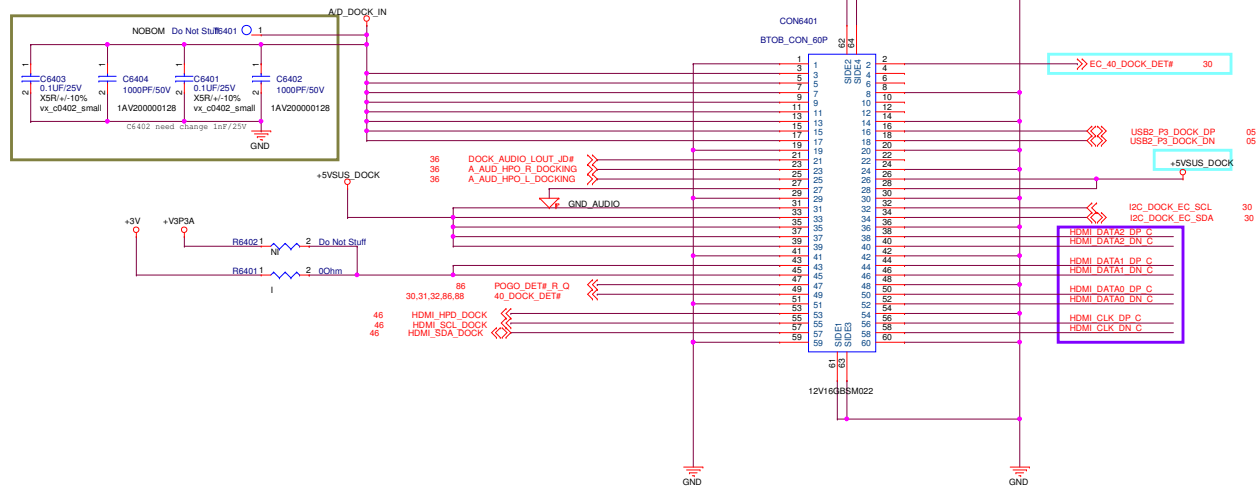


05,30,44,70	LPC_AD0	vx	r0201	h10	R6201	1	220H	2	10V120000033	LPC AD0 R
05,30,44,70	LPC_AD1	vx	r0201	h10	R6202	1	220H	2	10V120000033	LPC AD1 R
05,30,44,70	LPC_AD2	vx	r0201	h10	R6203	1	220H	2	10V120000033	LPC AD2 R
05,30,44,70	LPC_AD3	vx	r0201	h10	R6204	1	220H	2	10V120000033	LPC AD3 R
05,30,44,70	LPC_FRAME#	vx	r0201	h10	R6205	1	220H	2	10V120000033	LPC FRAME# R
05	LPC_CLK0	vx	r0201	h10	R6206	1	220H	2	10V120000033	LPC CLK0 R
05,30,70	LPC_CLKRUN#	vx	r0201	h10	R6207	1	220H	2	10V120000033	LPC CLKRUN# R
05,30,70	LPC_SERIRQ	vx	r0201	h10	R6208	1	220H	2	10V120000033	LPC SERIRQ R
06,30,70,84	PLTRST#	vx	r0201	h10	R6215	1	220H	2	10V120000033	LPC RESET# R



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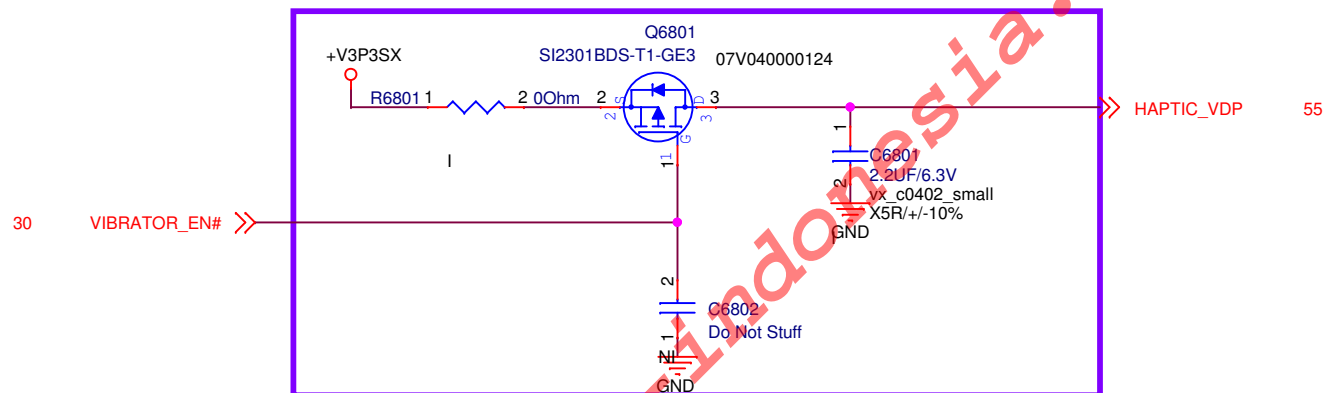
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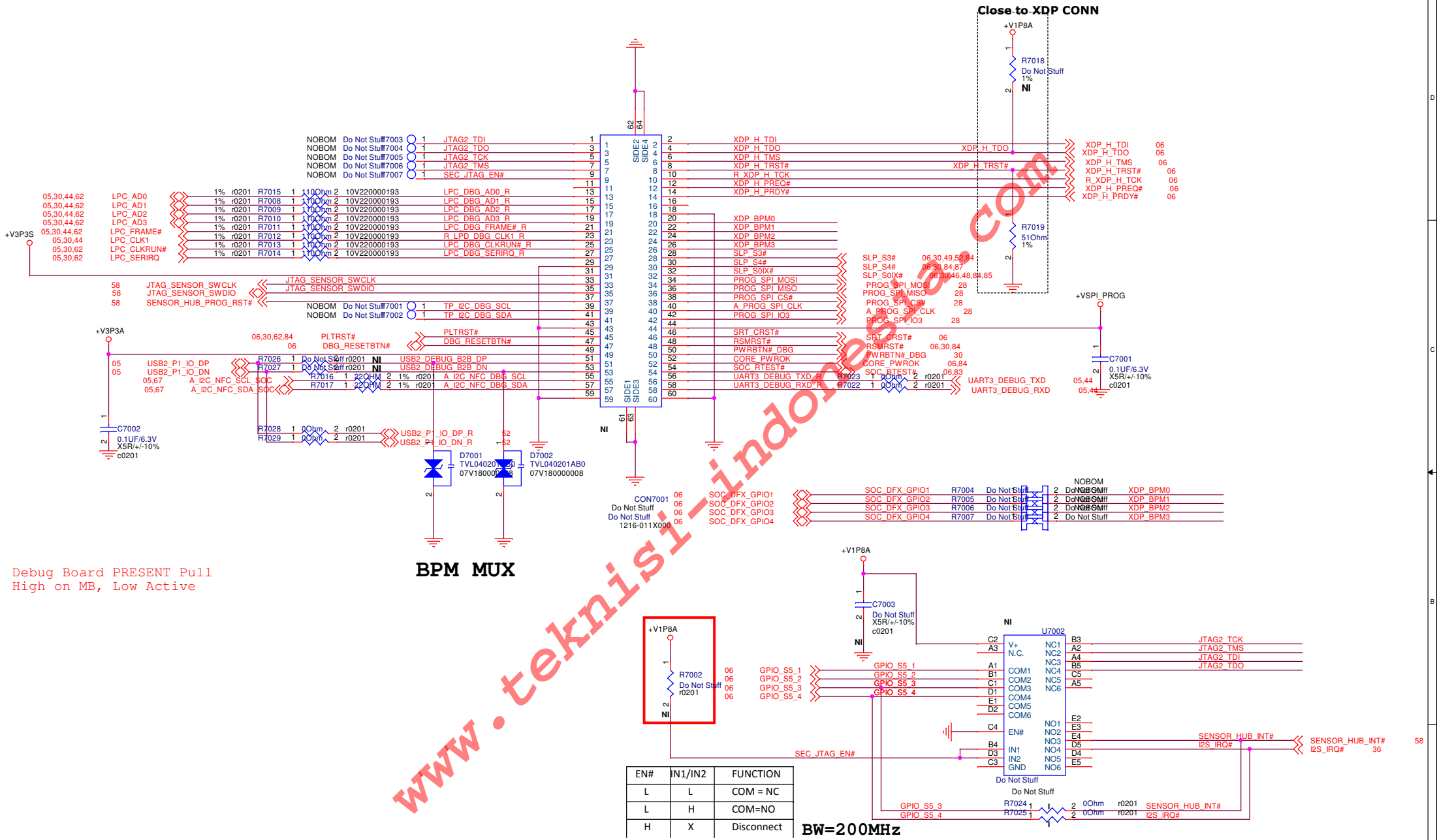
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PEGATRON		Title : 68. Vibrator IMAGIS	
PEGATRON CORPORATION		Engineer: Shinru Chung	
Size A4	Project Name MIDLAND DDR3L		Rev R1.0
Date: Tuesday, December 24, 2013		Sheet 68	of 97



Debug Board PRESENT Pull
High on MB, Low Active

BPM MUX

EN#	IN1/IN2	FUNCTION
L	L	COM = NC
L	H	COM=NO
H	X	Disconnect

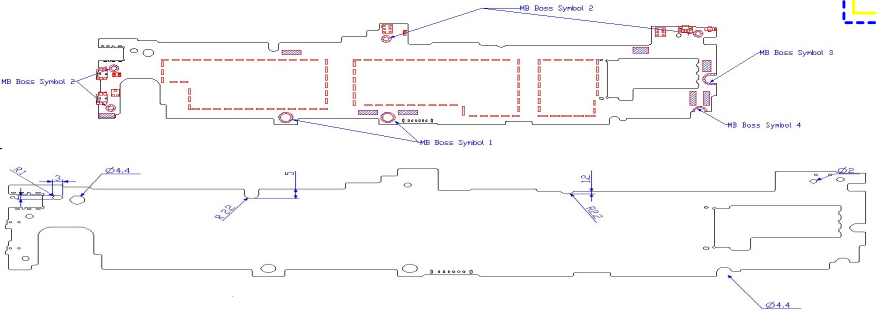
BW=200MHz

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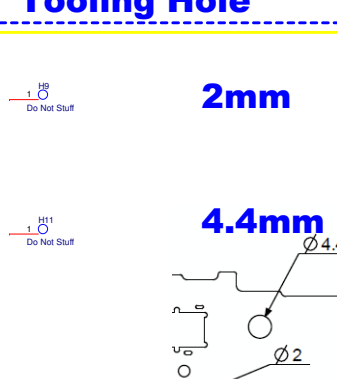
5
4

Screw Hole

The diagram illustrates four examples of screw hole symbols (H1, H3, H4, H5) and a detail view of a screw hole. Each symbol is shown with a red line indicating the hole's location and a ground symbol. The text "Do Not Stuff" is present below each symbol. The detail view shows a screw hole with a diameter of $\phi 4$ and a hole diameter of $\phi 2.2$, with a callout to "MB Boss Symbol 2".



Tooling Hole



1 H1
Do Not Stuff

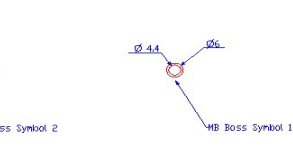
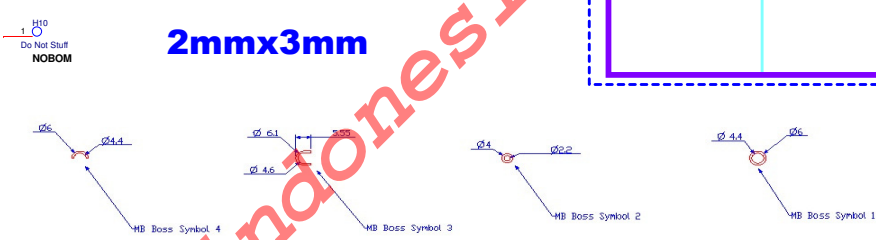
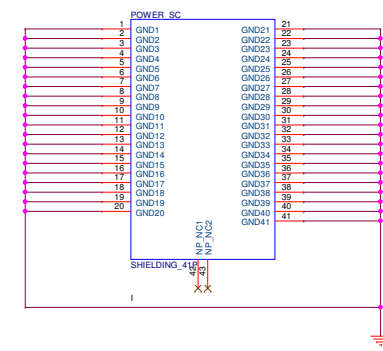
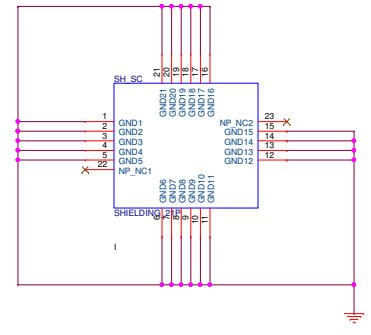
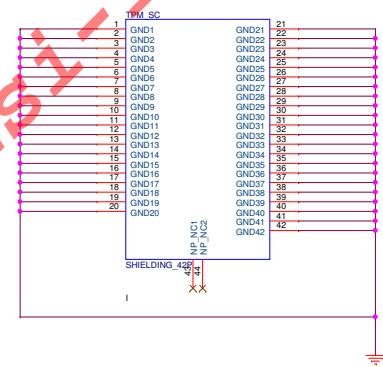
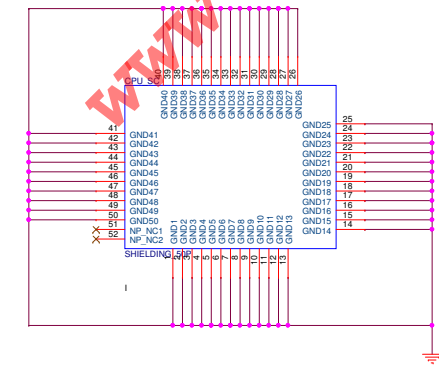
2mm

1 H1
Do Not Stuff

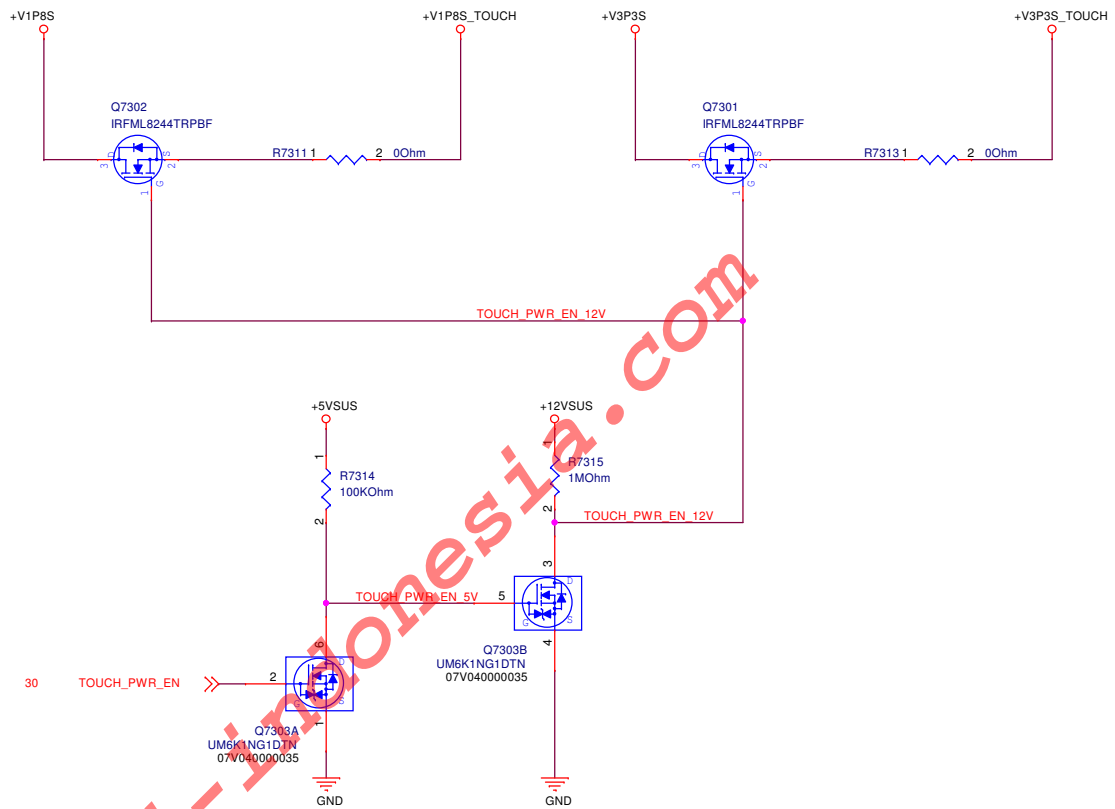
4.4mm

Ø 4.4

Ø 2

[illegible]

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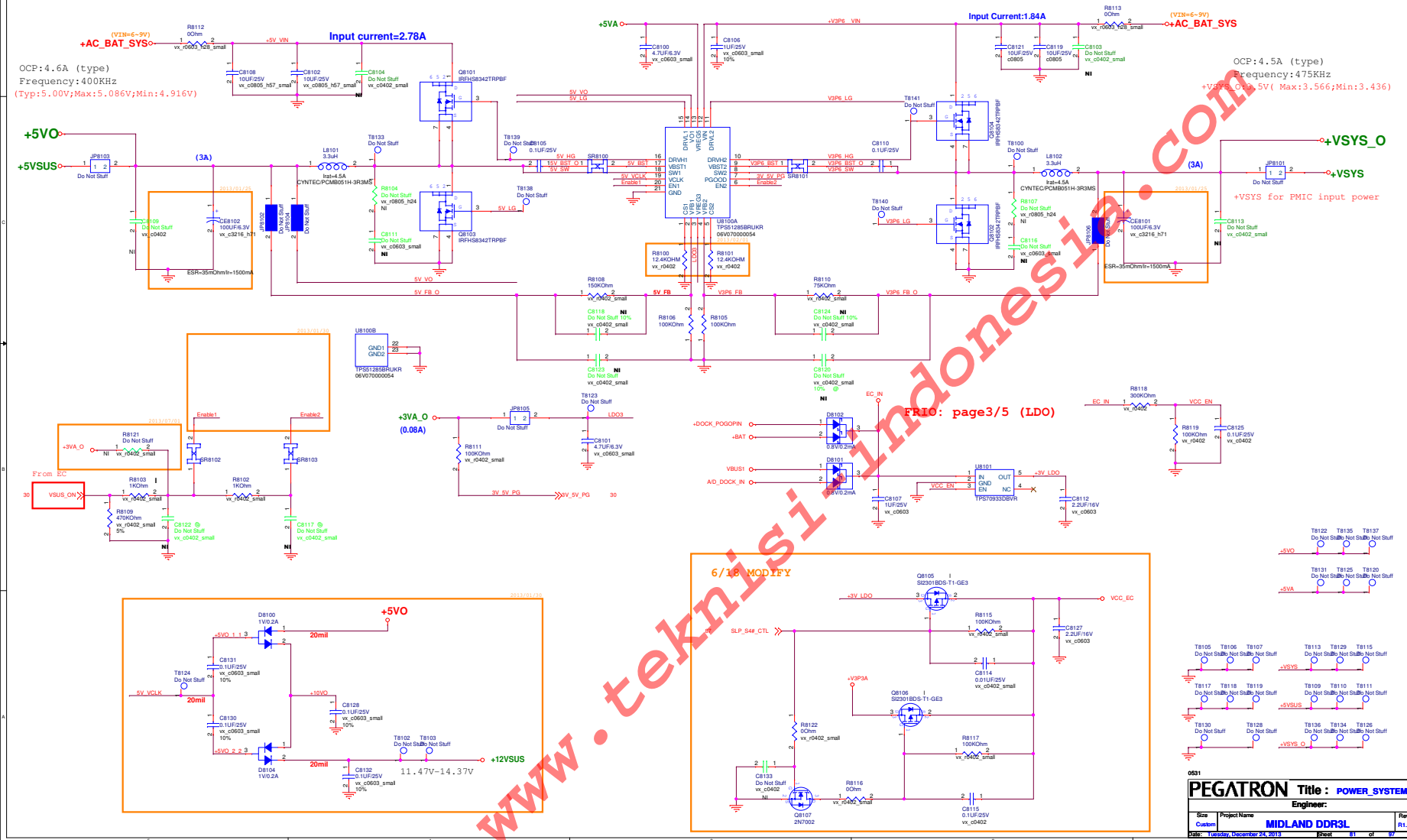
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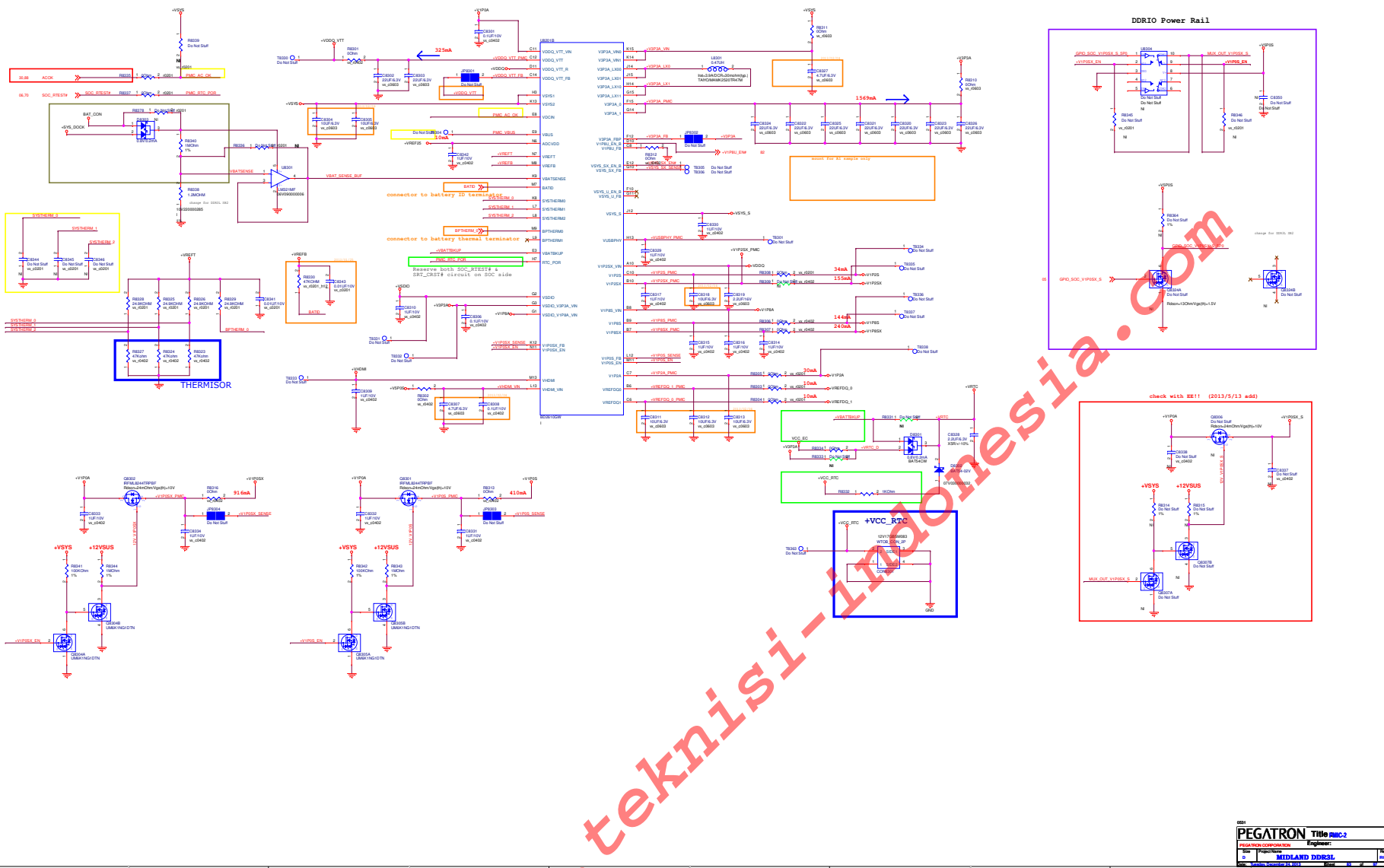
PEGATRON		Title : Touch Lens CON	
PEGATRON CORPORATION		Engineer: Shinru Chung	
Size A3	Project Name MIDLAND DDR3L	Date: Tuesday, December 24, 2013	Rev R1.0
Sheet 73 of 97			

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+5VO & +3VO POWER SUPPLY

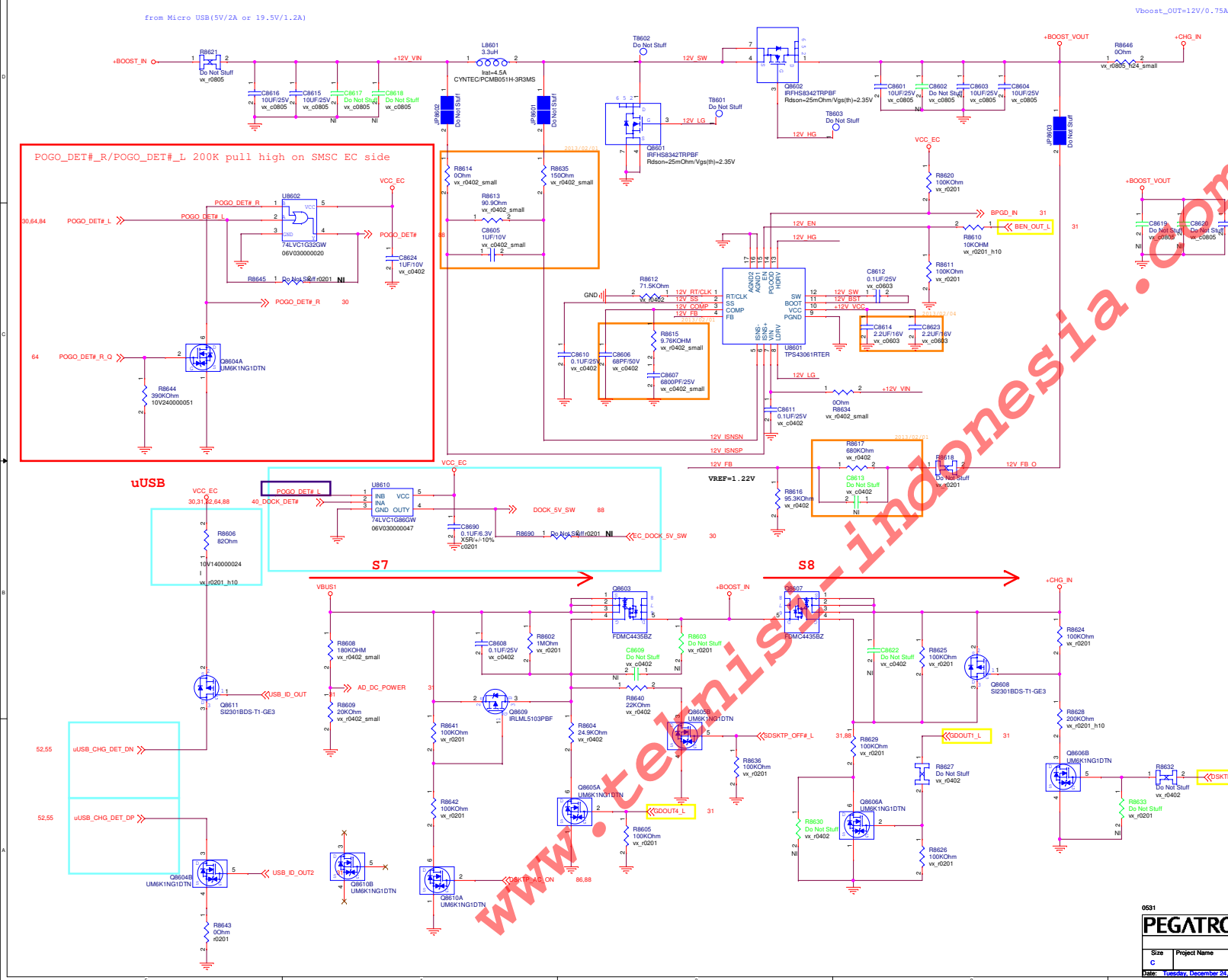






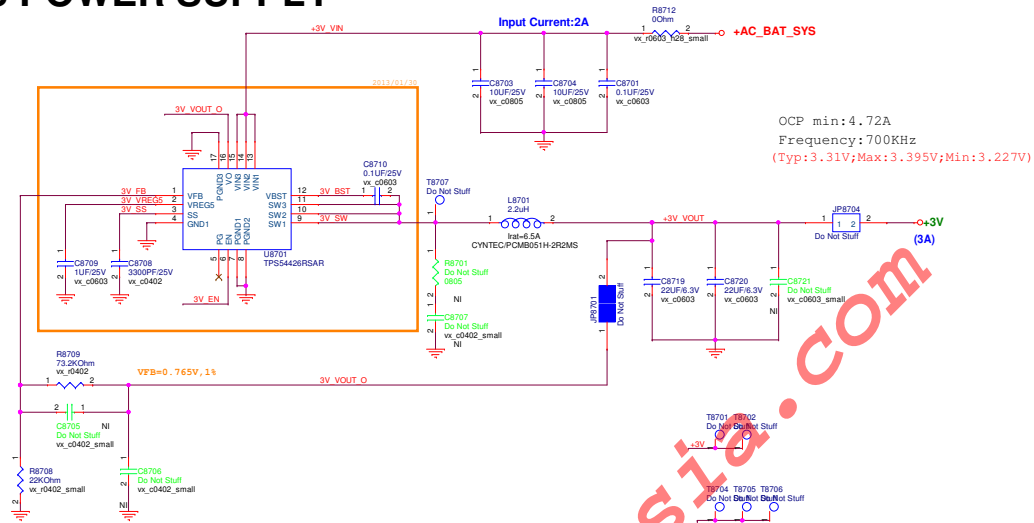
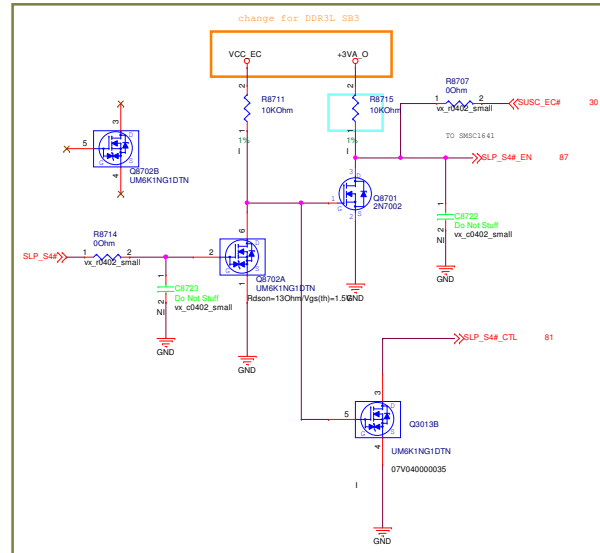
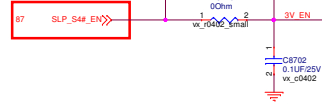


uUSB BOOST



+3VS POWER SUPPLY

Check connection to EC or PMIC



OCp min:4.72A
Frequency:700KHz
(Typ:3.31V;Max:3.395V;Min:3.227V)

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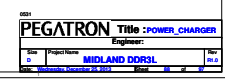
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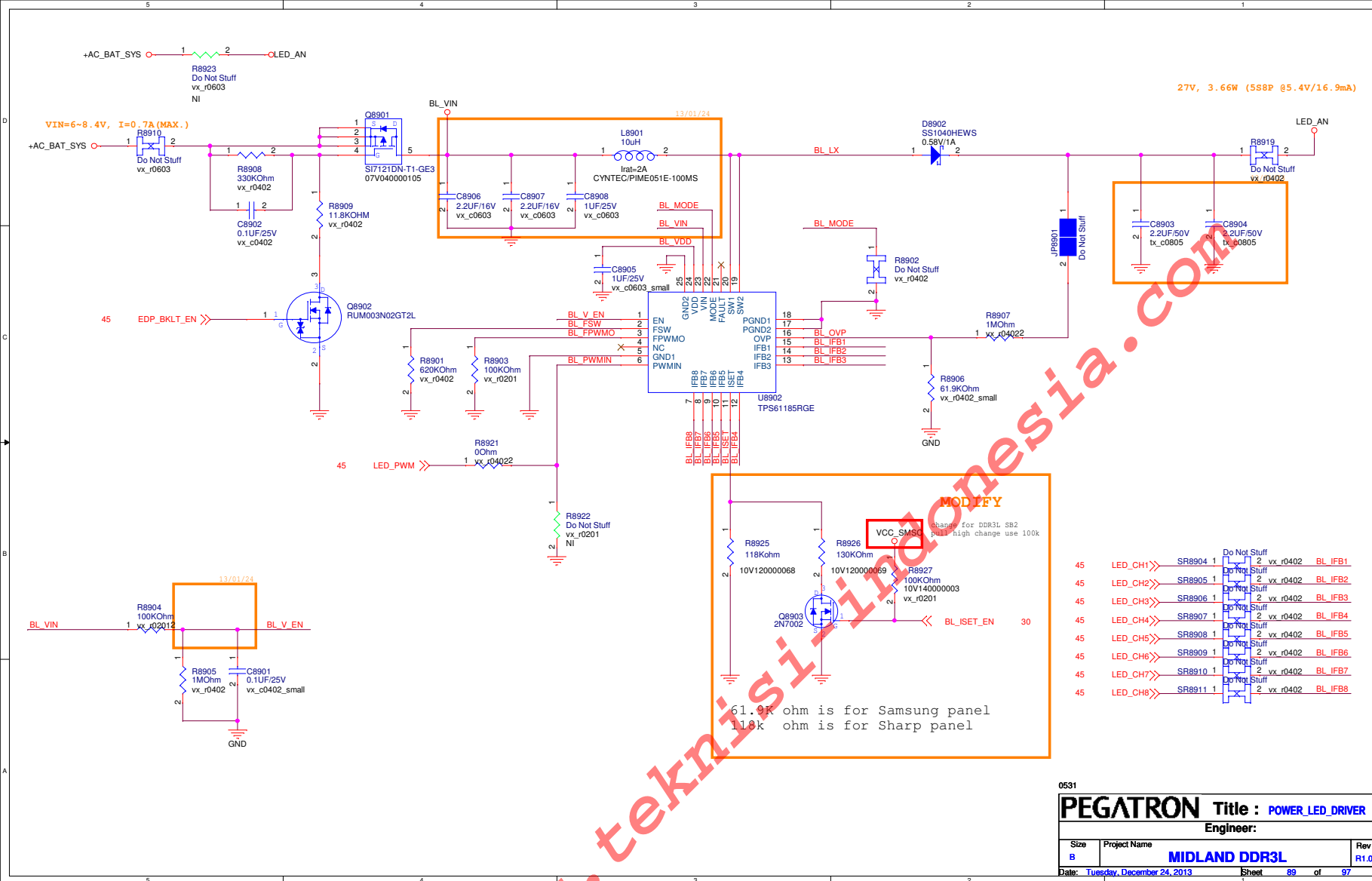
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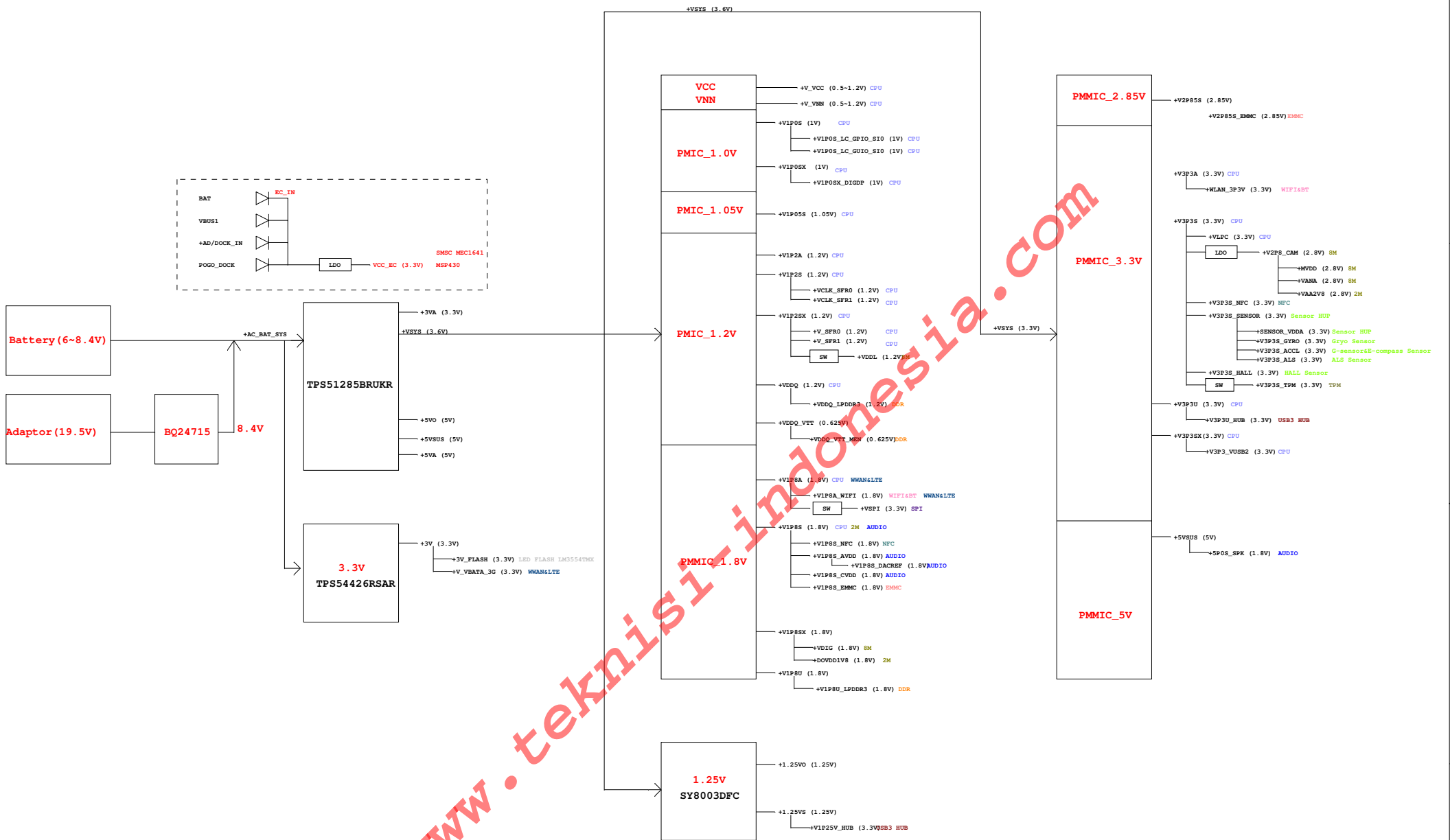
Engineer:

Size	Project Name	Rev
C		R1.0

Date: Tuesday, December 24, 2019 Sheet 87 of 87







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I2C Port	Usage	Device	7-bit Address
I2C_0	Touch Controller		
	LCD EDID		
	LVDS Bridge	TC358764XBG	0x0F
I2C_1	KB scan controller		
	NFC(Slate)	PN65	0x28
	NFC(Hybrid)	PN544	
I2C_2	USB Hub	USB3803	0x08
	Battery charger	BQ24192	
	Fuel gauge	BQ27501	0x55
I2C_3	Dock		
	HDMI DDC		
	Camera Primary		
I2C_4	Flash LED driver	LM3555	0x30
	Camera Secondary (Video Camera)		
	Audio codec	ALC5642	0x1C
I2C_5	Sensor hub	STM32F103	
	I2C GPIO expander for straps	PCA9574BS	0x21
	Sensor Hub I2C_1	G-Sensor and E-Compass	LSM303DLHC
Sensor Hub I2C_1	Gyro	L3G4200D	0x19 (linear) 0x1E (mag)
	Barometer (Pressure)	LPS331AP	0x5C
	ALS&Proximity	CM3218	

BOM upload prepare

- 1) add PMIC U6001 :0664-003K000 -> 0664-004A000
- 2) del CON3601 & CON3602 & R8672 & SW1 (I/O card)
- 3) add PCB P/N

R100 : 08N1-0TL0J00 & 08N1-0TL0V00

R101 : 08N1-0TL1J00 & 08N1-0TL1V00 & 08NT-0630000

- 4) add U5001 :0101-01FW000 (CPU)

- 5) U12(charger 192i) : 0637-003M000

- 6) U4101 : 0220-002D000

- 7) U6229 : 0675-001M000

- 8) D8402 : 0703-00V8000

- 9) U3004 :0613-00E0000

- 10) LED3403 0713-01N6000

- 11)

- 12) BOARD_ID for SOC ver

I2C_Port	Module	DEVICE	7-bit addr
I2C_0	PAD EC		
	DOCKING EC		
I2C_1	AUDIO CODEC	ALC5672	
I2C_2	EC		
I2C_3	2M CAM	OV2720	
	8M CAM	Sony IMX175	
	LED FLASH	LM3554TMX	0X53
	VIBRATOR	IMAGIS ISA1200	
I2C_4	Sensor HUB	ST STM32F103RDY6TR	
	Proximity Sensor	ST STM8T143	
	ALS	CAPELLA CM32181	
	Gyro	ST L3GD20TR	
	E-Compass & Accelerometer	ST LSM303DLHCTR	
I2C_5	eDP Panel		
	TOUCH LENS		
I2C_6	PMIC	DIALOG DA6021	
NFC_I2C	NFC	NXP PN544PC	

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