

# SERVICE MANUAL

*notebook*

NB60TJ1

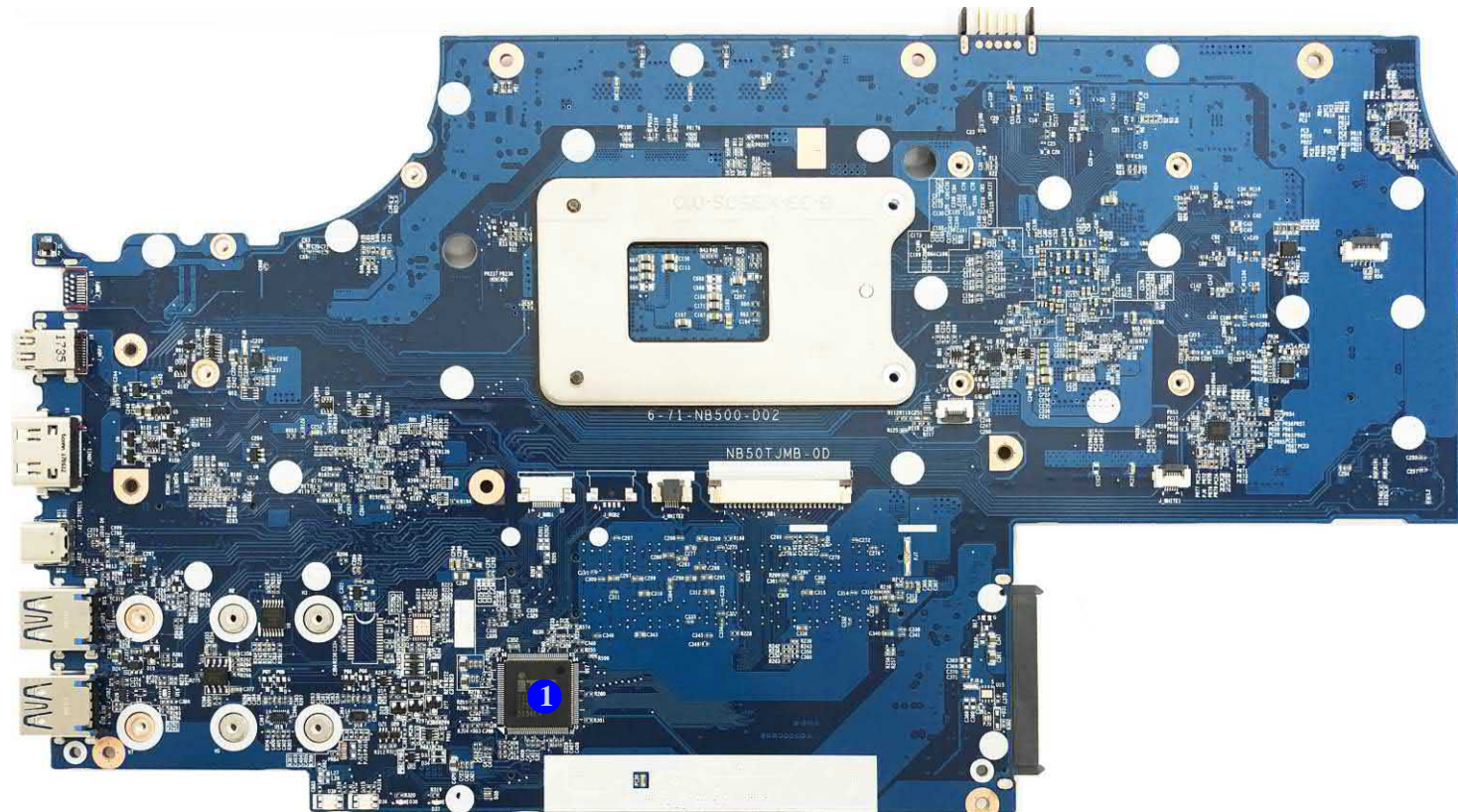


## Introduction

*Figure 7*  
**Mainboard Top  
Key Parts**

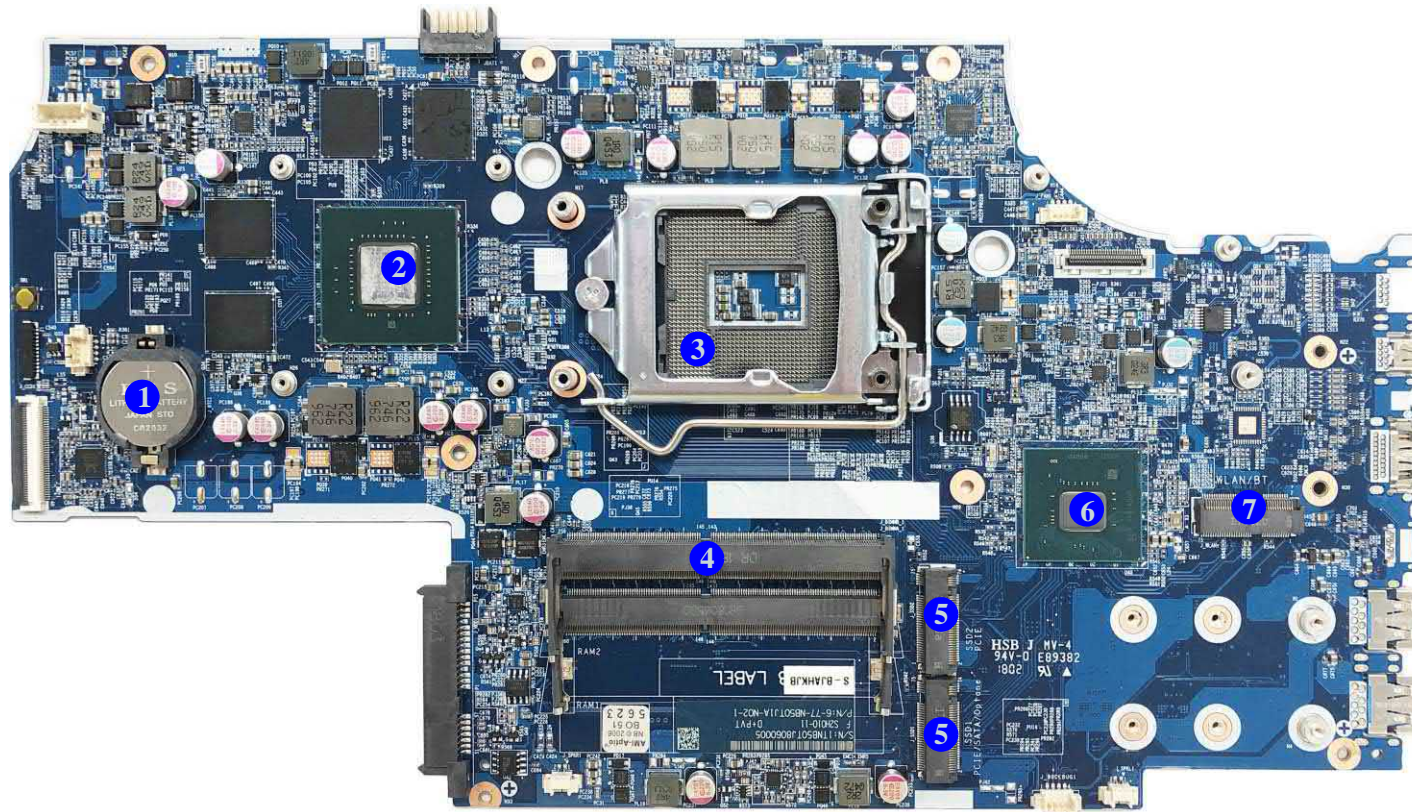
1. KBC-ITE IT8587

## Mainboard Overview - Top (Key Parts)





## Mainboard Overview - Bottom (Key Parts)



*Figure 8*  
**Mainboard Bottom  
Key Parts**

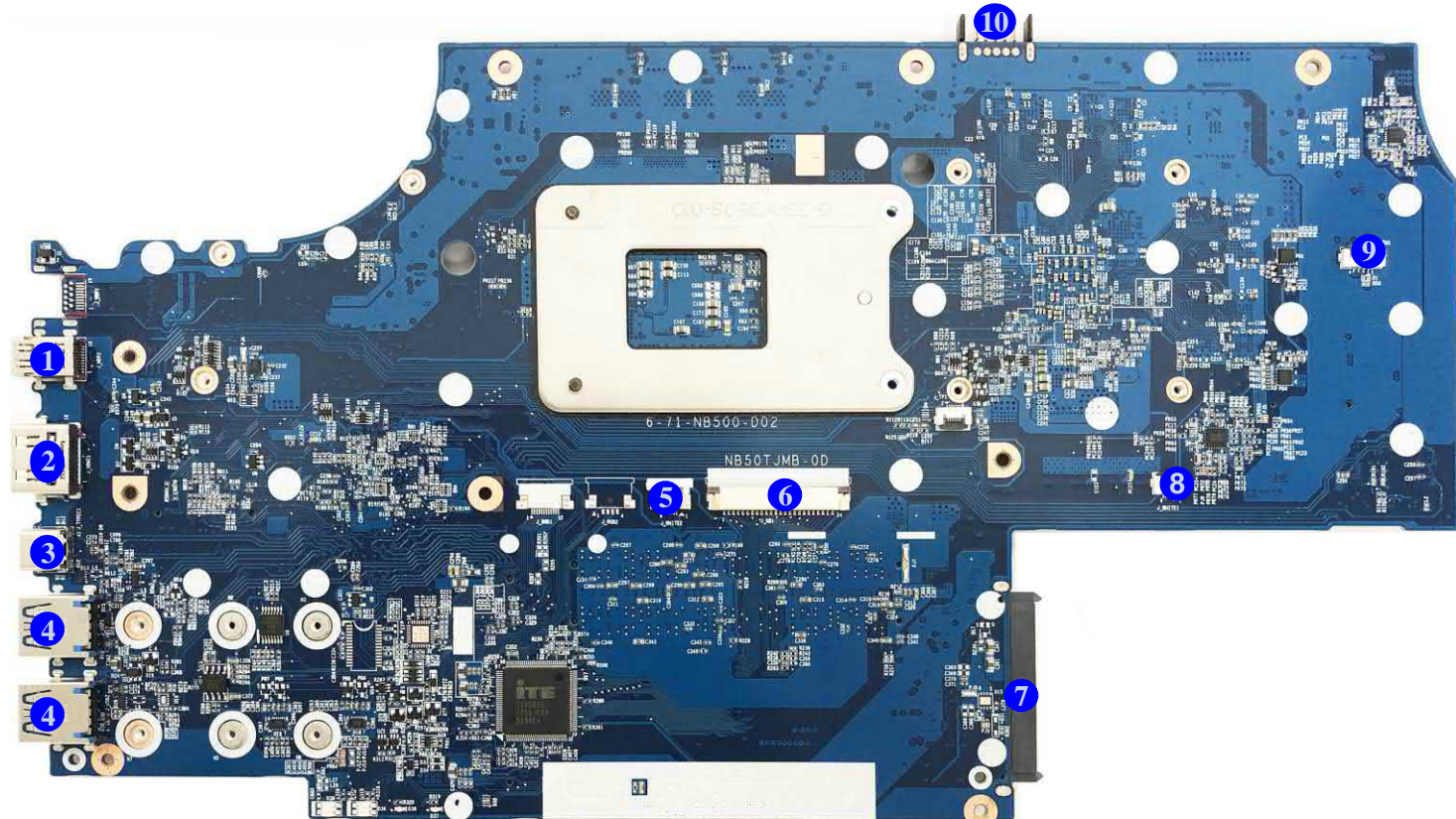
1. CMOS Battery
2. GPU
3. CPU
4. Memory Slots  
DDR4 SO-DIMM
5. M.2-Card  
Connector (SSD  
Module)
6. PCH
7. M.2-Card  
Connector (WLAN  
Module)

## Introduction

*Figure 9*  
**Mainboard Top  
Connectors**

1. Mini Display Port
2. HDMI-Out Port
3. USB Port 3.1  
(Type C)  
Connector
4. USB Port 3.1  
(Type A)  
Connector
5. KB LED (White)  
Connector
6. Keyboard Cable  
Connector
7. HDD Connector
8. KB LED (White)  
Connector
9. Power Button  
Connector
10. Battery  
Connector

## Mainboard Overview - Top (Connectors)

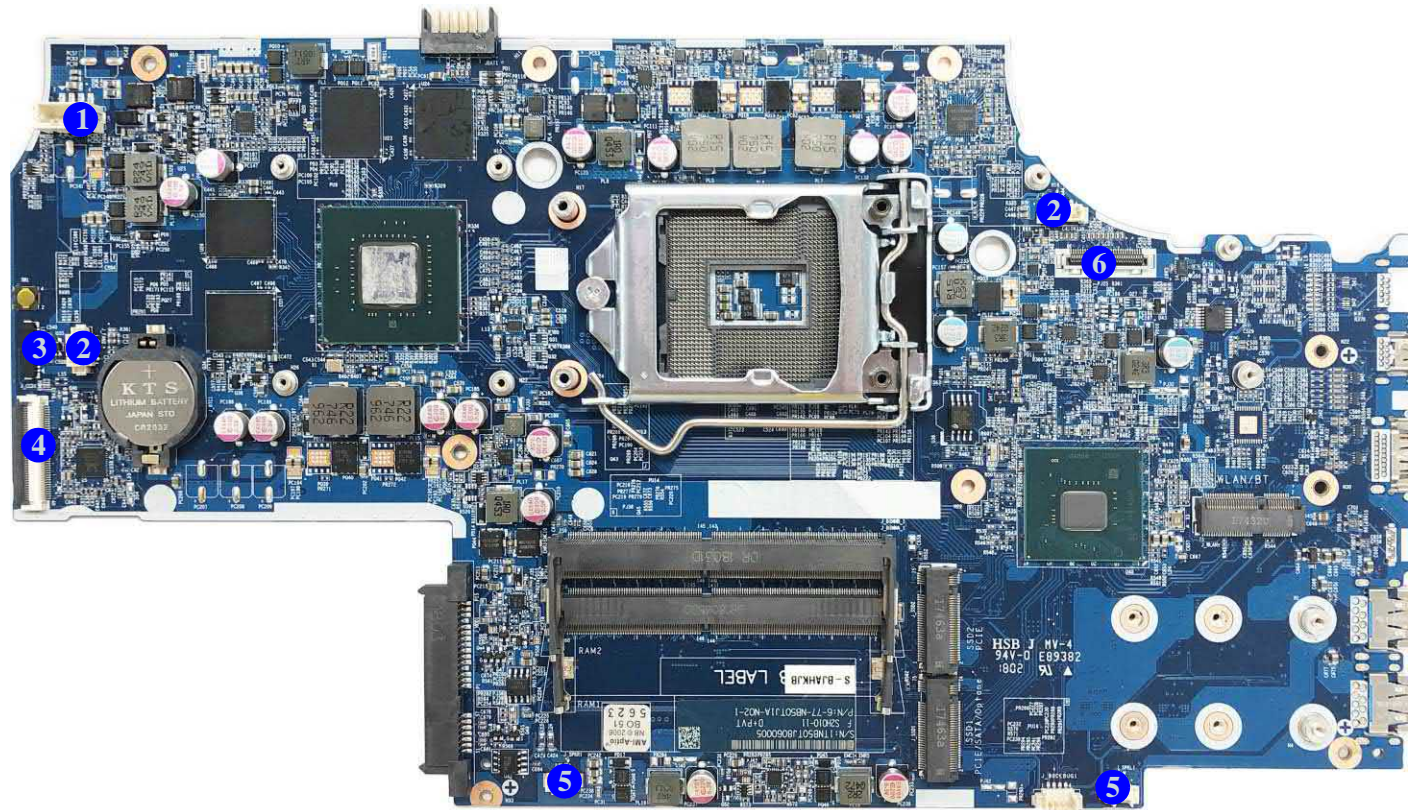




## Mainboard Overview - Bottom (Connectors)

*Figure 10*  
**Mainboard Bottom  
Connectors**

1. DC-In Connector
2. Fan Connector
3. CCD Connector
4. J\_MUX Connector
5. Speaker Connector
6. LCD Connector



# Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *NB60TJ1* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
<i>System Block Diagram - Page B - 2</i>	<i>PCH 1/9 - Page B - 25</i>	<i>VCCSA - Page B - 48</i>
<i>Processor 1/6 - Page B - 3</i>	<i>PCH 2/9 - Page B - 26</i>	<i>AC_In, Charger - Page B - 49</i>
<i>Processor 2/6 - Page B - 4</i>	<i>PCH 3/9 - Page B - 27</i>	<i>NVVDD - Page B - 50</i>
<i>Processor 3/6 - Page B - 5</i>	<i>PCH 4/9 - Page B - 28</i>	<i>FBVDDQ - Page B - 51</i>
<i>Processor 4/6 - Page B - 6</i>	<i>PCH 5/9 - Page B - 29</i>	<i>IV8_RUN IV8_AON, PEXVDD - Page B - 52</i>
<i>Processor 5/6 - Page B - 7</i>	<i>PCH 6/9 - Page B - 30</i>	<i>DC_Jack Board - Page B - 53</i>
<i>Processor 6/6 - Page B - 8</i>	<i>PCH 7/9 - Page B - 31</i>	<i>Multi Board - Page B - 54</i>
<i>DDR4 CHA SO-DIMM - Page B - 9</i>	<i>PCH 8/9 - Page B - 32</i>	<i>RTL8411B - Page B - 55</i>
<i>DDR4 CHB SO-DIMM - Page B - 10</i>	<i>PCH 9/9 - Page B - 33</i>	<i>Power SW Board - Page B - 56</i>
<i>VGA PCI-E Interface - Page B - 11</i>	<i>M.2 WLAN+BT, SSD - Page B - 34</i>	<i>Click Board - Page B - 57</i>
<i>VGA Frame Buffer Interface - Page B - 12</i>	<i>USB Type-A - Page B - 35</i>	<i>Power Sequence - Page B - 58</i>
<i>VGA Frame Buffer A - Page B - 13</i>	<i>USB Conn, USB Charger - Page B - 36</i>	
<i>VGA Frame Buffer A - Page B - 14</i>	<i>HDD, Click TP, Audio, Hall Con. - Page B - 37</i>	
<i>VGA Frame Buffer B - Page B - 15</i>	<i>LED, CCD, TPM - Page B - 38</i>	
<i>VGA Frame Buffer B - Page B - 16</i>	<i>Audio Codec ALC269 VC2 - Page B - 39</i>	
<i>VGA I/O - Page B - 17</i>	<i>White/RGB KB, Fan - Page B - 40</i>	
<i>NVIDIA Power Sequence - Page B - 18</i>	<i>KBC-ITE IT8587 - Page B - 41</i>	
<i>GPU Decoupling - Page B - 19</i>	<i>5V, 5VS, 3.3V, 3.3VS, 3.3VA - Page B - 42</i>	
<i>PS8330B - Page B - 20</i>	<i>VDD1.05V, VCCIO - Page B - 43</i>	
<i>MDP - Page B - 21</i>	<i>VDD3, VDD5 - Page B - 44</i>	
<i>MDP - Page B - 22</i>	<i>DDR 1.2V / 0.6VS, 2.5V - Page B - 45</i>	
<i>HDMI - Page B - 23</i>	<i>VCore, VCCGT - Page B - 46</i>	
<i>Panel, Inverter - Page B - 24</i>	<i>VCore, VCCGT Output Stage - Page B - 47</i>	

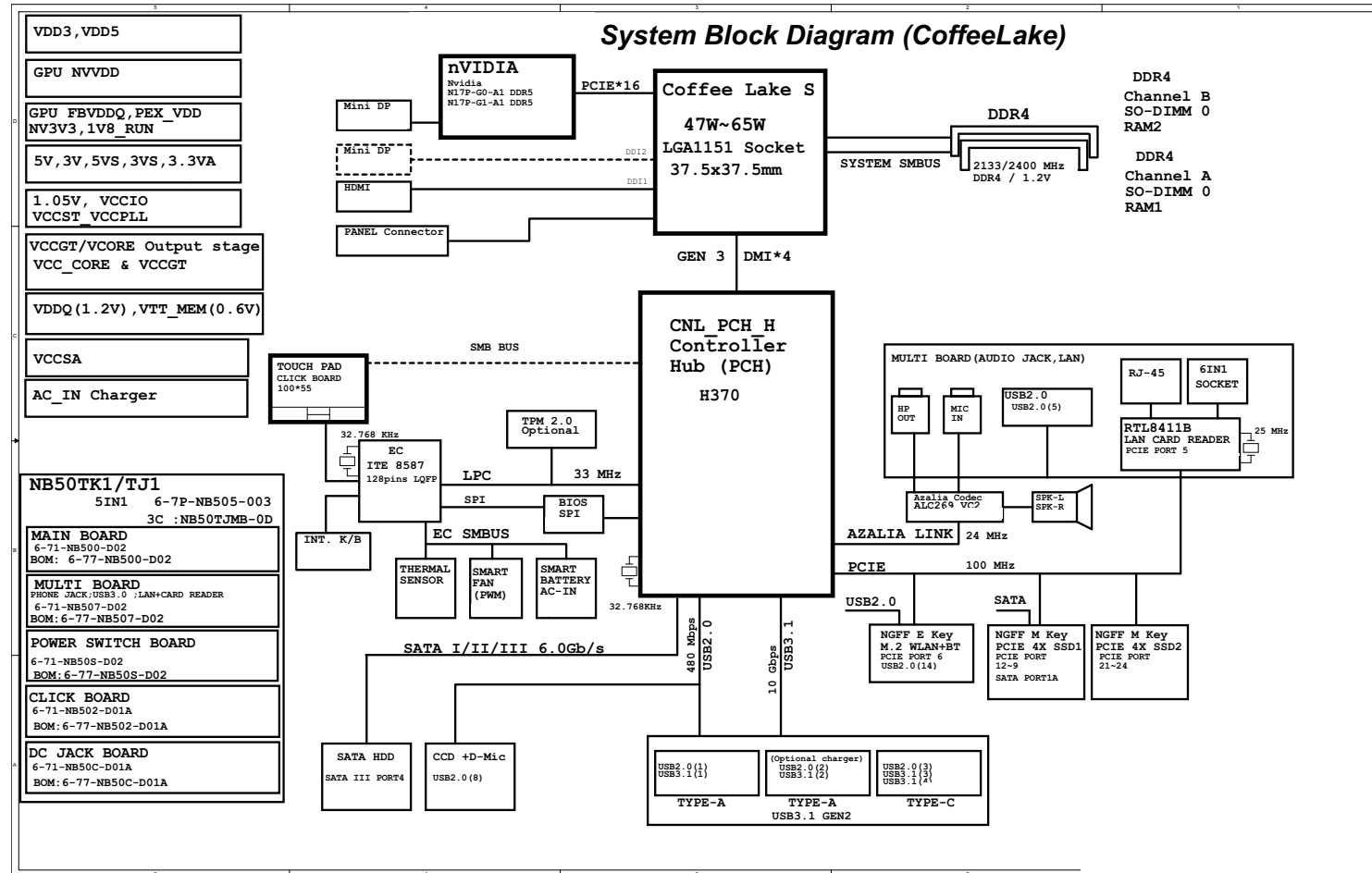
*Table B - 1*  
**SCHEMATIC  
DIAGRAMS**



## Version Note

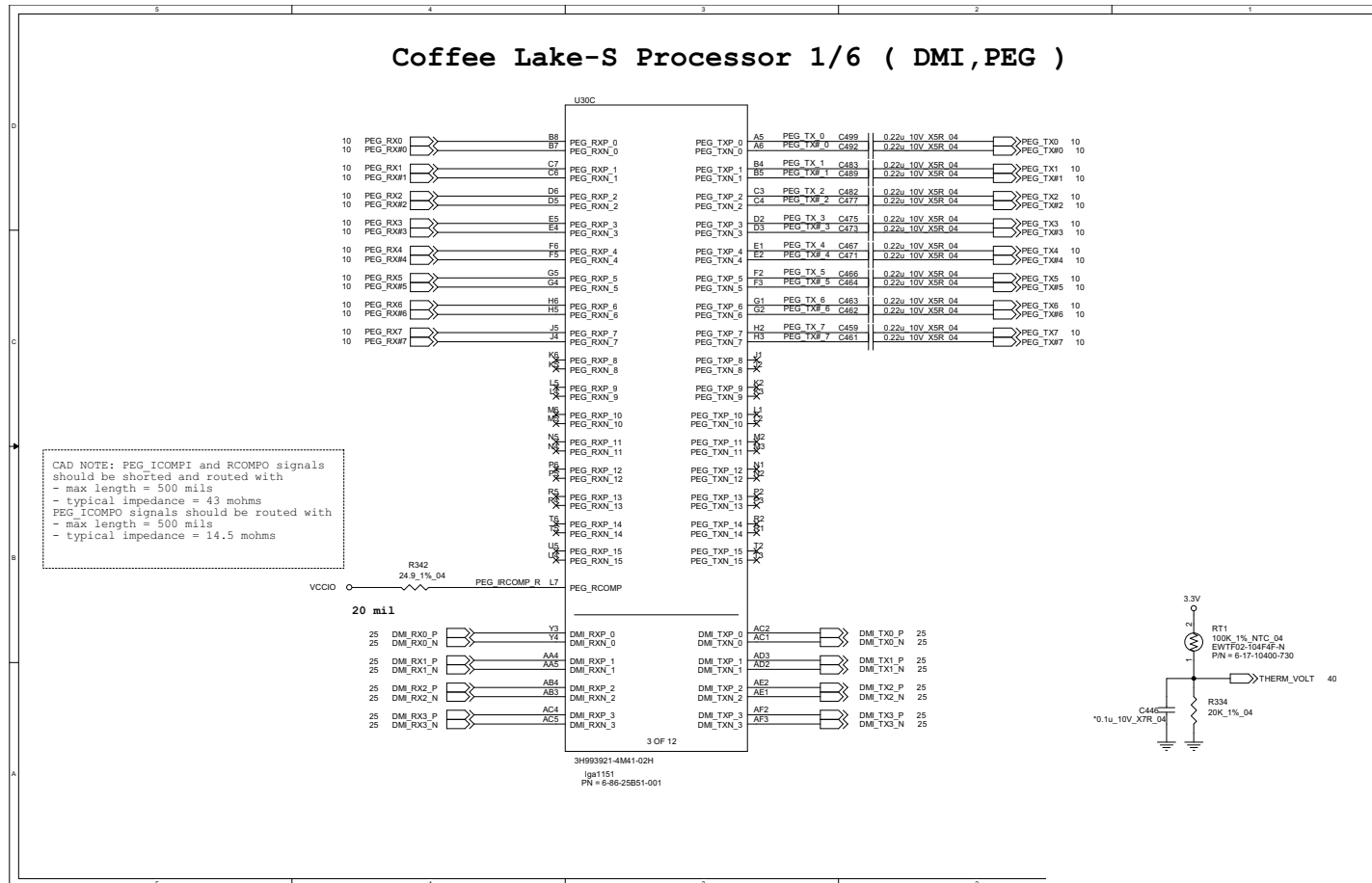
The schematic diagrams in this chapter are based upon version 6-7P-NB505-003. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

# System Block Diagram



Sheet 1 of 57  
System Block  
Diagram

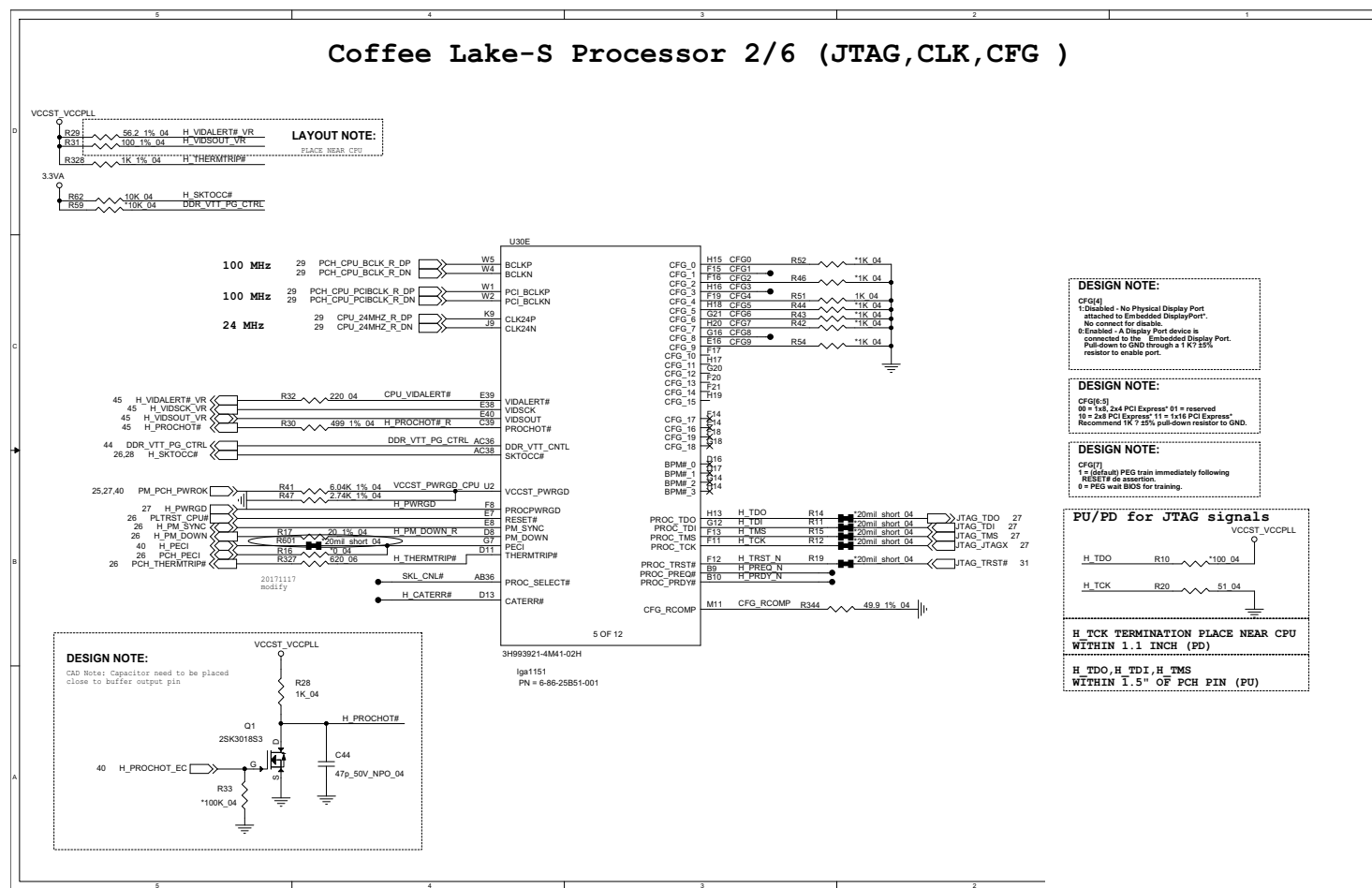
## Processor 1/6

Sheet 2 of 57  
Processor 1/6

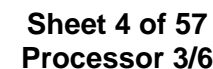


## Processor 2/6

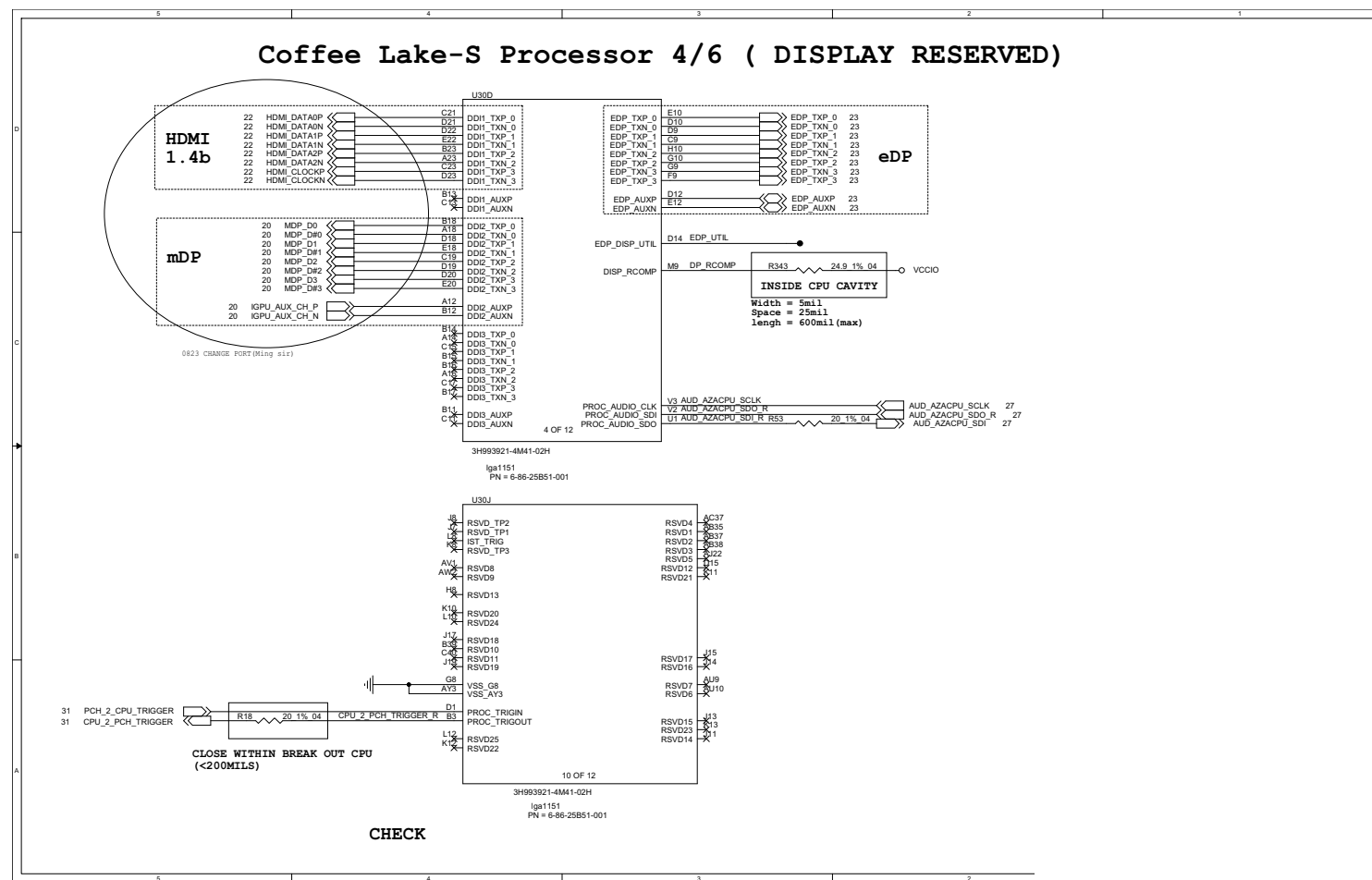
Sheet 3 of 57  
Processor 2/6



**Processor 3/6 B - 5**

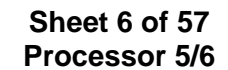


Sheet 5 of 57  
Processor 4/6





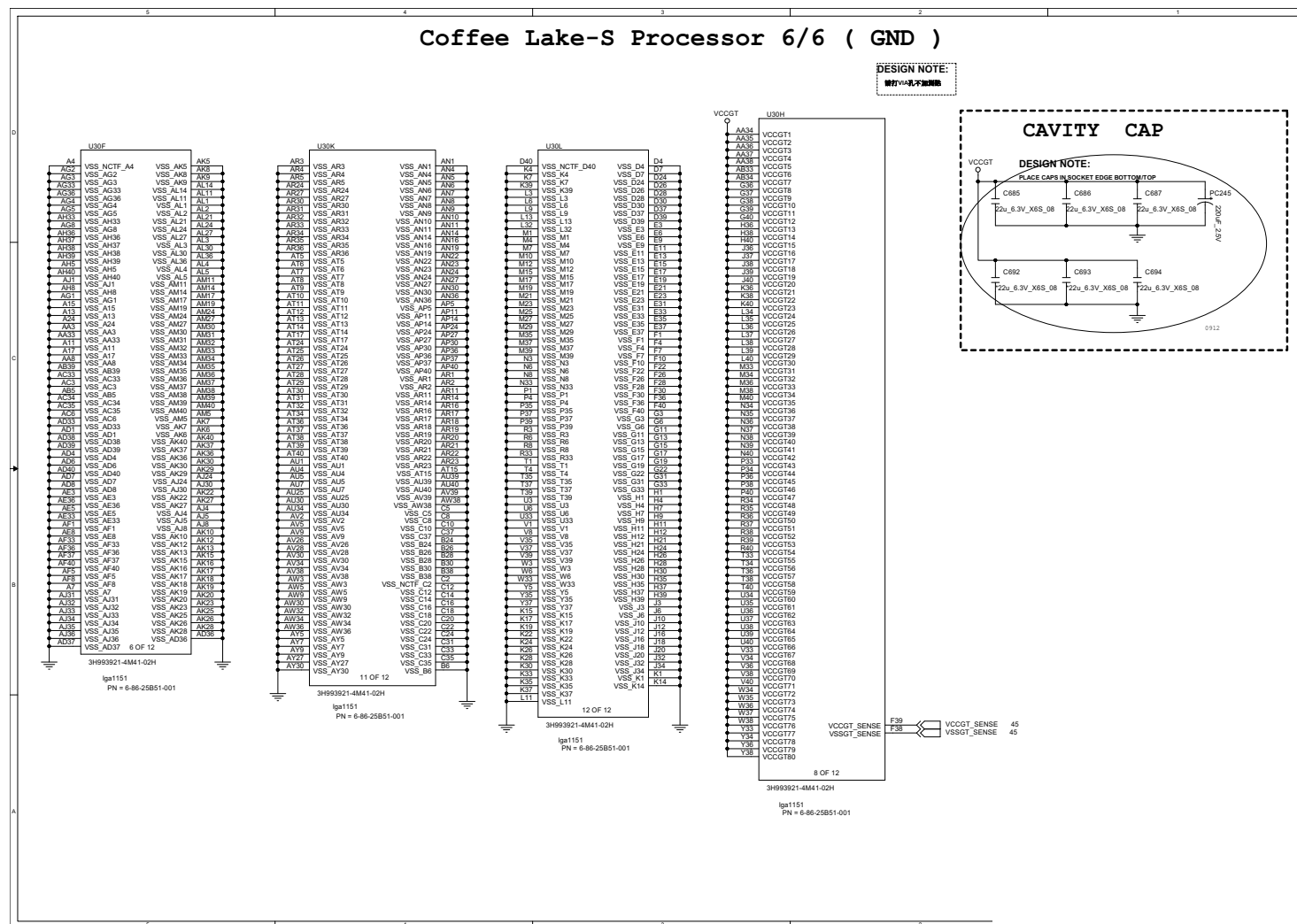
**Processor 5/6 B - 7**



## Processor 6/6

## B.Schematic Diagrams

Sheet 7 of 57  
Processor 6/6

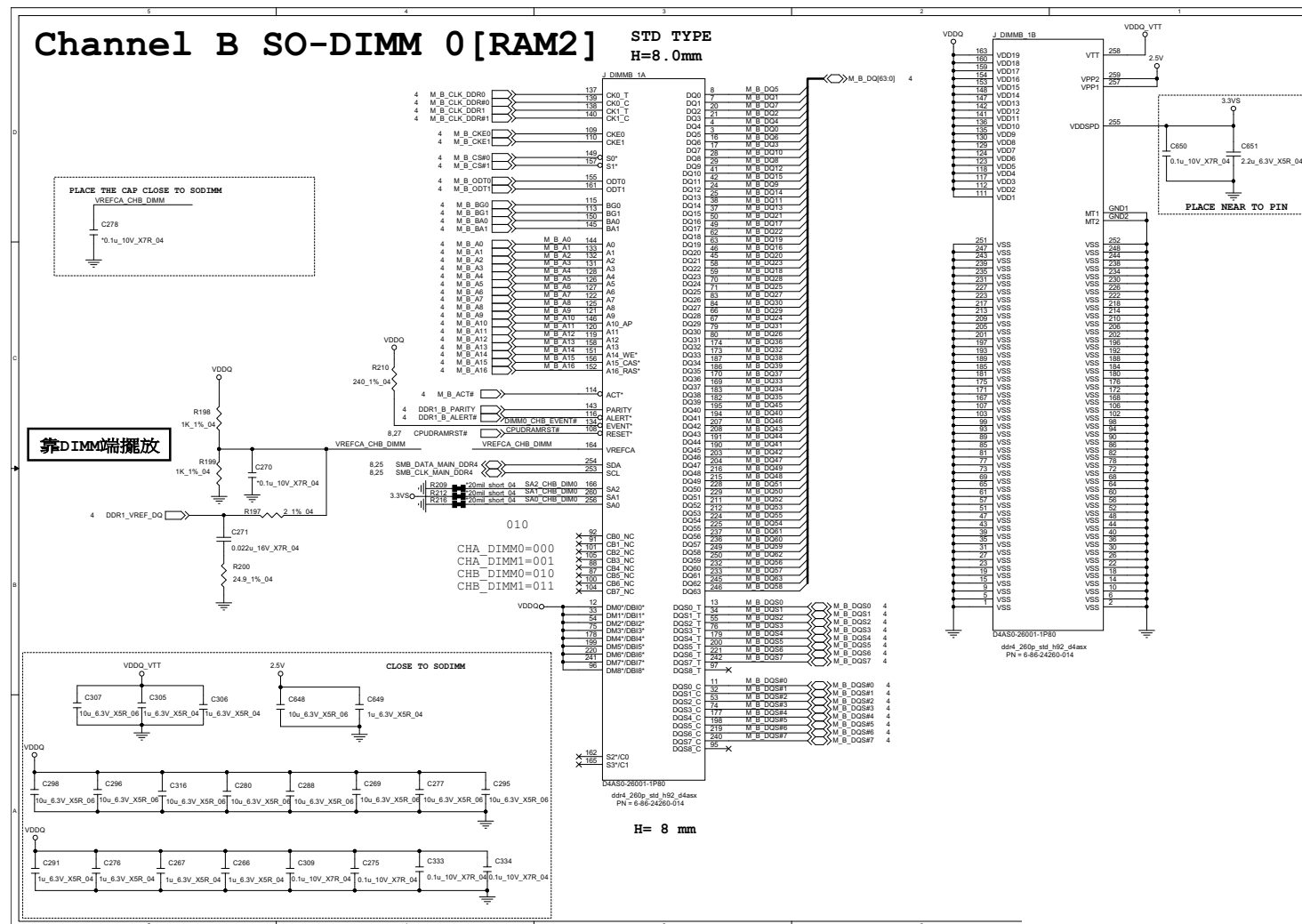


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## DDR4 CHB SO-DIMM

**Sheet 9 of 57**  
**DDR4 CHB SO-**  
**DIMM**

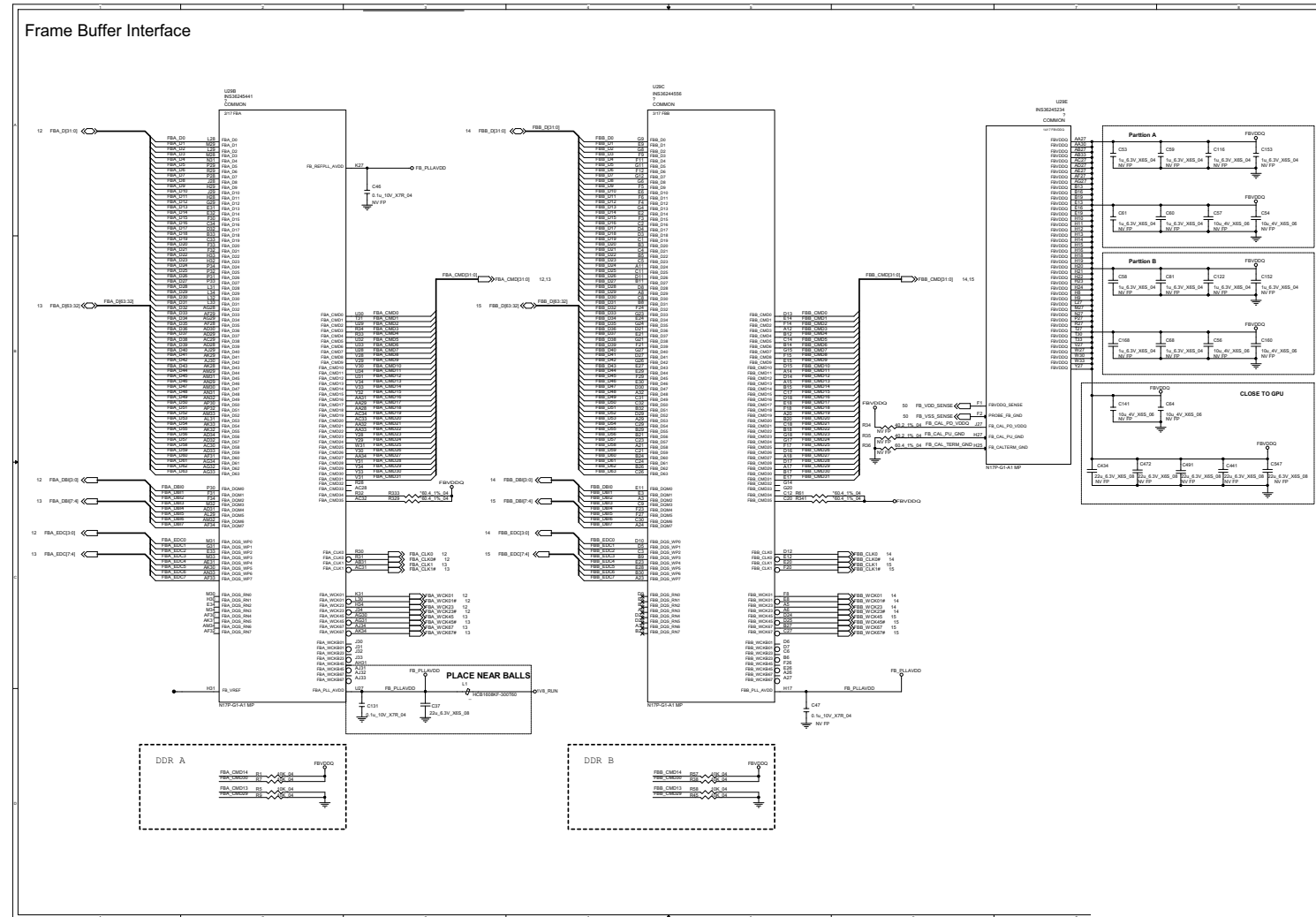


## B.Schematic Diagrams

## VGA Frame Buffer Interface

## B. Schematic Diagrams

**Sheet 11 of 57**  
**VGA Frame Buffer**  
**Interface**





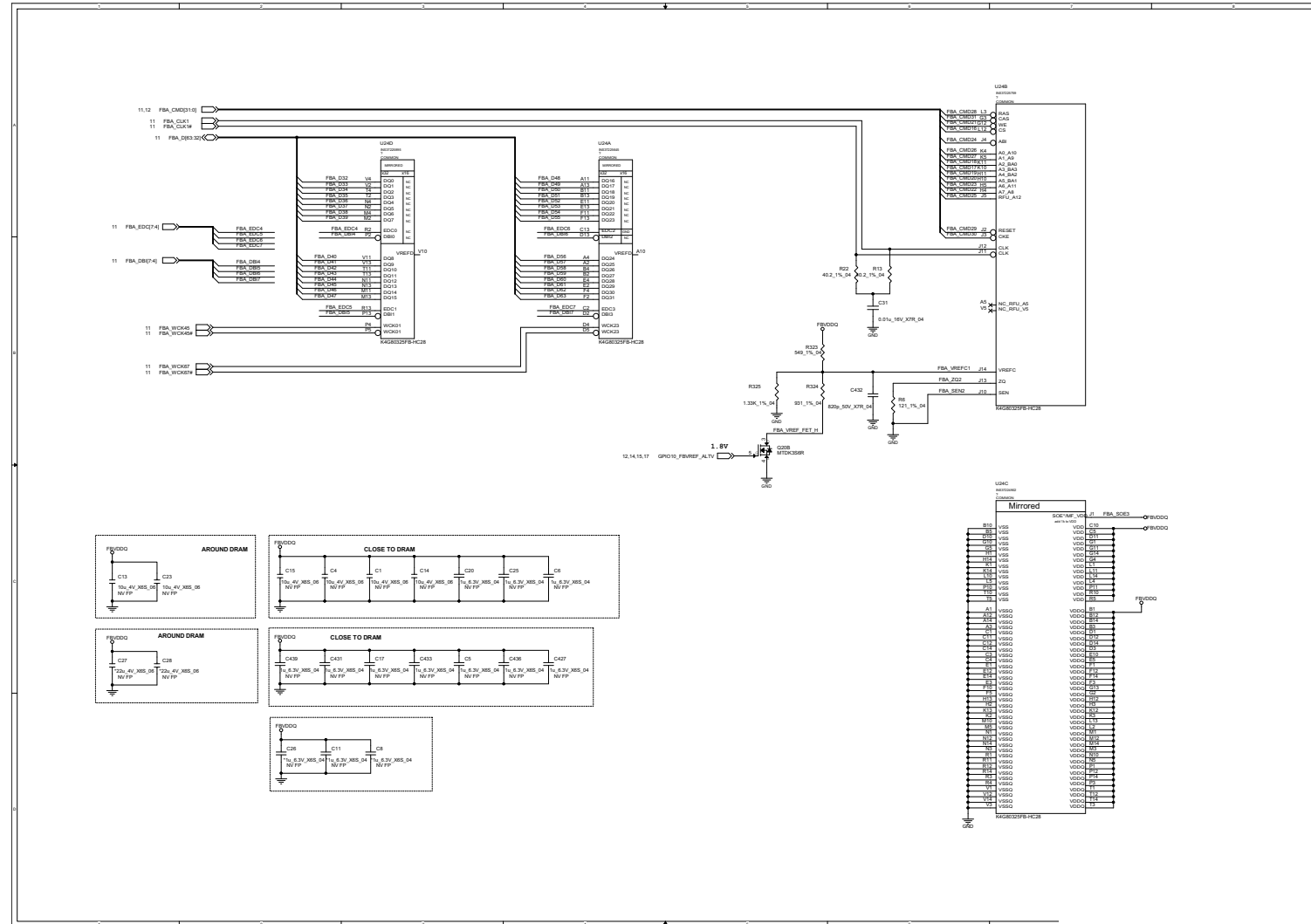
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Sheet 12 of 57  
VGA Frame Buffer  
A

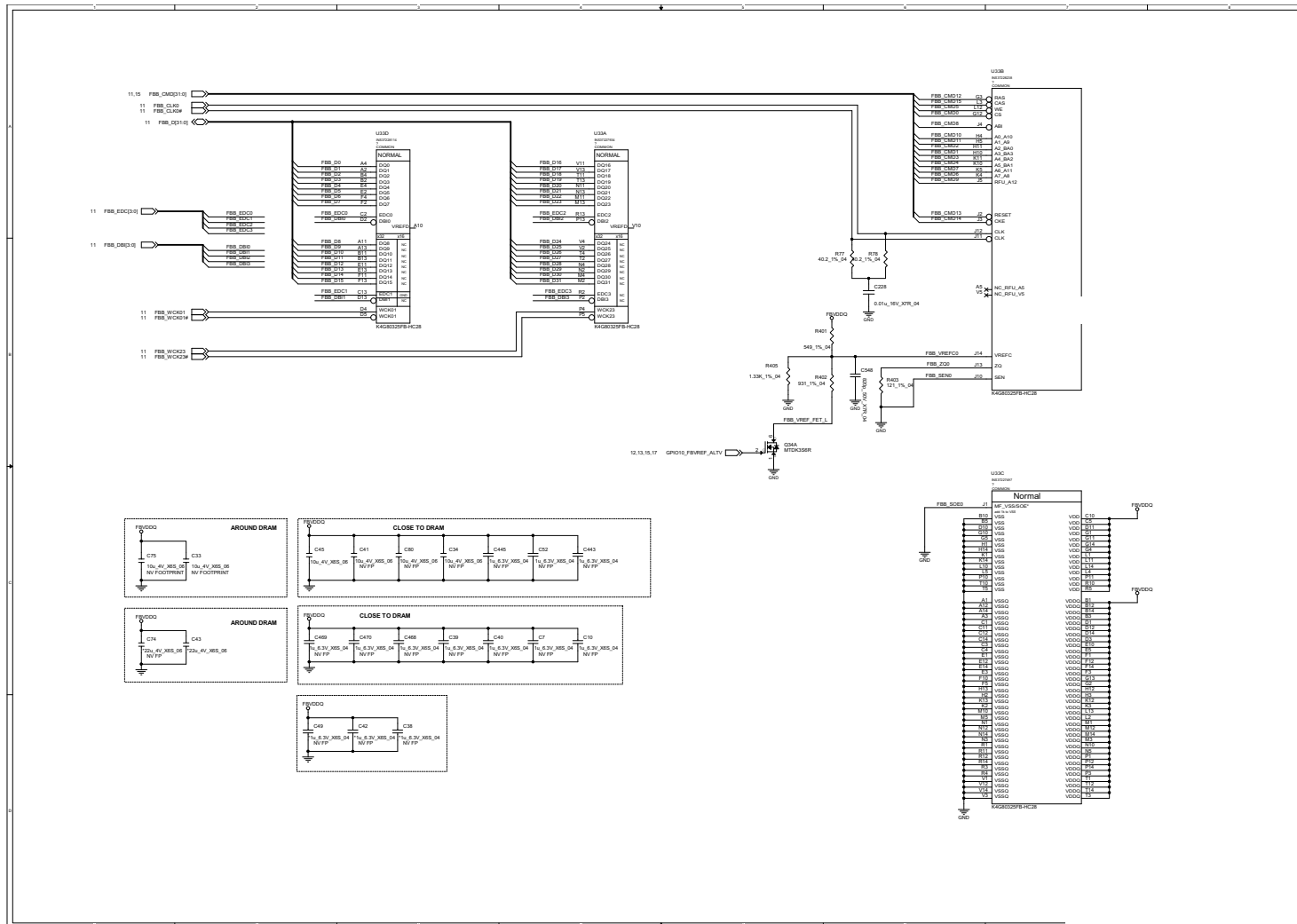
## VGA Frame Buffer A

## B. Schematic Diagrams

Sheet 13 of 57  
VGA Frame Buffer  
A



## VGA Frame Buffer B

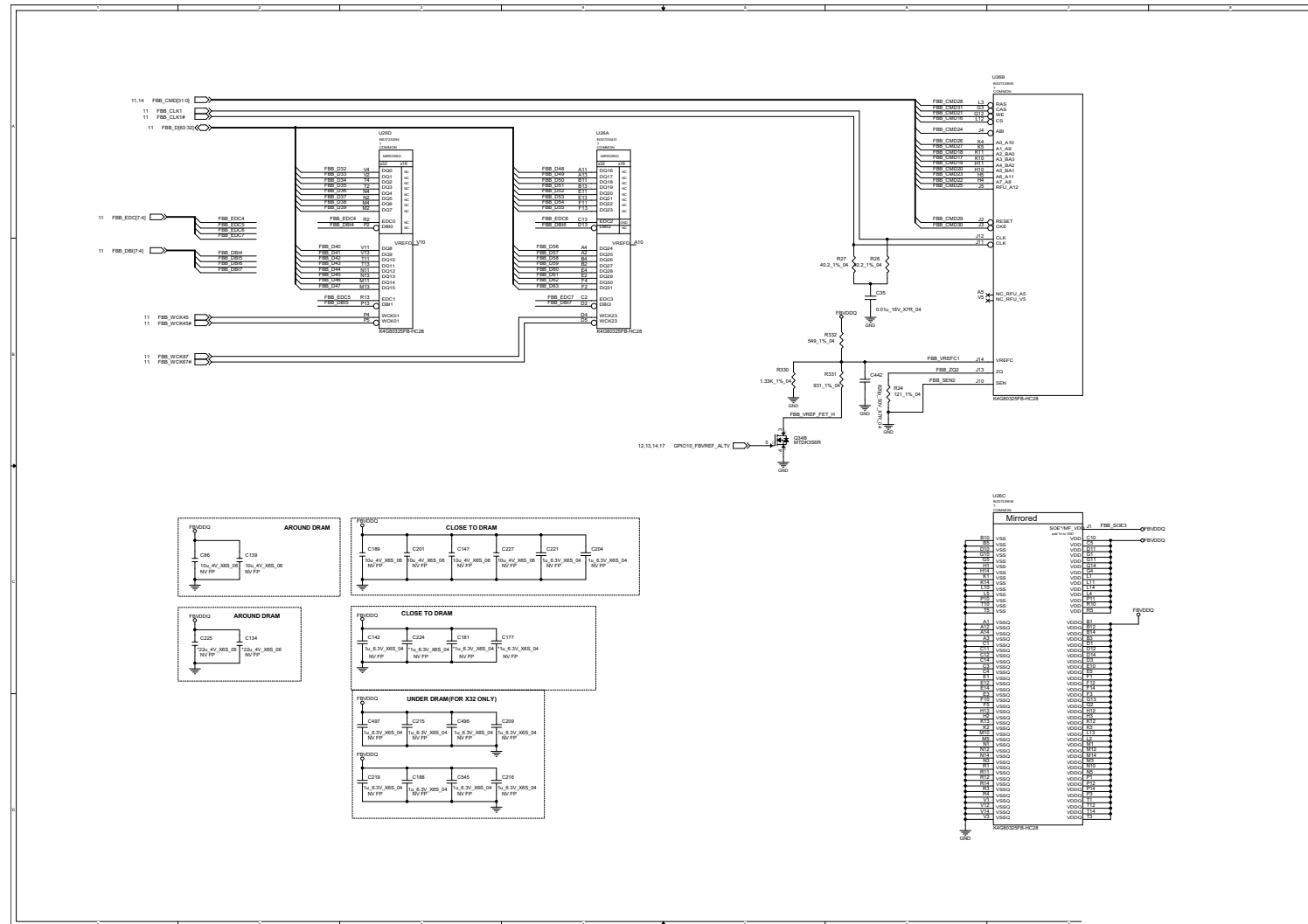




## VGA Frame Buffer B

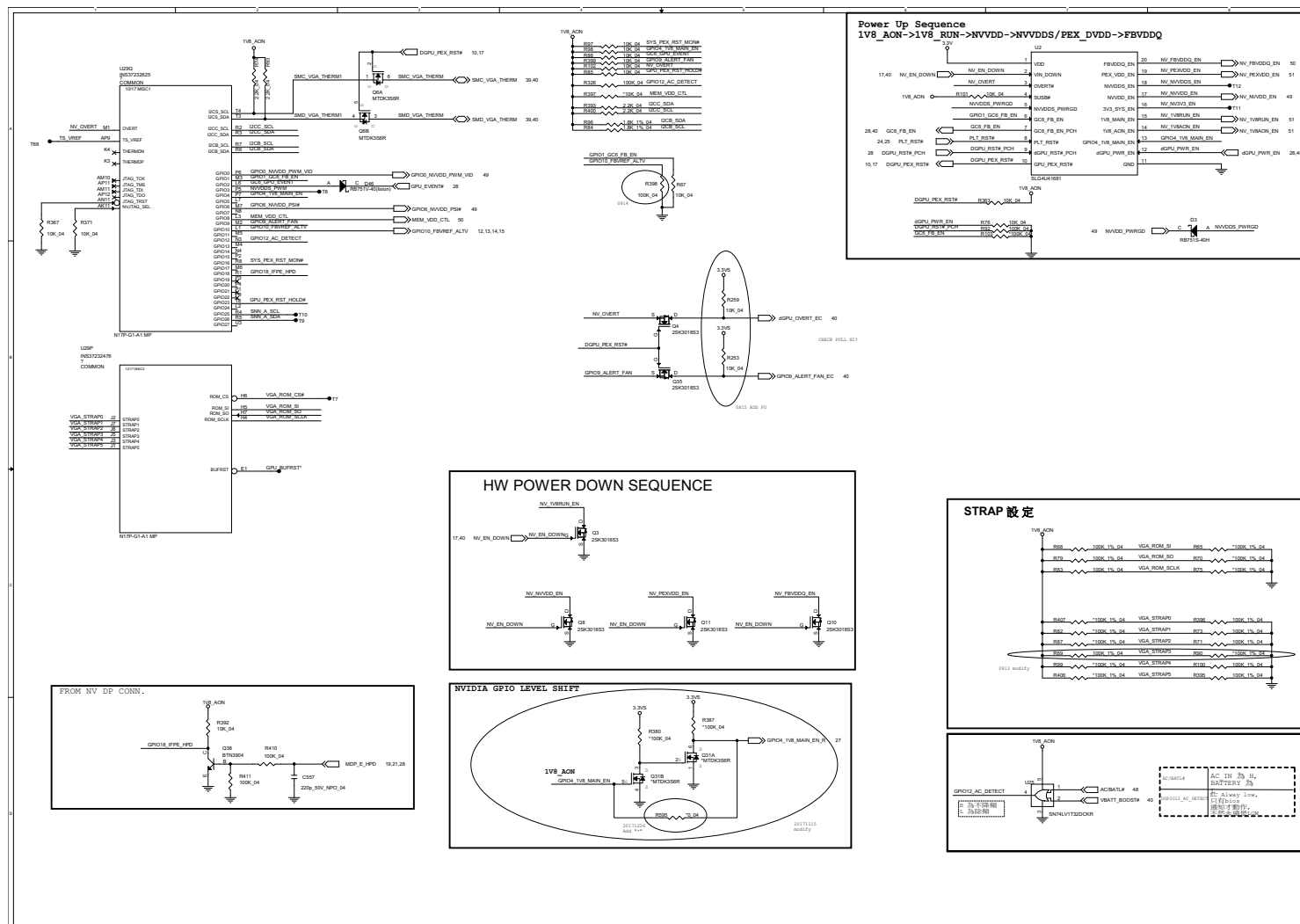
## B. Schematic Diagrams

**Sheet 15 of 57**  
**VGA Frame Buffer**  
**B**



VGA I/O B - 17

Sheet 17 of 57  
NVIDIA Power  
Sequence



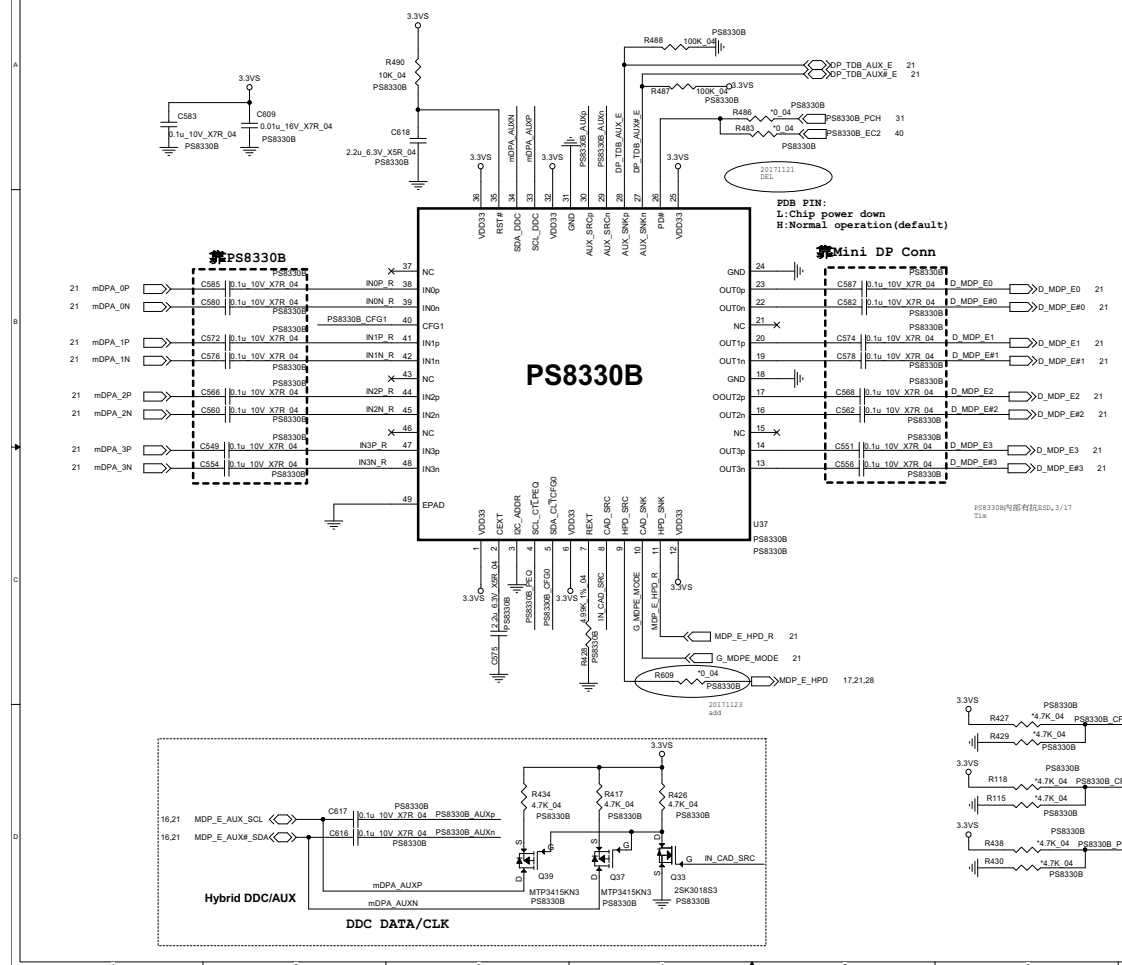
Sheet 18 of 57  
GPU Decoupling



**PS8330B**

### MINI DISPLAY PORT A (PS8330B)

零件數:41pcs



**DESIGN NOTE:PEQ**  
 Programmeable input equalization levels;internal pull down at-150k ,3.3v I/O  
 L: default, LEQ, compensate channel loss up to 12dB HBR2  
 H: HEQ, compensate channel loss up to 15dB at HBR2  
 M:LLEQ, compensate channel loss up to 50dB at HBR2

**DESIGN NOTE:CFG0**  
Configuration pin for automatic EQ and  
Aux interception; Internal pull down at  
~150Kohm, 3.3V I/O  
**L:** default, automatic EQ enable and Aux interception enable  
**H:** automatic EQ disable and AUX interception enable  
**M:** automatic EQ disable and AUX interception  
disable.no pre-emphasis, 600mVpp swing

**DESIGN NOTE: CFG1**

Configuration pin for auto test and input offset cancellation, 3.3V IO, internal pull up at ~150K

H: default, auto test disable and input offset cancellation enable

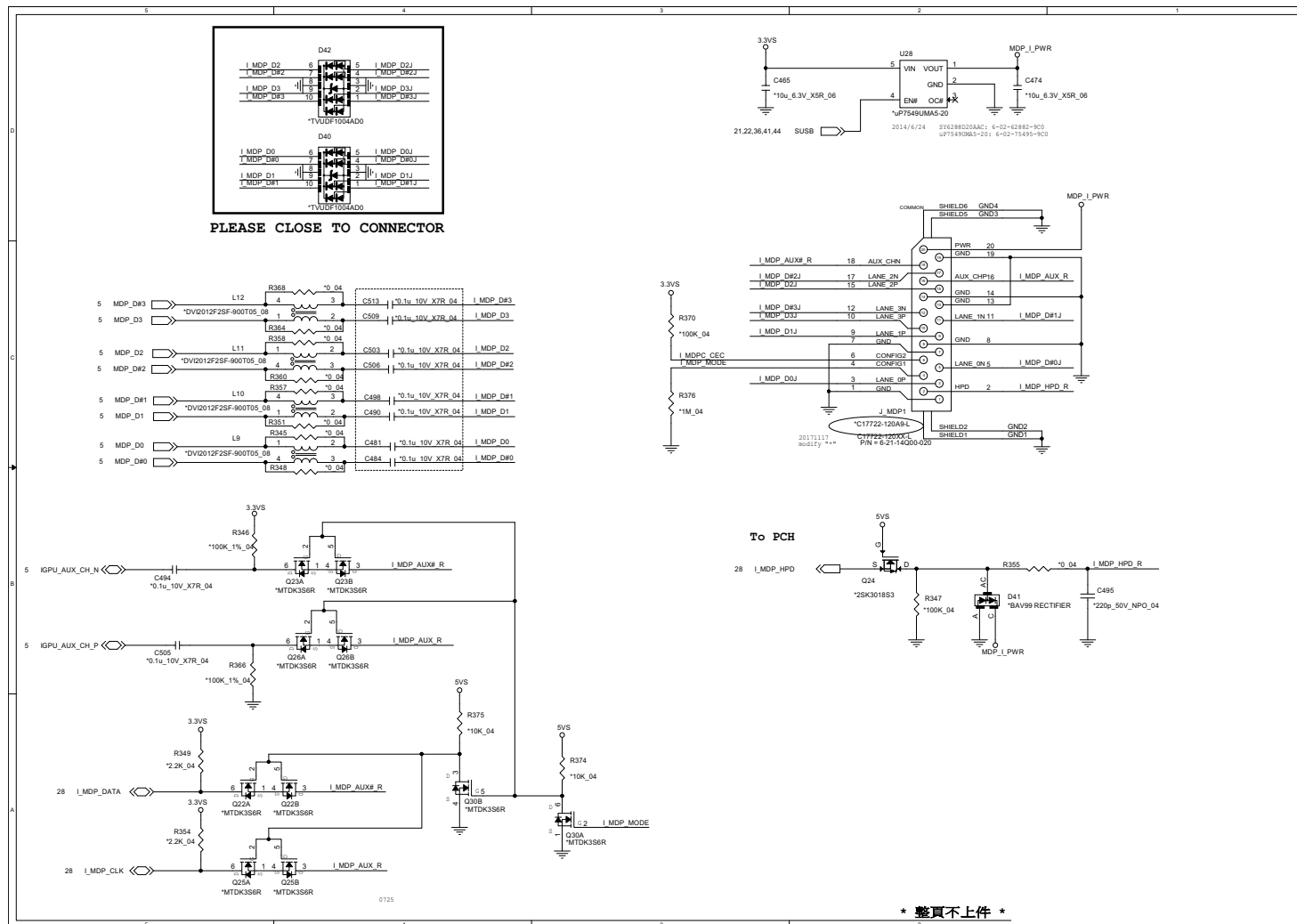
L: auto test enable and input offset cancellation enable

Mc: auto test disable and input offset cancellation disable



## Schematic Diagrams

# MDP

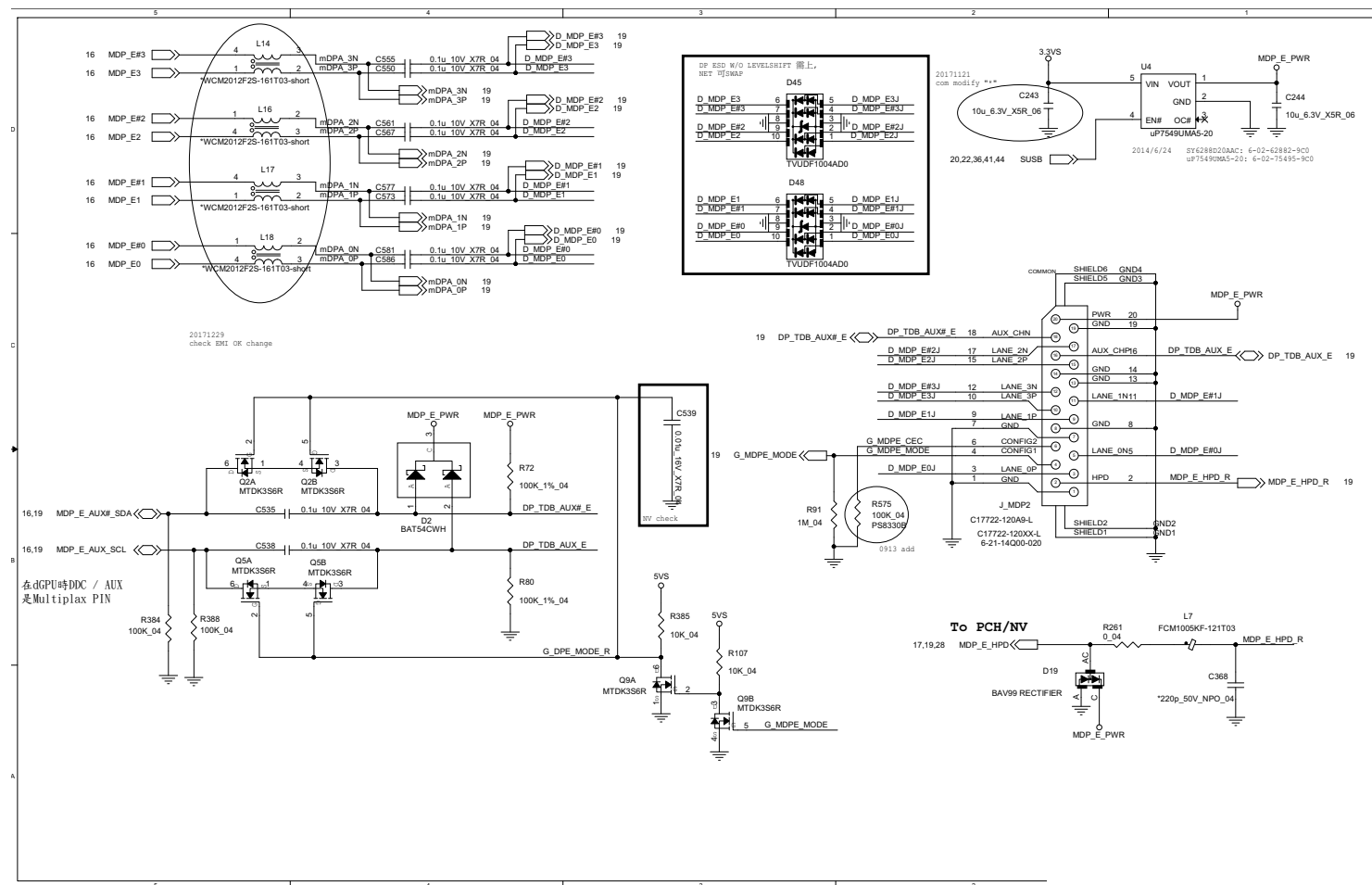


**Sheet 20 of 57**  
**MDP**

## B.Schematic Diagrams

## MDP

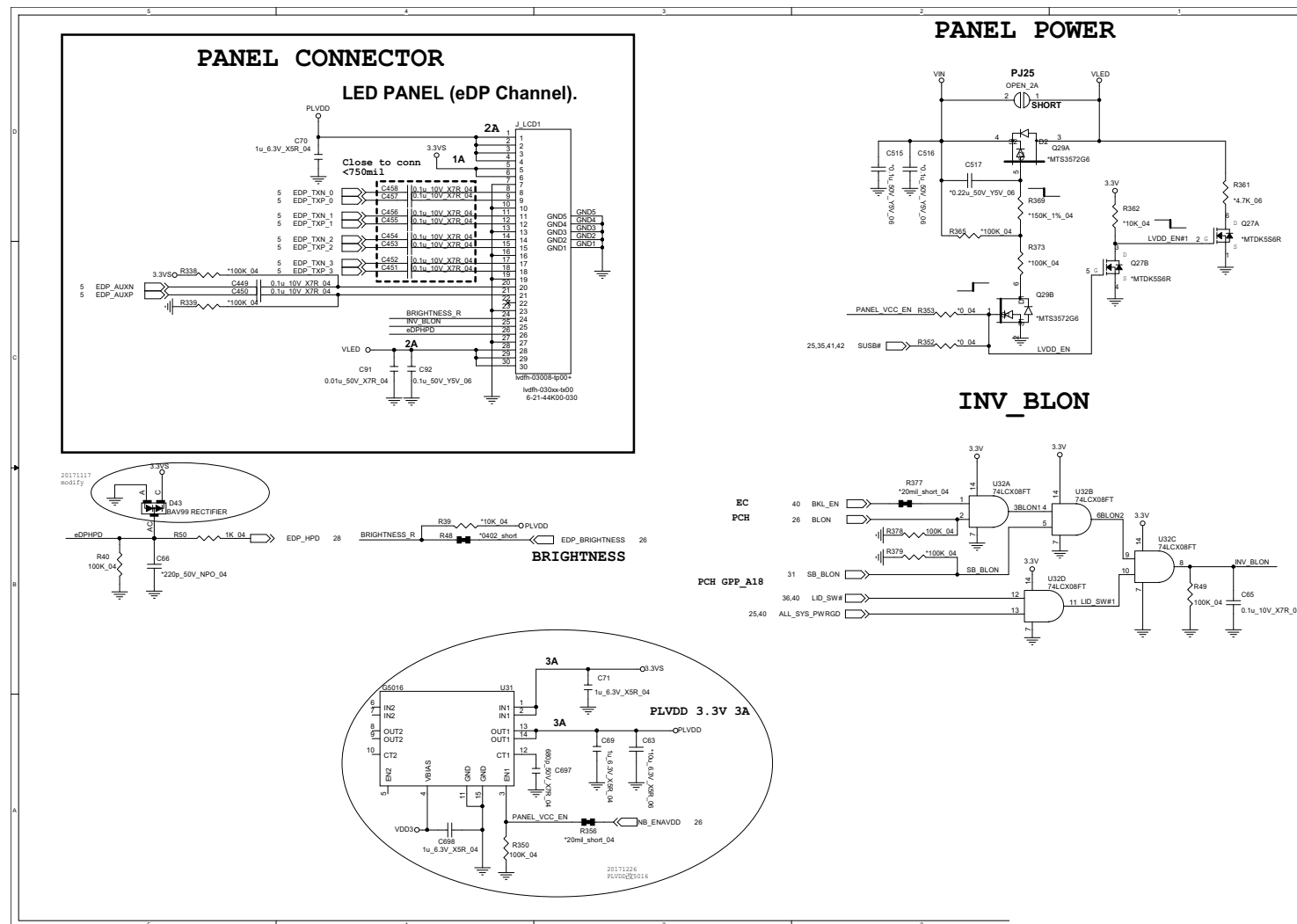
**Sheet 21 of 57**  
**MDP**



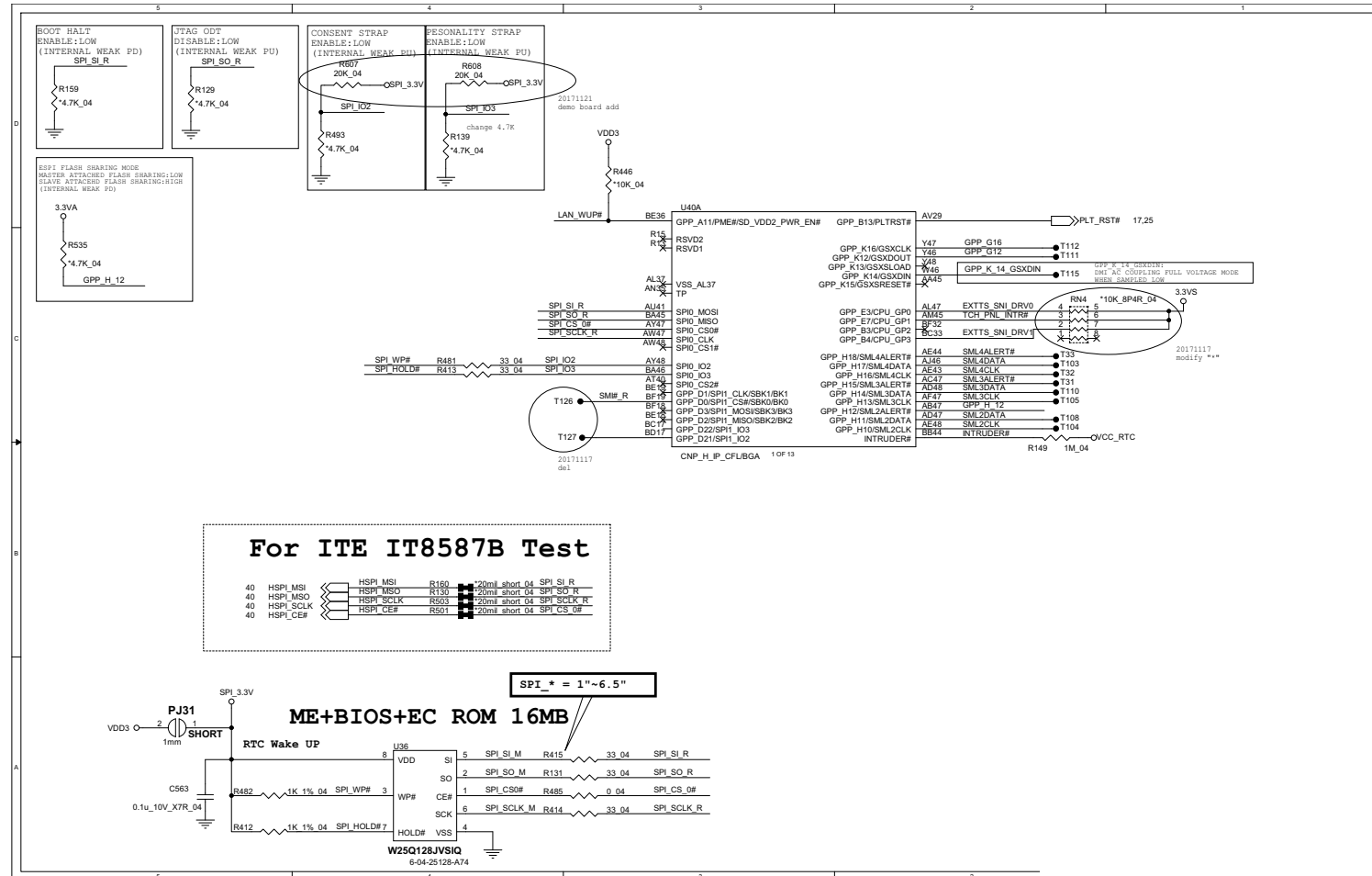
Sheet 22 of 57  
HDMI

## B.Schematic Diagrams

**Sheet 23 of 57**  
**Panel, Inverter**



## PCH 1/9

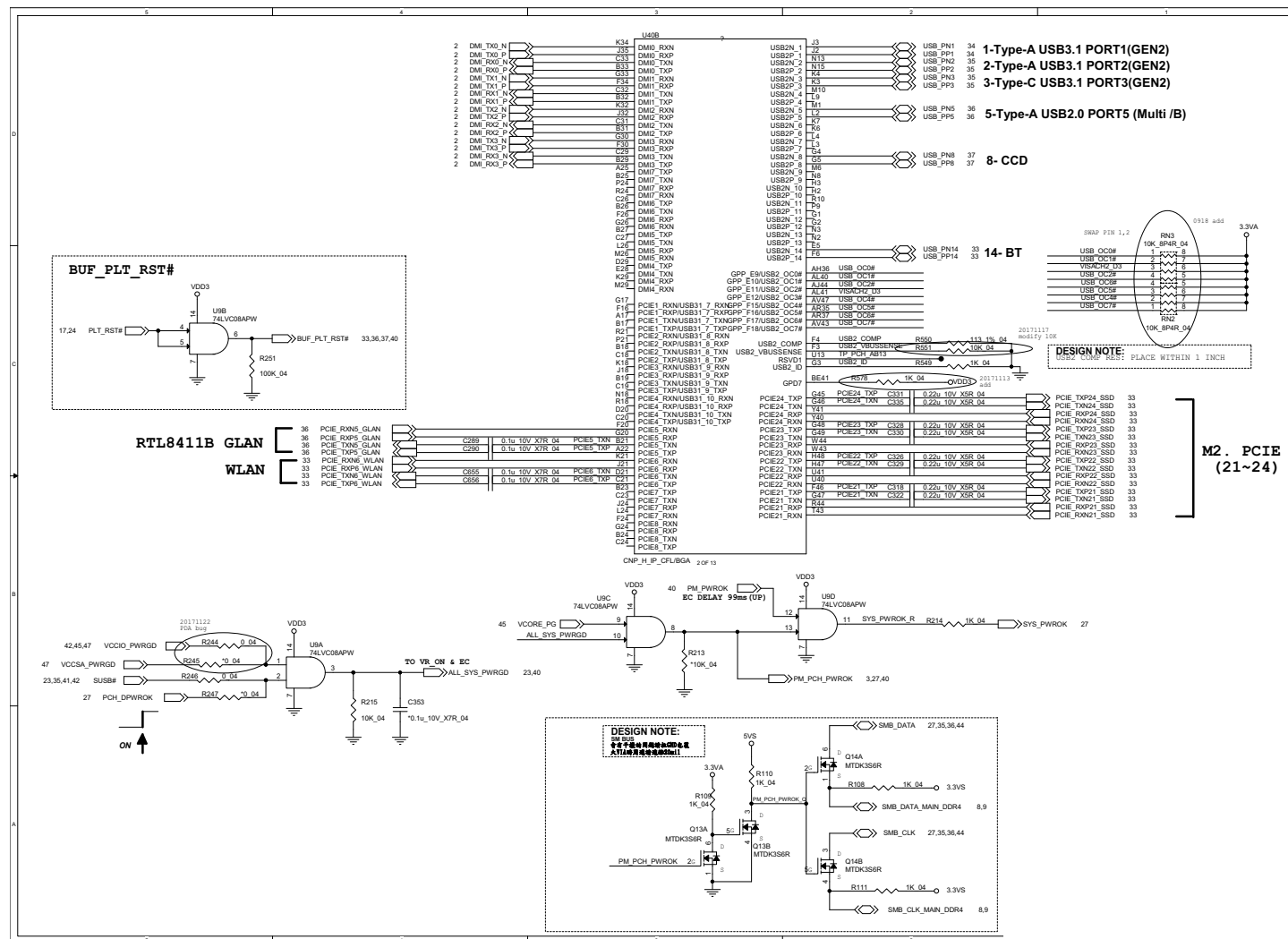
Sheet 24 of 57  
PCH 1/9



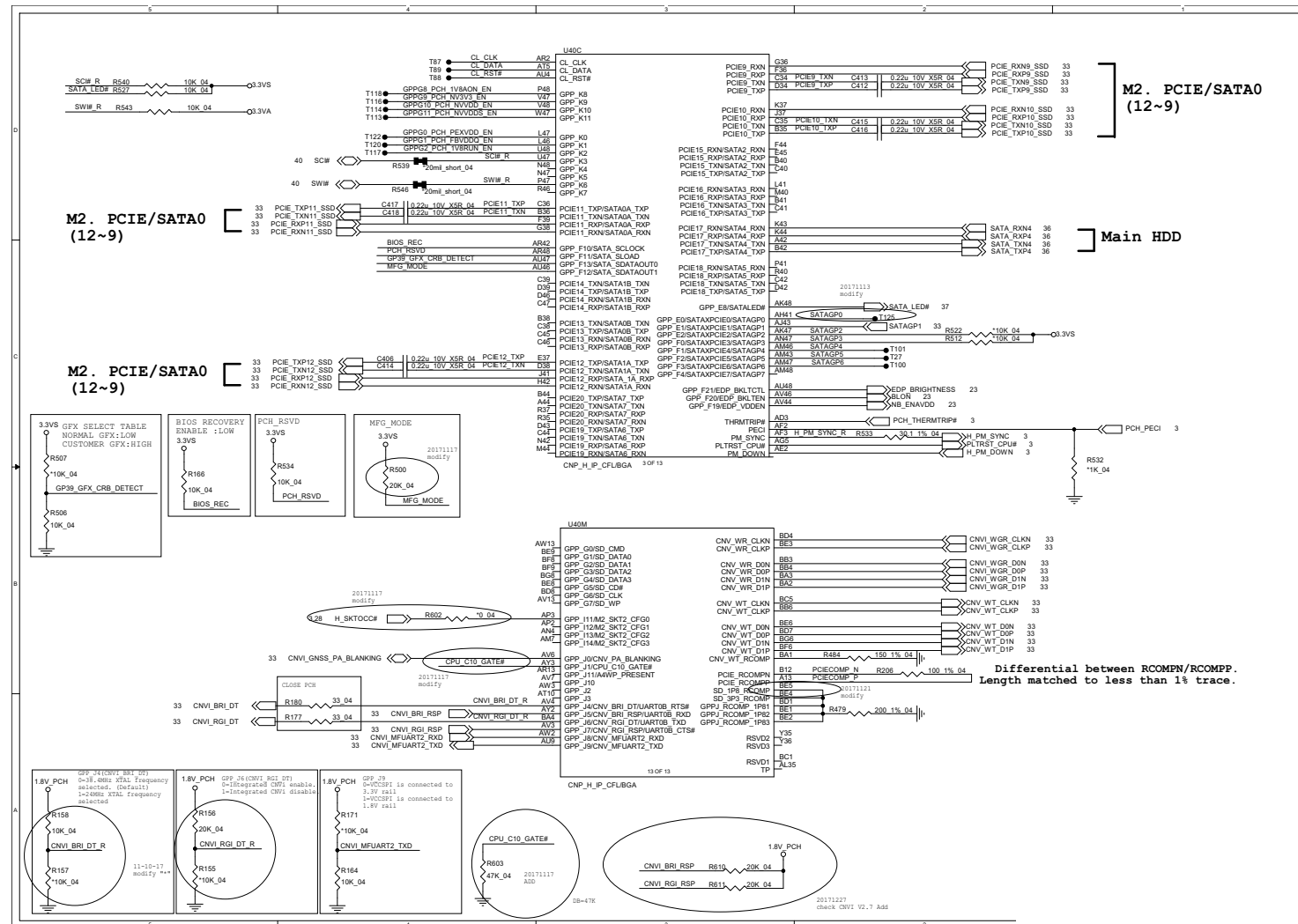
**PCH 2/9**

## B. Schematic Diagrams

Sheet 25 of 57  
PCH 2/9

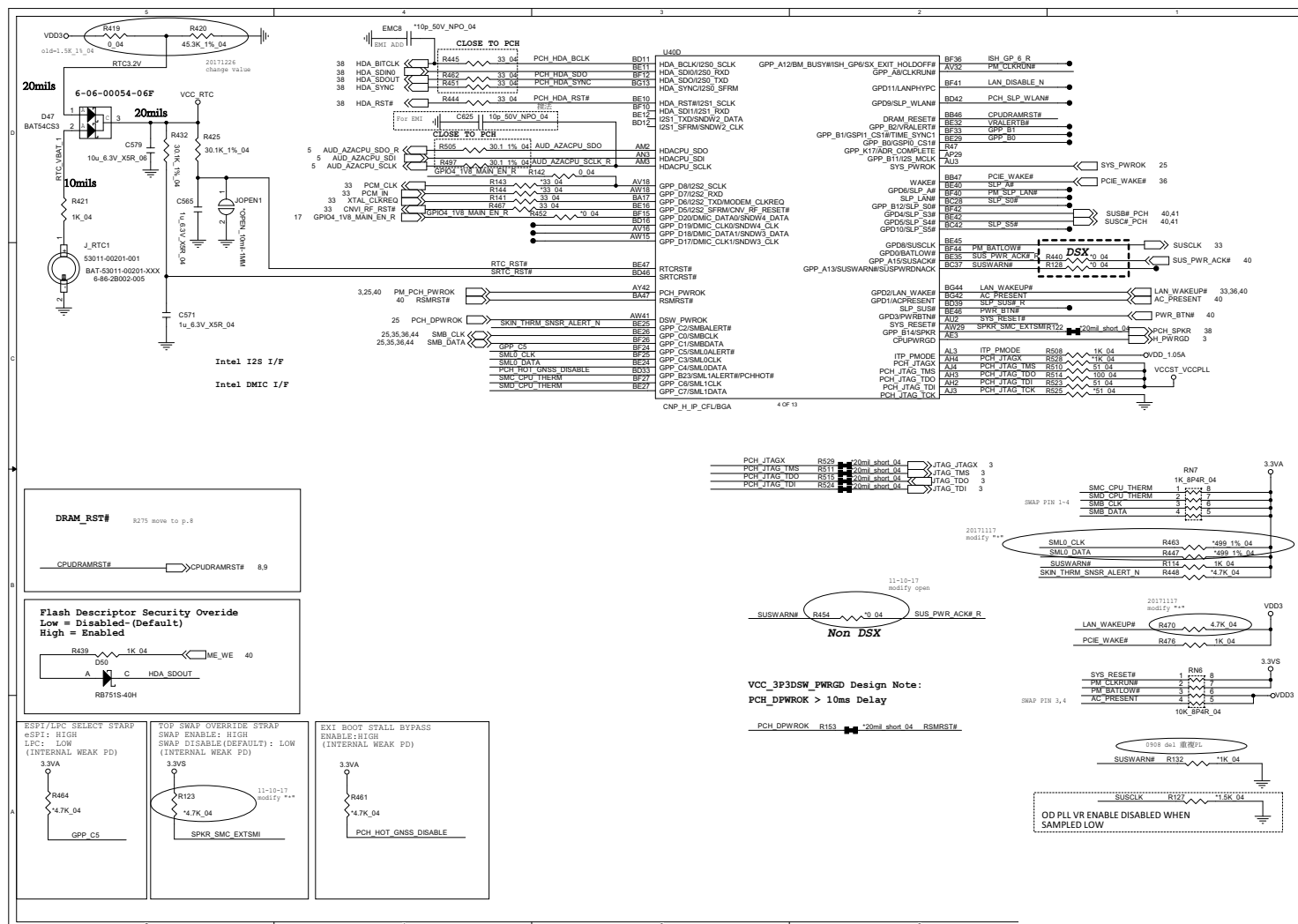


## PCH 3/9

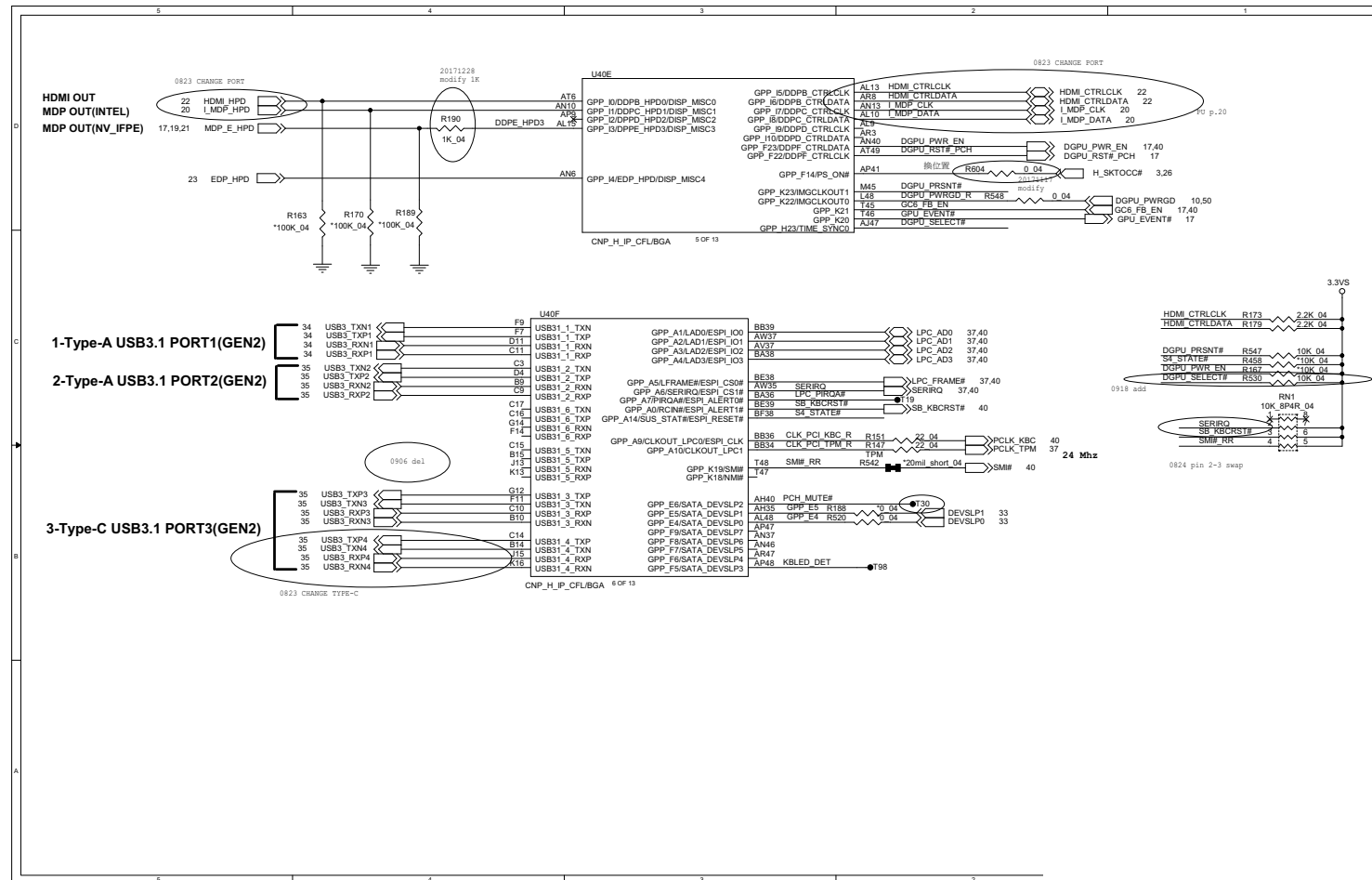
Sheet 26 of 57  
PCH 3/9

**PCH 4/9**

## B.Schematic Diagrams

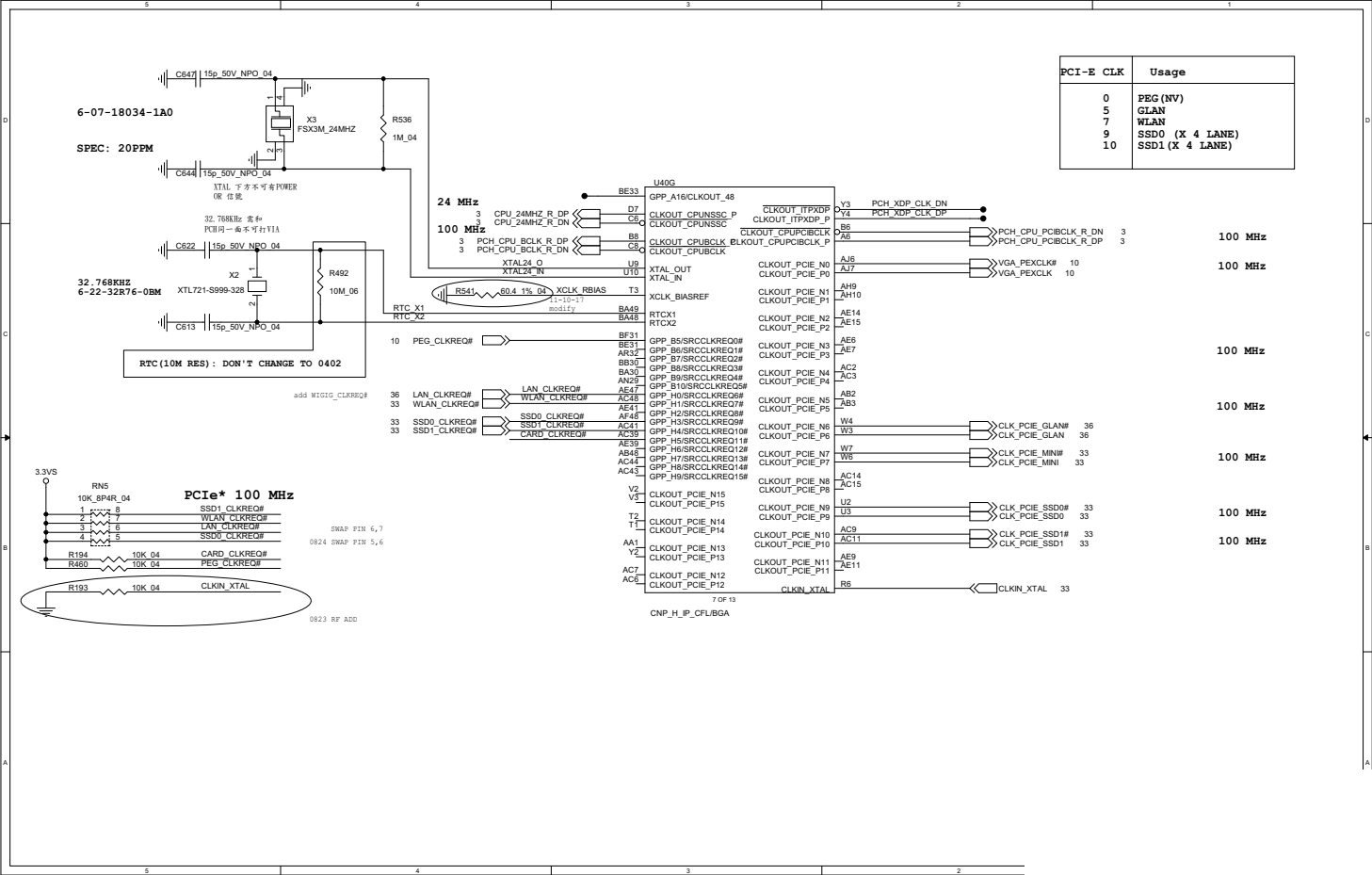


## PCH 5/9

Sheet 28 of 57  
PCH 5/9

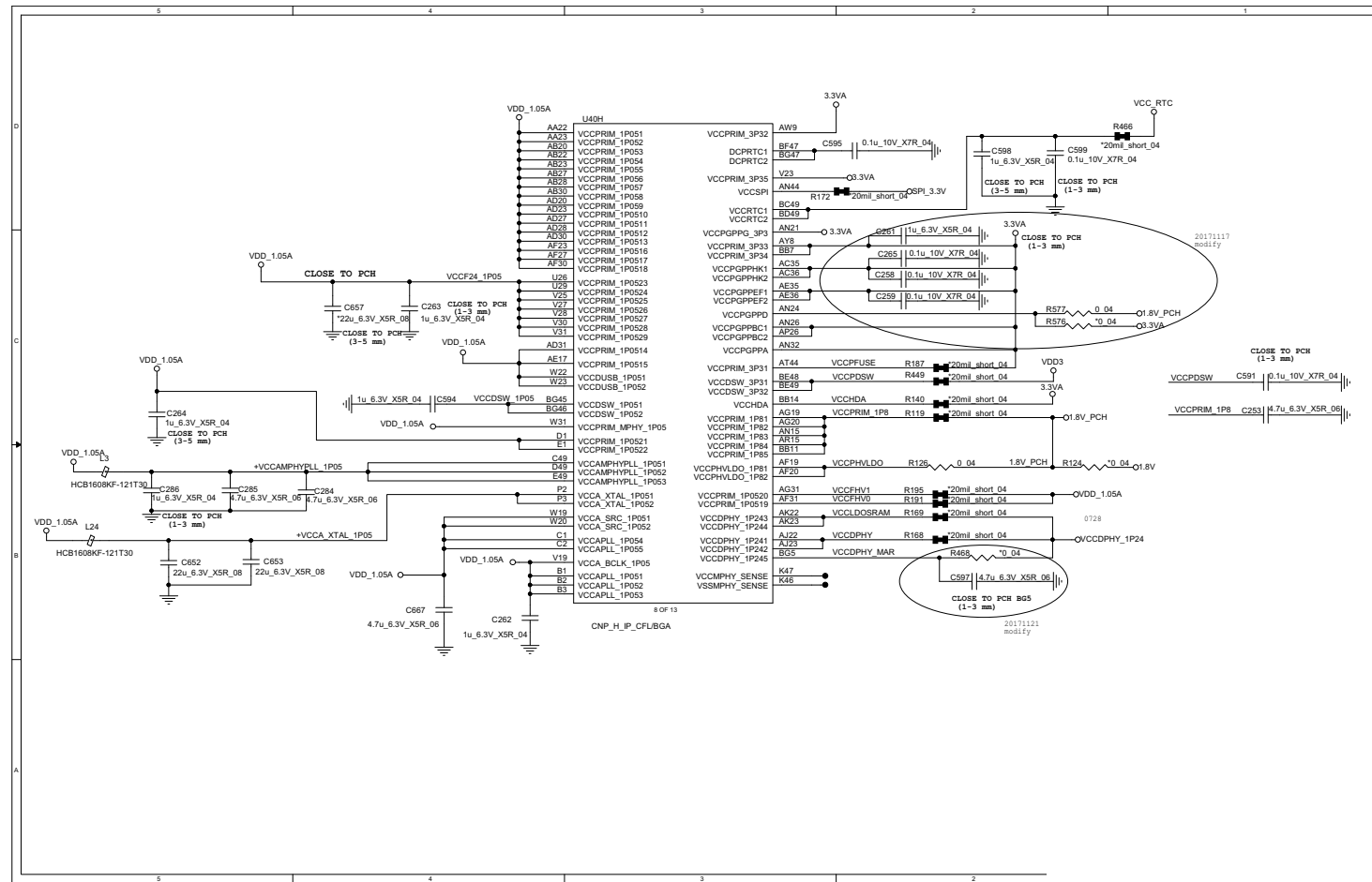
PCH 6/9

Sheet 29 of 57  
PCH 6/9





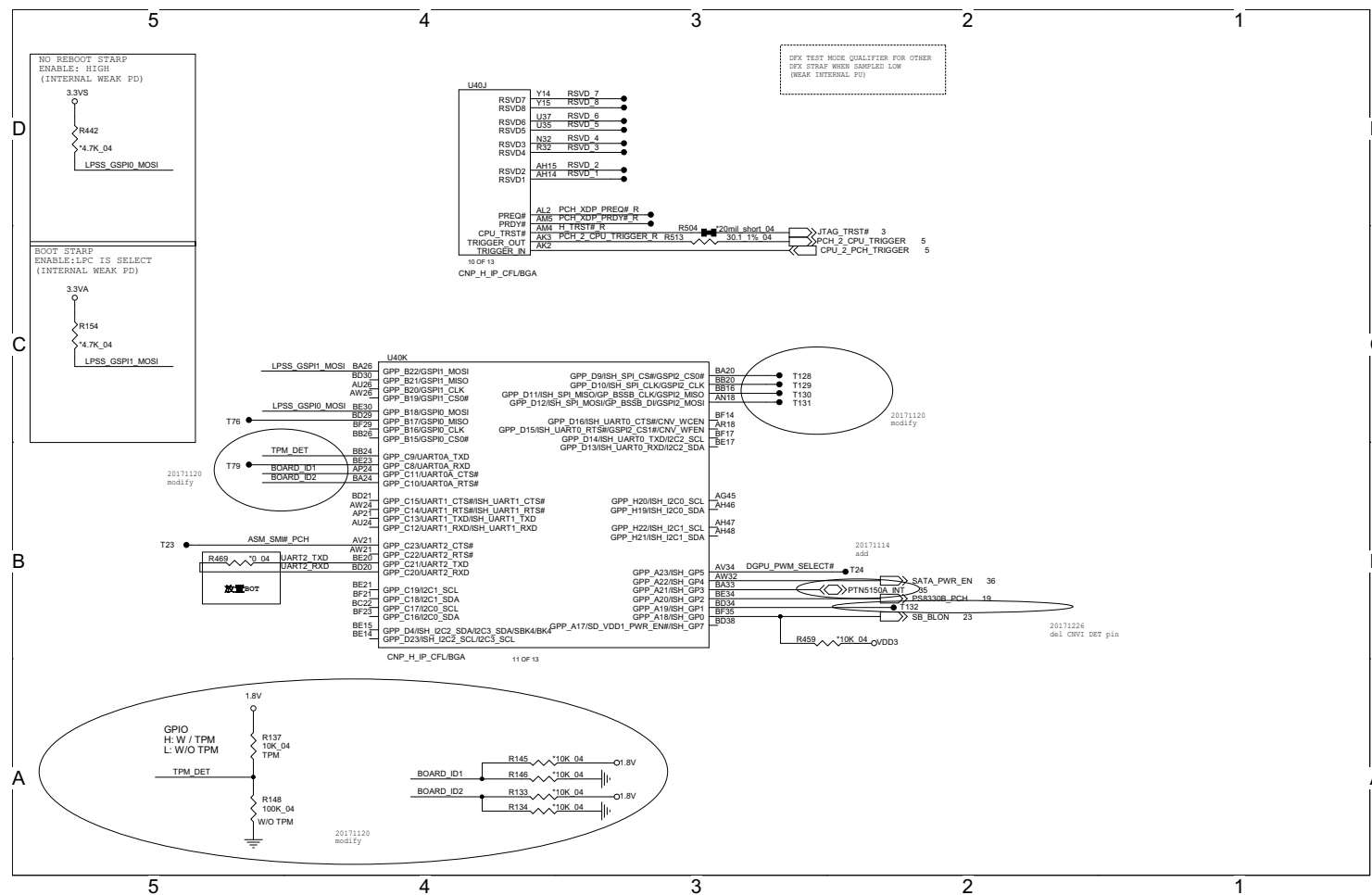
## PCH 7/9



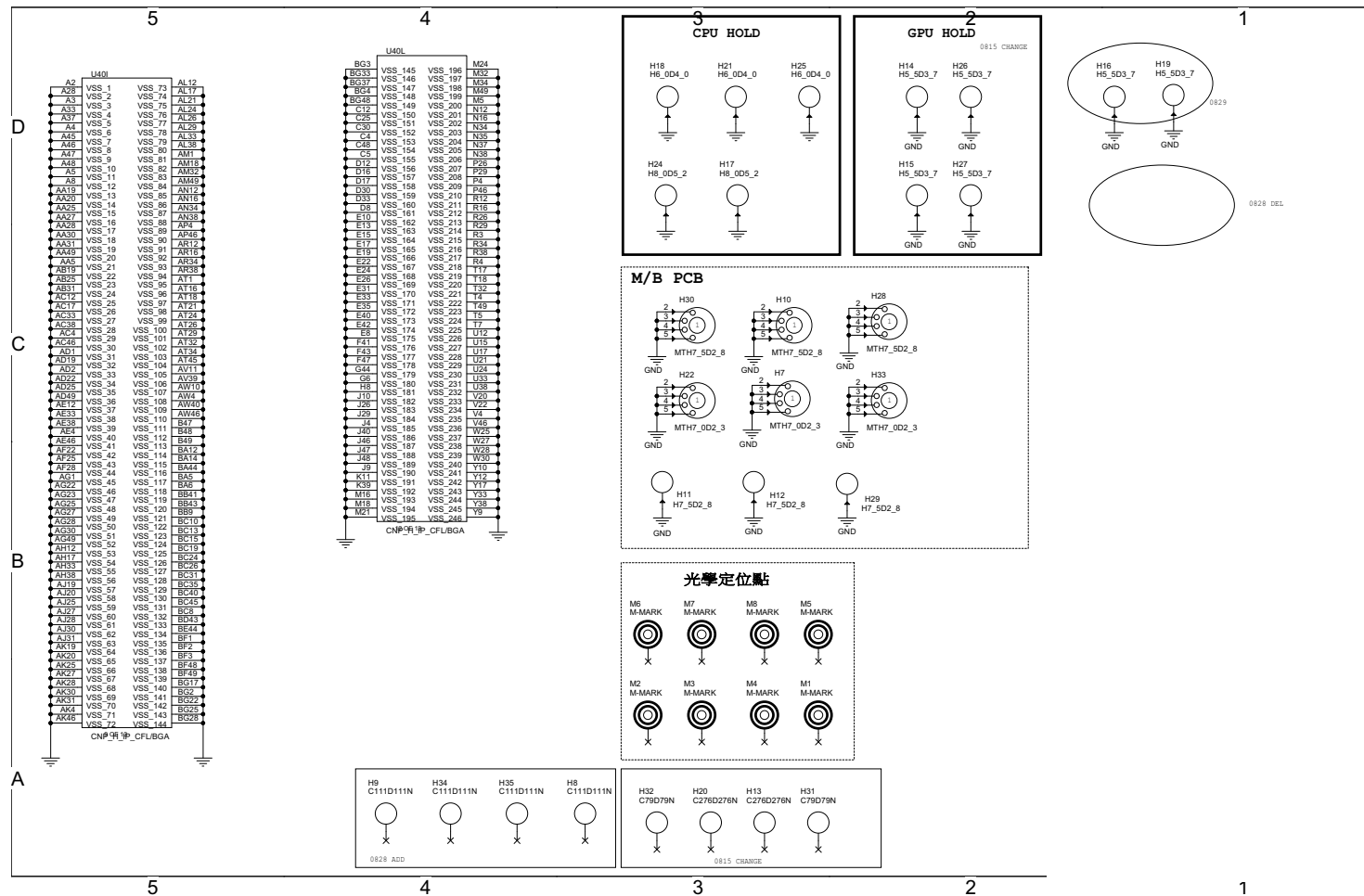
Sheet 30 of 57  
PCH 7/9

**PCH 8/9**

## B. Schematic Diagrams



## PCH 9/9

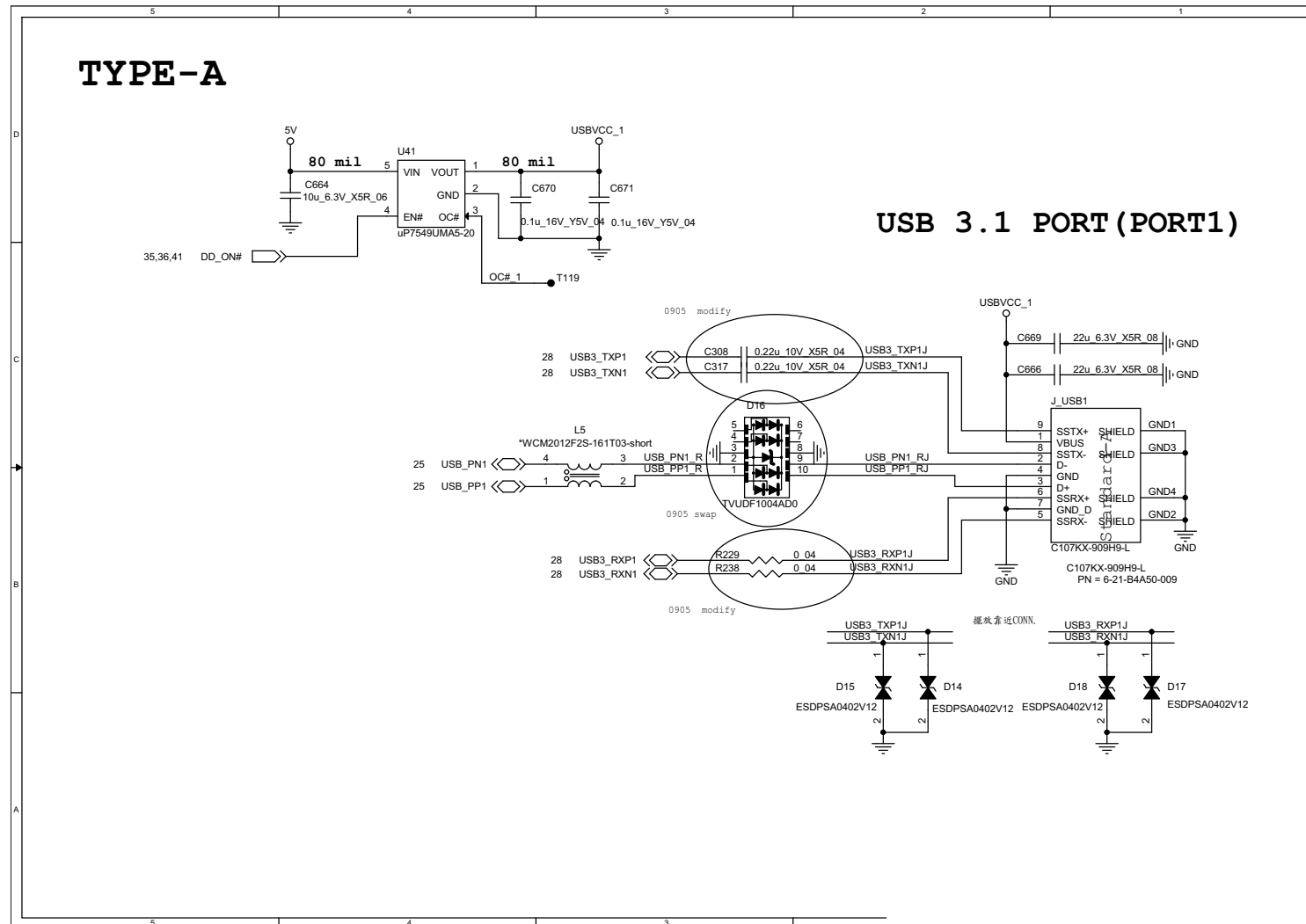


Sheet 32 of 57  
PCH 9/9

Sheet 33 of 57  
M.2 WLAN+BT,  
SSD



# USB Type-A

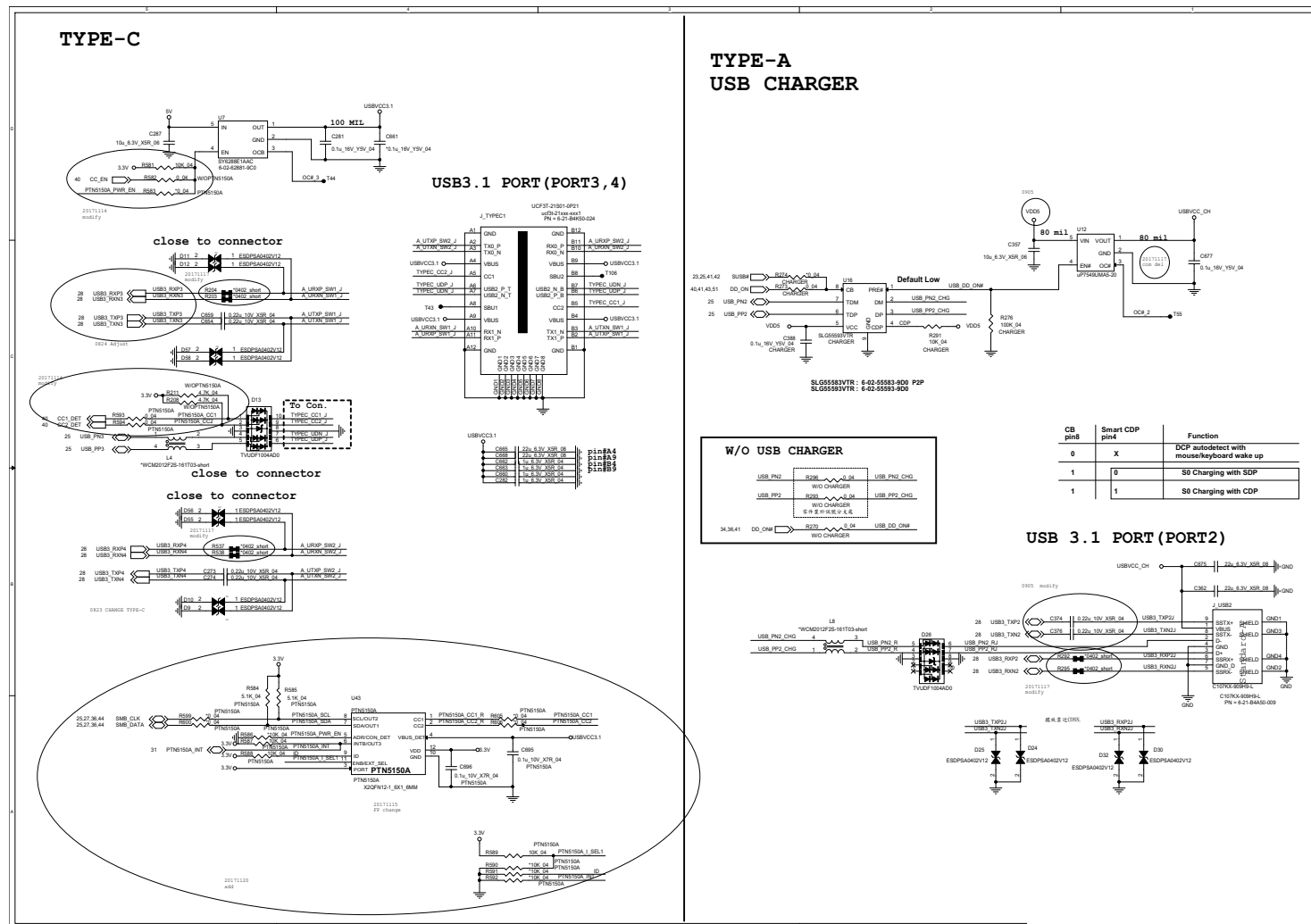


Sheet 34 of 57  
USB Type-A



## USB Conn, USB Charger

Sheet 35 of 57  
USB Conn,  
USB Charger



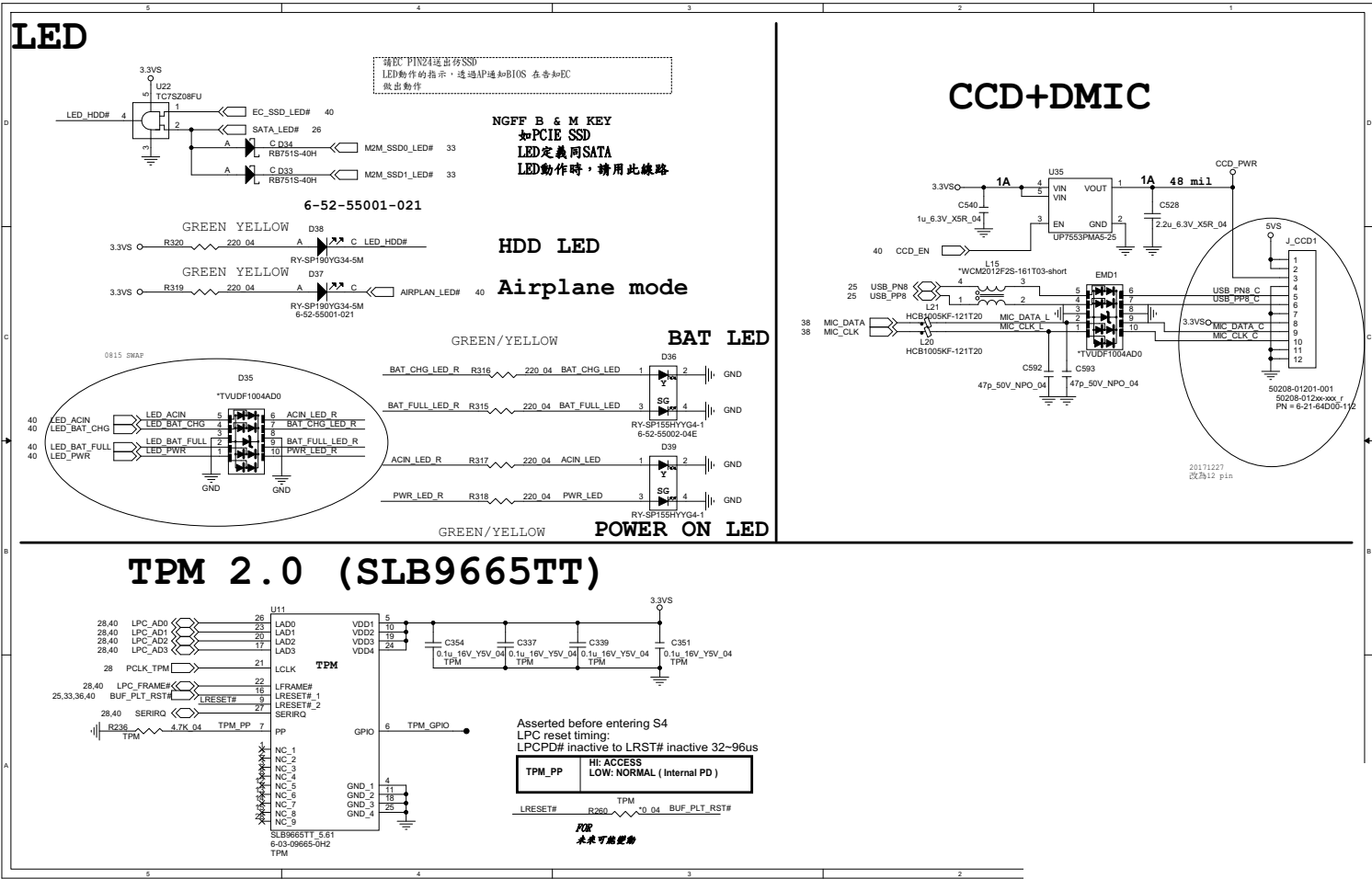
Sheet 36 of 57  
HDD, Click TP,  
Audio, Hall Con.



Schematic Diagrams

LED, CCD, TPM

Sheet 37 of 57  
LED, CCD, TPM



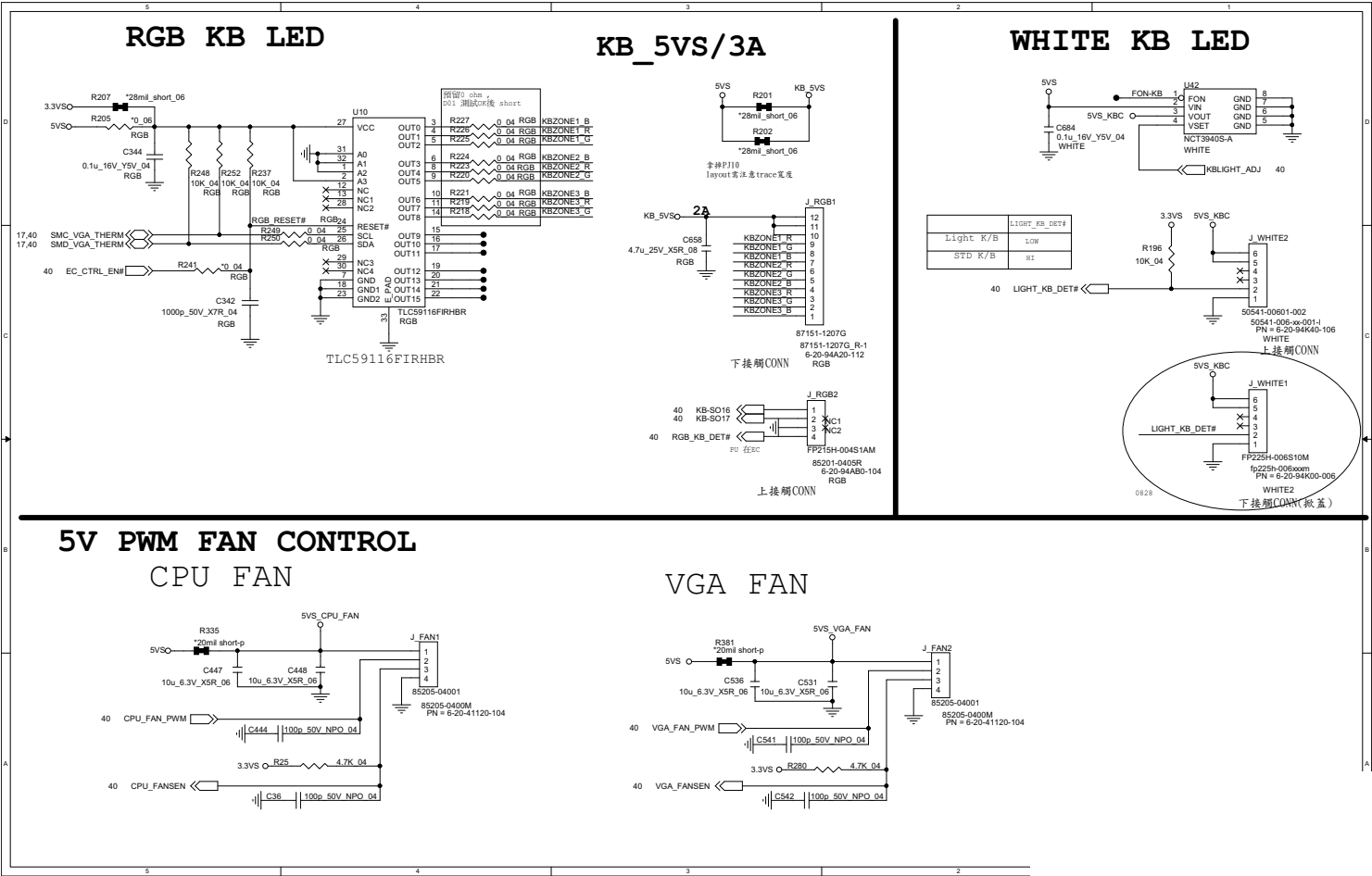
Sheet 38 of 57  
Audio Codec  
ALC269 VC2



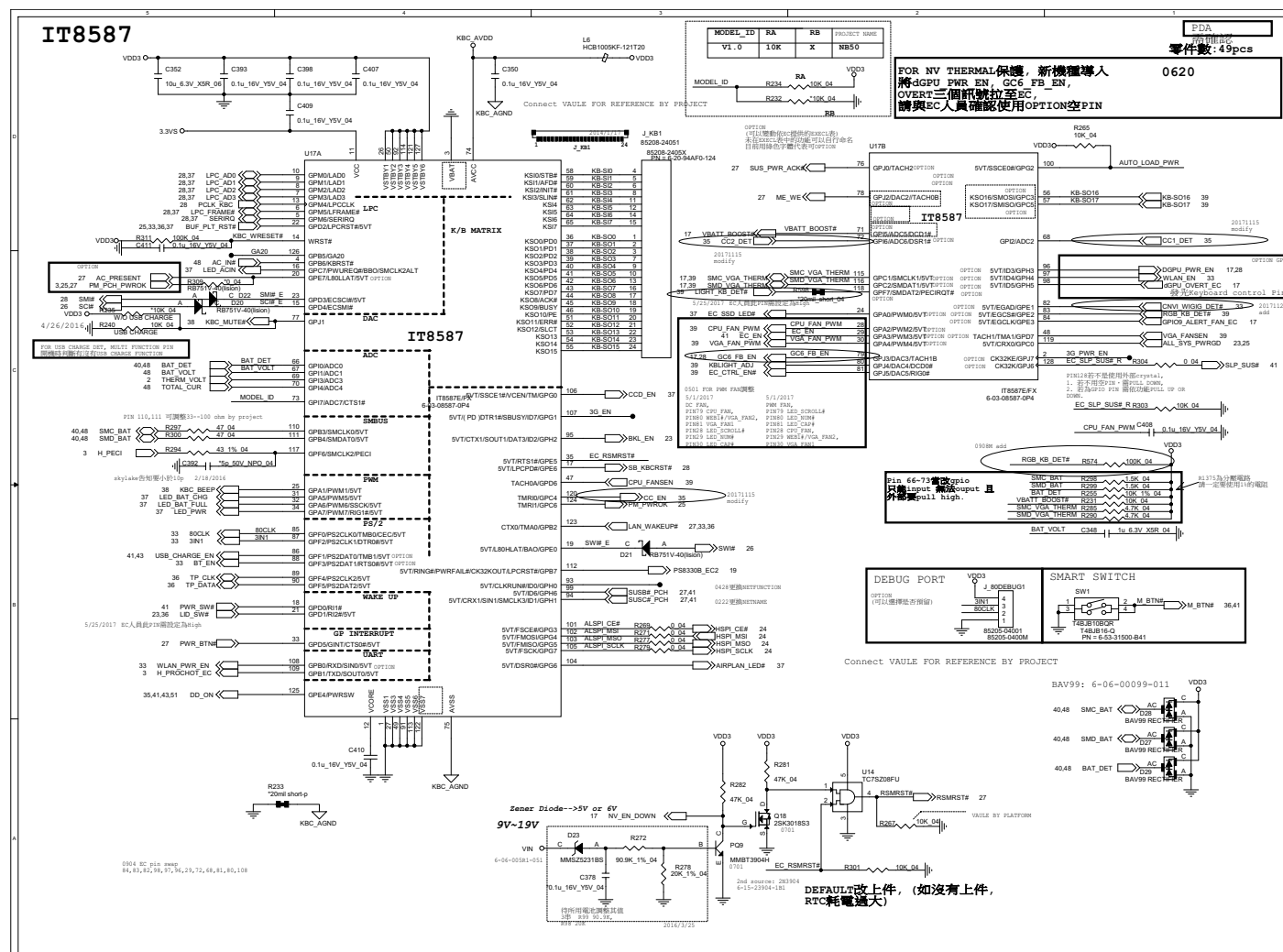
Schematic Diagrams

White/RGB KB, Fan

Sheet 39 of 57  
White/RGB KB, Fan



**KBC-ITE IT8587 B - 41**

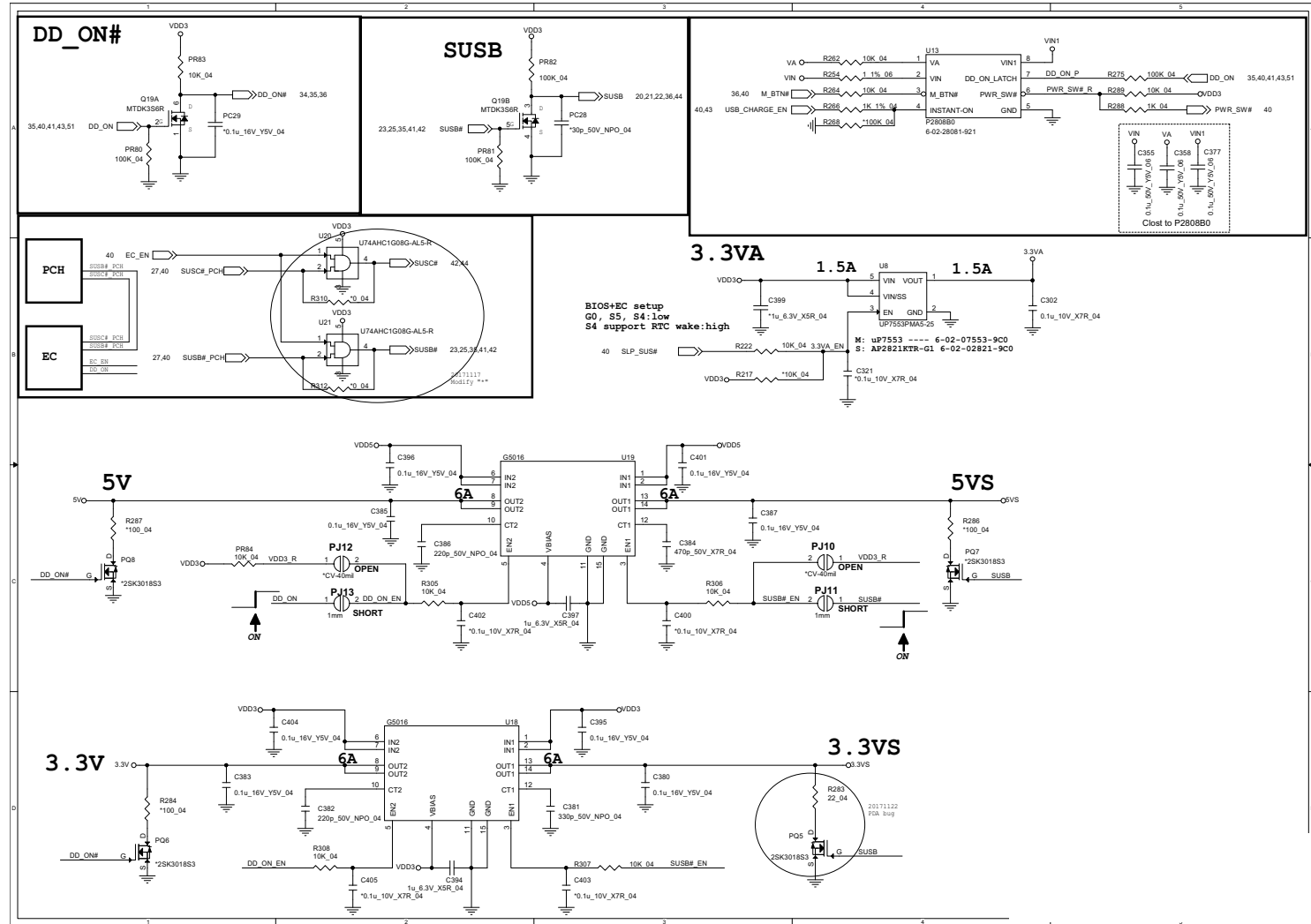




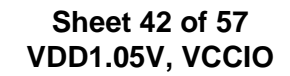
## Schematic Diagrams

## 5V, 5VS, 3.3V, 3.3VS, 3.3VA

Sheet 41 of 57  
5V, 5VS, 3.3V,  
3.3VS, 3.3VA

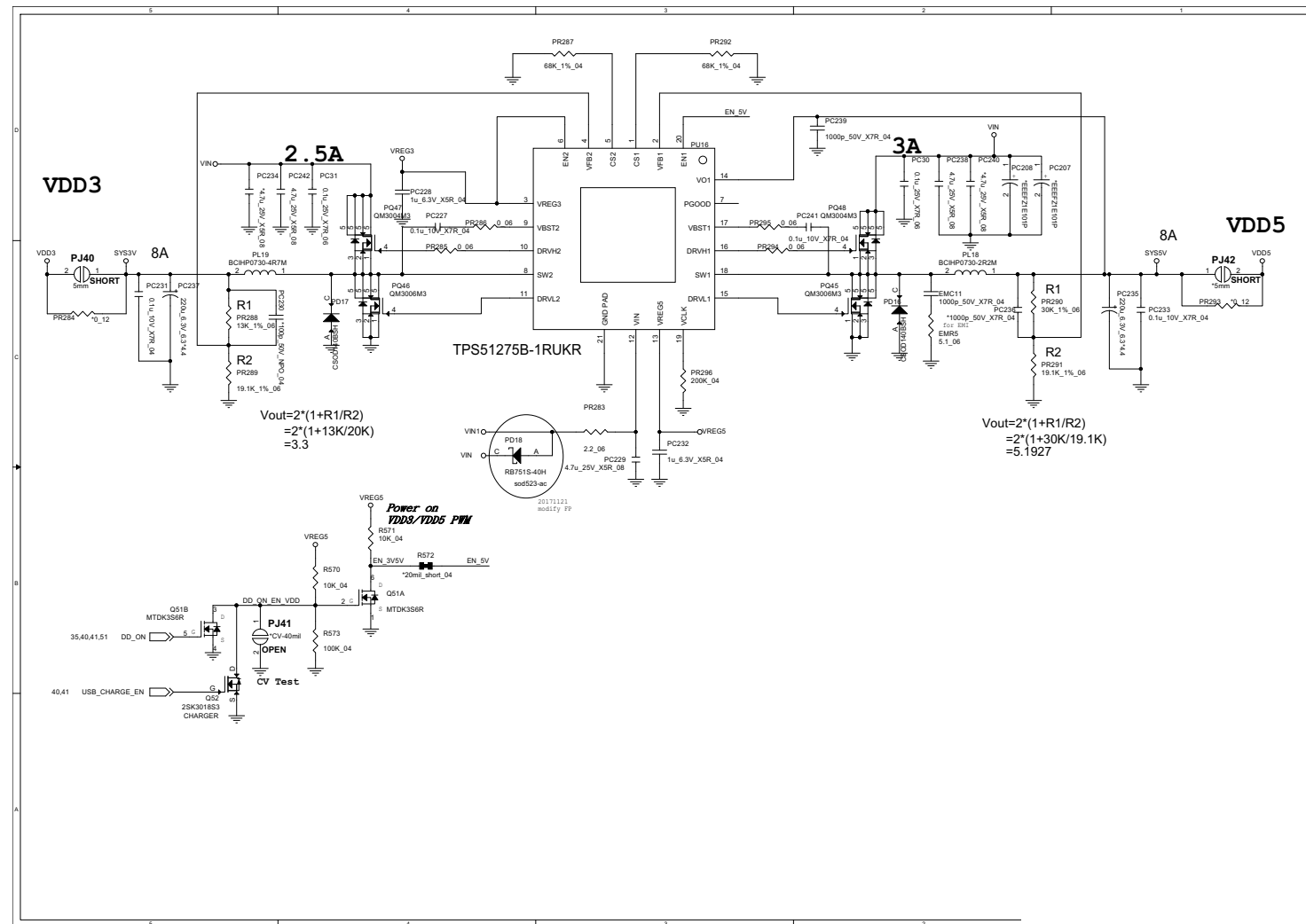


## VDD1.05V, VCCIO B - 43

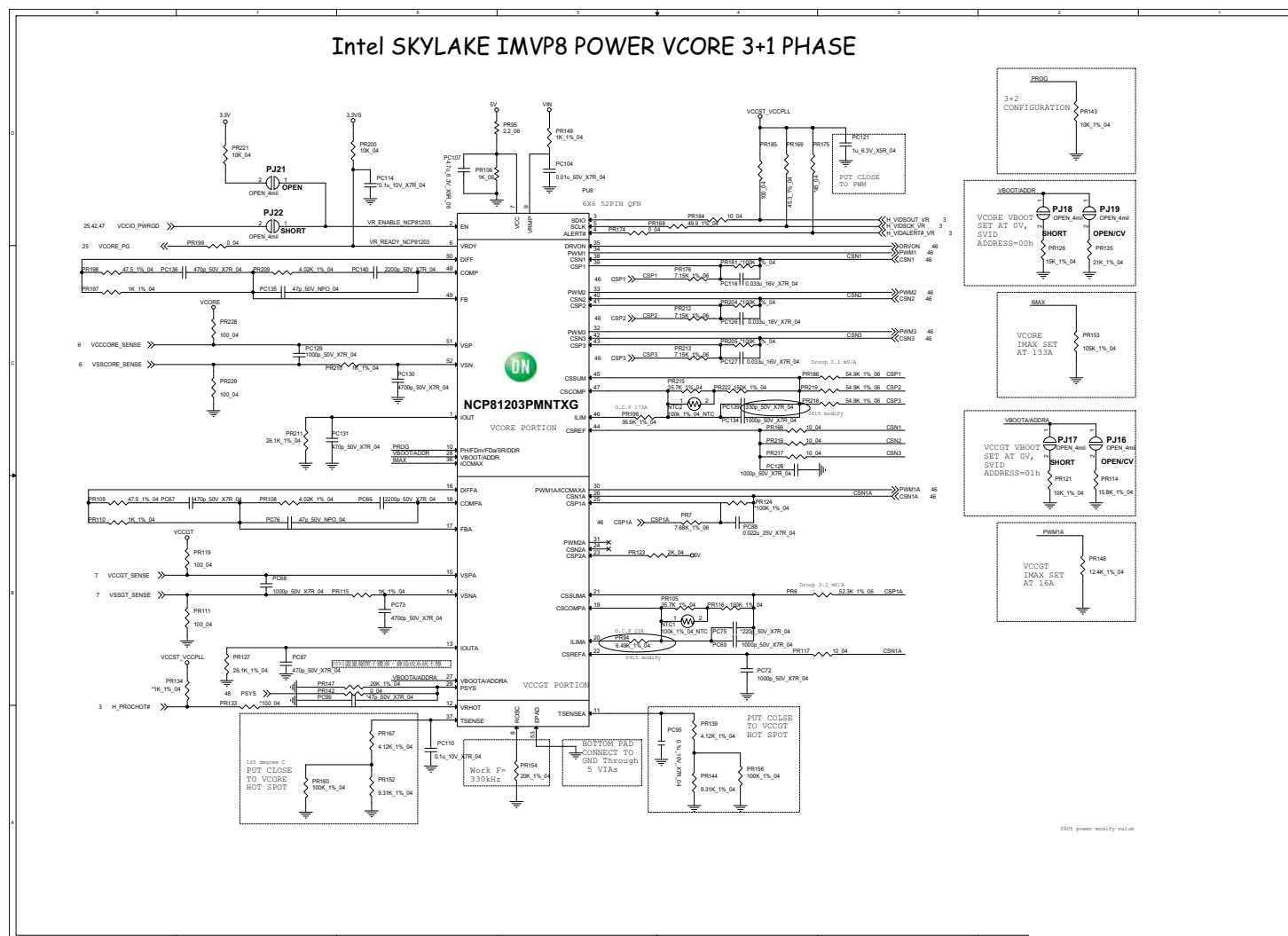


## VDD3, VDD5

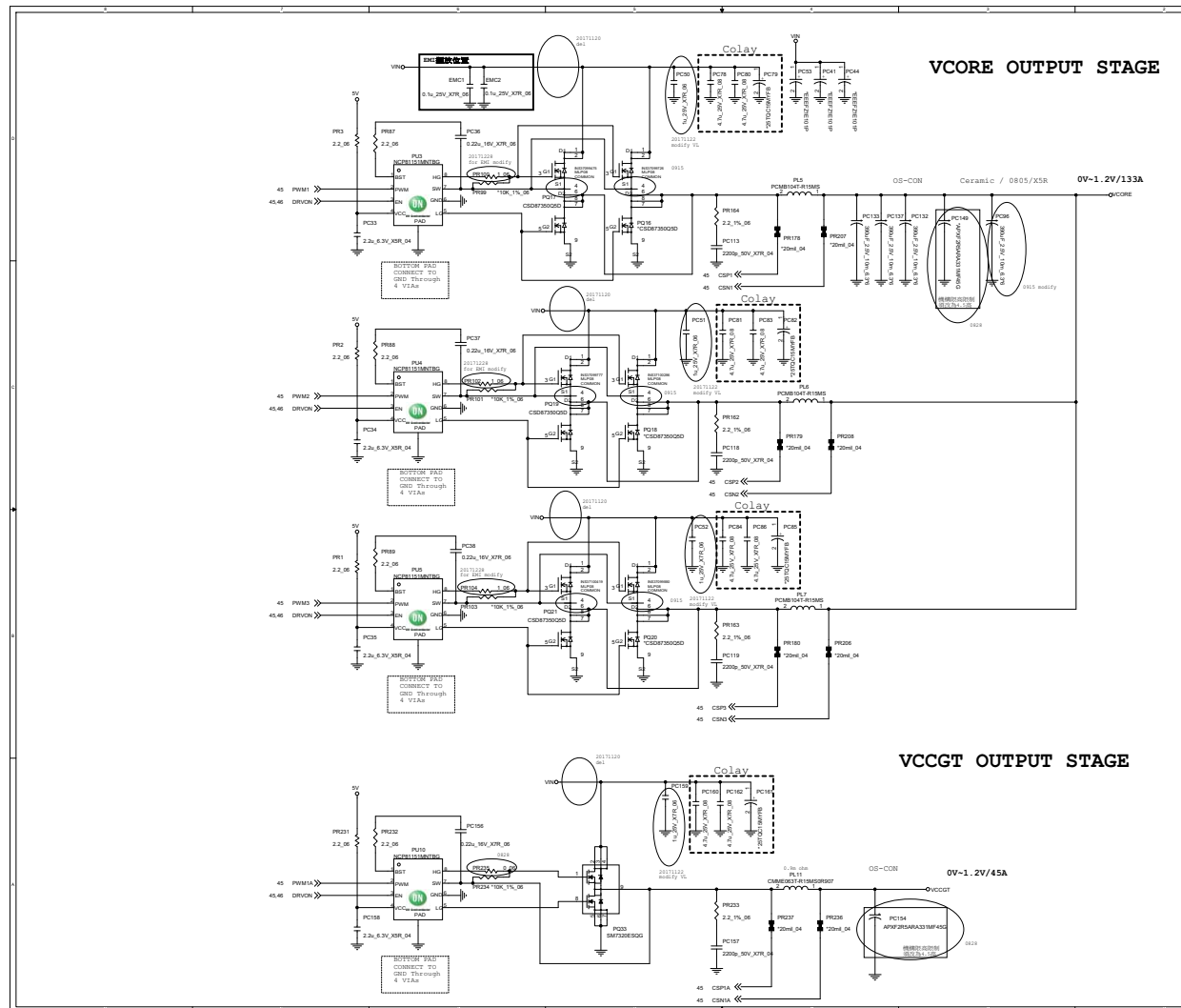
**Sheet 43 of 57**  
**VDD3, VDD5**



**DDR 1.2V / 0.6VS, 2.5V B - 45**



## VCore, VCCGT Output Stage

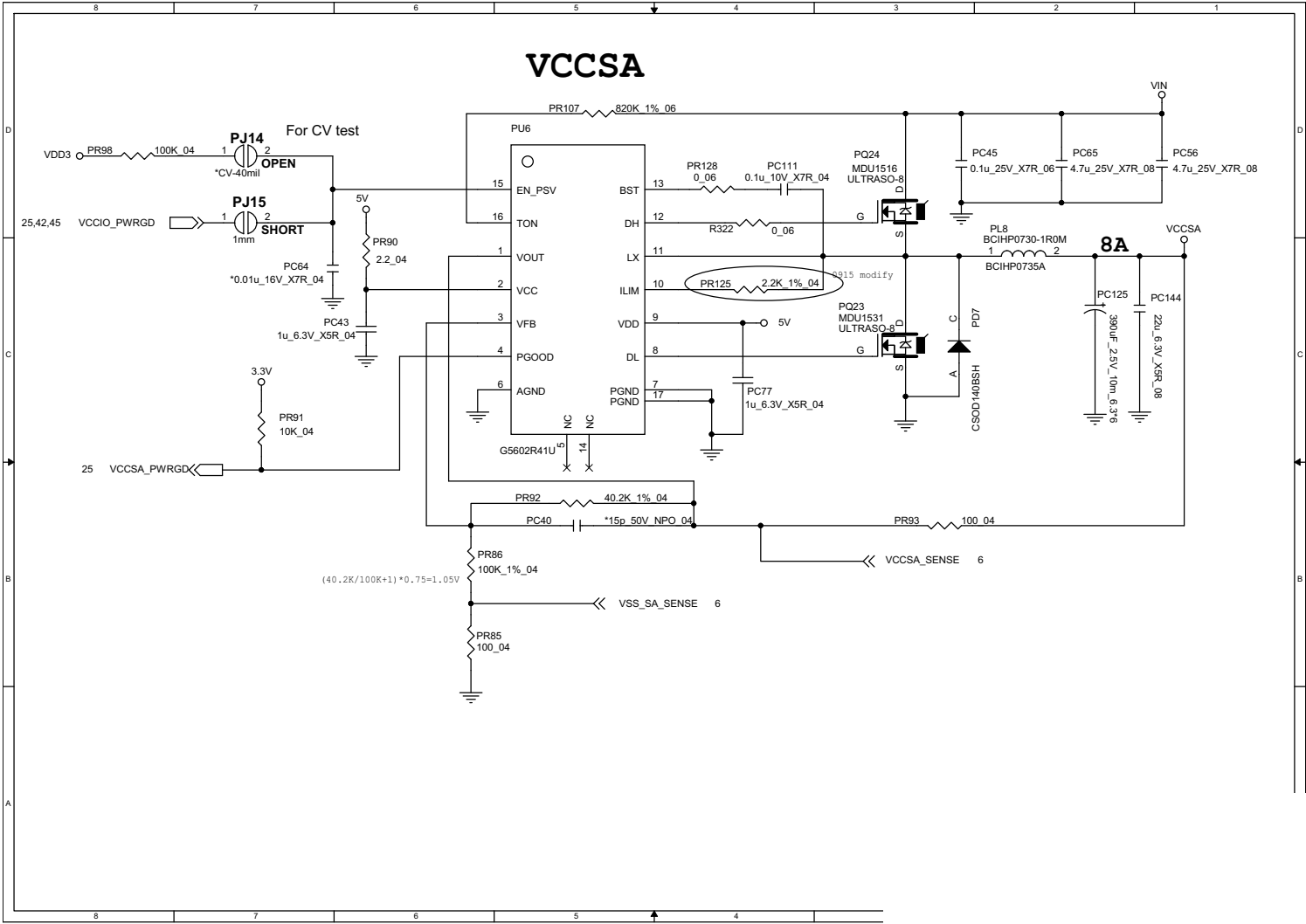


Sheet 46 of 57  
VCore, VCCGT  
Output Stage

Schematic Diagrams

VCCSA

Sheet 47 of 57  
VCCSA



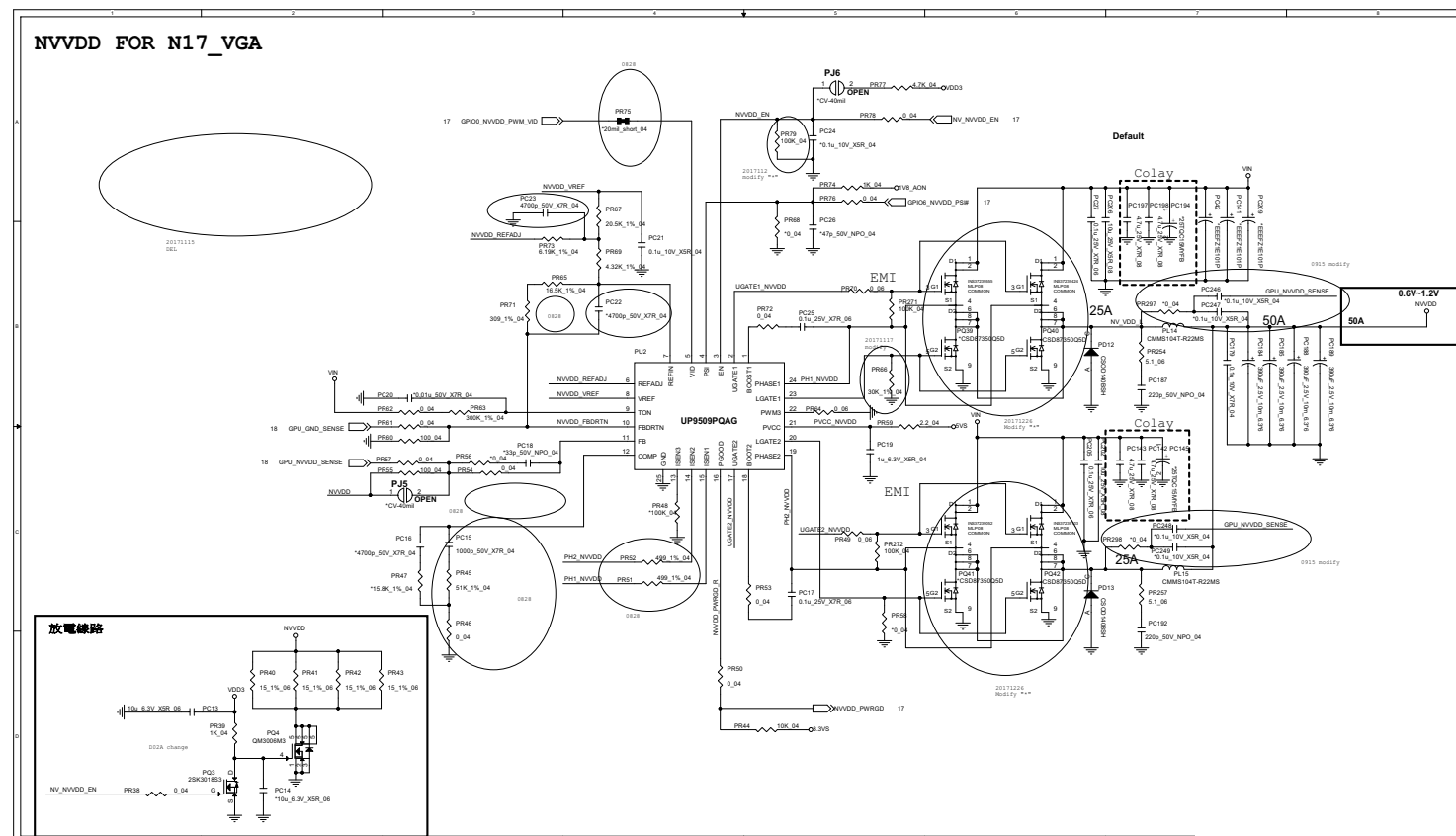


**AC\_In, Charger B - 49**

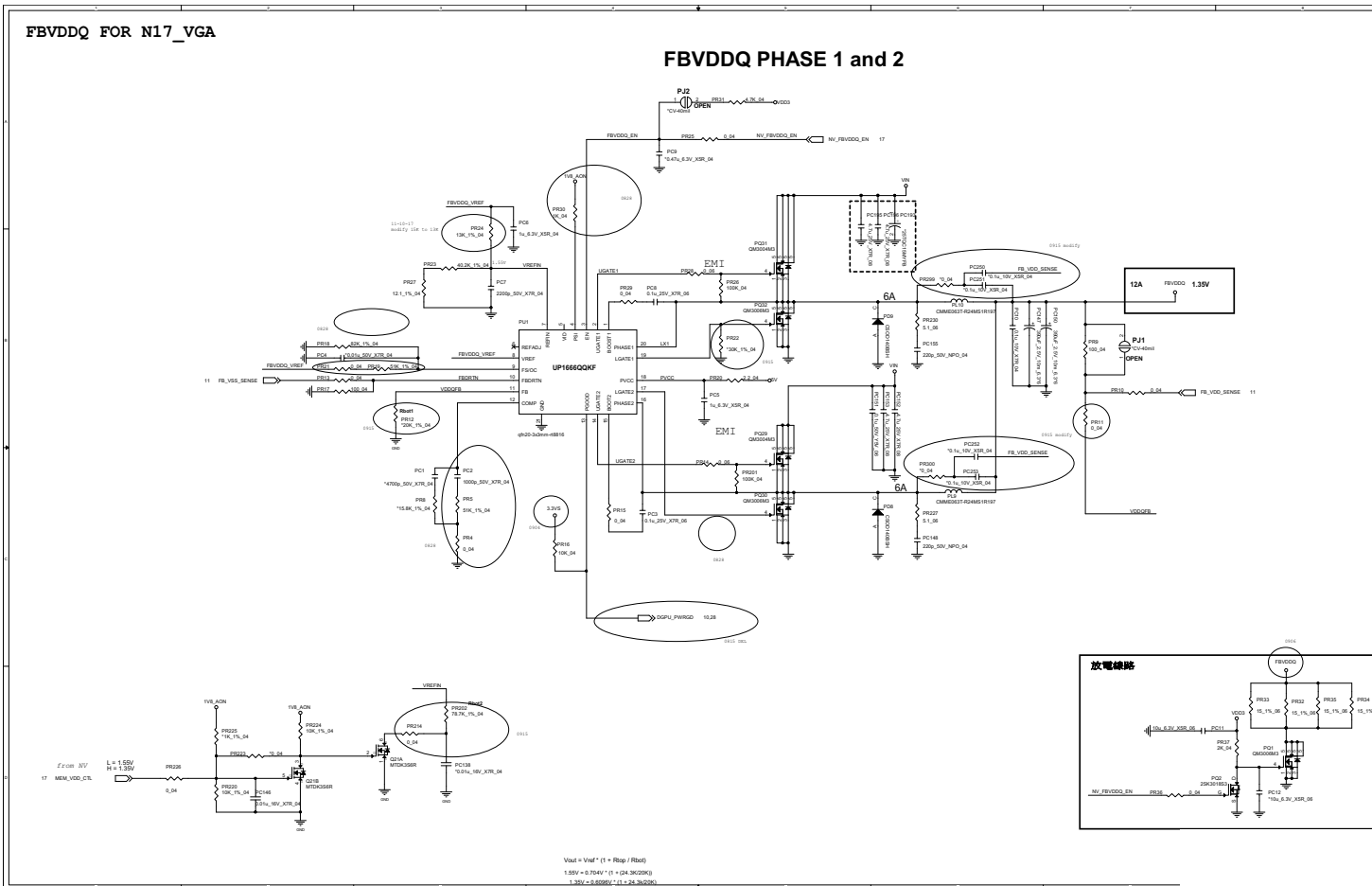


# NVVDD

**Sheet 49 of 57**  
**NVVDD**



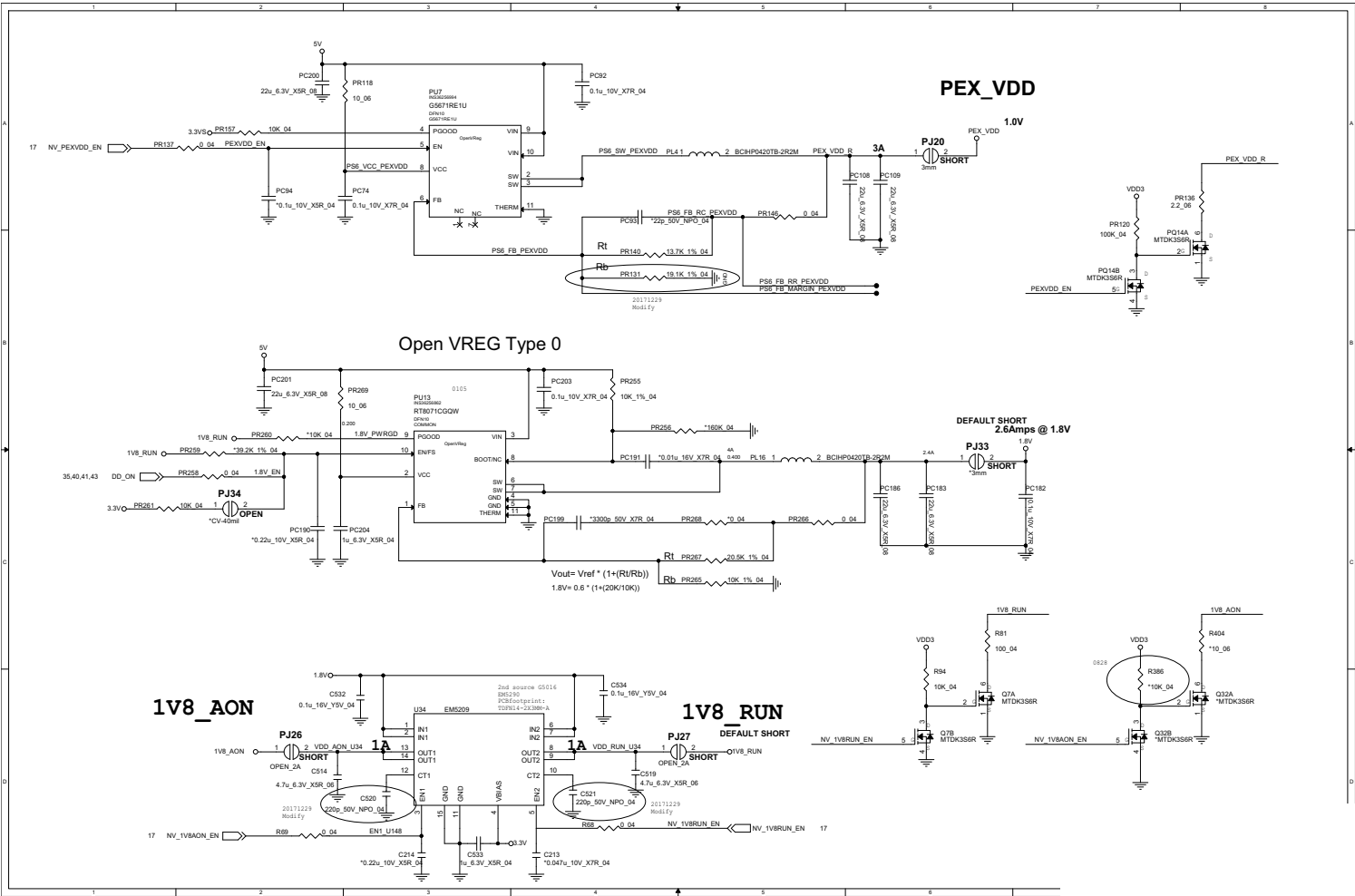
## FBVDDQ

Sheet 50 of 57  
FBVDDQ

Schematic Diagrams

1V8\_RUN 1V8\_AON, PEXVDD

Sheet 51 of 57  
1V8\_RUN  
1V8\_AON, PEXVDD



# DC\_JACK BOARD

DJ\_DC\_JACK1

2DC3157-002111F  
2863157-002111F  
PN = 6-20-83400-004

D\_DC\_AC

>320 MIL

D\_DC\_CON1

51332-0044L-002  
50310-0024N 04L  
PN = 6-20-41M20-004

D\_GND

D\_GND

DH1

MTH7\_002\_3

D\_GND

DH2

MTH7\_002\_3

D\_GND

10E1 3 04

20E1 3 04

30E1 3 04

40E1 3 04

50E1 3 04

60E1 3 04

併成重疊

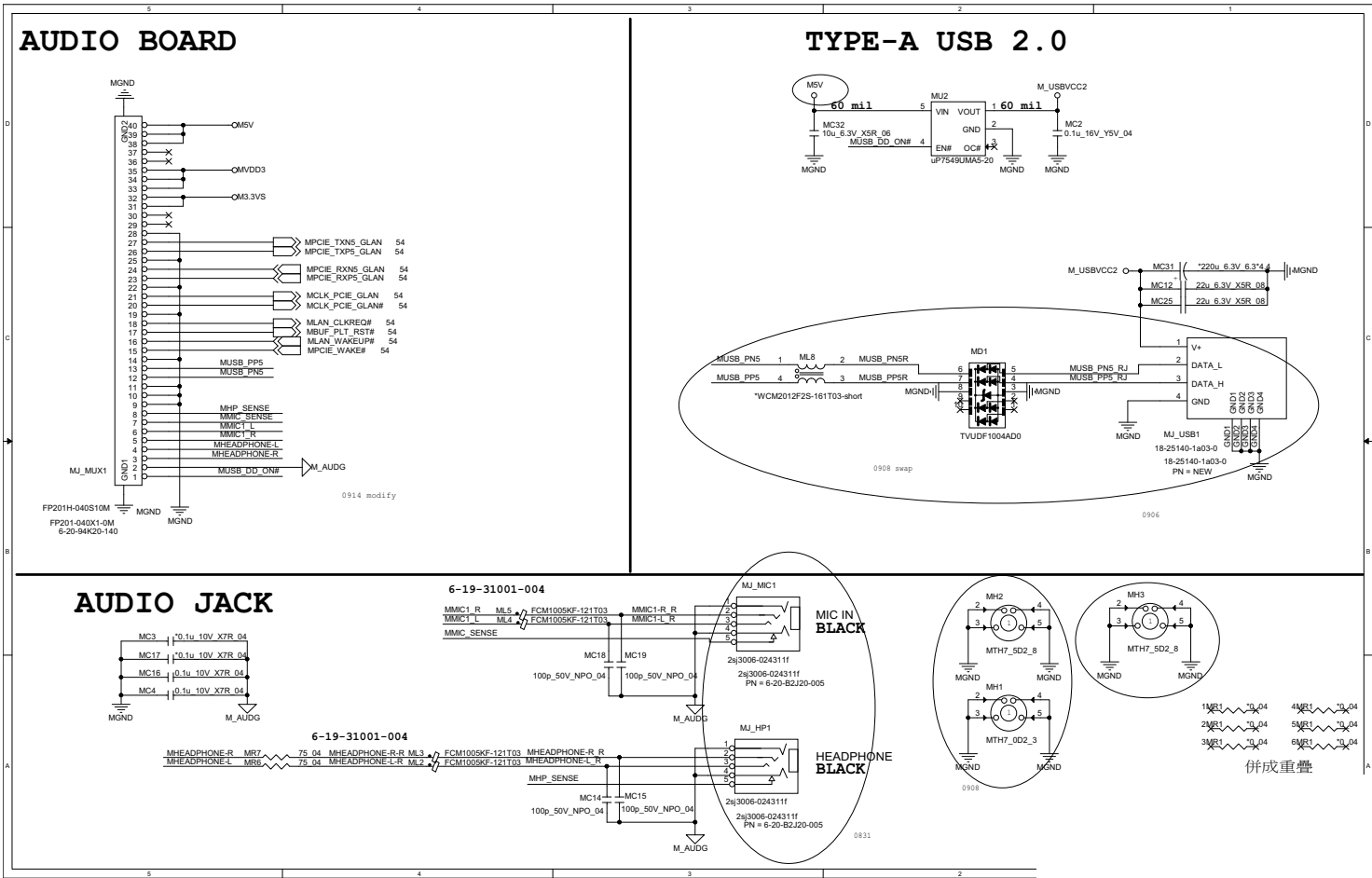
0828

DC\_Jack Board B - 53

Schematic Diagrams

Multi Board

Sheet 53 of 57  
Multi Board



**Sheet 54 of 57**  
**RTL8411B**

[illegible]



# POWER SW BOARD

# POWER SW BOARD

201712226  
修改組值包裝

POWER  
BUTTON  
LED

WHITE

BD3

RY-SP190DBW71-5A  
6-52-57301-022

BDGND

BDGND

CLOSE TO BD3

BJ\_SW1

1 2 3 4

OB\_3.3VS

BPWRBTN#

BDGND

FP226H-004S10M  
JXT\_FP226H-004XXAM  
PN = 6-20-94A40-004

POWER  
BOTTOM

BSW1

1 2 3 4

T4BJB10BOR

T4BJB16-Q  
PN = 6-53-31500-B41

BDGND

BDGND

BDGND

BDGND

0828 DEL

MTH7\_OD2\_3

MTH7\_OD2\_3

MTH7\_OD2\_3

MTH7\_OD2\_3

1BR1 \*0.04

2BR1 \*0.04

3BR1 \*0.04

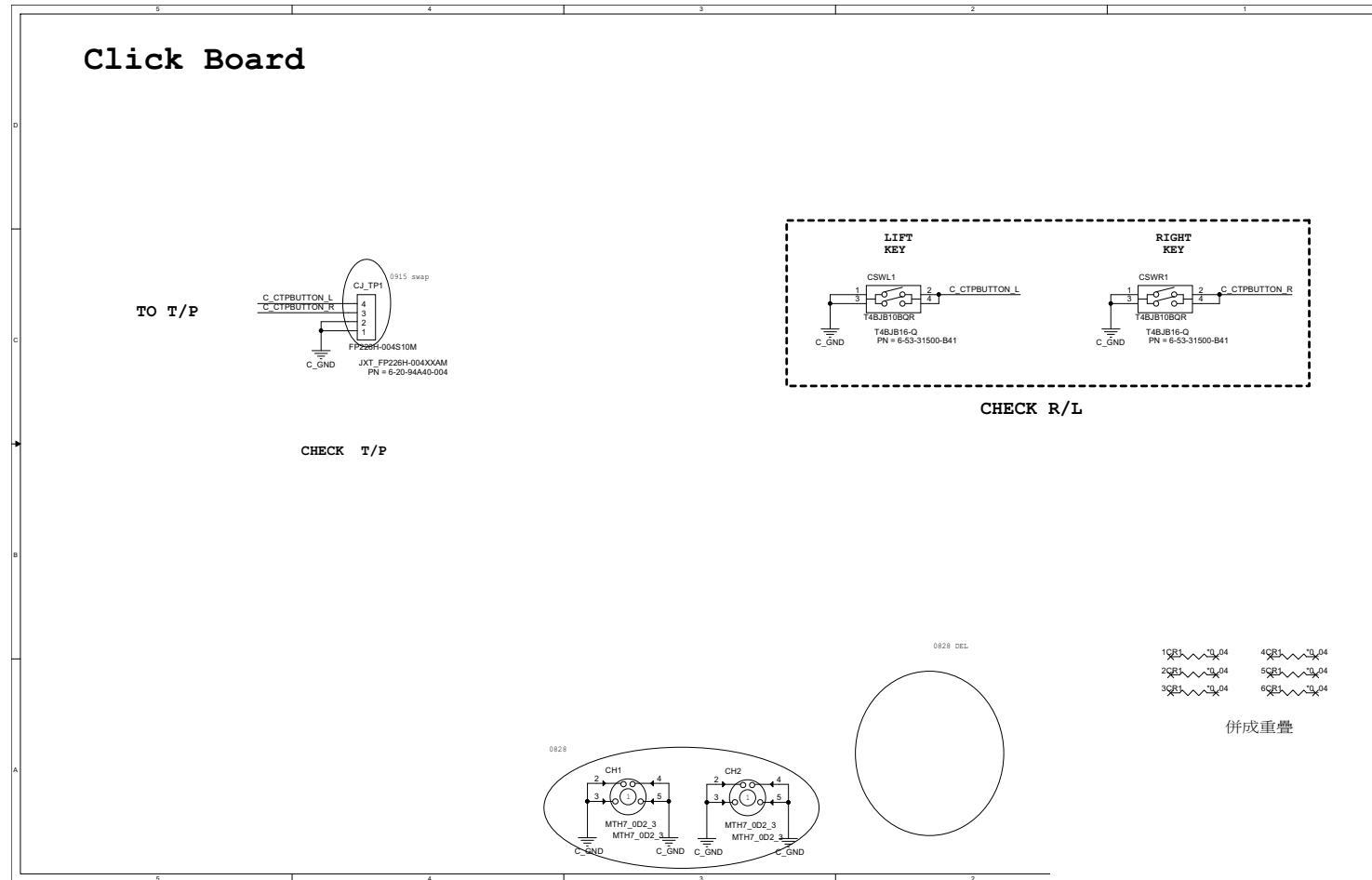
4BR1 \*0.04

5BR1 \*0.04

6BR1 \*0.04

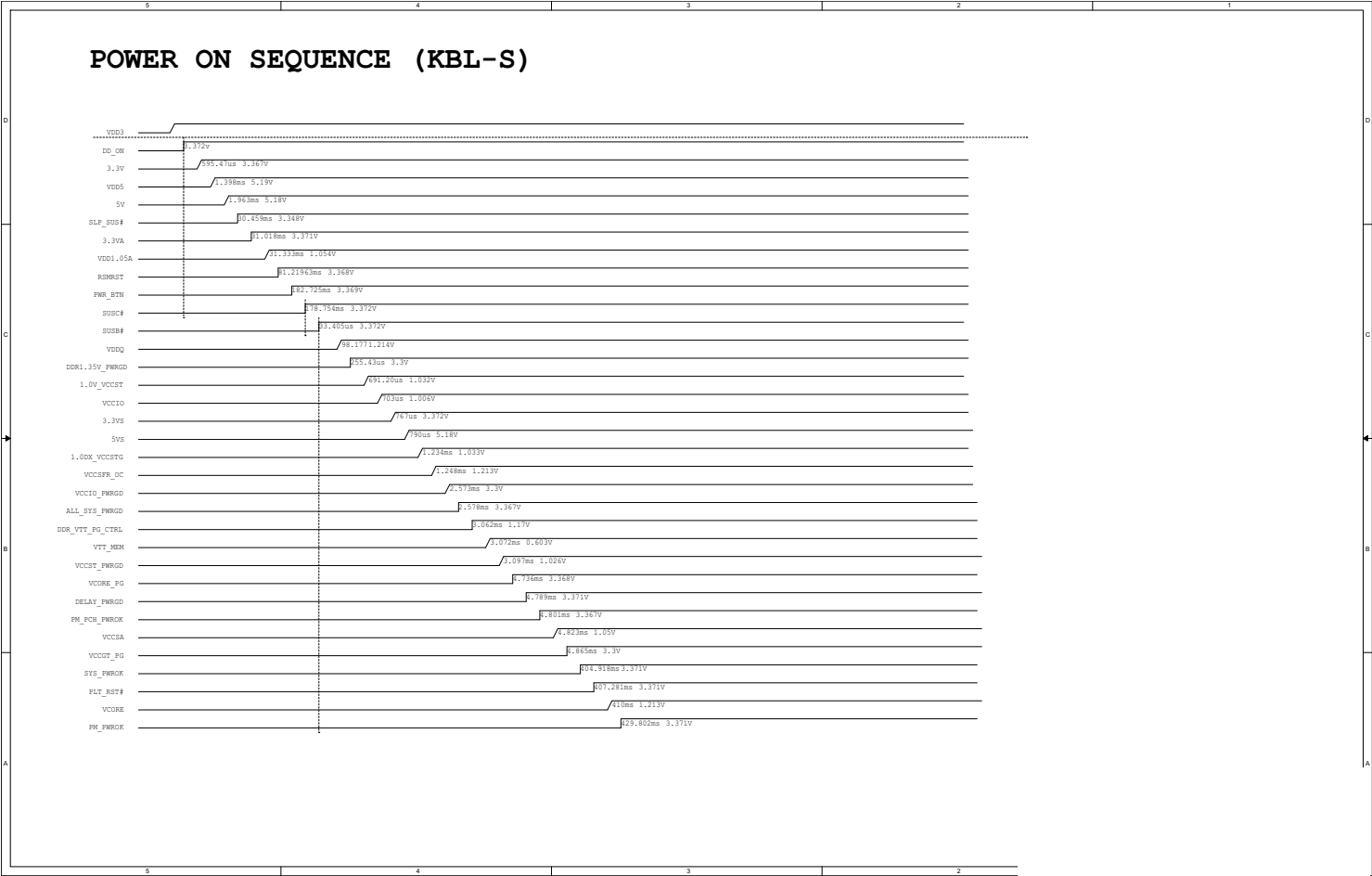
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# Click Board



Sheet 56 of 57  
Click Board

Power Sequence



Sheet 57 of 57  
Power Sequence