

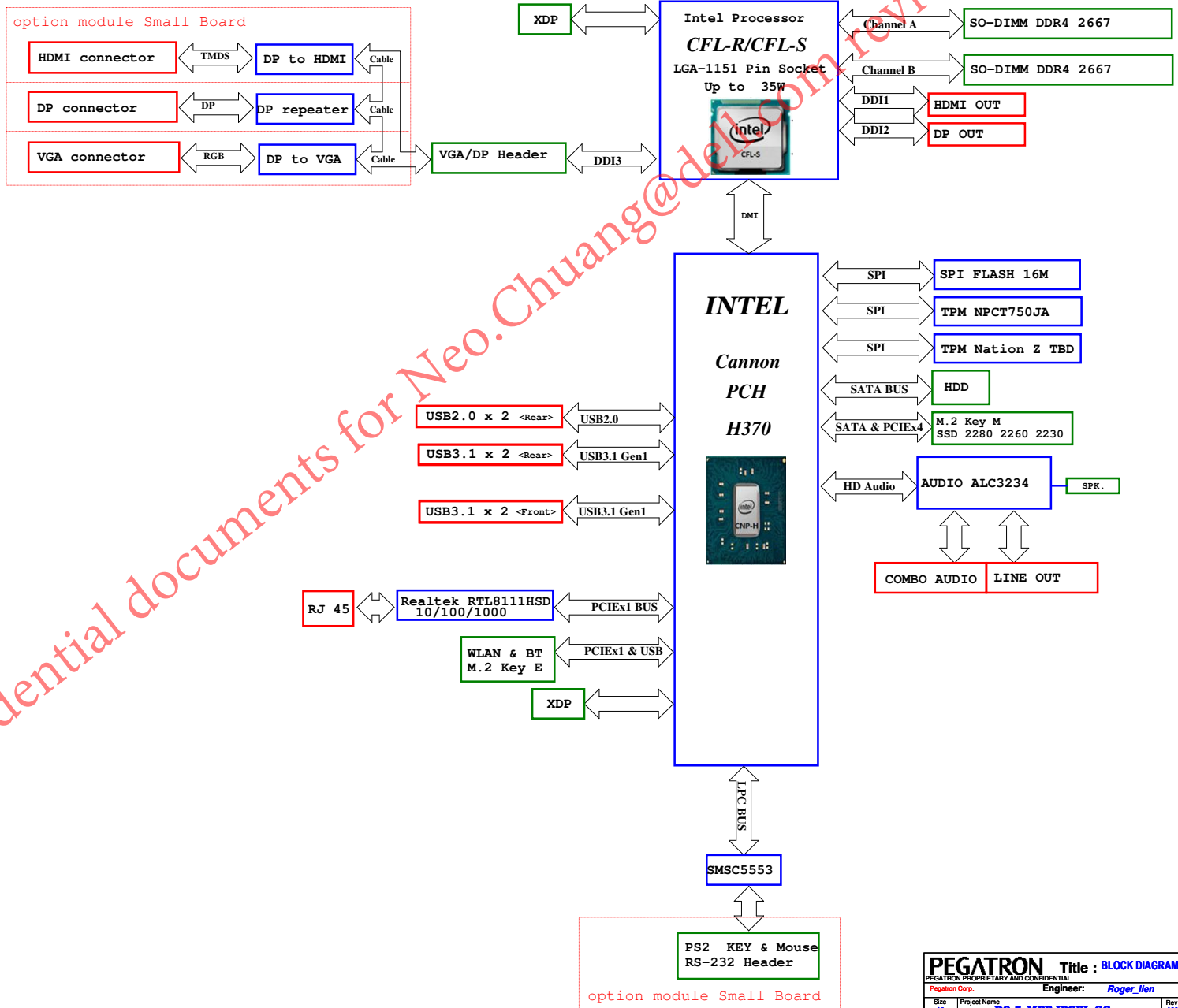
MFF-Cougar-MLK

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03	SIGNAL & RESET MAP
04	CHANGE HISTORY
05	POWER FLOW 35W
06	POWER DISTRIBUTION
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15	DDR4 SODIMM CH-B
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26	SPI ROM
27	ME DISABLE
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29	NGFF KEY M 2280 (SSD)
30	LOM Intel i219
31	LAN JACK
32	N/A
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34	N/A
35	Front 3.0 USB CHARGE IC
36	REAR USB3.0
37	REAR USB3.0
38	N/A
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40	TYPEC CONN
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42	VGA option header
43	REAR LINE OUT& GHS CONN
44	N/A
45	SIO SCH5555V-NU
46	SCREW HOLE
47	FAN CIRCUIT
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49	DEBUG LED
50	APS/LPC DEBUG
51	RTC
52	SATA HDD CONN & LED
53	HDMI OUT
54	AUDIO CODEC ALC3234
55	PWRBTN & LED
56	N/A
57	N/A
58	TPM Z32H320TC
59	TPM NPCT750JAA1X
60	DP CONN
61	TPM
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64~66	VCORE CONTROLLER
67	VCC GT DRIVER
68	VCCSA & VCCIO
69	VCORE & VCC_GT CAP
70	VCCST & +3P3VSB
71	NEVER SLEEP POWER SWITCH
72	+5V, +3P3V, +3P3V_LAN,
73	+1P5V_GPU
74	+5VSB, +3P3VA
75	+3P3VSB & GPU DISCHARGE
76	+1P35V_DUAL & +VTT_DDR
77	+3V_WLAN & +0P95V
78	CPU XDP DEBUG CONNECTOR
79	PCH XDP DEBUG CONNECTOR
80~86	GPU MESO-S3-XT
87	VRAM DDR3 256Mx16bit
88~90	N/A
91	+1VSB
92~93	+VDDC CONTROLLER

PCB BOARD SIZE  
170x172.3mm

- Internal Slot/Header
- Front/Rear IO
- Chipset
- Optional

Cougar-MFF-35W-MLK BLOCK DIAGRAM



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Date: <i>Wednesday, November 28, 2018</i>		Sheet 3 of 97

5	4	3	2	1
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[illegible]

ote:

Component footprint is SMD 0402, Y5V, 5% type. Difference footprint show on schematics

**BOM**

led Part.

Installed Part.

PROTO = PROTO Phase Only.

VP = Virtual Part.

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**PEGATRON** Title : CHANCE HISTORY

Pegatron Corp. Engineer: Roger\_Ilen

Size	Project Name	Estimate
1000	Project A	1000
2000	Project B	2000
3000	Project C	3000
4000	Project D	4000
5000	Project E	5000
6000	Project F	6000
7000	Project G	7000
8000	Project H	8000
9000	Project I	9000
10000	Project J	10000

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## POWER FLOW

Adapter

1

Current Limit

INA199B1DCKR

NCP81203 + NCP81151MNTBG\*5  
Vcore:3Phase VGT:2Phase  
FDPC5030 \*3 AON6992\*2RT8204  
SIZ340DT-T1-GE3\*1RT6575B  
SIZ340DT-T1-GE3\*1RT6575B  
SIZ340DT-T1-GE3\*1

APL3523AQB

APL3523AQB

APL3523AQB

APL5933

RT9053

AOZ2263QI 10

RMPB20EN

RT8231B  
SIZ340DT-T1-GE3\*1

RT8231B

RT8204

+Vcore I<sub>max</sub>=104A / TDC=74A

11

+VGT I<sub>max</sub>=35A / TDC=25A

14

+VCCSA I<sub>max</sub>=11.1A/TDC=10A

12

+5VA I<sub>max</sub>=0.004A

2

+5VSB I<sub>max</sub>=10.5A/TDC=7.35A

3b

+5V I<sub>max</sub>=5.35A / TDC=3.75A

9b

+3P3VSB\_LAN I<sub>max</sub>=0.18A/TDC=0.126A

4b

+3P3VA I<sub>max</sub>=10.41A/TDC=7.28A

2

+3P3VSB I<sub>max</sub>=2.57A/TDC=1.8A

3a

+3P3V\_WLAN I<sub>max</sub>=2A/TDC=1.4A

4a

+3P3V\_MSATA I<sub>max</sub>=3.15A/TDC=2.2A

8b

+3P3V I<sub>max</sub>=1.63A/TDC=1.14A

9a

+2P5VPP I<sub>max</sub>=0.74A/TDC=0.518A

8a

+1P5VSB I<sub>max</sub>=0.02A /Tdc=0.014A

8a

+1P05VSB I<sub>max</sub>=12A/TDC=8.4A

5

+VCCST I<sub>max</sub>=0.23A/TDC=0.161A

6b

+1P2V\_DUAL I<sub>max</sub>=15.6A/TDC=10.92A

7

+VTDDR I<sub>max</sub>=1.5A/TDC=1.05A

13

+VCCIO I<sub>max</sub>=6.4A/TDC=4.48A

10

Switching

Linear

SPDT/Switch

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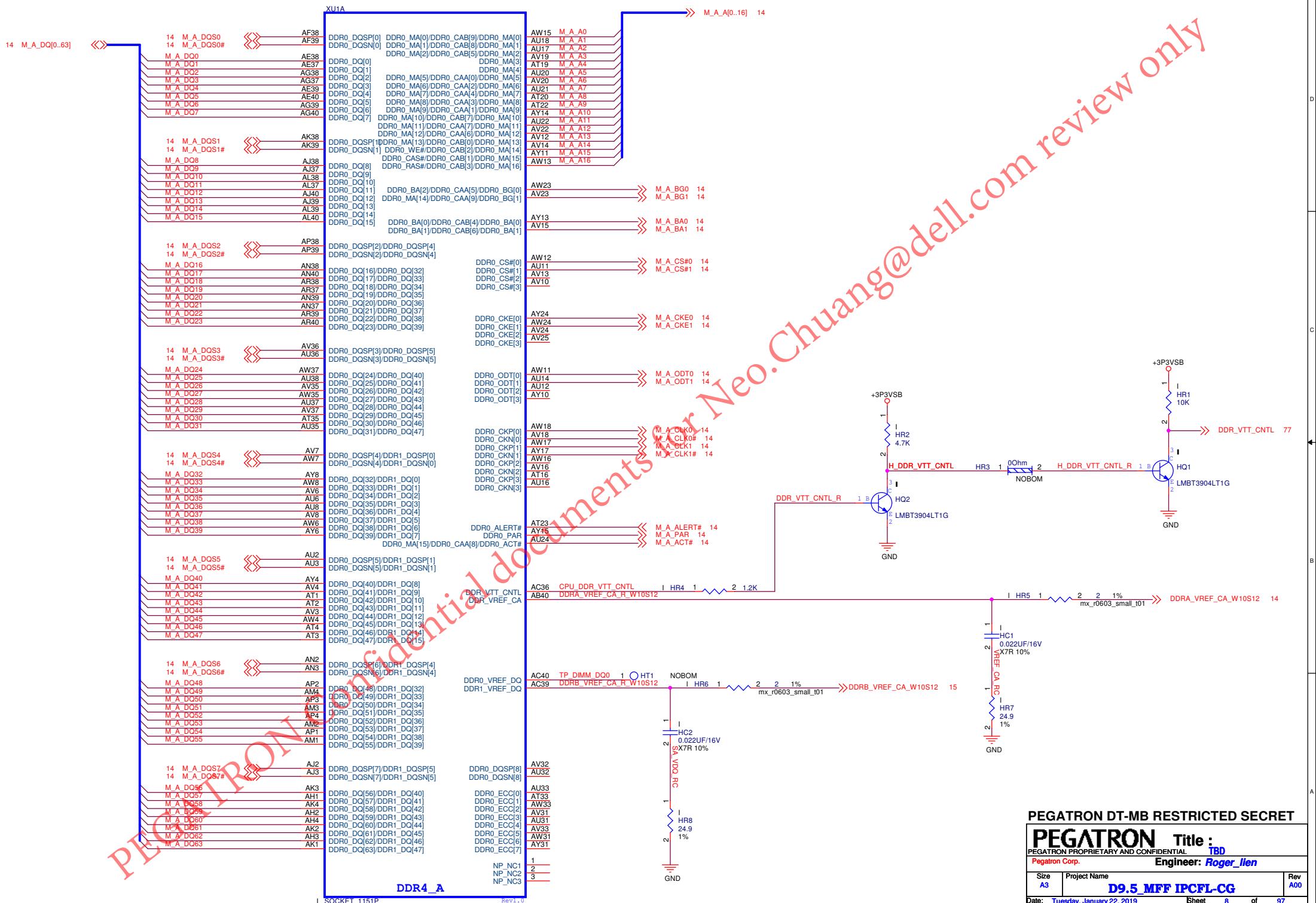
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Pegatron Corp.		Engineer: Roger_Iien
Size A3	Project Name D9.5_MFF IPCFL-CG	Rev A00
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Pegatron Corp.		Engineer: <i>Roger_Ilen</i>
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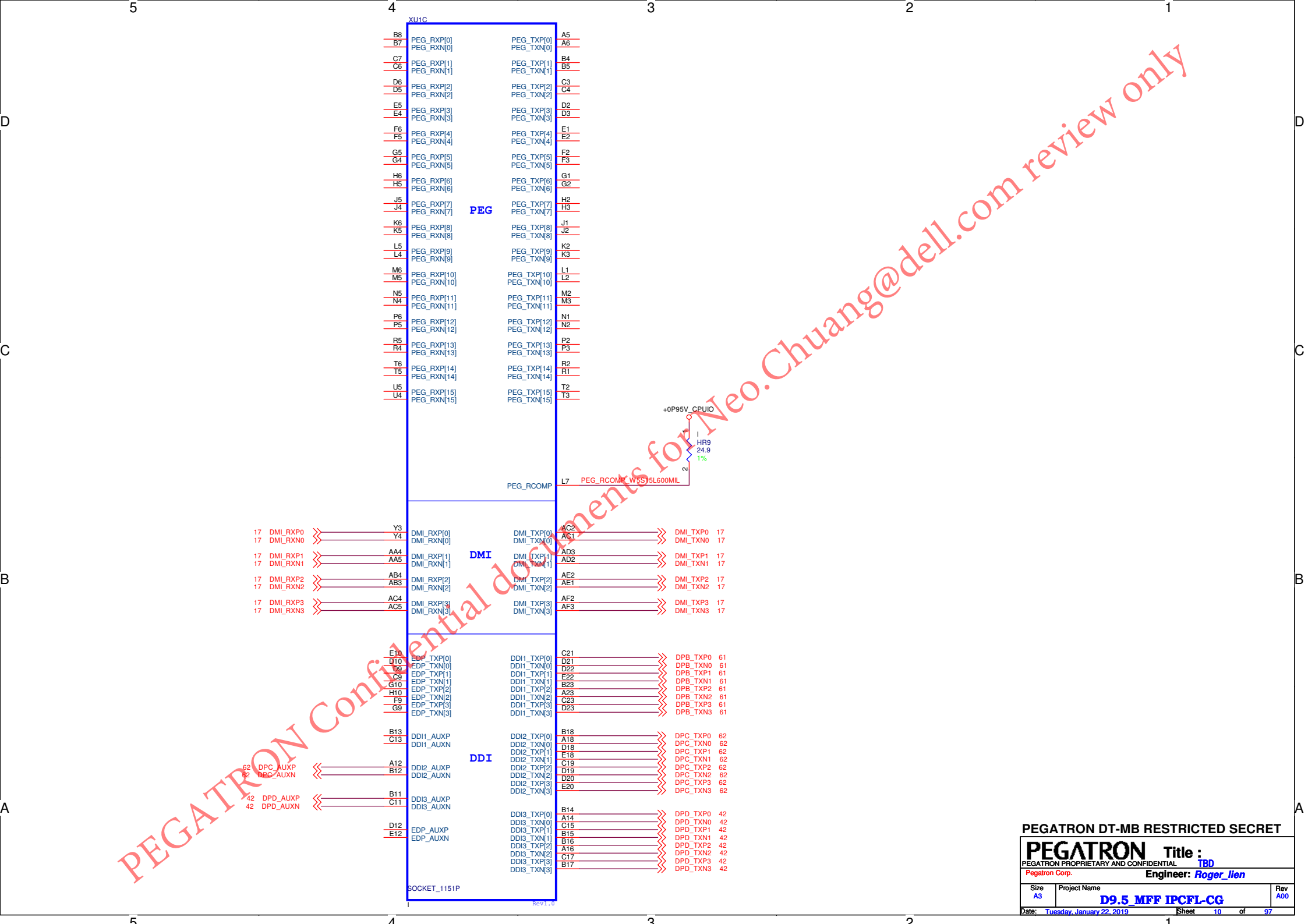
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Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
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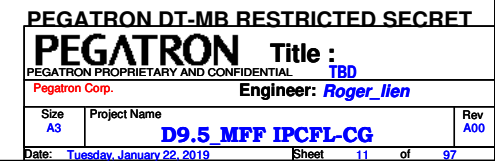


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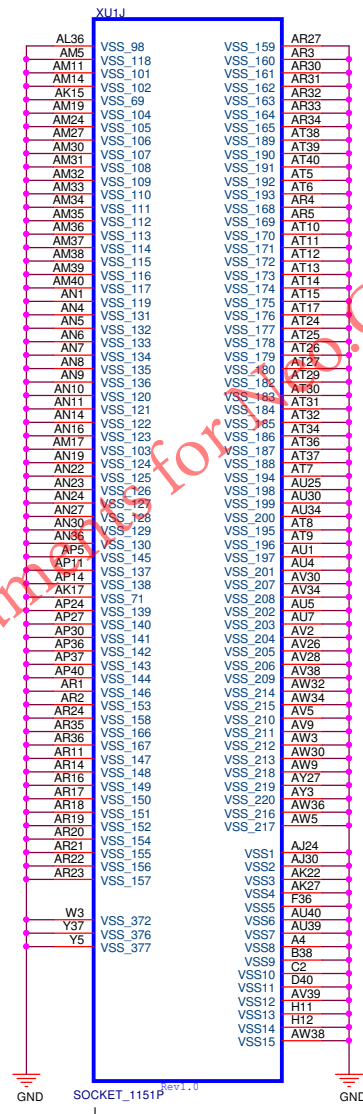
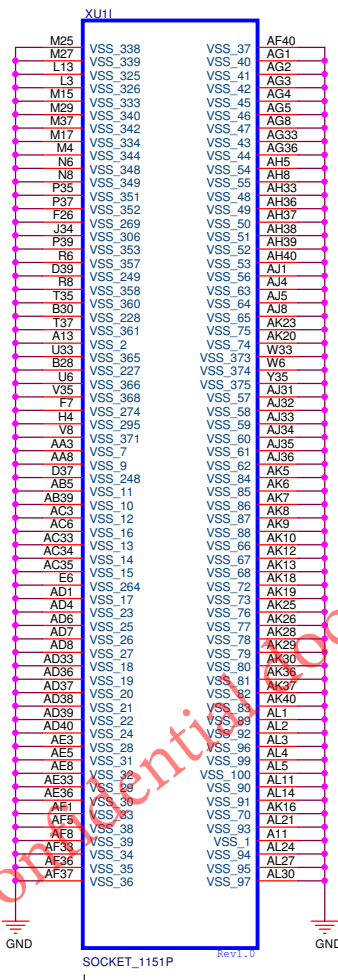
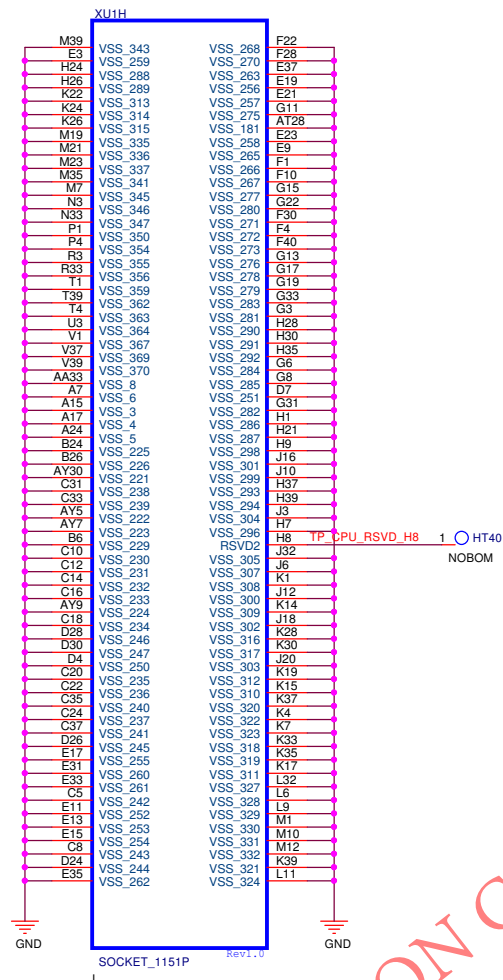
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PEGATRON PROPRIETARY AND CONFIDENTIAL  
Pegatron Corp. Engineer: Roger\_Iien

Size A3	Project Name D9.5 MFF IPCFL-CG	Rev A00
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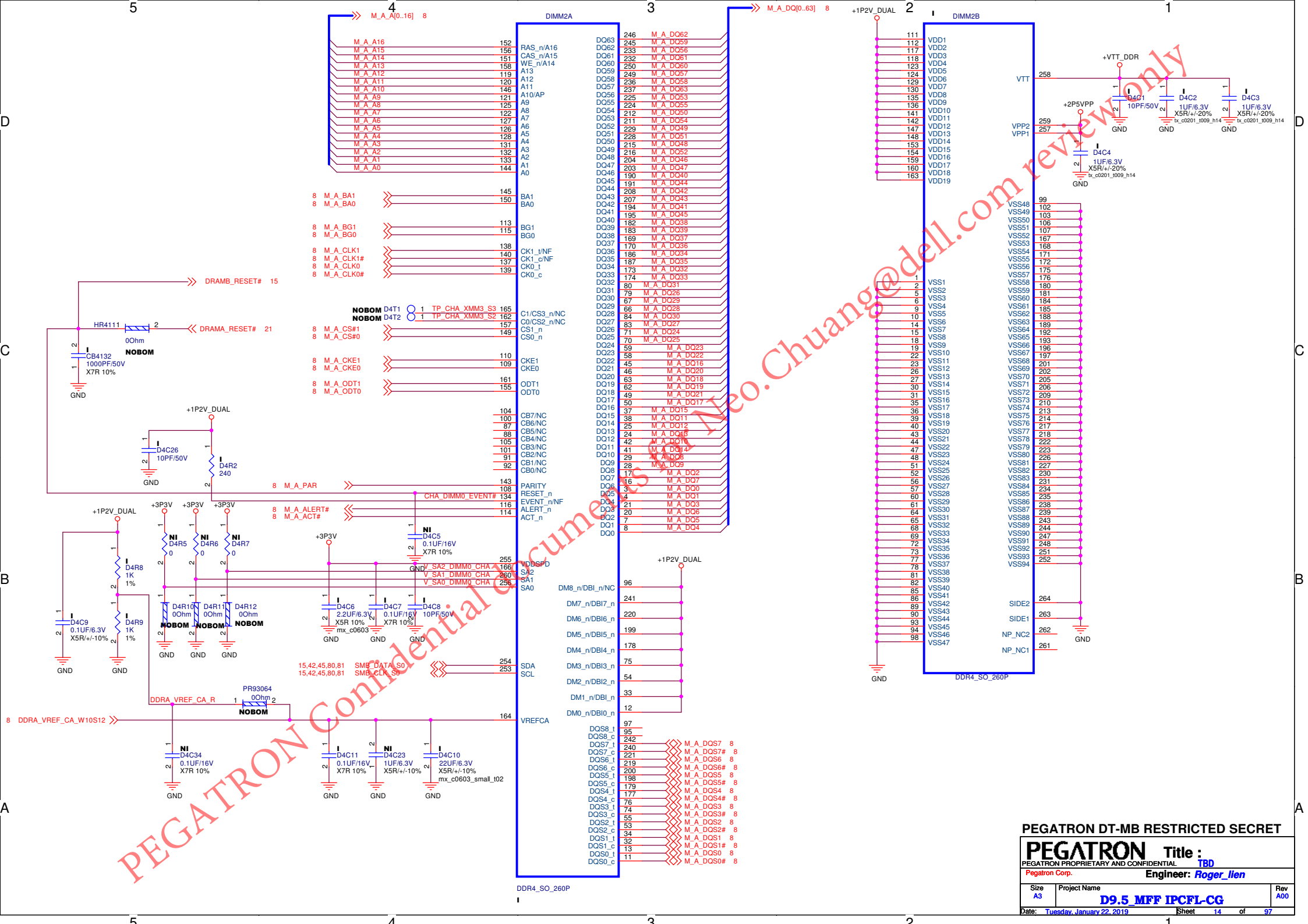




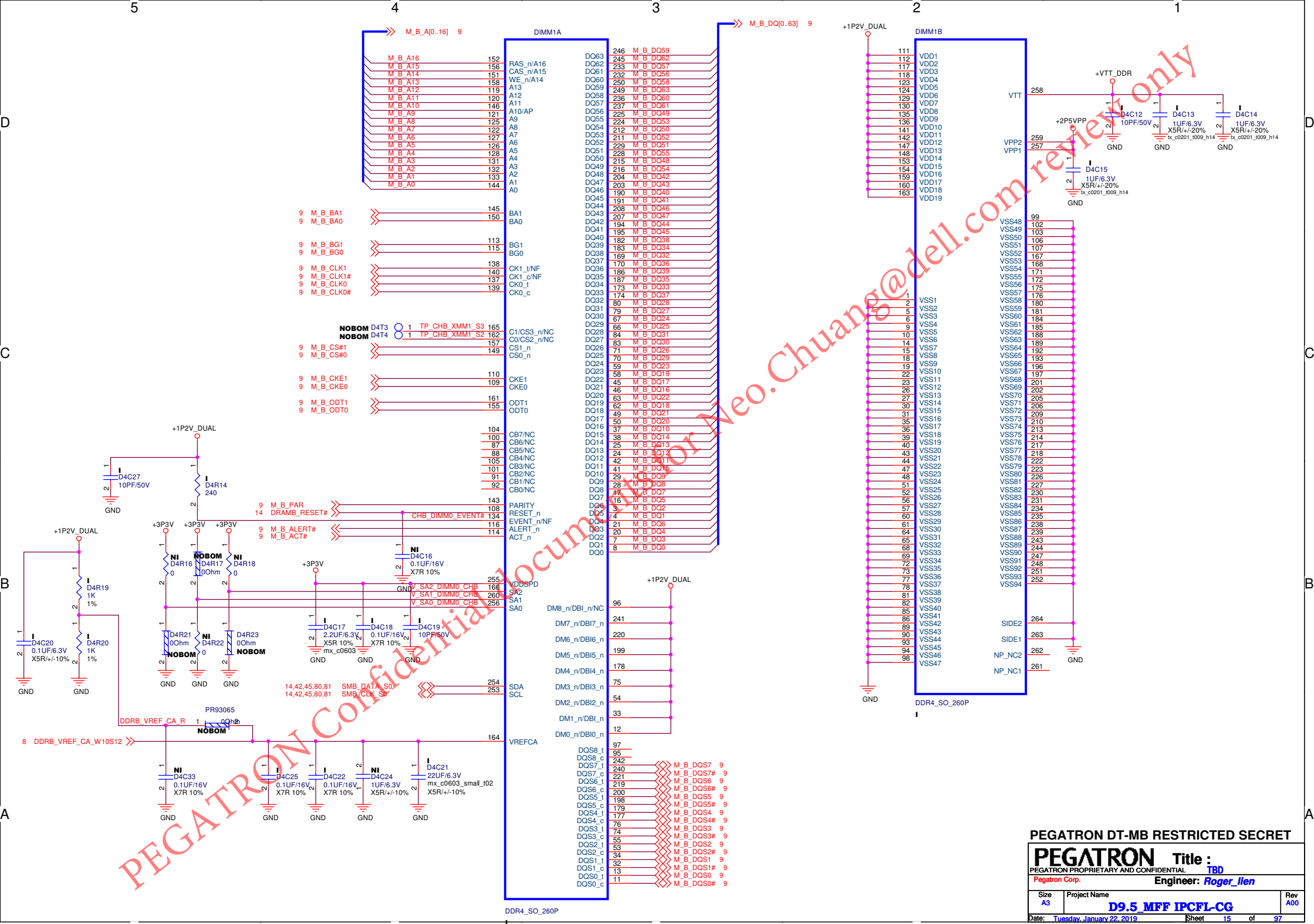


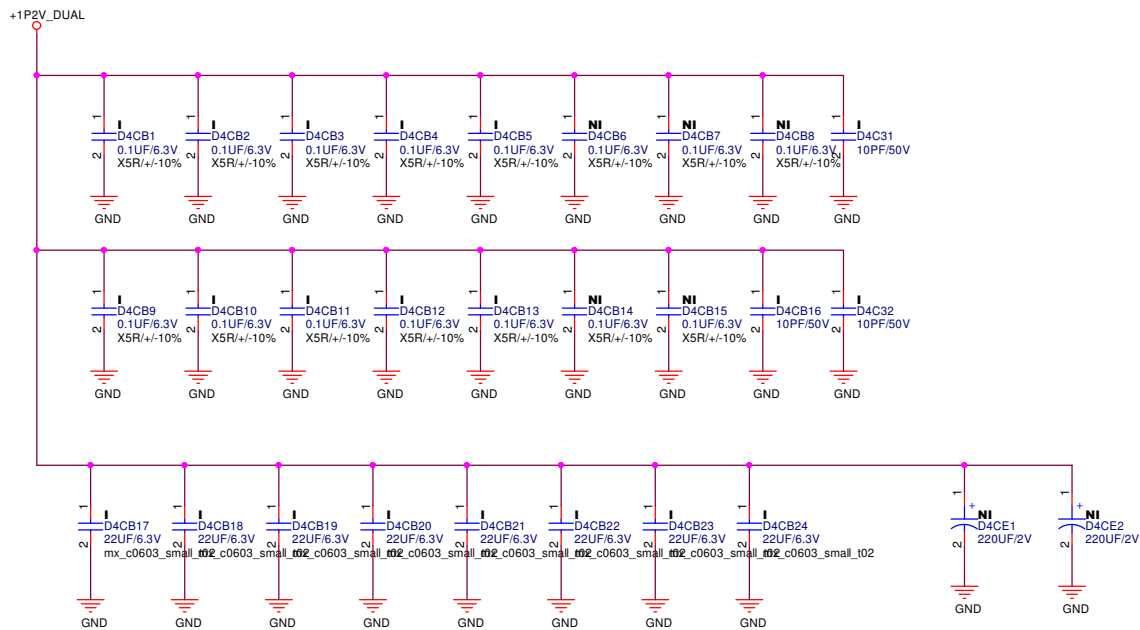
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<b>PEGATRON</b>		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL		TBD	
Pegatron Corp.		Engineer: Roger_Iien	
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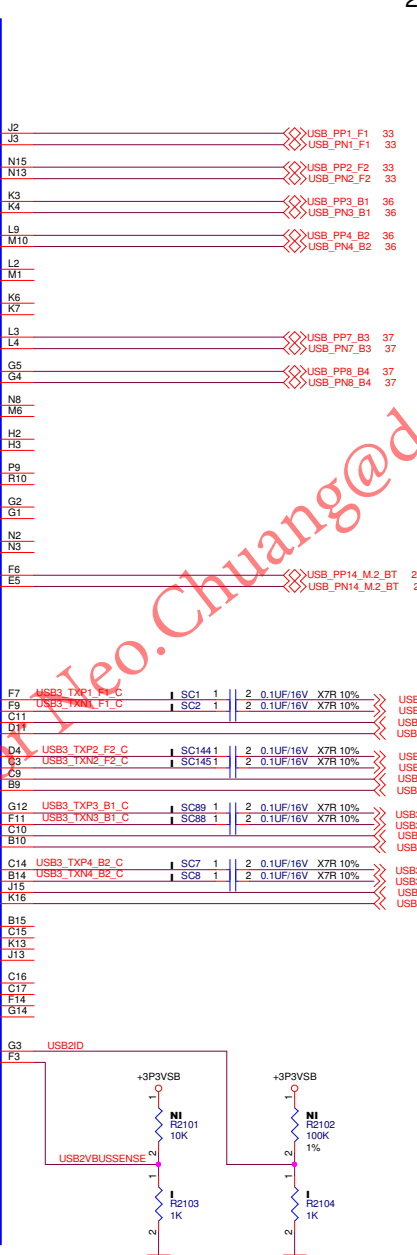
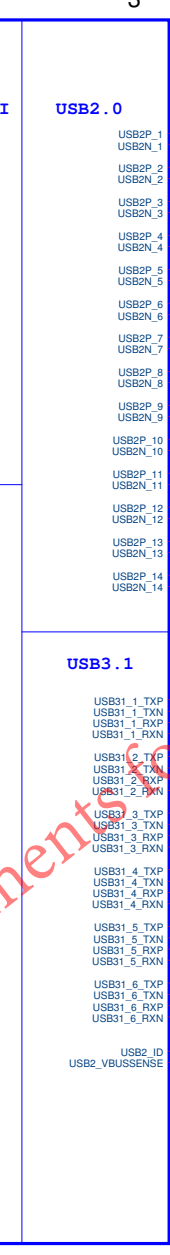
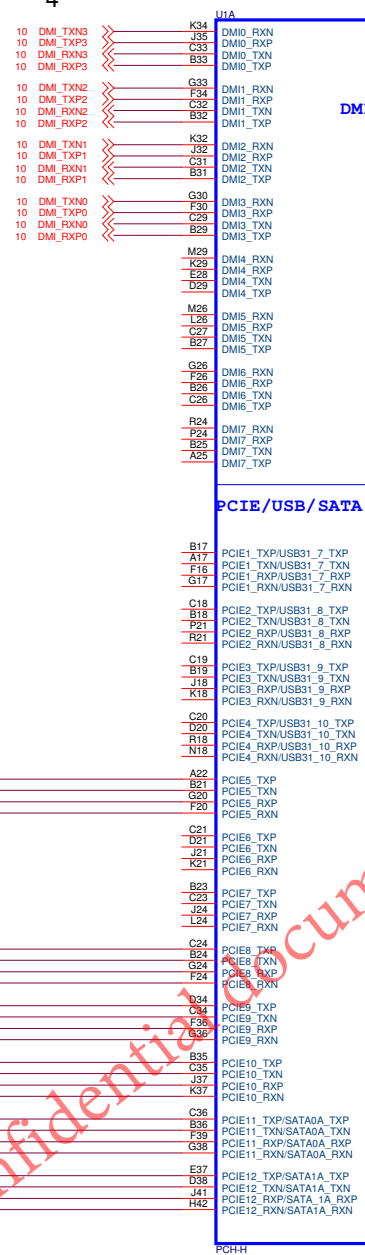
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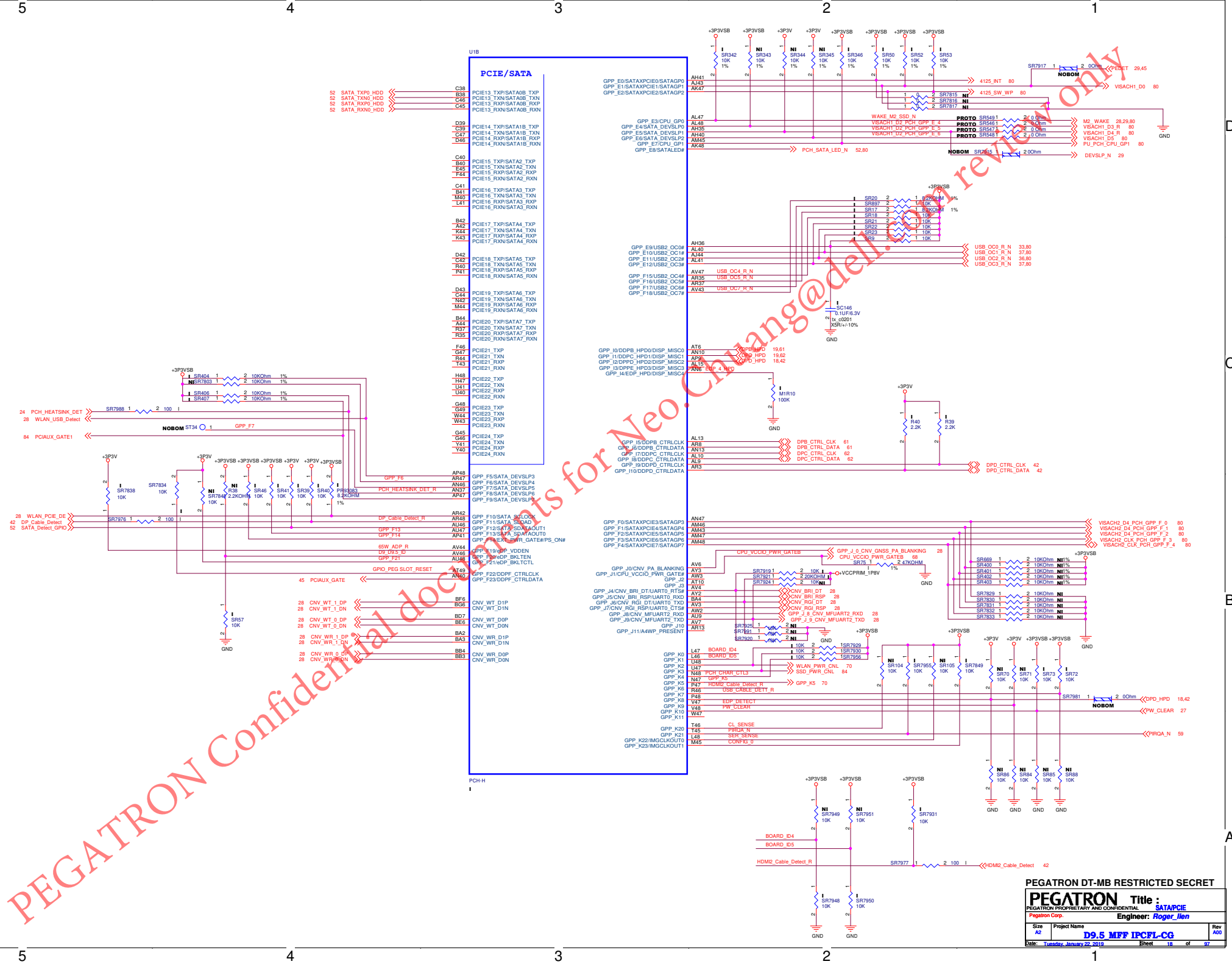
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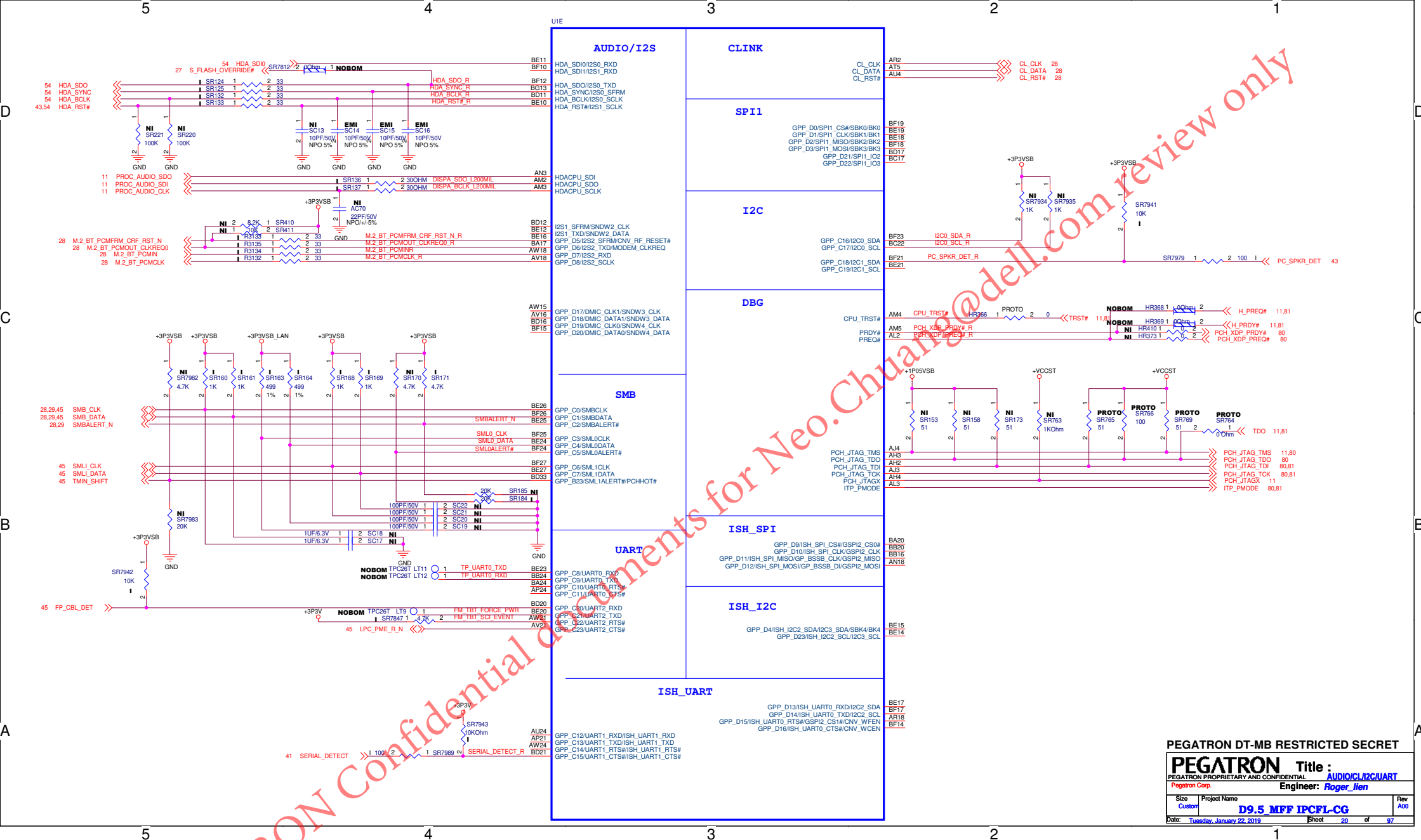
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PEGATRON Project Name: **D9.5 MFT IPCFL-CG**

Size: **A2** Project Name: **D9.5 MFT IPCFL-CG** Rev: **A00**

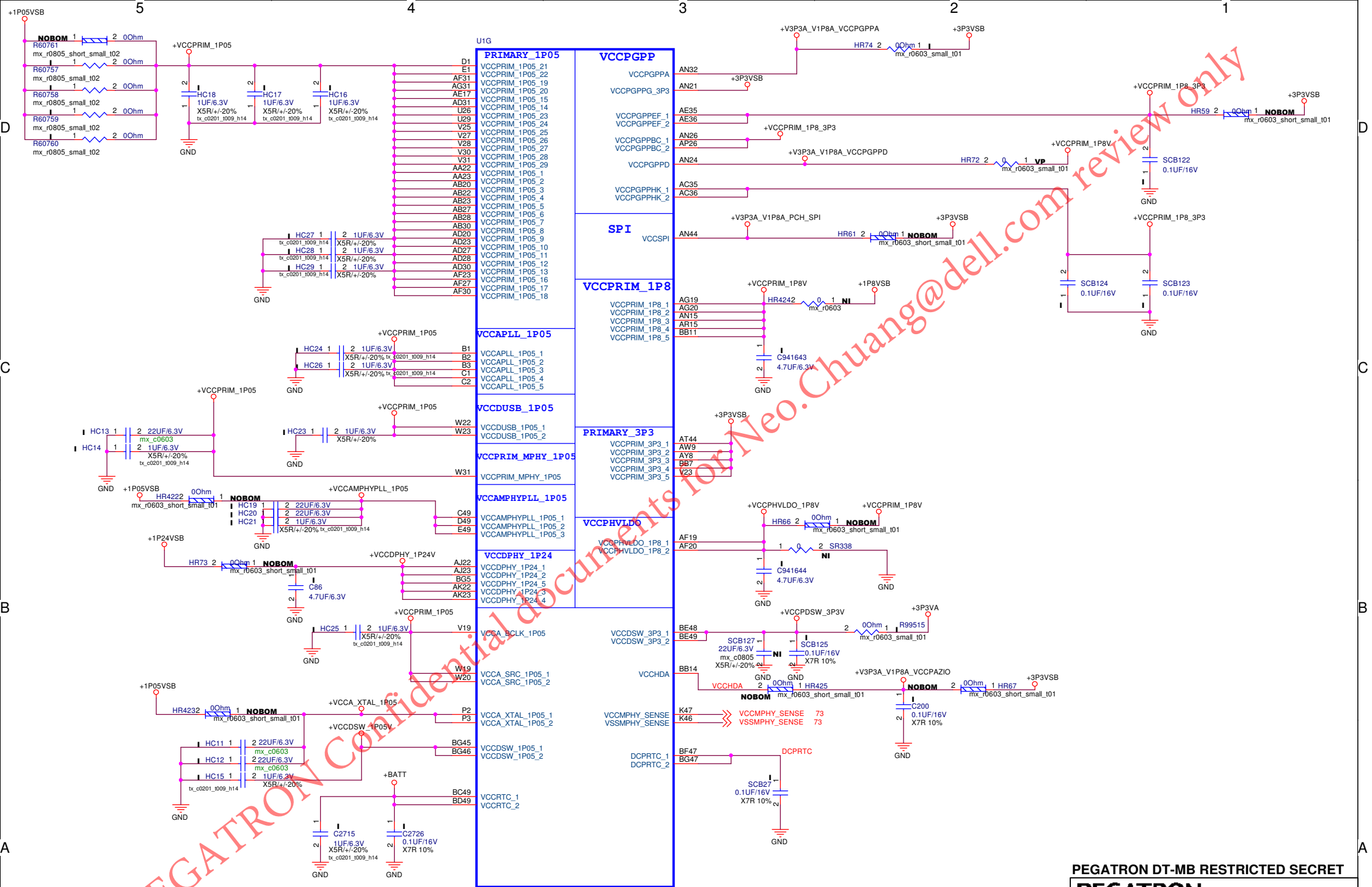
Date: **Tuesday, January 22, 2019** Sheet: **18** of **97**











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<b>PEGATRON</b>		Title :	
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Pegatron Corp.		Engineer: Roger_Iien	
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00	
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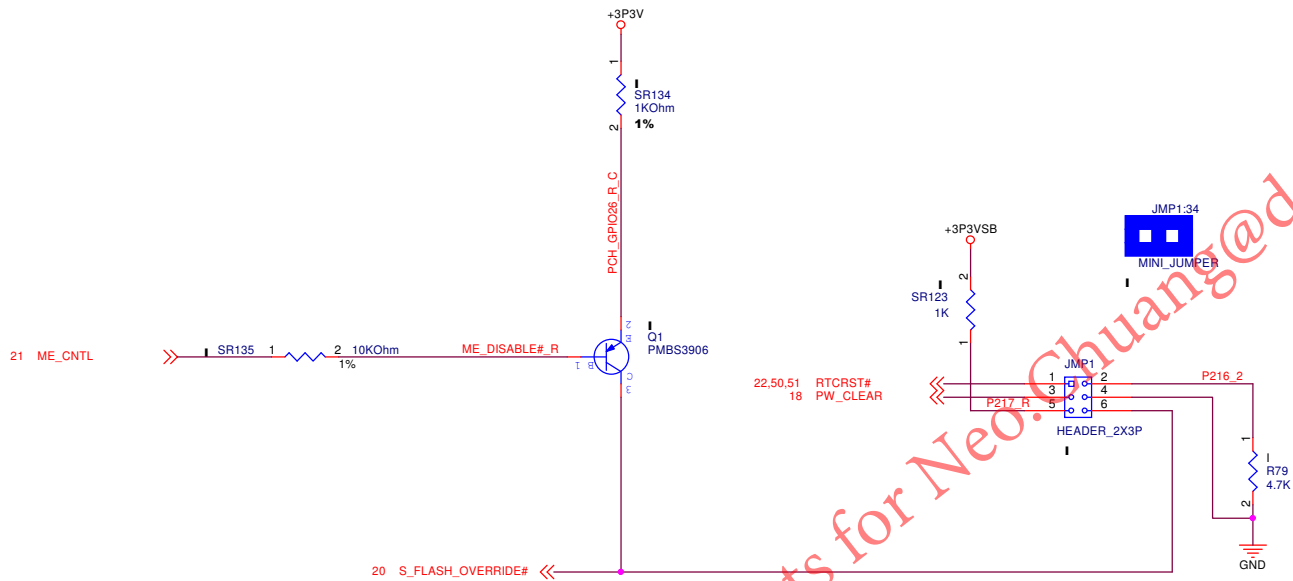
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Size A3	Project Name <b>D9.5_MFF IPCFL-CG</b>		Rev A00
Date: <u>Wednesday, November 28, 2018</u>		Sheet <u>25</u> of <u>97</u>	

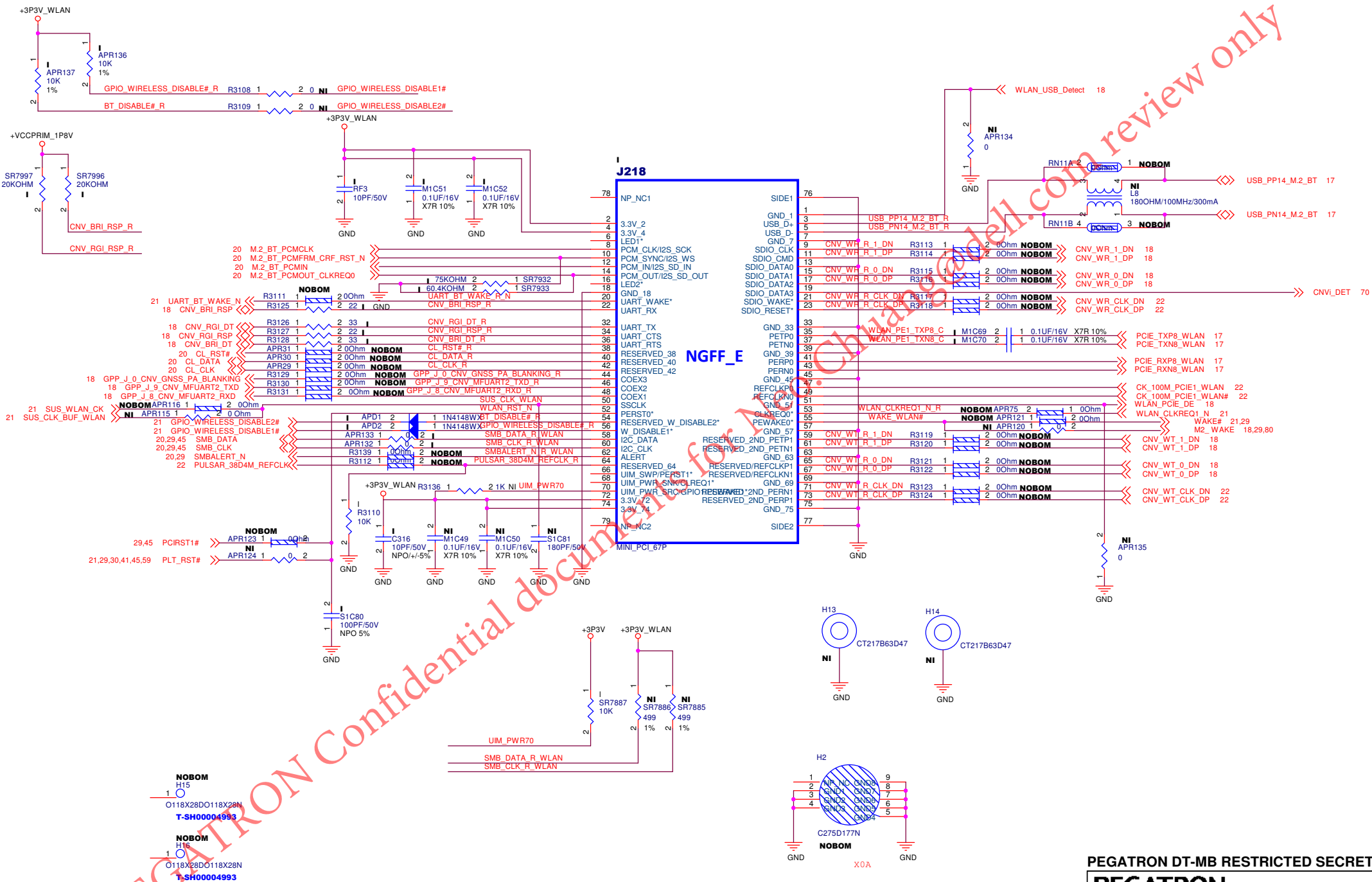


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PEGATRON		Title : ME DISABLE	
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Date: Tuesday, January 22, 2019		Sheet 27 of 97	

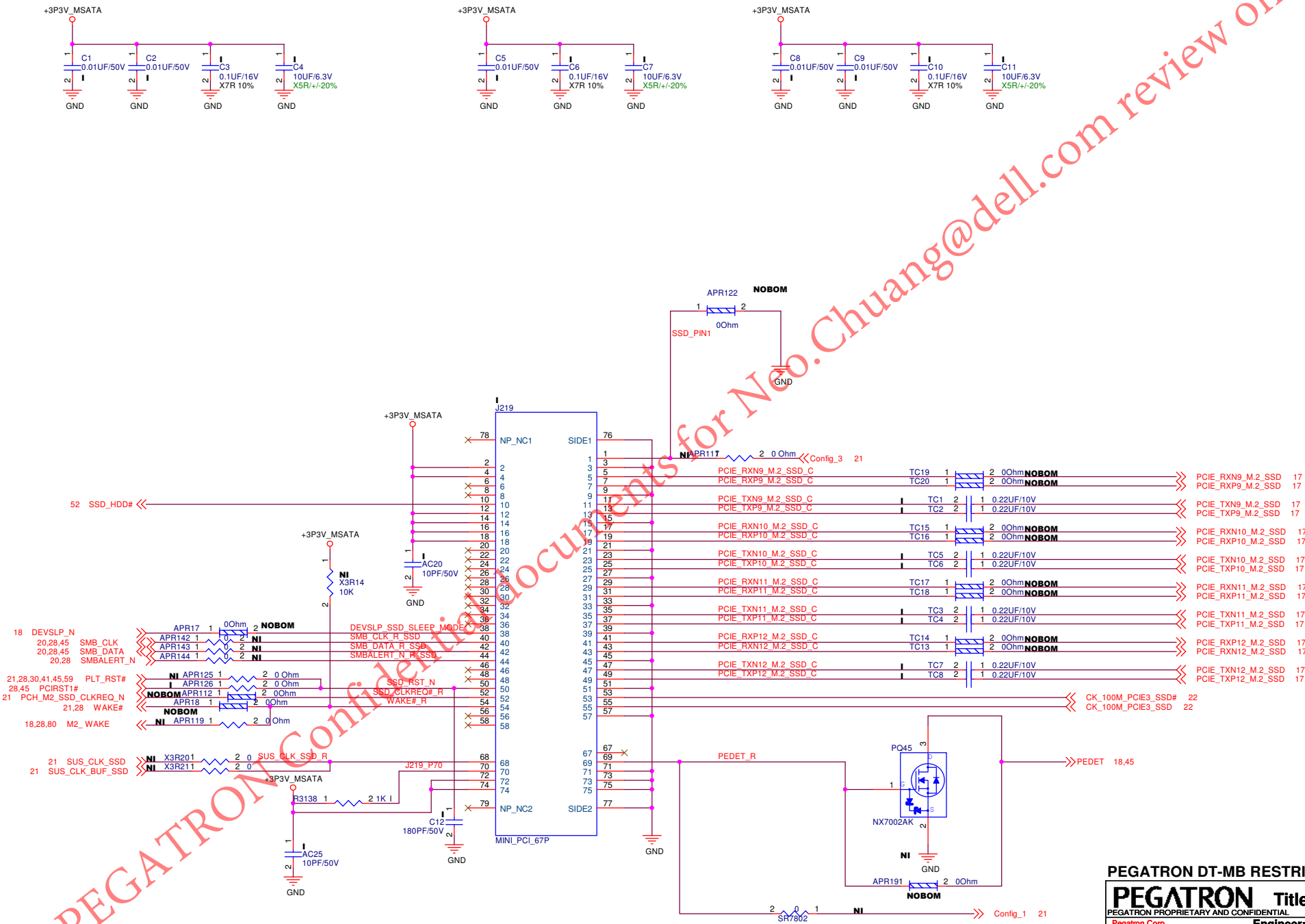


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**PEGATRON** Title : NGFF KEY E(WLAN)  
PEGATRON PROPRIETARY AND CONFIDENTIAL  
Engineer: Roger\_Ilen

Size A3 Project Name D9.5\_MFF\_IPCFL-CG

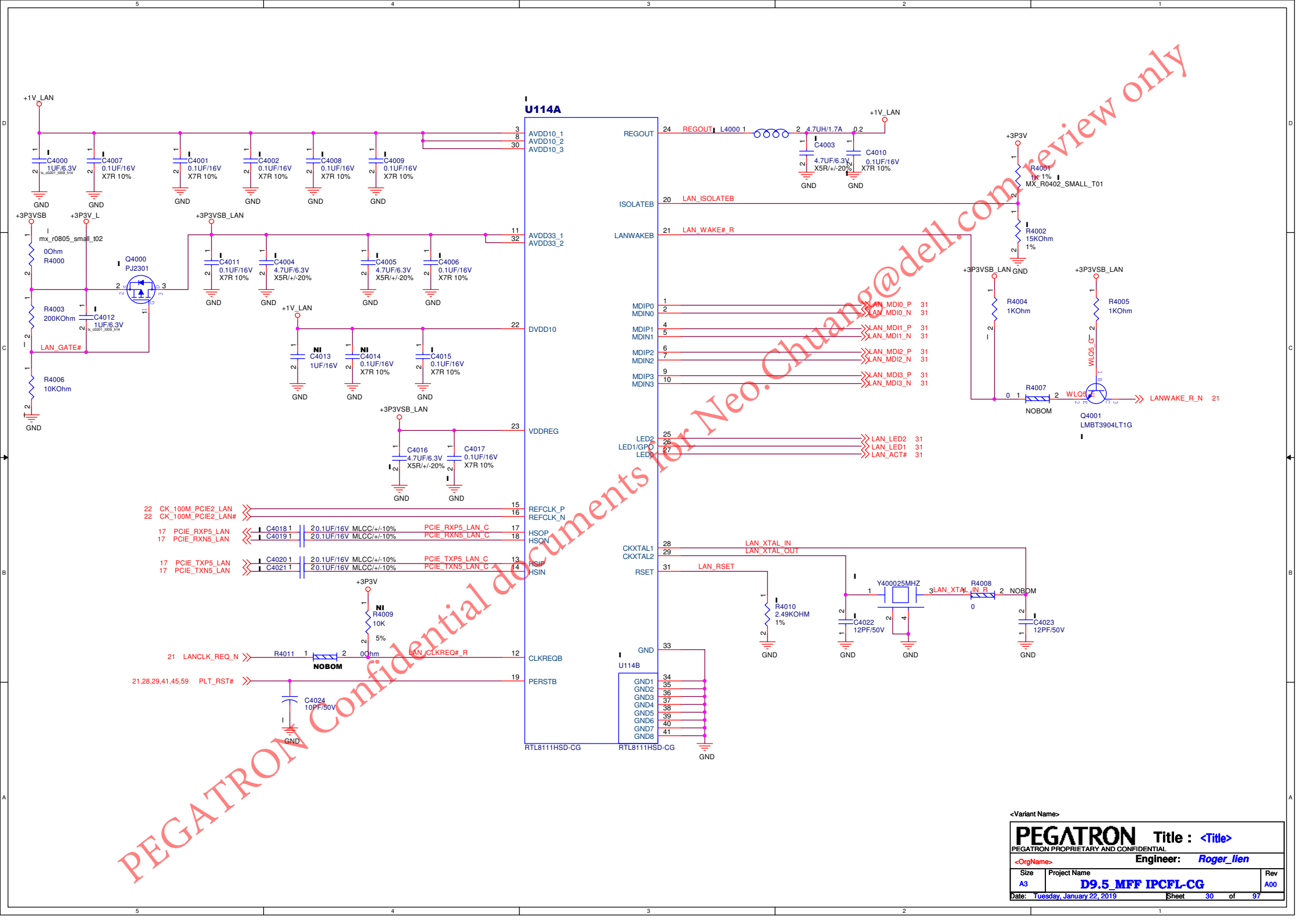
Date: Tuesday, January 22, 2019 Sheet 28 of 97

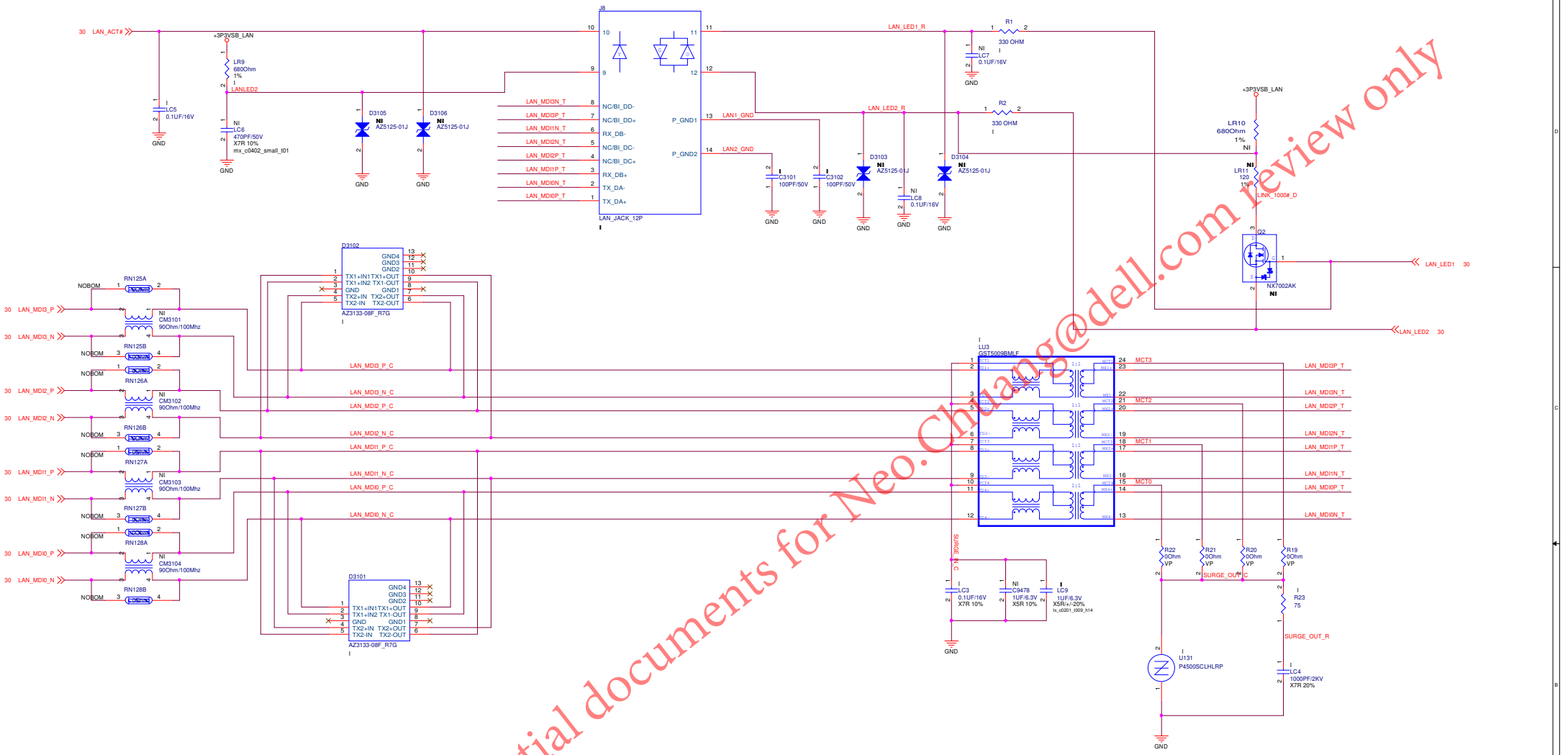


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**PEGATRON** Title :  
 PEGATRON PROPRIETARY AND CONFIDENTIAL NGFF KEY M  
 Pegatron Corp. Engineer: Roger\_lien

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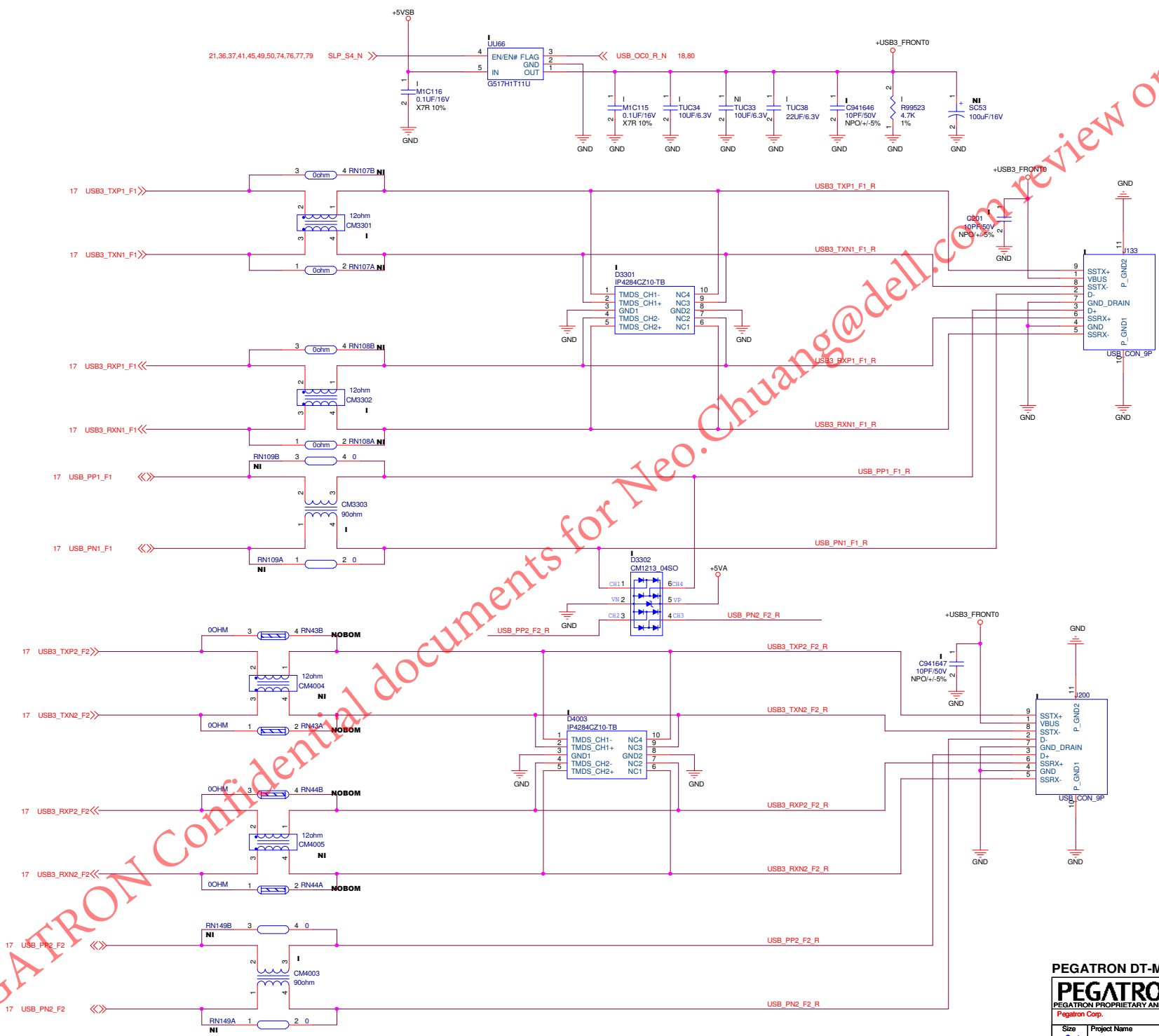
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Pegatron Corp.		Engineer: Roger_Ilen	
Size	Project Name	Rev	
A2	D9.5 MFF IPCFL-CG	A00	
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Size A3	Project Name D9.5 MFF IPCFL-CG	Rev A00
Date: Wednesday, November 28, 2018		
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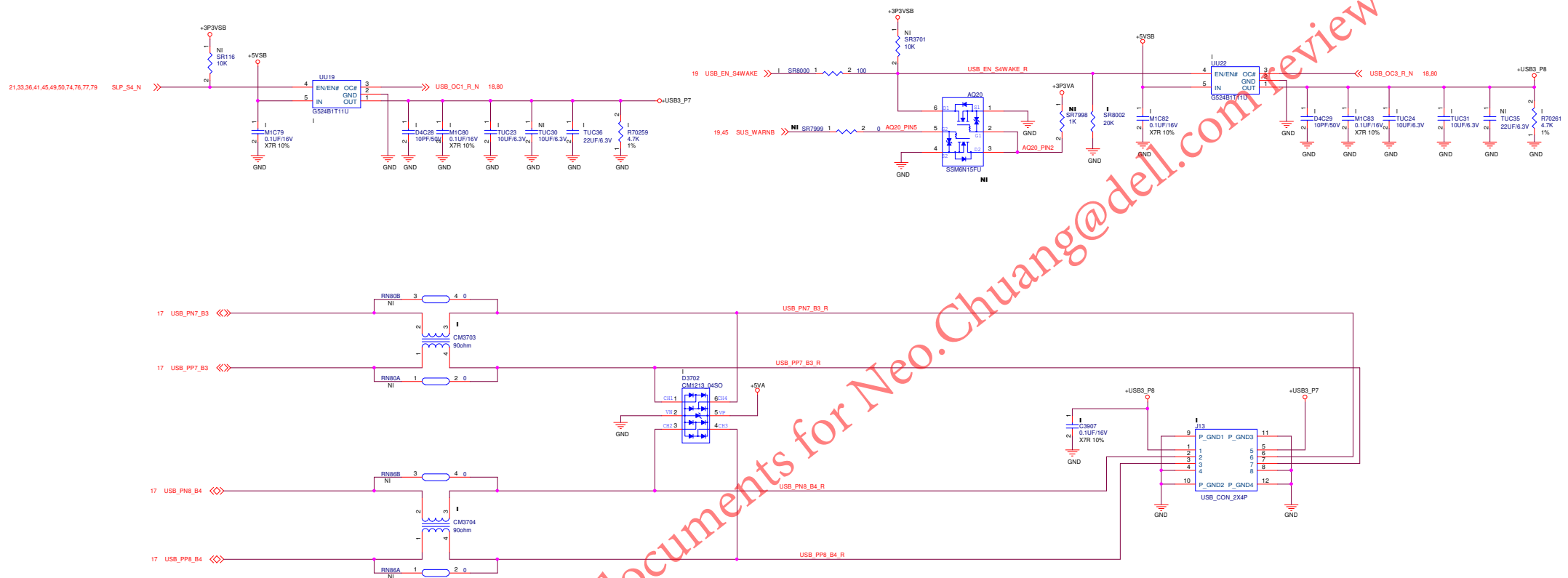


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PEGATRON		Title :	
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Size	Project Name	D9.5 MFF IPCFL-CG	Rev
A2			A00
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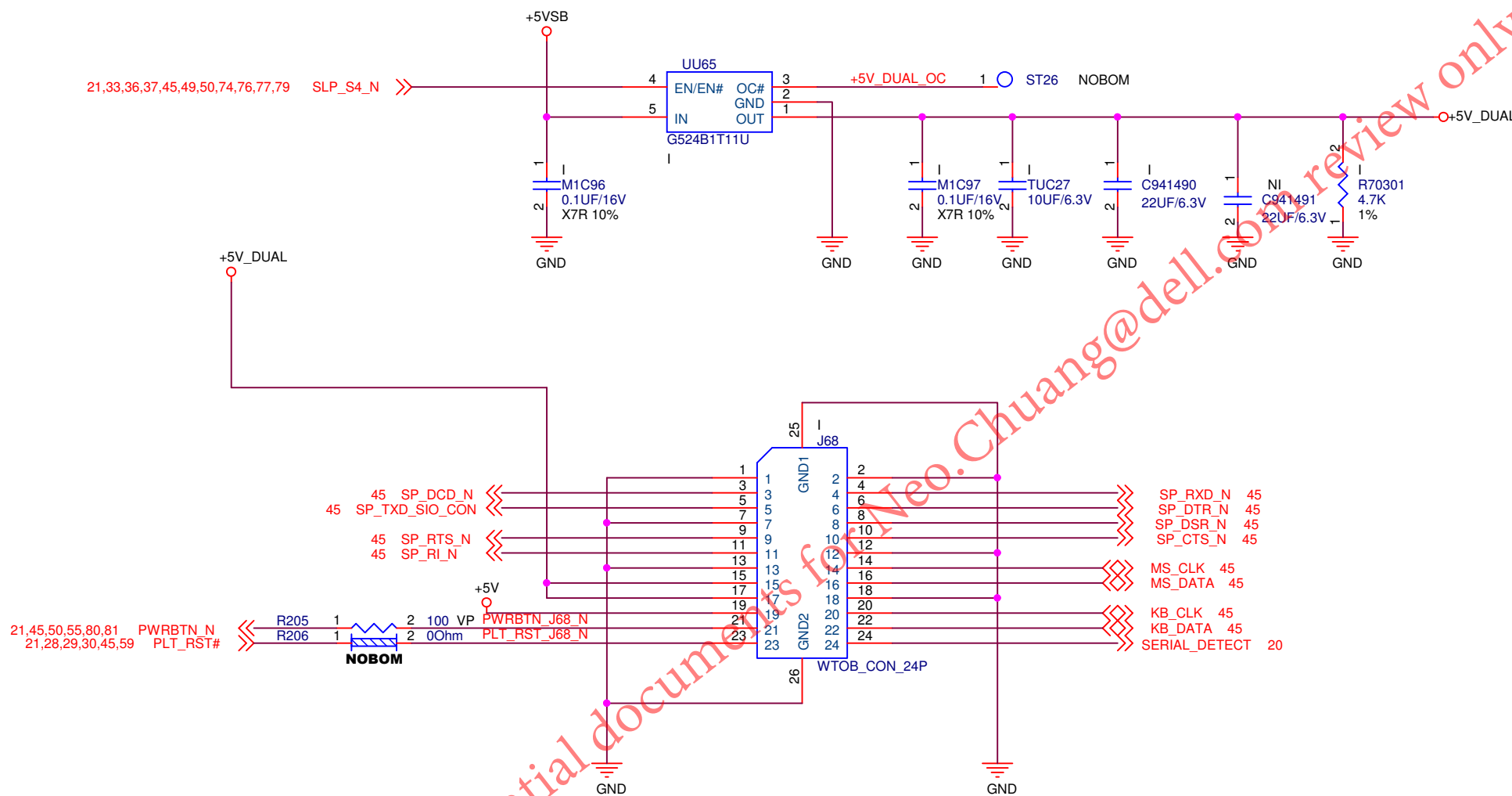
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Date: <i>Wednesday, November 28, 2018</i>		Sheet	38 of 97

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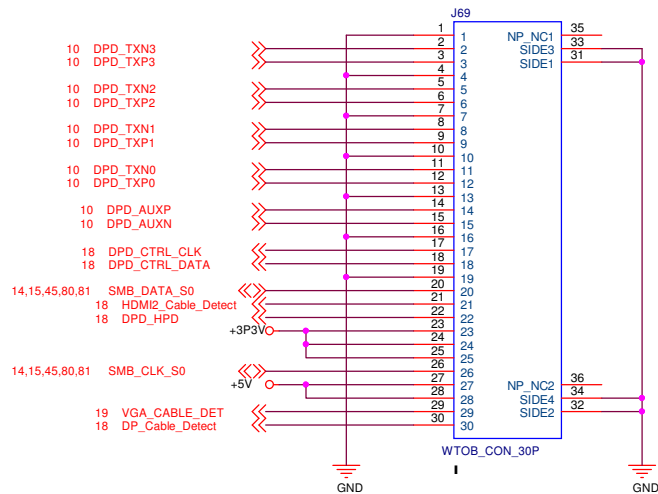
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<b>PEGATRON</b>		Title :	
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Pegatron Corp.		Engineer: Roger_lien	
Size A4	Project Name <b>D9.5 MFF IPCFL-CG</b>		Rev A00
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<b>PEGATRON</b>		<b>Title :</b>
PEGATRON PROPRIETARY AND CONFIDENTIAL		DP or VGA option header
Pegatron Corp.		Engineer: Roger_Ilen
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
Date: Wednesday, November 28, 2018	Sheet 42 of 97	

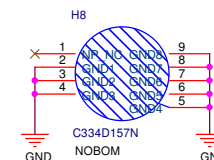
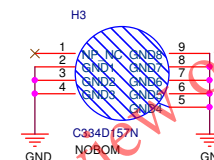
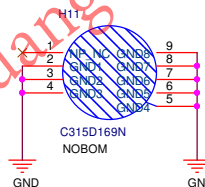
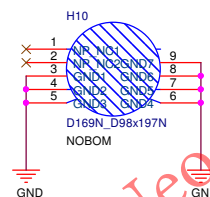
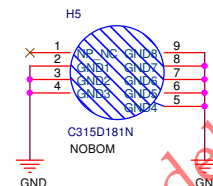
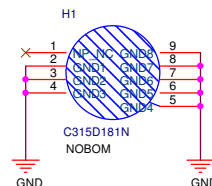
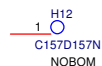
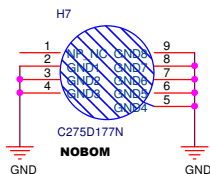
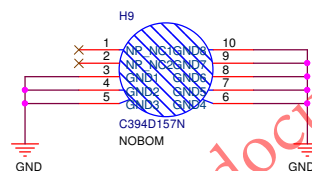
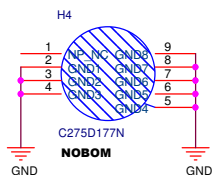
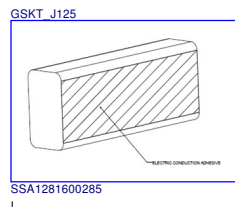
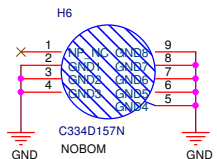


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Size A3	Project Name <b>D9.5_MFF IPCFL-CG</b>		Rev A00
Date: <i>Wednesday, November 28, 2018</i>		Sheet	44 of 97

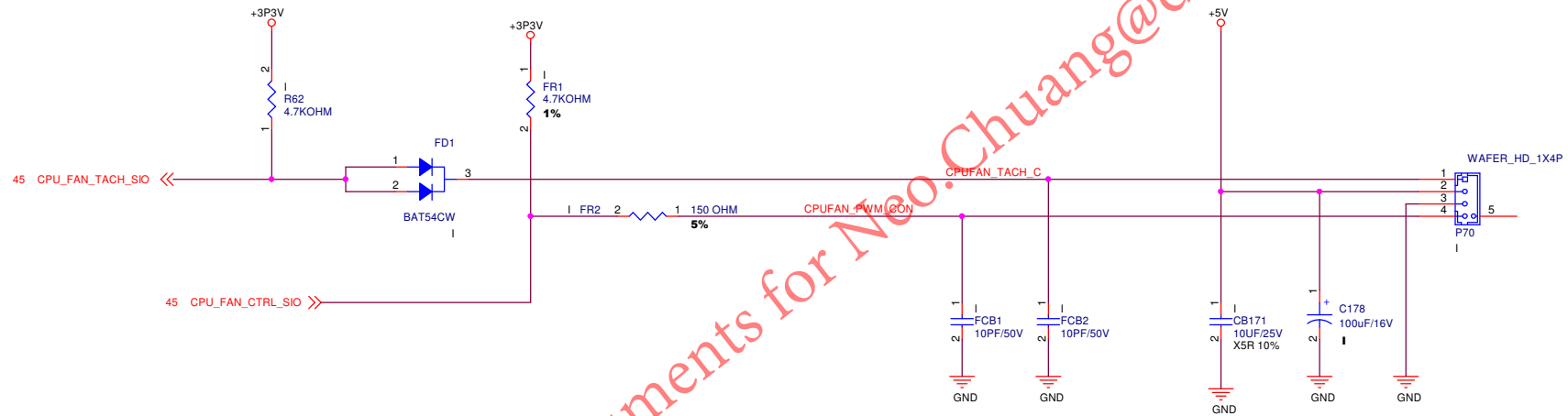




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<b>PEGATRON</b>		Title : <b>SCREW HOLE</b>	
PEGATRON PROPRIETARY AND CONFIDENTIAL		Engineer: <b>Roger_Ilien</b>	
Size <b>A3</b>	Project Name <b>D9.5_MFF IPCFL-CG</b>	Rev <b>A00</b>	
Date: <b>Tuesday, January 22, 2019</b>		Sheet <b>46</b> of <b>97</b>	

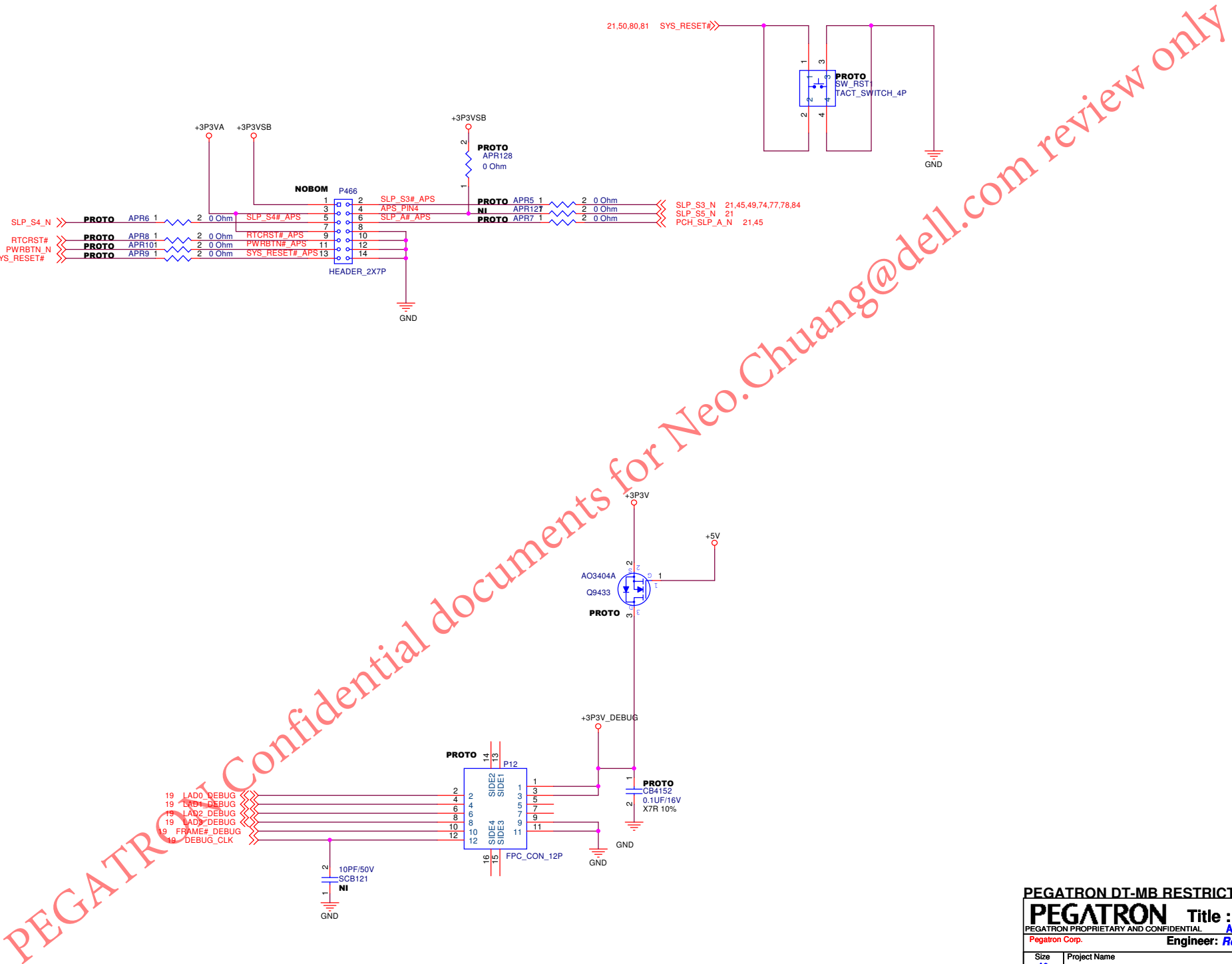
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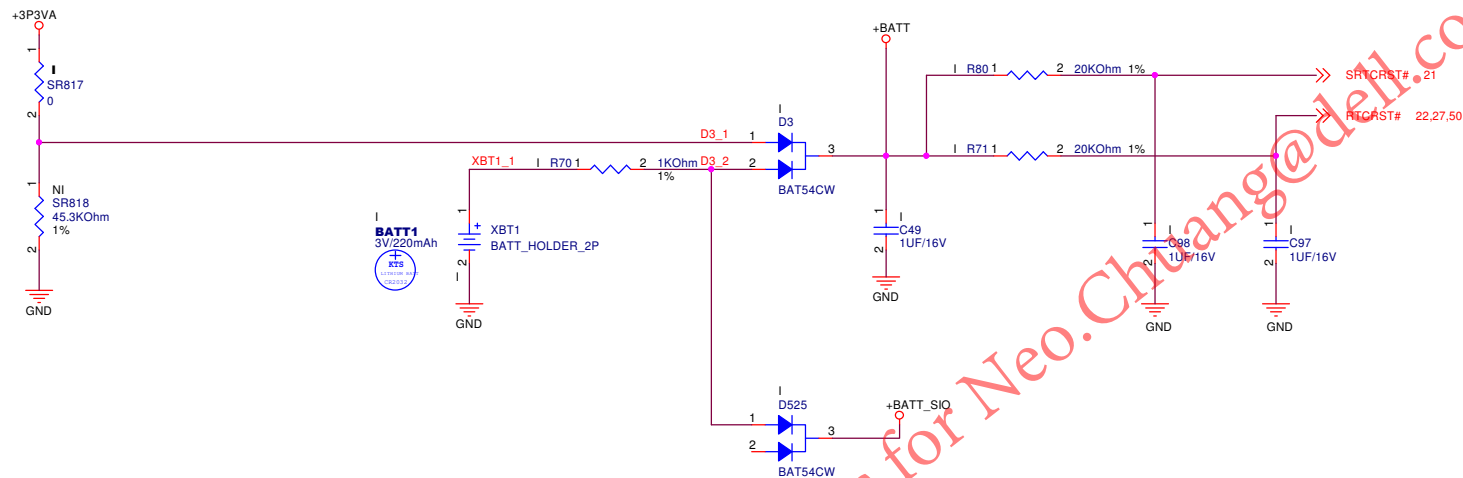










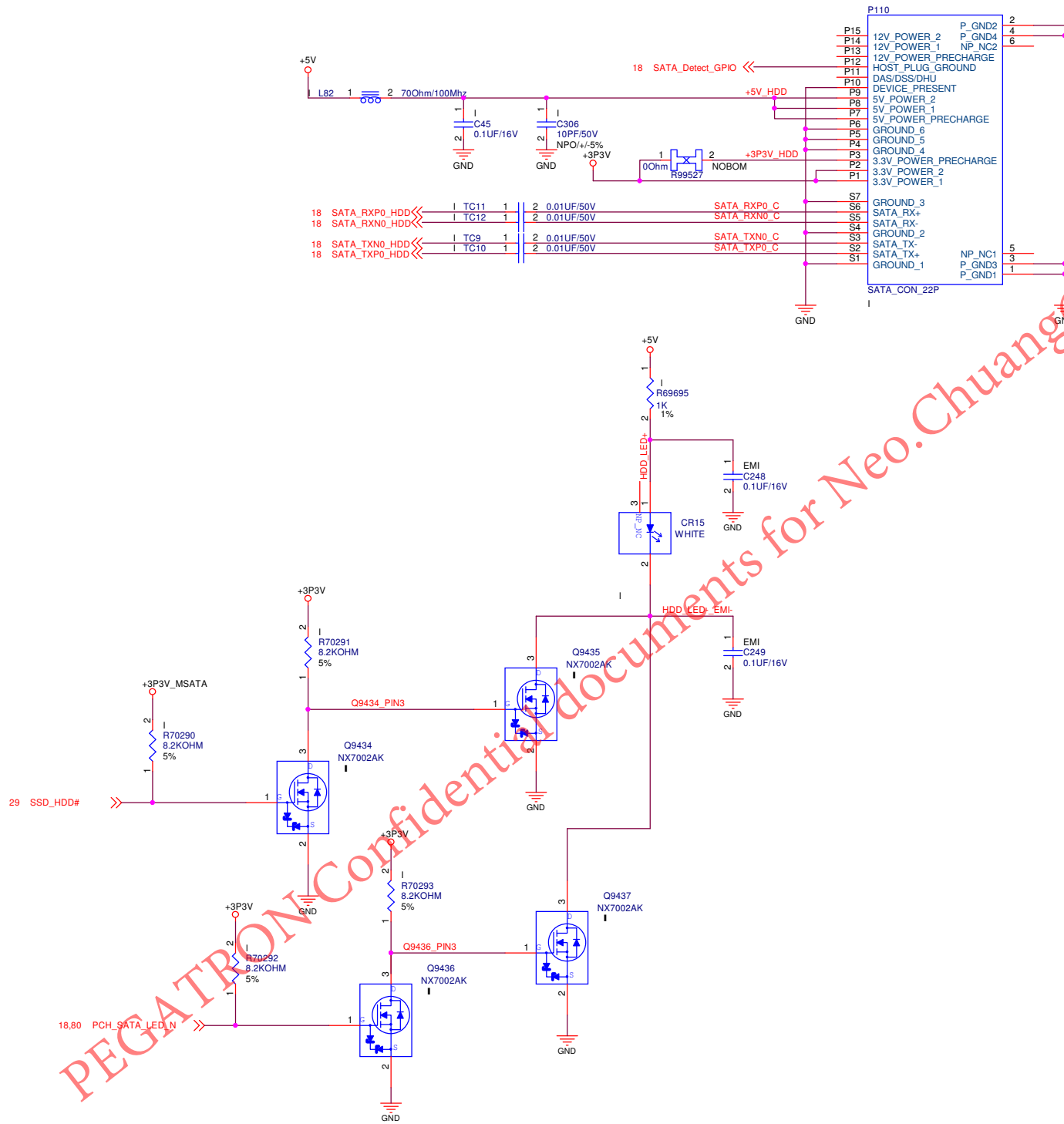


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**PEGATRON** Title :  
PEGATRON PROPRIETARY AND CONFIDENTIAL **RTC**  
Pegatron Corp. Engineer: **Roger\_Ilen**

Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
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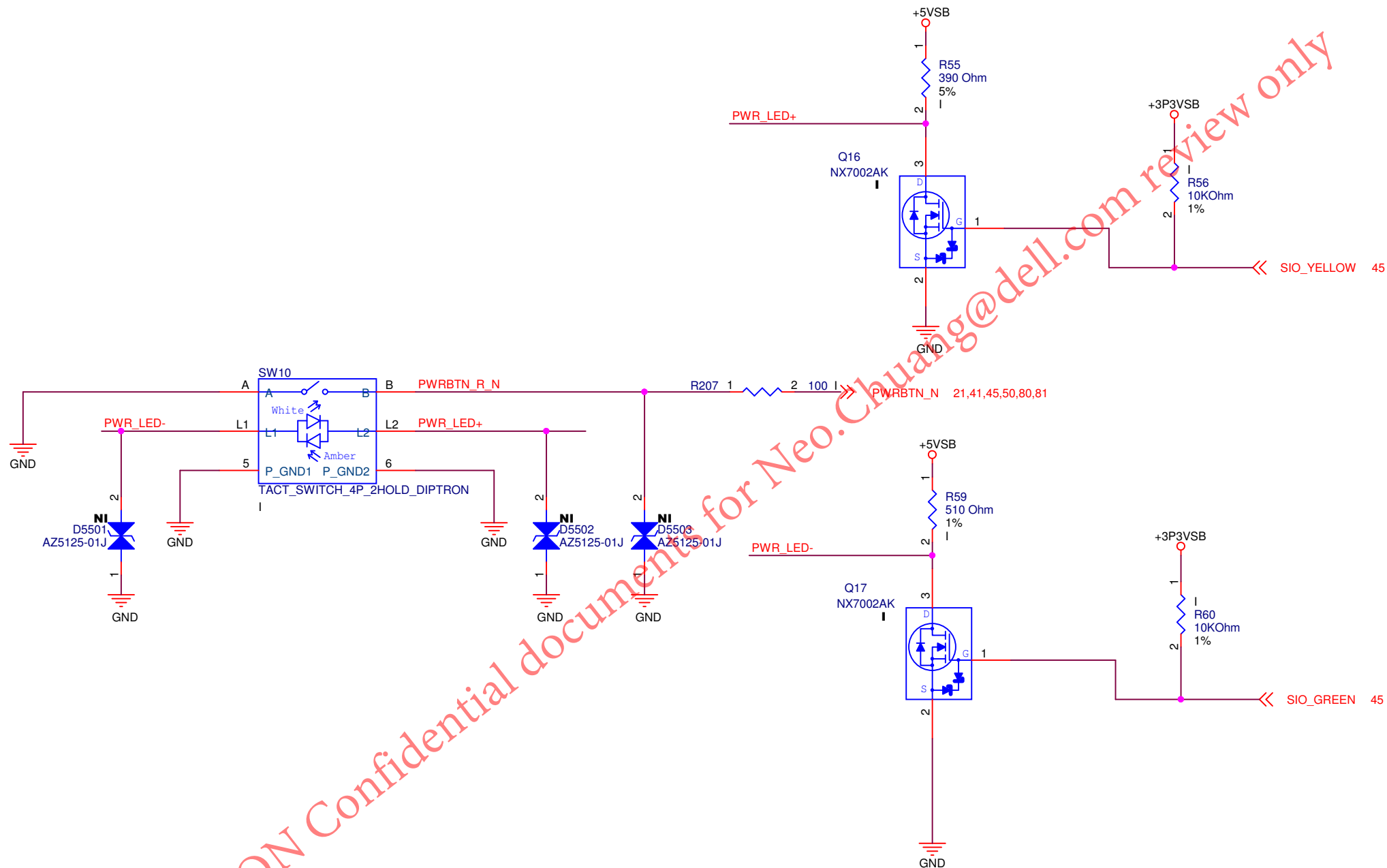
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PEGATRON PROPRIETARY AND CONFIDENTIAL		<b>SATA_CONN</b>
Pegatron Corp.		Engineer: <b>Roger_Ilen</b>
Size A3	Project Name <b>D9.5_MFF_IPCFL-CG</b>	Rev A00
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<b>PEGATRON</b> Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: Roger_lien
Size A3	Project Name <b>D9.5_MFF IPCFL-CG</b>	Rev A00
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**PEGATRON** Title :  
PEGATRON PROPRIETARY AND CONFIDENTIAL **PWR BUTTON & LED**  
Pegatron Corp. Engineer: **Roger\_lien**

Size A4	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
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<b>PEGATRON</b>		<b>Title :</b>
PEGATRON PROPRIETARY AND CONFIDENTIAL		
<b>Engineer:</b> Roger_lien		
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
Date: Wednesday, November 28, 2018		
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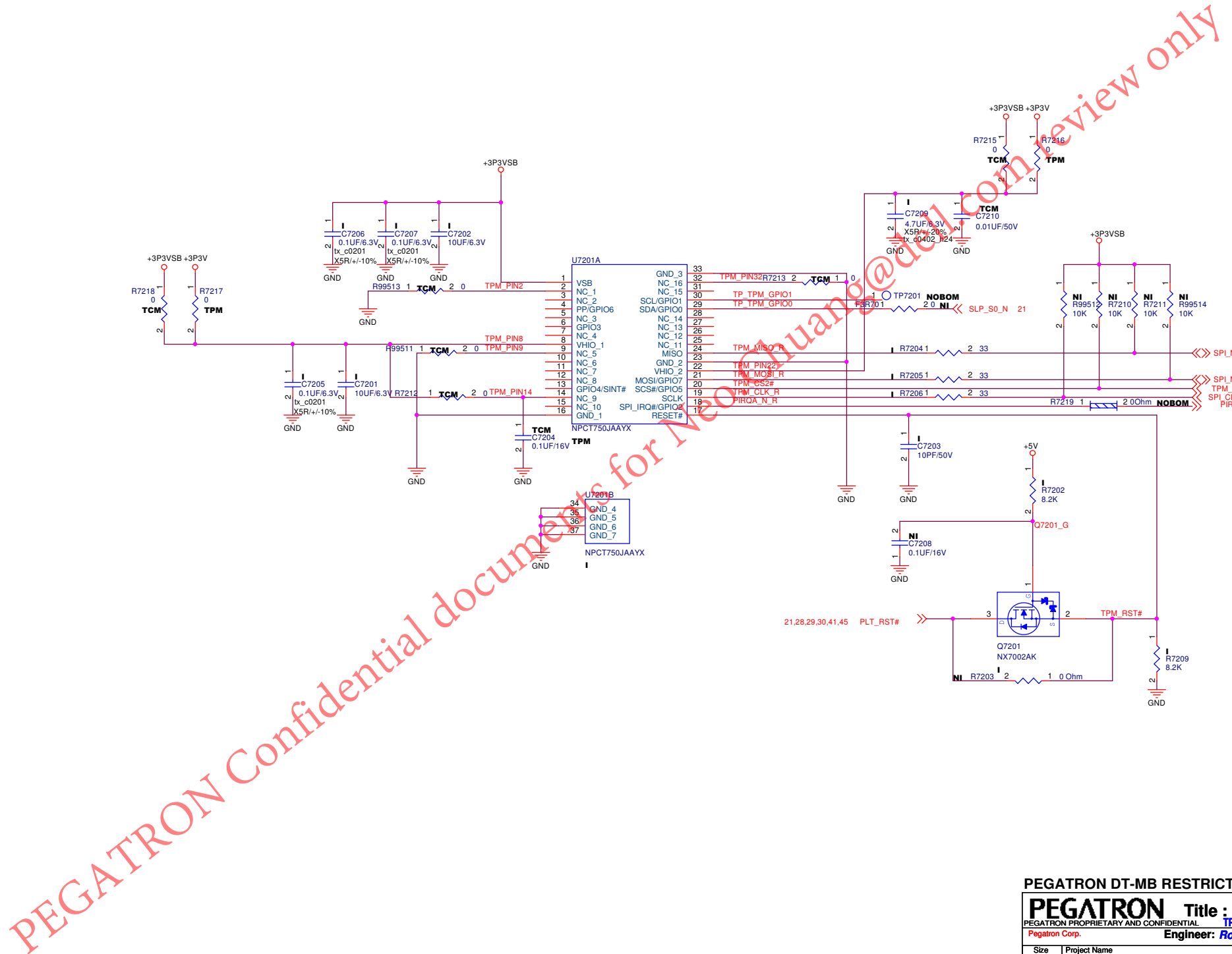
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<b>PEGATRON</b>		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL			
Pegatron Corp.		Engineer: <i>Roger_lien</i>	
Size A3	Project Name <b>D9.5_MFF IPCFL-CG</b>		Rev A00
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<b>PEGATRON</b>		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL			
Pegatron Corp.		Engineer: <i>Roger_lien</i>	
Size <i>A4</i>	Project Name <b>D9.5 MFF IPCFL-CG</b>		Rev <i>A00</i>
Date: <i>Wednesday, November 28, 2018</i>		Sheet <i>58</i> of <i>97</i>	



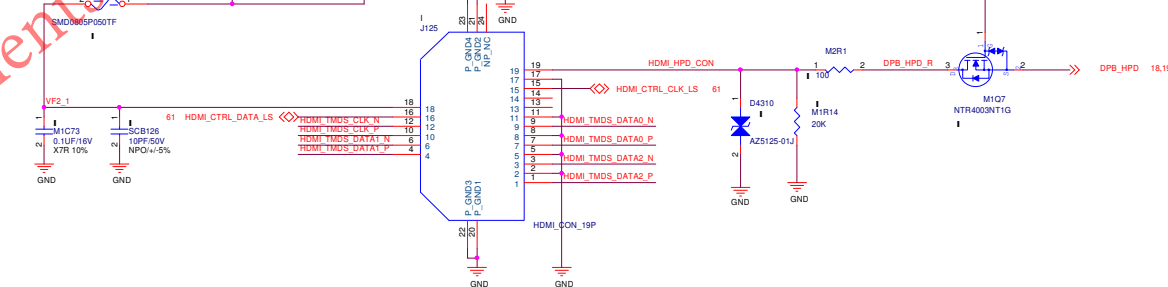
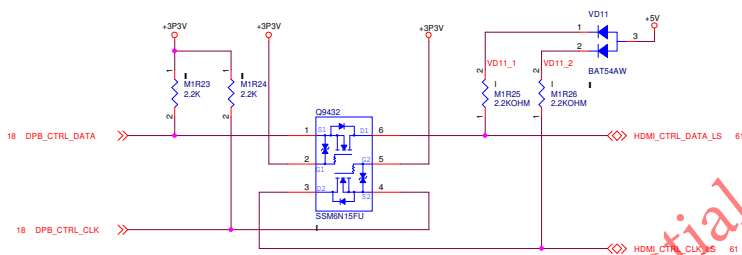
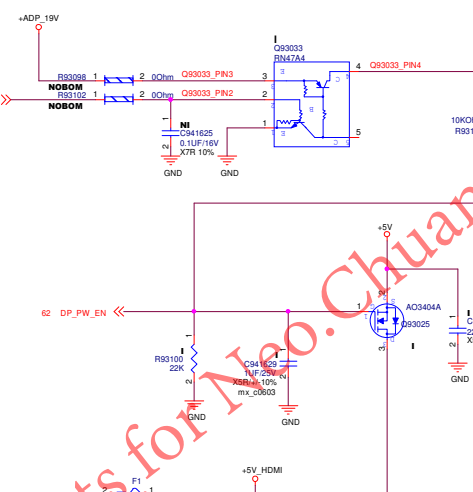
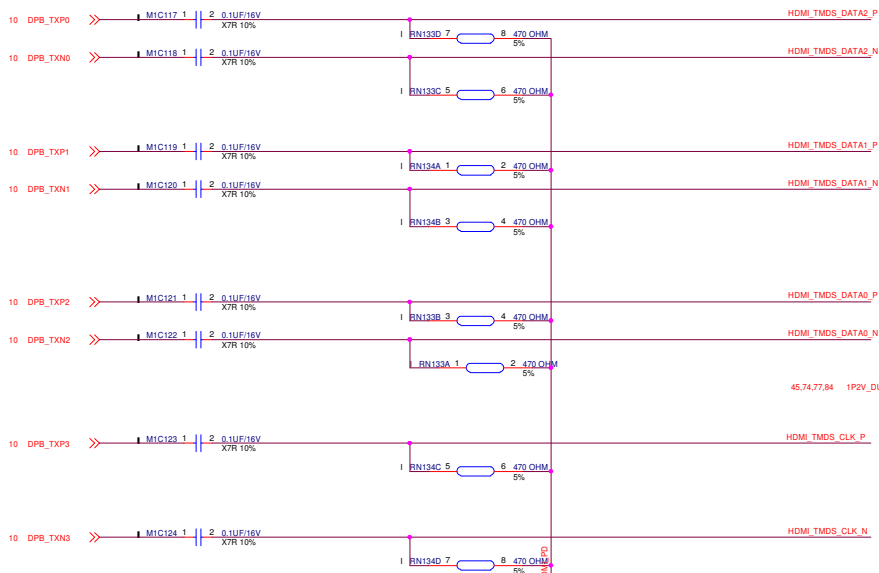
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Size A3	Project Name D9.5_MFF_IPCFL-CG	Rev A00	
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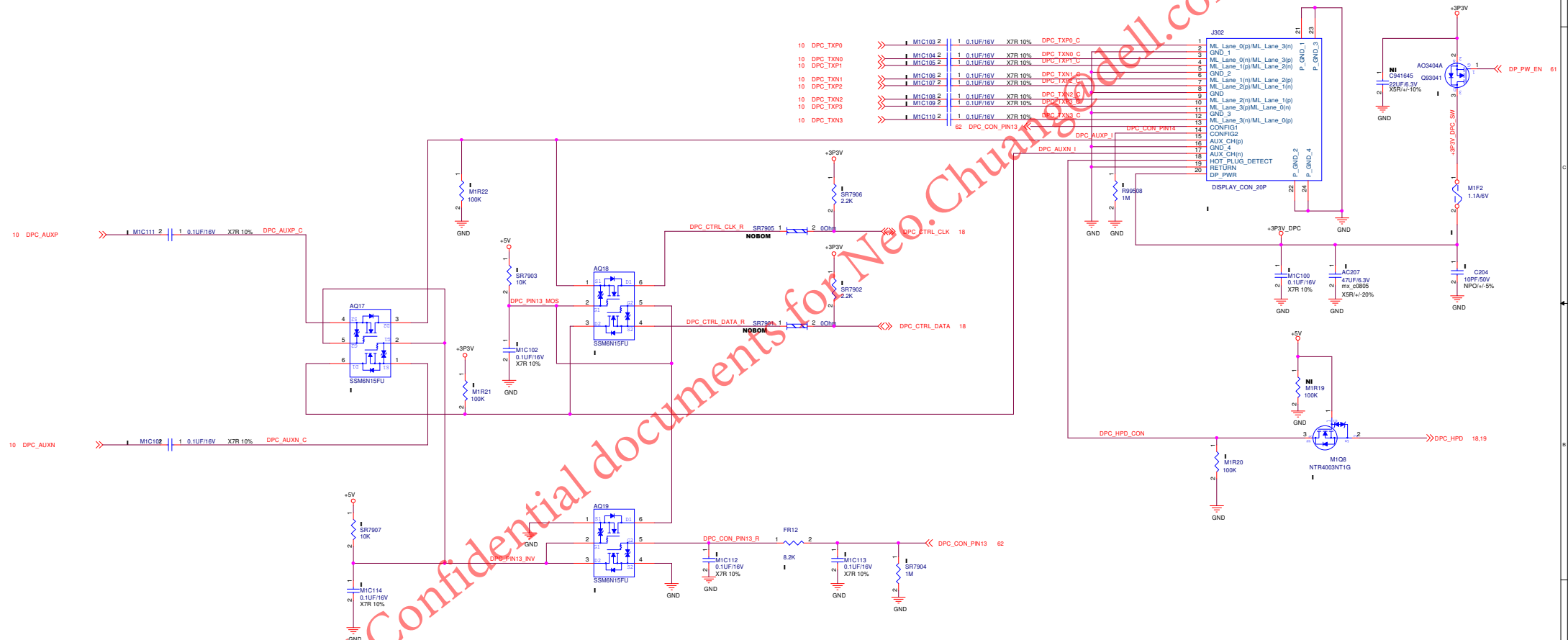
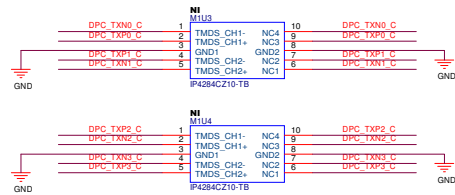
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PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: Roger_Ilen
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
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PEGATRON		Title	
PEGATRON PROPRIETARY AND CONFIDENTIAL		NDM CONN	
Engineer:		Roger Wen	
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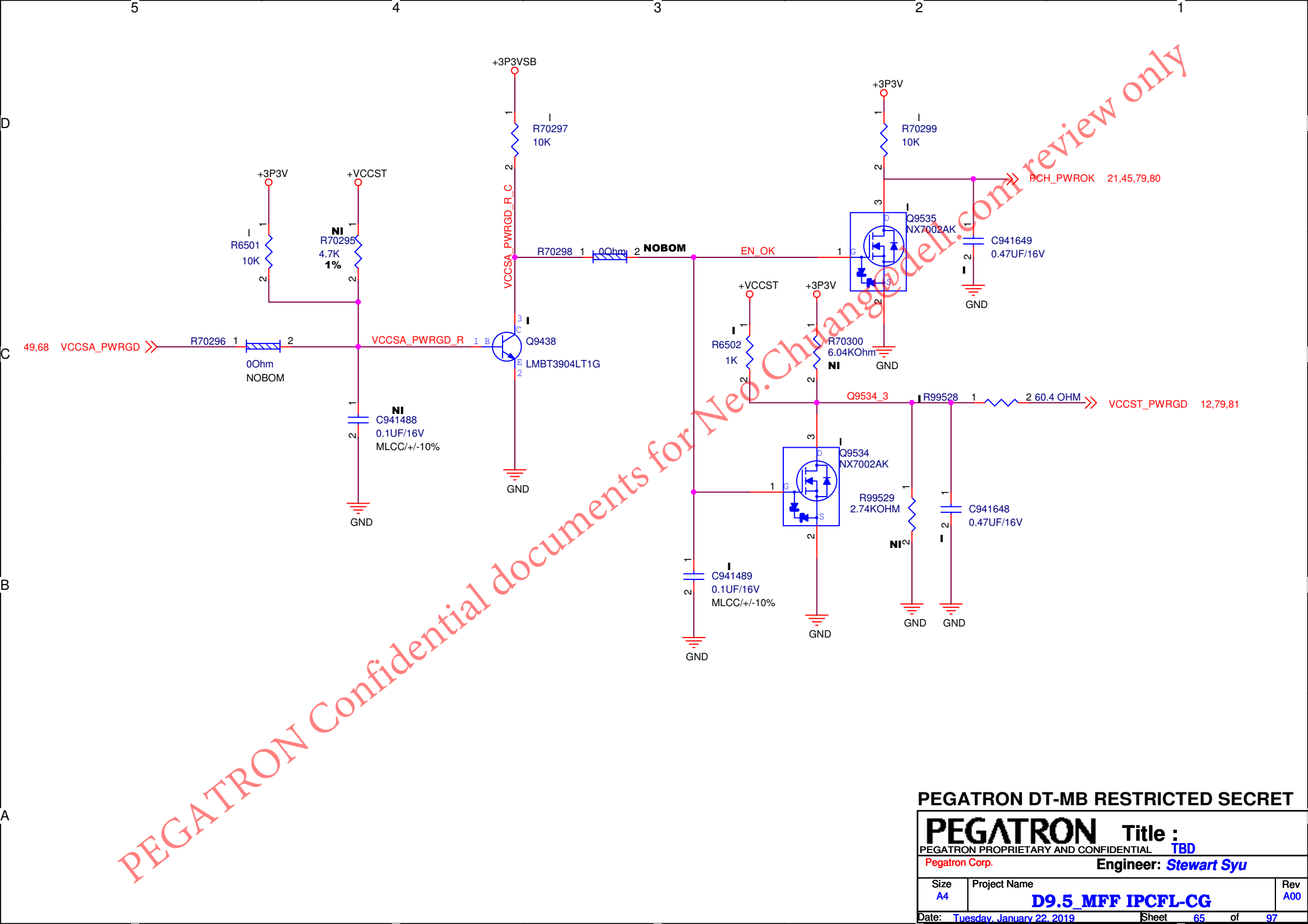
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Pegatron Corp.		Engineer: Roger_Ilen	
Size	Project Name	D9.5 MFF IPCFL-CG	
A2		Rev	
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PEGATRON Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		
Engineer: Stewart Syu		
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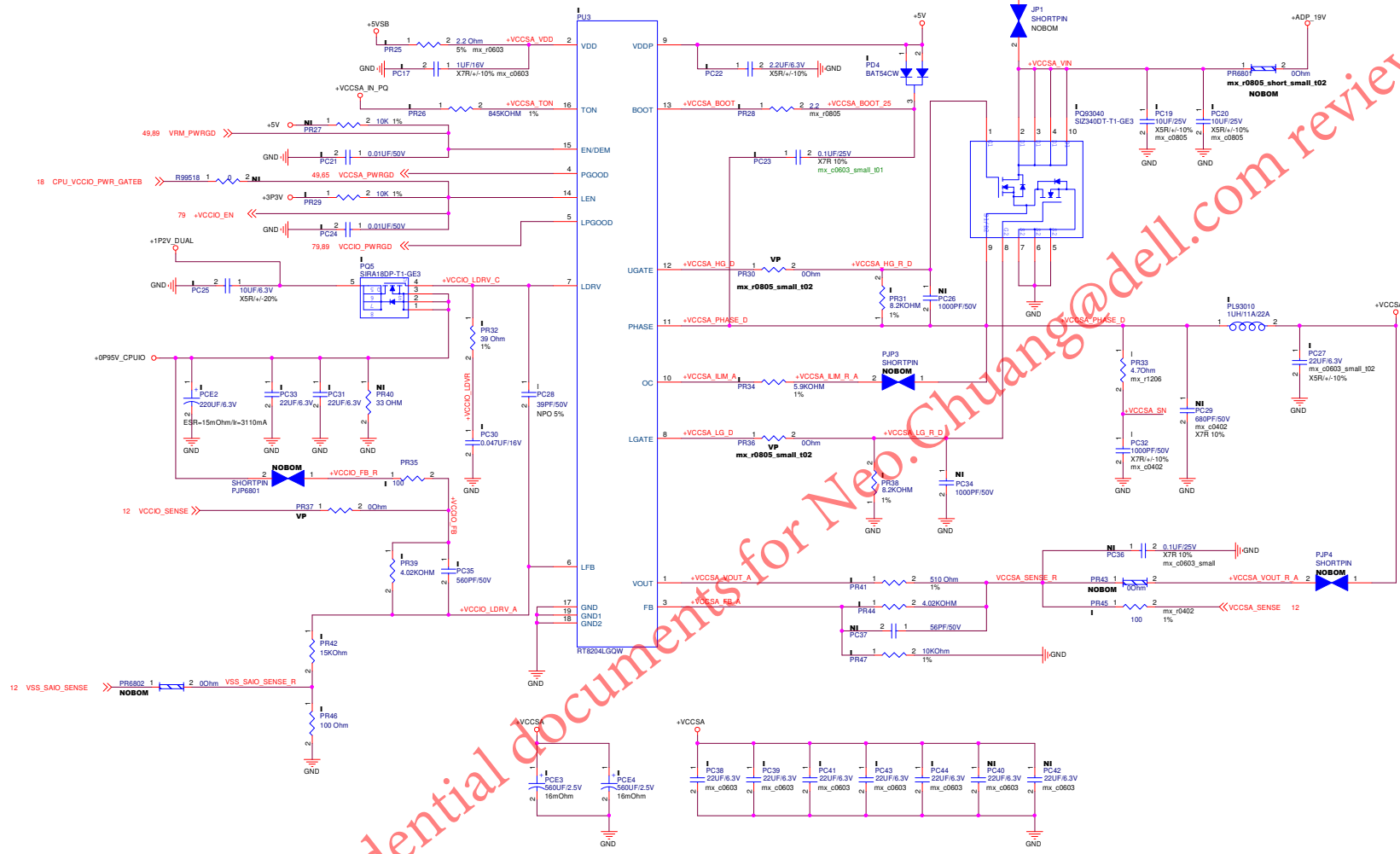
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PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		<b>Engineer:</b> <i>Stewart Syu</i>
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
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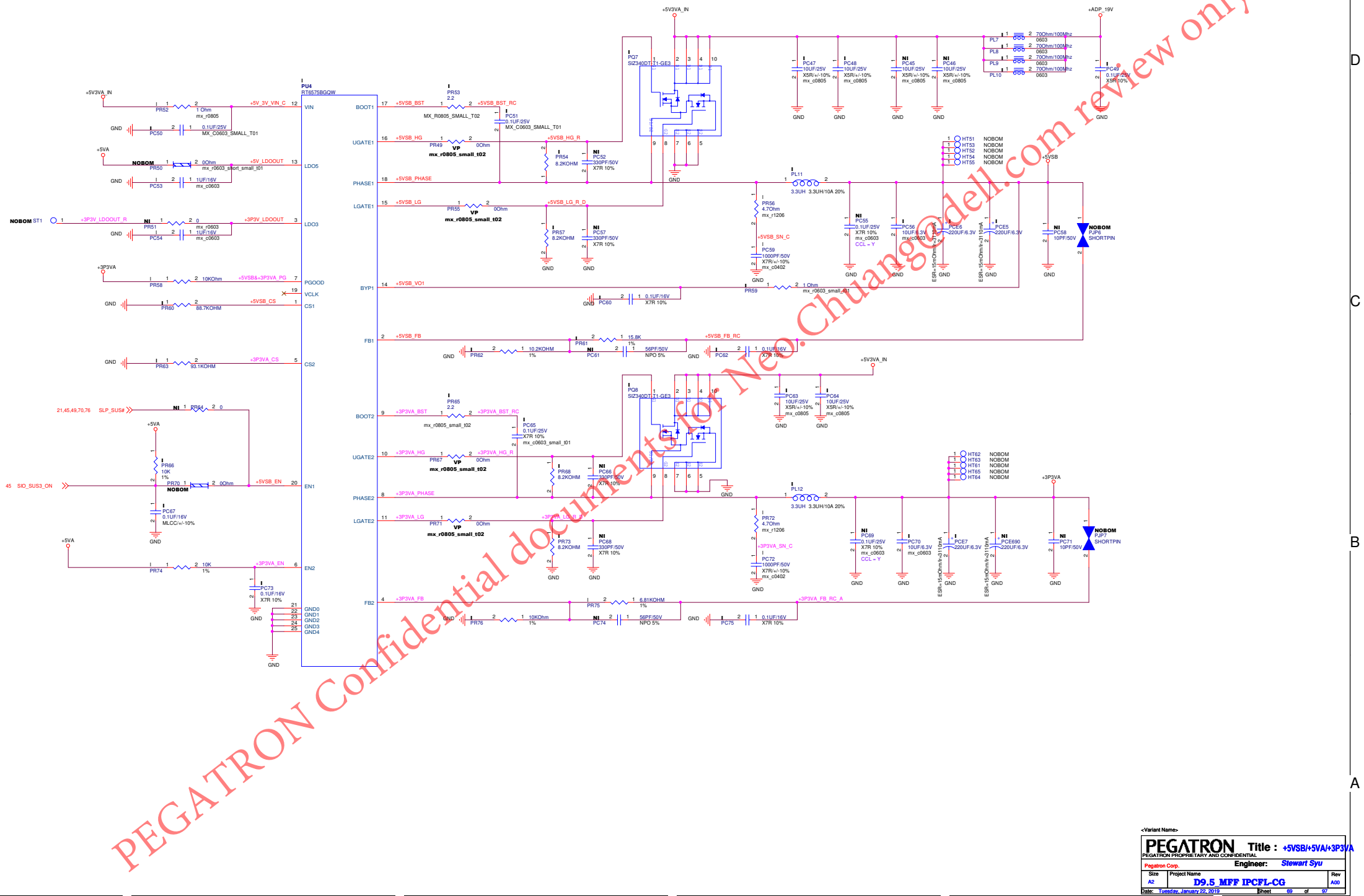
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PEGATRON PROPRIETARY AND CONFIDENTIAL			
Pegatron Corp.		Engineer: <i>Stewart Syu</i>	
Size <i>A3</i>	Project Name <b>D9.5 MFF IPCFL-CG</b>		Rev <i>A00</i>
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PEGATRON		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL		+VCCSA & +VCCIO	
Pegatron Corp.		Engineer: Stewart Syu	
Size	Project Name	Rev	
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<b>PEGATRON</b> Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <b>Stewart Syu</b>
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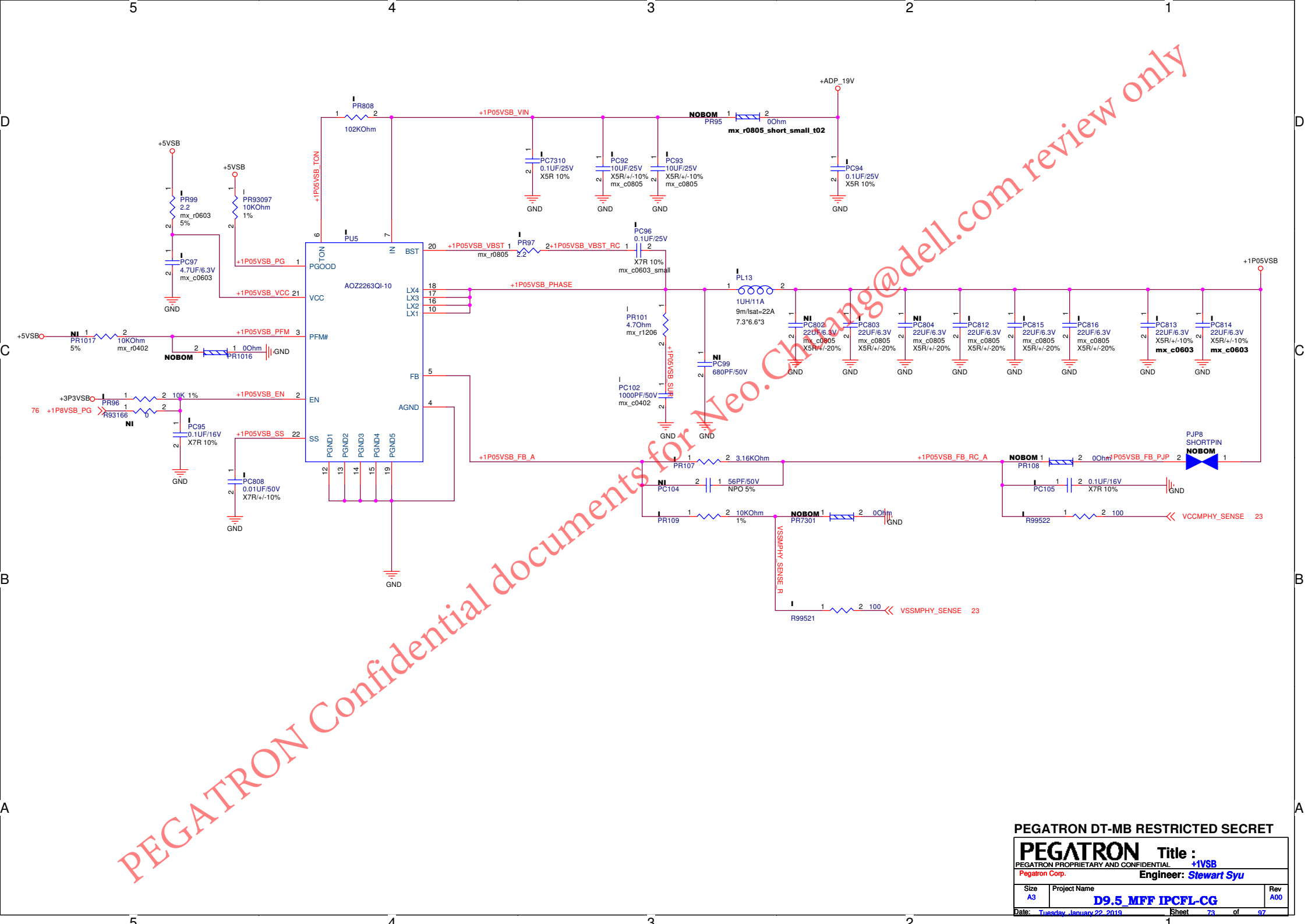
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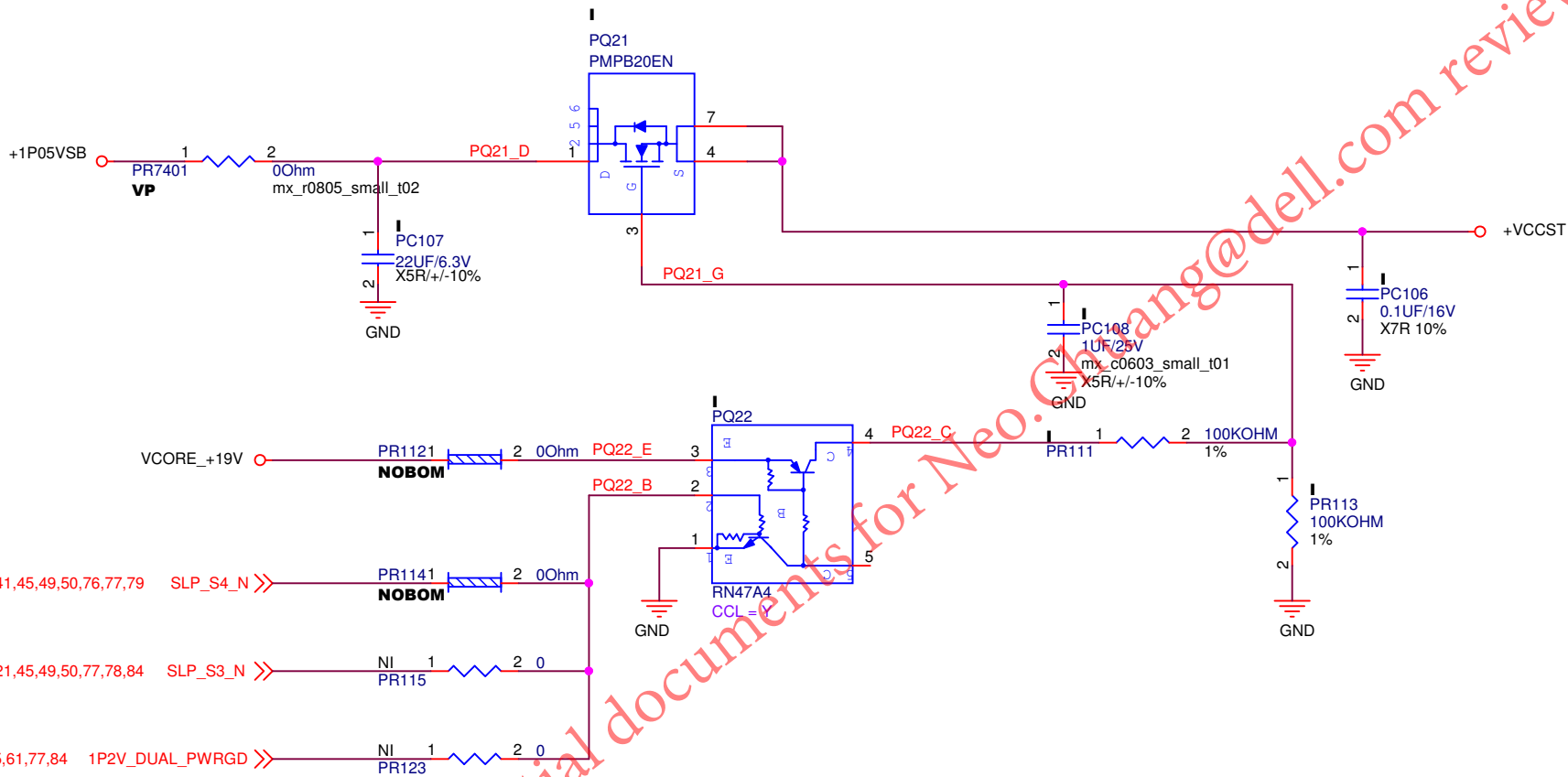
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PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <b>Stewart Syu</b>
Size A4	Project Name <b>D9.5_MFF IPCFL-CG</b>	Rev A00
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PEGATRON		Title :
PEGATRON PROPRIETARY AND CONFIDENTIAL		+1VSB
Pegatron Corp.		Engineer: Stewart Syu
Size	Project Name	Rev
A3	D9.5 MFF IPCFL-CG	A00
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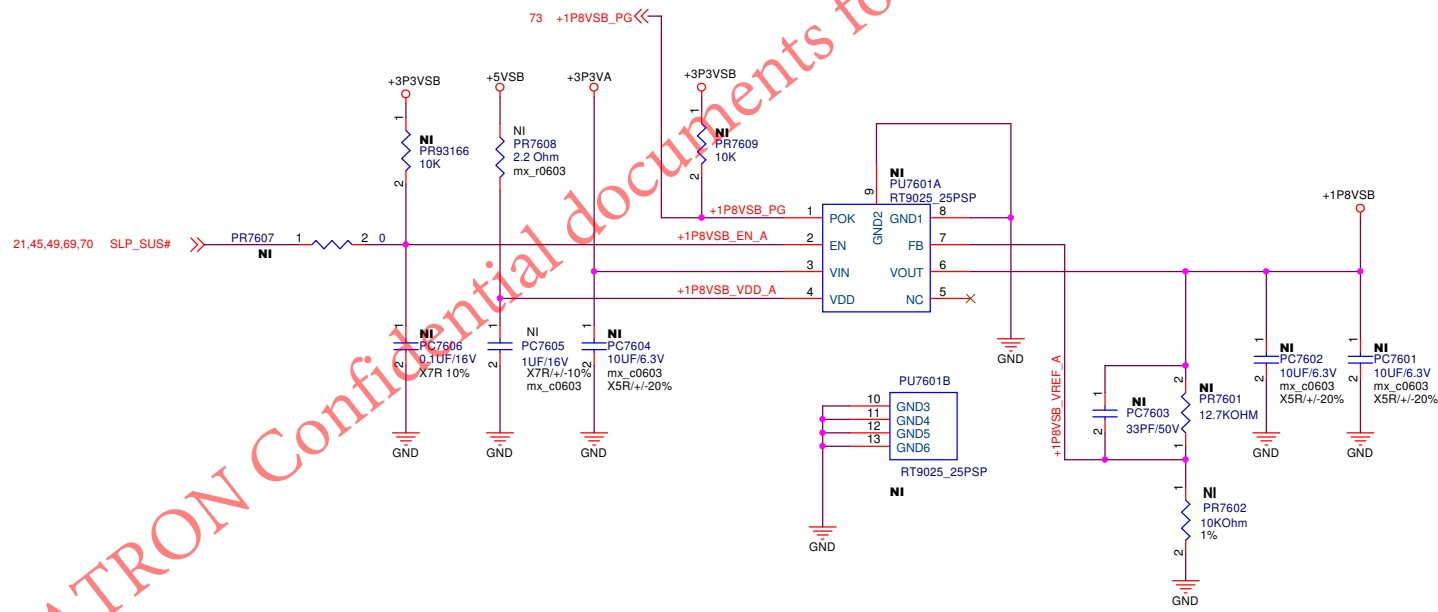
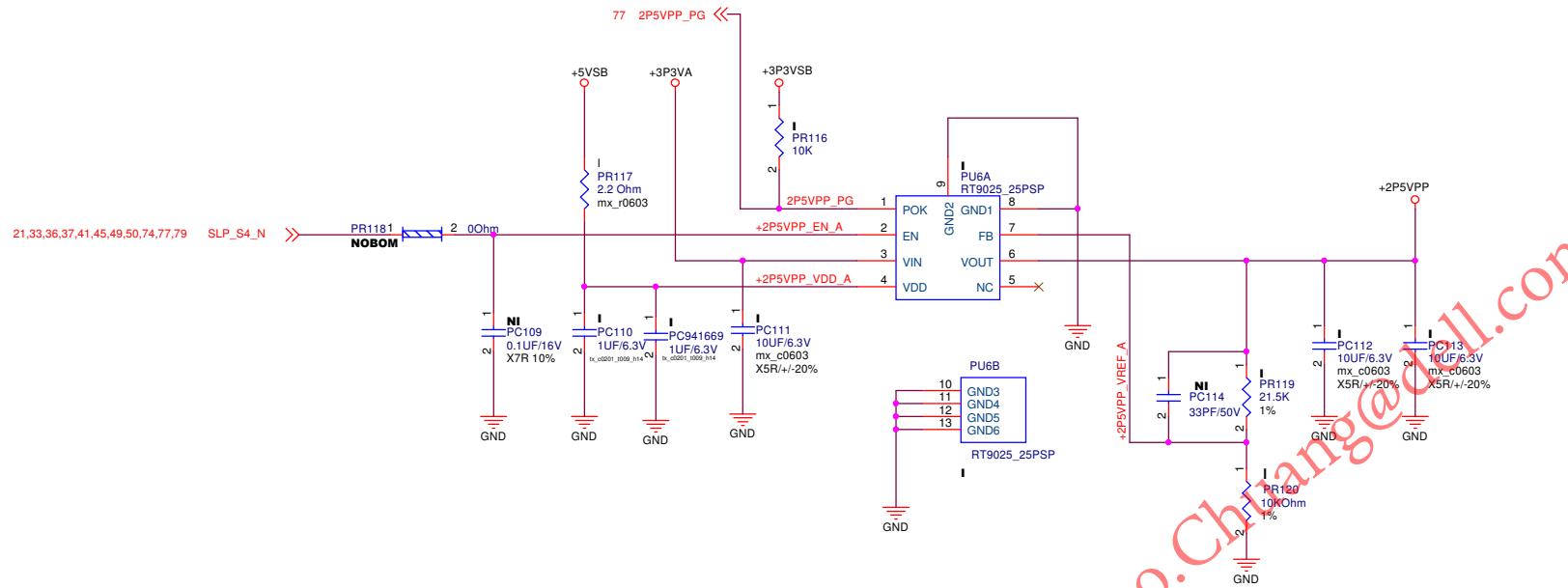
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<b>PEGATRON</b>		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL		+VCCST	
Pegatron Corp.		Engineer: <b>Stewart Syu</b>	
Size A4	Project Name <b>D9.5_MFF IPCFL-CG</b>		Rev A00
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<b>PEGATRON</b>		<b>Title :</b>	
PEGATRON PROPRIETARY AND CONFIDENTIAL			
Pegatron Corp.		Engineer: <i>Stewart Syu</i>	
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>		Rev A00
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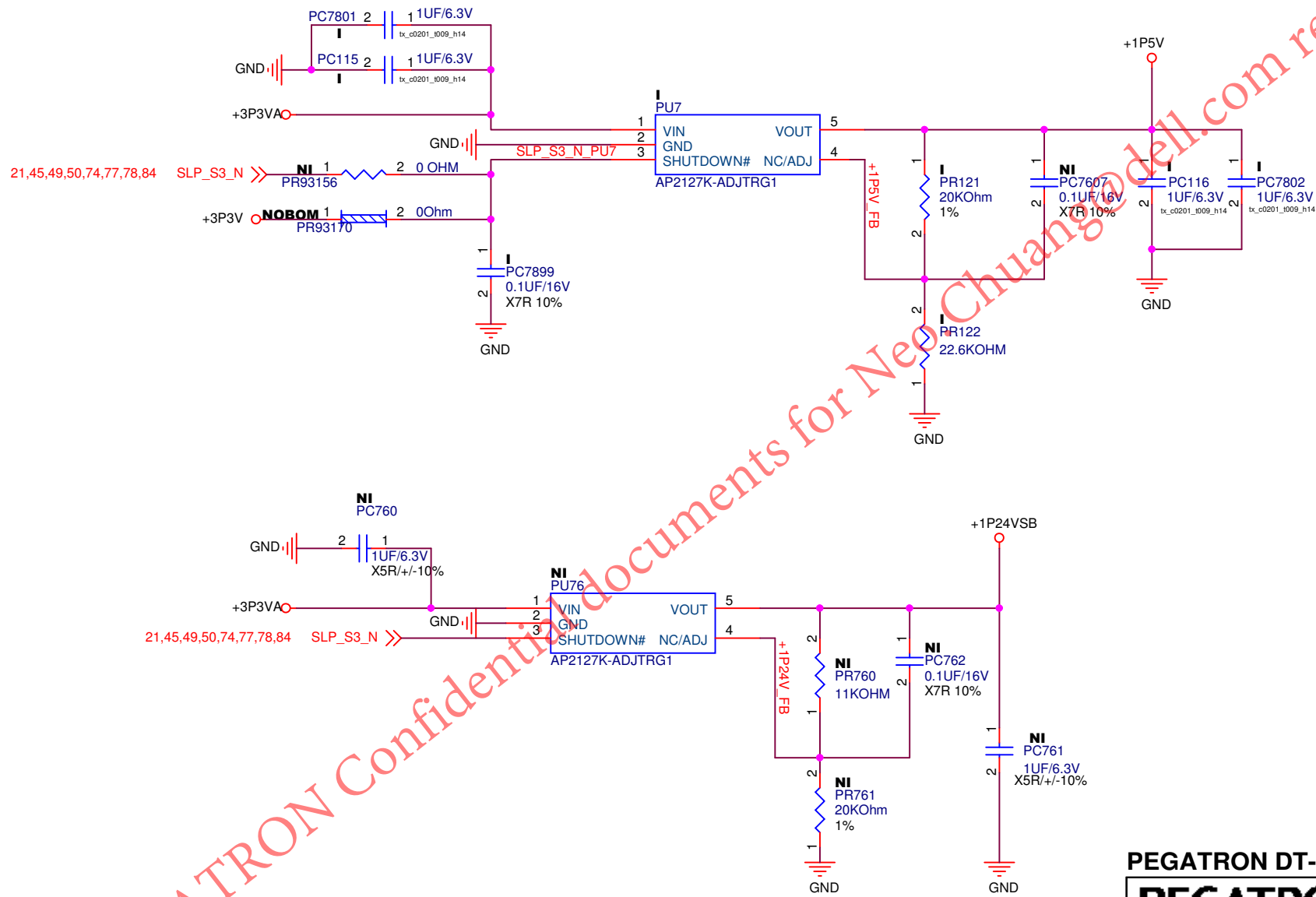


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**PEGATRON** Title :  
PEGATRON PROPRIETARY AND CONFIDENTIAL +1P5VSB/+2P5VPP  
Pegatron Corp. Engineer: Stewart Syu

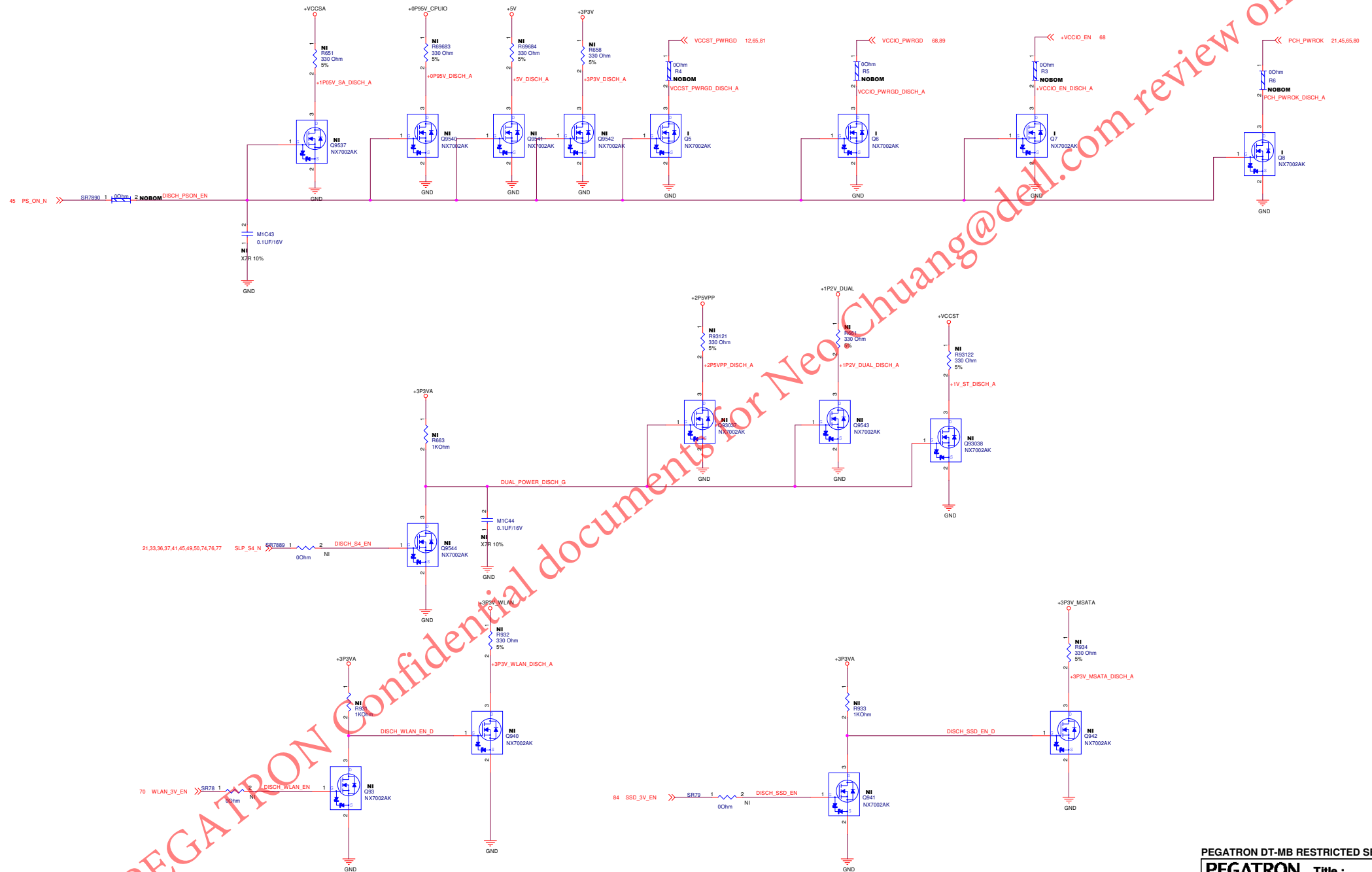
Size A3	Project Name D9.5 MFF IPCFL-CG	Rev A00
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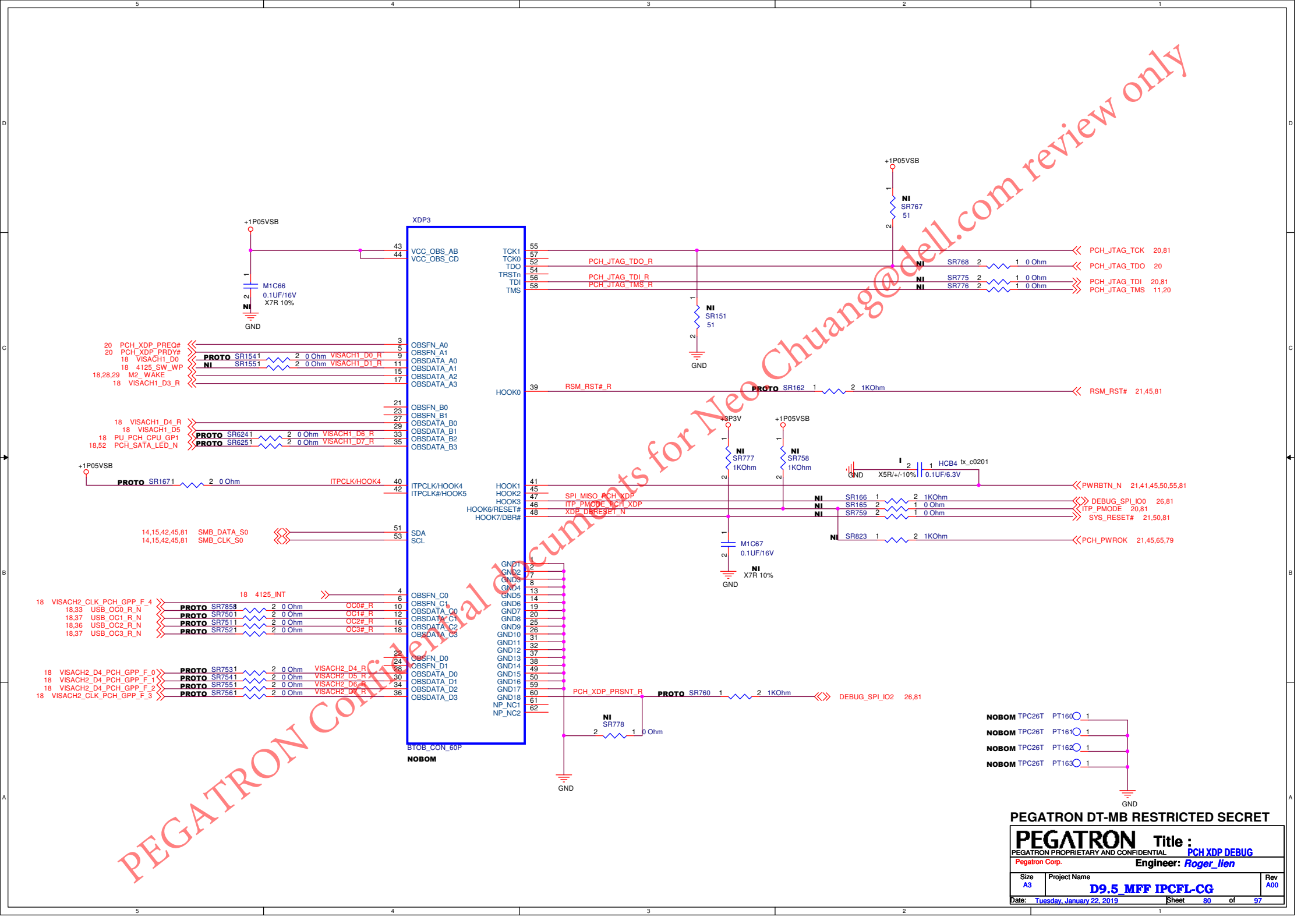
PEGATRON DT-MB RESTRICTED SECRET

<b>PEGATRON</b> Title : <b>TBD</b>		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <b>Stewart Syu</b>
Size <b>A4</b>	Project Name <b>D9.5_MFF IPCFL-CG</b>	Rev <b>A00</b>
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<b>PEGATRON</b>		<b>Title :</b>	
PEGATRON PROPRIETARY AND CONFIDENTIAL		TBD	
Pegatron Corp.		Engineer: Roger_Ilen	
Size	Project Name	Rev	
A2	D9.5 MFF IPCFL-CG	A00	
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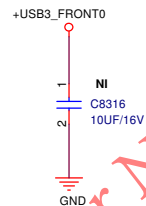
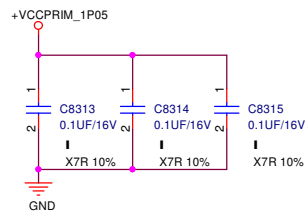
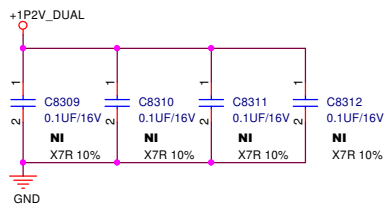
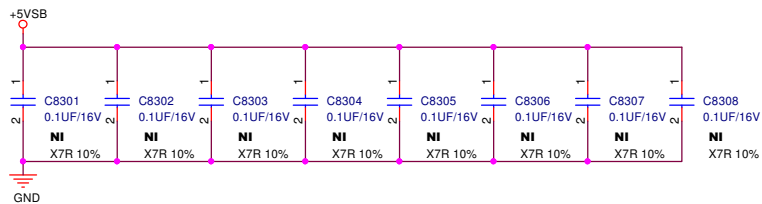
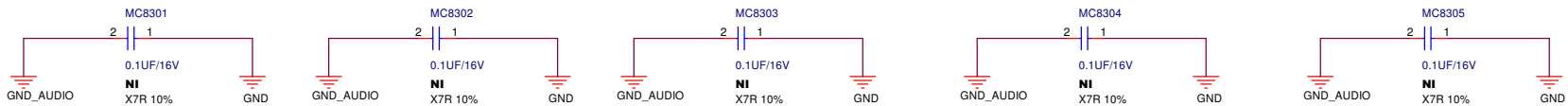




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<b>PEGATRON</b>		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL		CPU XDP DEBUG	
Pegatron Corp.		Engineer: Stewart Syu	
Size A3	Project Name D9.5 MFF IPCFL-CG		Rev A00
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<b>PEGATRON</b>		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL		EMI SOLUTION	
Pegatron Corp.		Engineer: Roger_Ilen	
Size A3	Project Name D9.5_MFF IPCFL-CG		Rev A00
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<b>PEGATRON</b> Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <b>Stewart Syu</b>
Size <b>A</b>	Project Name <b>D9.5_MFF IPCFL-CG</b>	Rev <b>A00</b>
Date: <b>Wednesday, November 28, 2018</b>		Sheet <b>85</b> of <b>97</b>

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<b>PEGATRON</b>		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL			
Pegatron Corp.		Engineer: <i>Stewart Syu</i>	
Size A4	Project Name <b>D9.5 MFF IPCFL-CG</b>		Rev A00
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<b>PEGATRON</b> Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <i>Stewart Syu</i>
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
Date: <i>Wednesday, November 28, 2018</i>		Sheet 87 of 97

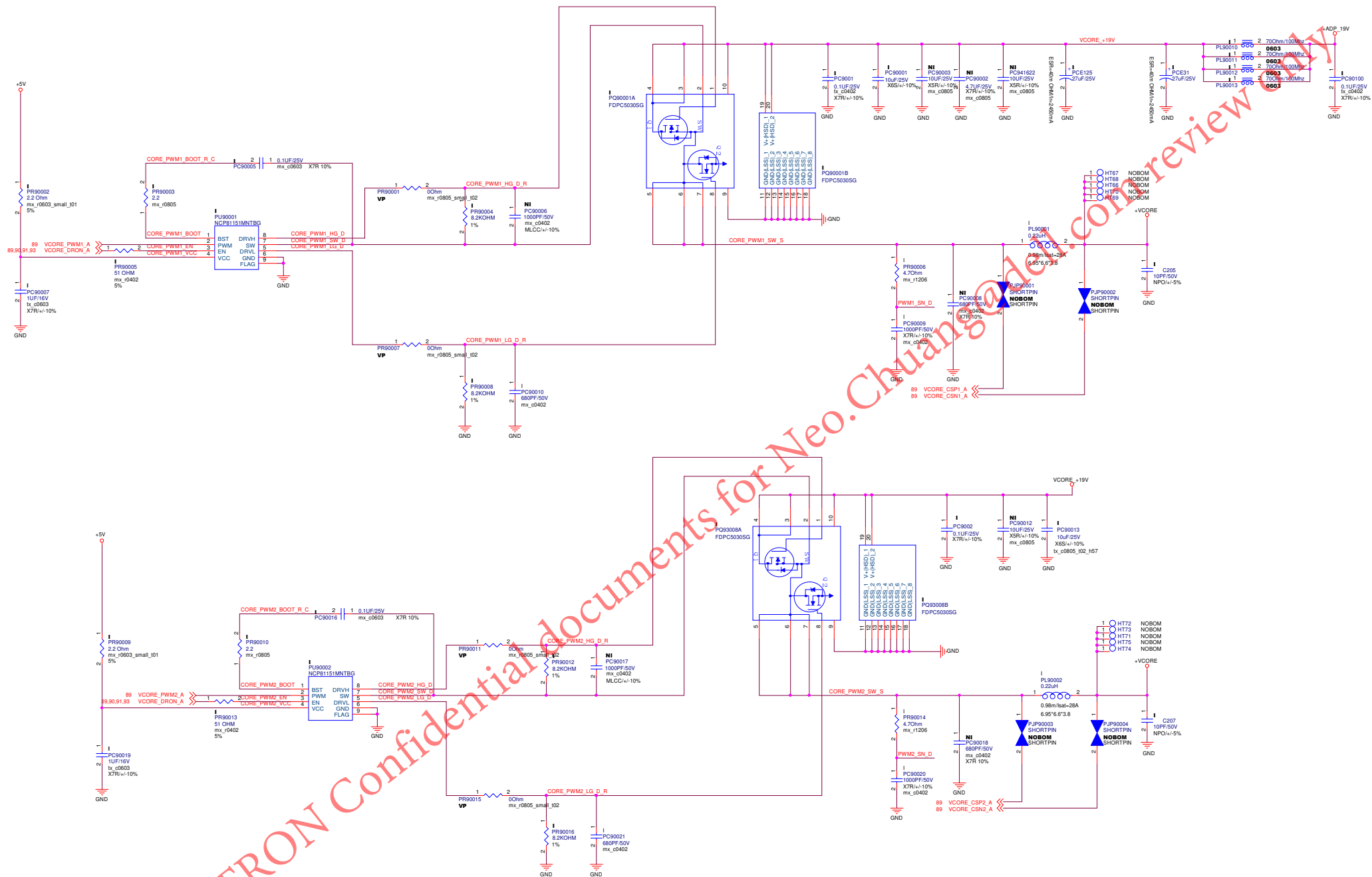
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<b>PEGATRON</b> Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <i>Stewart Syu</i>
Size A3	Project Name <b>D9.5_MFF IPCFL-CG</b>	Rev A00
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Pegatron Corp.		Engineer: <b>Stewart Syu</b>	
Size <b>A2</b>	Project Name <b>D9.5_MFF IPCFL-CG</b>		Rev <b>A00</b>
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**PEGATRON** Title: **+Vcore**  
 PEGATRON PROPRIETARY AND CONFIDENTIAL  
 PEGATRON Corp. Engineer: **Stewart Syu**

Size	Project Name	Rev
A2	<b>D9.5 MFF IPCFL-CG</b>	A00
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<b>PEGATRON</b>		Title :	
PEGATRON PROPRIETARY AND CONFIDENTIAL			
Pegatron Corp.		Engineer: <i>Stewart Syu</i>	
Size A3	Project Name <b>D9.5_MFF IPCFL-CG</b>		Rev A00
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PEGATRON DT-MB RESTRICTED SECRET		
<b>PEGATRON</b> Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <i>Stewart Syu</i>
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
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<b>PEGATRON</b> Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <i>Stewart Syu</i>
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
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<b>PEGATRON</b> Title :		
PEGATRON PROPRIETARY AND CONFIDENTIAL		
Pegatron Corp.		Engineer: <b>Stewart Syu</b>
Size A3	Project Name <b>D9.5 MFF IPCFL-CG</b>	Rev A00
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