PG132-A02

370W, FH Std PCB, 384b, GDDR6x 2CH X16
DP + DP + DP + HDMI/DP

TABLE OF CONTENTS

Page Description

1 Table of Contents
2 BLOCK DIAGRAM
3 PCI EXPRESS
4 MEMORY: GPU PARTITION A/B
5 MEMORY: FBA PARTITION[31:0]
6 MEMORY: FBA PARTITION[63:32]
7 MEMORY: FBB PARTITION[31:0]
8 MEMORY: FBB PARTITION[63:32]
9 MEMORY: GPU PARTITION C/D
10 MEMORY: FBC PARTITION[31:0]
11 MEMORY: FBC PARTITION[63:32]
12 MEMORY: FBD PARTITION[31:0]
13 MEMORY: FBD PARTITION[63:32]
14 MEMORY: GPU PARTITION E/F
15 MEMORY: FBE PARTITION[31:0]
16 MEMORY: FBE PARTITION[63:32]
17 MEMORY: FBF PARTITION[31:0]
18 MEMORY: FBF PARTITION[63:32]
19 GPU GND, RFUs & RSVD
20 GPU POWERS
21 GPU DECOUPLING NVVDD
22 GPU DECOUPLING FBVDDQ
23 GPU DECOUPLING MSVDD
24 BLANK
25 NVHS x16

Page Description

26 MISC: THERMAL, JTAG, GPIO
27 IFPA UNUSED, IFPB UNUSED
28 IFPE DP
29 IFPD DP
30 IFPC HDMI/DP
31 IFPF DP
32 MISC. ROM, STRAPS
33 MISC. XTAL, PLL
34 PS: 5V
35 PS: PEX_DVDD and 1V8
36 BLANK
37 PS: FBVDD Controller OVR3
38 PS: FBVDDQ OVR4
39 PS: FBVDD PH1
40 PS: FBVDD PH3
41 PS: FBVDD PH2
42 PS: FBVDD PH4
43 PS: FBVDD OUTPUT CAP
44 PS: FBVDD_OUTPUT_CAP_NEAR_MEMORY
45 PS: MSVDD CONTROLLER
46 PS: MSVDD PH1
47 PS: MSVDD PH2
48 PS: MSVDD PH3 and PH5
49 PS: MSVDD PH4 and PH6
50 PS: MSVDD OUTPUT CAP(TOP)

Page Description

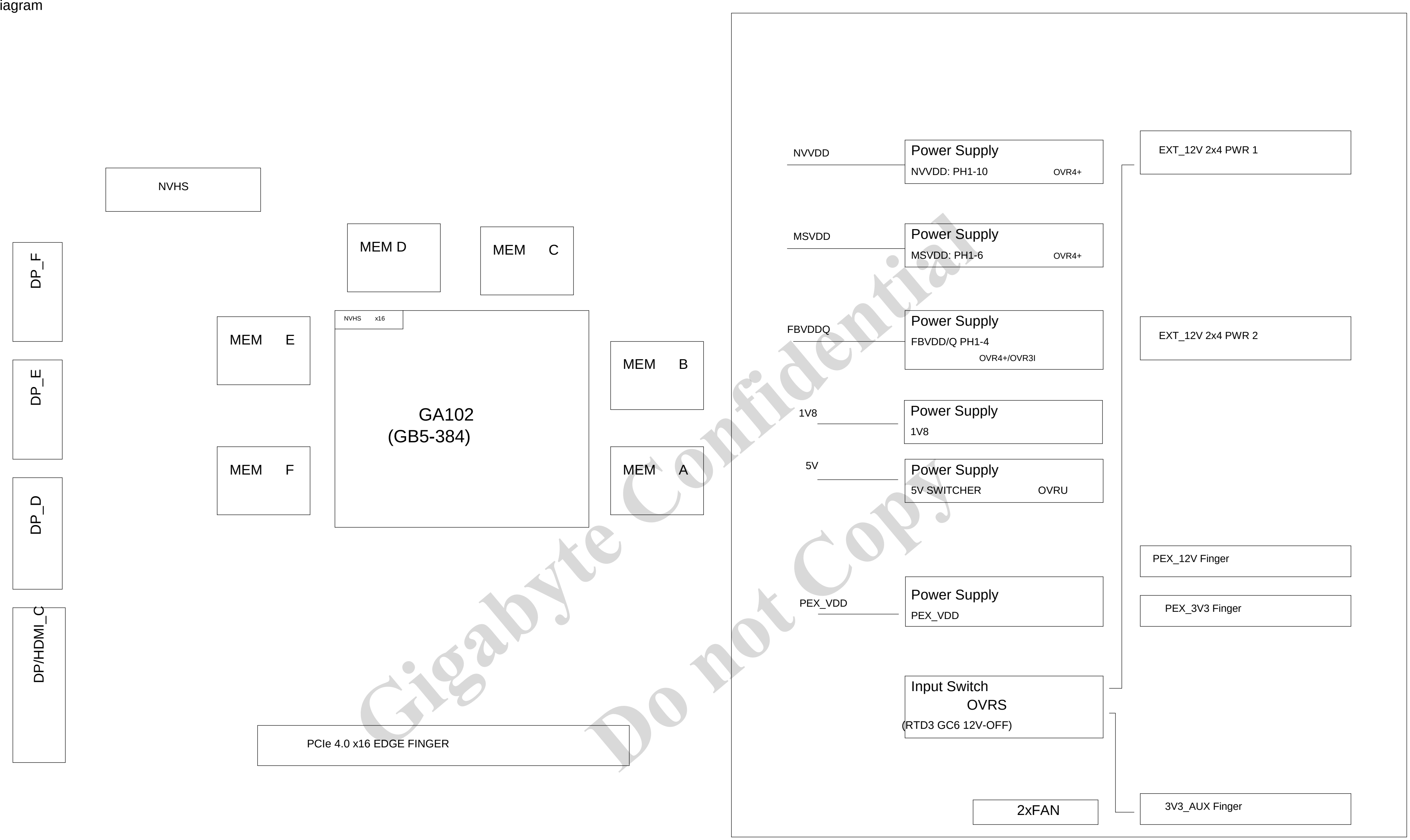
51 BLANK
52 PS: NVVDD Controller_OVR8
53 PS: NVVDD PH1 (PWM1)
54 PS: NVVDD PH2(PWM6)
55 PS: NVVDD PH3 (PWM3) and PH4 (PWM3)
56 PS: NVVDD PH5(PWM7) and PH7(PWM8)
57 PS: NVVDD PH6 (PWM7)
58 PS: NVVDD PH8(PWM5) and PH9(PWM2)
59 PS: NVVDD PH10 (PWM4)
60 Colayout_Notes
61 BLANK
62 PS: NVVDD OUTPUT CAP(TOP)
63 BLANK
64 PS: INPUT SWITCH RTD3
65 BLANK
66 PS: INPUTS, FILTERING, and, MONITORING
67 PS: HOT UNPLUG
68 PS: Discrete Power Steering
69 PS: PREFILTER
70 PS: PREFILTER B
71 Sequence: 5V, 1V8, 3V3_SEQ
72 Sequence: NV, PEX, FB EN
73 Sequence: 3V3 MONITOR
74 Sequence: MISC
75 MISC: LED & FAN

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL Table of Contents

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
TABLE CONTENT
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 1 of 79

Block Diagram

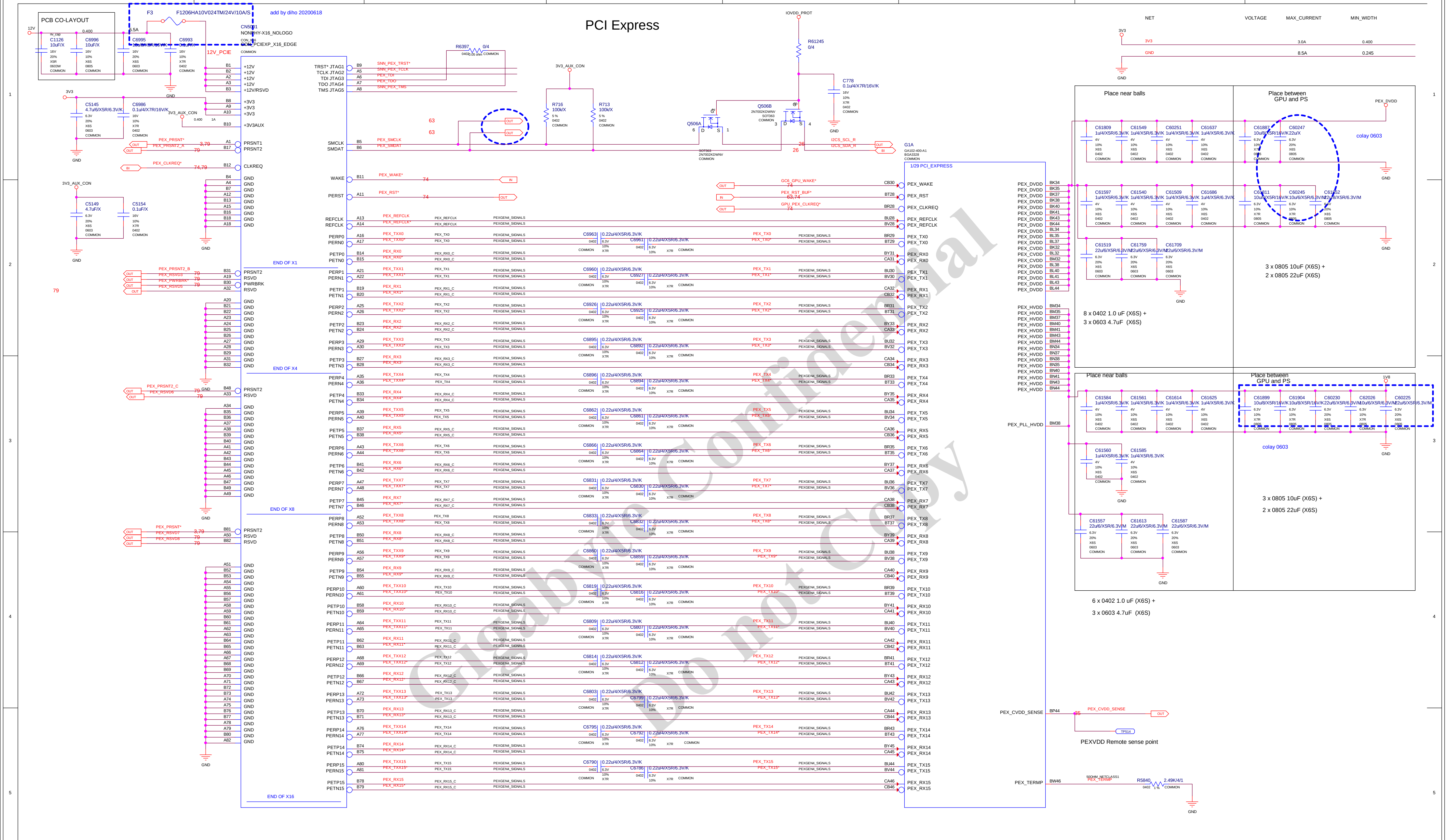

NVHS
DP_F
DP_E
DP_D
DP/HDMI_C
MEM D
MEM C
MEM E
MEM F
MEM B
MEM A
NVHS x16
GA102
(GB5-384)
PCIe 4.0 x16 EDGE FINGER
NVVDD
Power Supply
NVVDD: PH1-10
OVR4+
MSVDD
Power Supply
MSVDD: PH1-6
OVR4+
FBVDDQ
Power Supply
FBVDD/Q PH1-4
OVR4+/OVR3I
1V8
Power Supply
1V8
5V
Power Supply
5V SWITCHER
OVRU
PEX_VDD
Power Supply
PEX_VDD
Input Switch
OVRS
(RTD3 GC6 12V-OFF)
2xFAN
EXT_12V 2x4 PWR 1
EXT_12V 2x4 PWR 2
PEX_12V Finger
PEX_3V3 Finger
3V3_AUX Finger

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL BLOCK DIAGRAM

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
Block Diagram
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 2 of 79

PCI Express


PCB CO-LAYOUT
F3 F1206HA10V024TM/24V/10A/S
add by diho 20200618
CN5001
NONPHY-X16_NOLOGO
CON_X16
PCIEXP_X16_EDGE
12V_PCIE
3V3_AUX_CON
IOVDD_PROT
R61245 0/4
R6397 0/4
R716 100k/X
R713 100k/X
C778 0.1u/4/X7R/16V/K
Q506A
Q506B 2N7002KDWNV
C1126 10uF/X
C6996 10uF/X
C6995
C6993
C5145 4.7u/6/X5R/6.3V/K
C6986 0.1u/4/X7R/16V/K
C5149 4.7uF/X
C5154 0.1uF/X
TRST* JTAG1
TCLK JTAG2
TDI JTAG3
TDO JTAG4
TMS JTAG5
SMCLK
SMDAT
WAKE
PERST
REFCLK
PRSNT1
PRSNT2
CLKREQ
+12V
+3V3
+3V3AUX
END OF X1
END OF X4
END OF X8
END OF X16
I2CS_SCL_R
I2CS_SDA_R
G1A
GA102-400-A1
BGA3328
1/29 PCI_EXPRESS
PEX_WAKE
PEX_RST
PEX_CLKREQ
PEX_REFCLK
PEX_DVDD
PEX_HVDD
PEX_PLL_HVDD
PEX_CVDD_SENSE
PEX_TERMP
R5840 2.49K/4/1
GC6_GPU_WAKE*
PEX_RST_BUF*
GPU_PEX_CLKREQ*
NET
VOLTAGE
MAX_CURRENT
MIN_WIDTH
3V3 3.0A 0.400
GND 8.5A 0.245
Place near balls
Place between GPU and PS
PEX_DVDD
colay 0603
8 x 0402 1.0 uF (X6S) +
3 x 0603 4.7uF (X6S)
3 x 0805 10uF (X6S) +
2 x 0805 22uF (X6S)
1V8
6 x 0402 1.0 uF (X6S) +
3 x 0603 4.7uF (X6S)
3 x 0805 10uF (X6S) +
2 x 0805 22uF (X6S)
PEXVDD Remote sense point
GND

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PCI EXPRESS

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

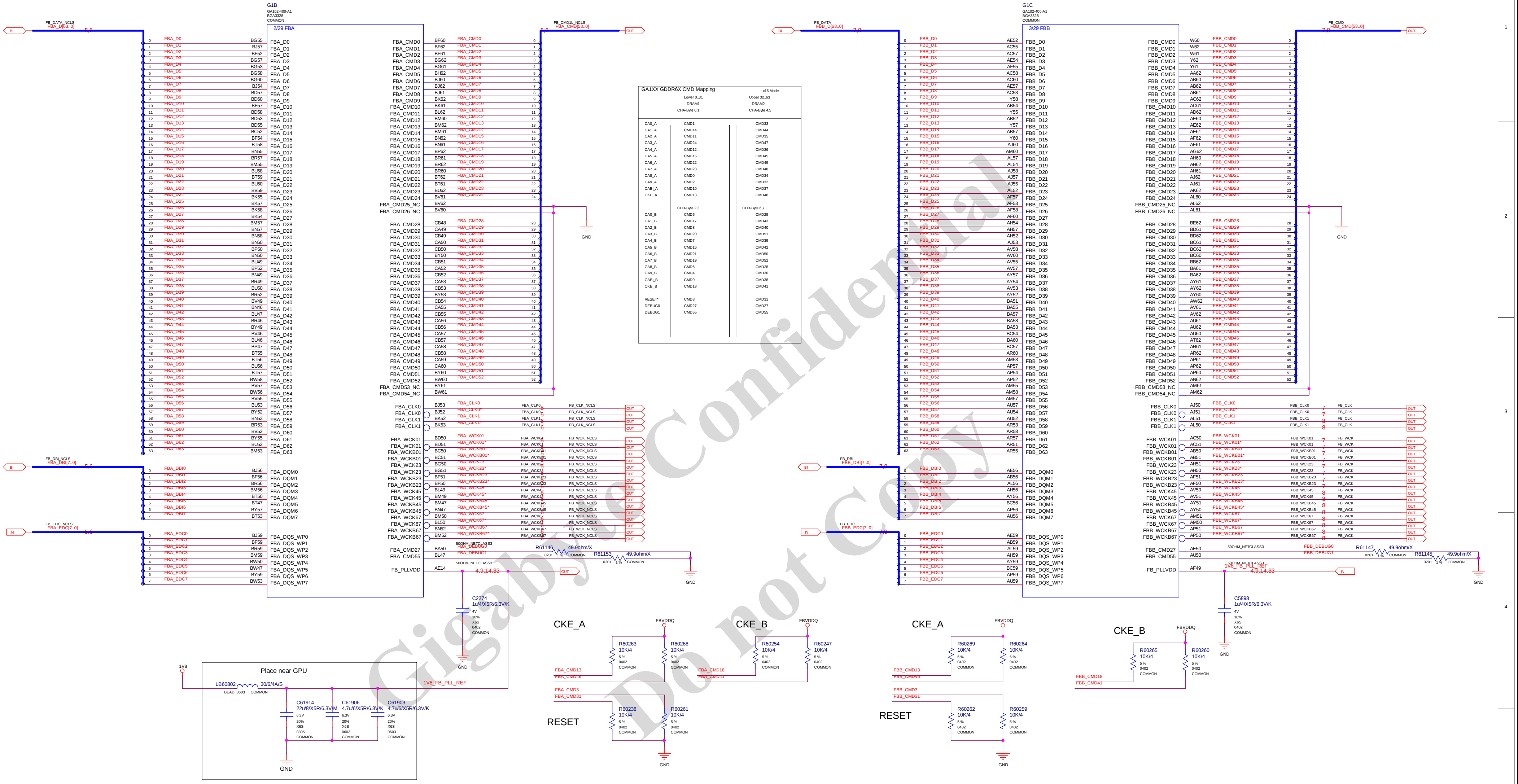
GIGABYTE

Title
PCI EXPRESS

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020 Sheet 3 of 79

MEMORY: GPU Partition A/B


G1B
GA102-400-A1
BGA3328
COMMON
2/29 FBA
FB_DATA_NCLS
FBA_D[63..0]
FB_CMD1_NCLS
FBA_CMD[53..0]
FB_DBI_NCLS
FBA_DBI[7..0]
FB_EDC_NCLS
FBA_EDC[7..0]
FBA_CLK0
FBA_CLK0*
FBA_CLK1
FBA_CLK1*
FB_CLK_NCLS
FB_WCK_NCLS
FBA_DEBUG0
FBA_DEBUG1
50OHM_NETCLASS3
R61146
49.9ohm/X
R61153
49.9ohm/X
FB_PLLVDD
AE14
4,9,14,33
C2274
1u/4/X5R/6.3V/K
G1C
GA102-400-A1
BGA3328
COMMON
3/29 FBB
FB_DATA
FBB_D[63..0]
FB_CMD
FBB_CMD[53..0]
FB_DBI
FBB_DBI[7..0]
FB_EDC
FBB_EDC[7..0]
FBB_CLK0
FBB_CLK0*
FBB_CLK1
FBB_CLK1*
FBB_DEBUG0
FBB_DEBUG1
R61147
49.9ohm/X
R61145
49.9ohm/X
1V8_FB_PLL_REF
C5898
1u/4/X5R/6.3V/K
BI
OUT
IN
GND
Place near GPU
1V8
LB60802
30/6/4A/S
BEAD_0603
C61914
22u/8/X5R/6.3V/M
C61906
4.7u/6/X5R/6.3V/K
C61903
4.7u/6/X5R/6.3V/K
1V8_FB_PLL_REF
CKE_A
CKE_B
RESET
FBVDDQ
R60263
10K/4
R60268
10K/4
R60254
10K/4
R60247
10K/4
R60238
10K/4
R60261
10K/4
R60269
10K/4
R60264
10K/4
R60265
10K/4
R60260
10K/4
R60262
10K/4
R60259
10K/4
FBA_CMD13
FBA_CMD46
FBA_CMD18
FBA_CMD41
FBA_CMD3
FBA_CMD31
FBB_CMD13
FBB_CMD46
FBB_CMD18
FBB_CMD41
FBB_CMD3
FBB_CMD31

GA1XX GDDR6X CMD Mapping

	Lower 0..31 DRAM1 CHA-Byte 0,1	x16 Mode Upper 32..63 DRAM2 CHA-Byte 4,5
CA0_A	CMD1	CMD33
CA1_A	CMD14	CMD44
CA2_A	CMD11	CMD35
CA3_A	CMD24	CMD47
CA4_A	CMD12	CMD36
CA5_A	CMD15	CMD45
CA6_A	CMD22	CMD49
CA7_A	CMD23	CMD48
CA8_A	CMD0	CMD34
CA9_A	CMD2	CMD32
CABI_A	CMD10	CMD37
CKE_A	CMD13	CMD46
	CHB-Byte 2,3	CHB-Byte 6,7
CA0_B	CMD5	CMD29
CA1_B	CMD17	CMD43
CA2_B	CMD8	CMD40
CA3_B	CMD20	CMD51
CA4_B	CMD7	CMD39
CA5_B	CMD16	CMD42
CA6_B	CMD21	CMD50
CA7_B	CMD19	CMD52
CA8_B	CMD6	CMD28
CA9_B	CMD4	CMD30
CABI_B	CMD9	CMD38
CKE_B	CMD18	CMD41
RESET*	CMD3	CMD31
DEBUG0	CMD27	CMD27
DEBUG1	CMD55	CMD55

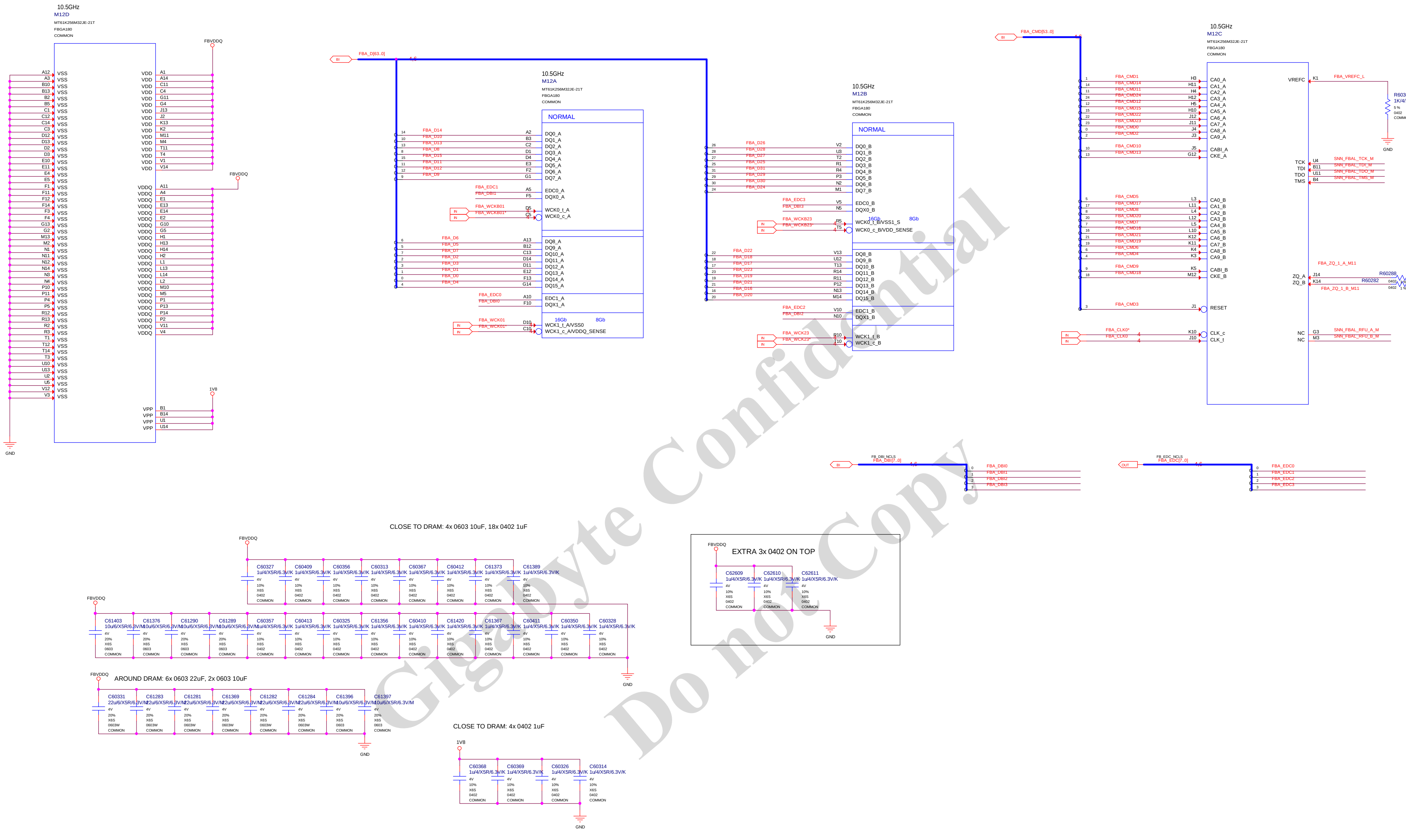
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL MEMORY: GPU PARTITION A/B

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	MEMORY: GPU Partition A/B
Size	Custom
Document Number	GV-N3080AORUSX W-10GD
Rev	1.0
Date:	Wednesday, September 30, 2020
Sheet	4 of 79

MEMORY: FBA Partition 31..0


10.5GHz
M12D
MT61K256M32JE-21T
FBGA180
COMMON
VSS
VDD
VDDQ
VPP
FBVDDQ
1V8
GND
10.5GHz
M12A
MT61K256M32JE-21T
FBGA180
COMMON
NORMAL
FBA_D[63..0]
BI
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
16Gb
8Gb
FBA_EDC1
FBA_DBI1
FBA_WCKB01
FBA_WCKB01*
FBA_EDC0
FBA_DBI0
FBA_WCK01
FBA_WCK01*
IN
10.5GHz
M12B
MT61K256M32JE-21T
FBGA180
COMMON
NORMAL
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
FBA_EDC3
FBA_DBI3
FBA_WCKB23
FBA_WCKB23*
FBA_EDC2
FBA_DBI2
FBA_WCK23
FBA_WCK23*
FBA_CMD[53..0]
10.5GHz
M12C
MT61K256M32JE-21T
FBGA180
COMMON
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
TCK
TDI
TDO
TMS
ZQ_A
ZQ_B
NC
FBA_VREFC_L
R60306
1K/4/1
5 %
0402
COMMON
SNN_FBAL_TCK_M
SNN_FBAL_TDI_M
SNN_FBAL_TDO_M
SNN_FBAL_TMS_M
FBA_ZQ_1_A_M11
FBA_ZQ_1_B_M11
R60288
R60282
360/4/1
SNN_FBAL_RFU_A_M
SNN_FBAL_RFU_B_M
FBA_CLK0*
FBA_CLK0
FBA_CMD3
FB_DBI_NCLS
FBA_DBI[7..0]
FBA_DBI0
FBA_DBI1
FBA_DBI2
FBA_DBI3
FB_EDC_NCLS
FBA_EDC[7..0]
OUT
FBA_EDC0
FBA_EDC1
FBA_EDC2
FBA_EDC3
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
EXTRA 3x 0402 ON TOP
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
CLOSE TO DRAM: 4x 0402 1uF
C60327
C60409
C60356
C60313
C60367
C60412
C61373
C61389
1u/4/X5R/6.3V/K
C61403
C61376
C61290
C61289
C60357
C60413
C60325
C61356
C60410
C61420
C61367
C60411
C60350
C60328
10u/6/X5R/6.3V/M
C62609
C62610
C62611
C60331
C61283
C61281
C61369
C61282
C61284
C61396
C61397
22u/6/X5R/6.3V/M
C60368
C60369
C60326
C60314
4V
10%
20%
X6S
0402
0603
0603W
COMMON

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
MEMORY: FBA PARTITION[31:0]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

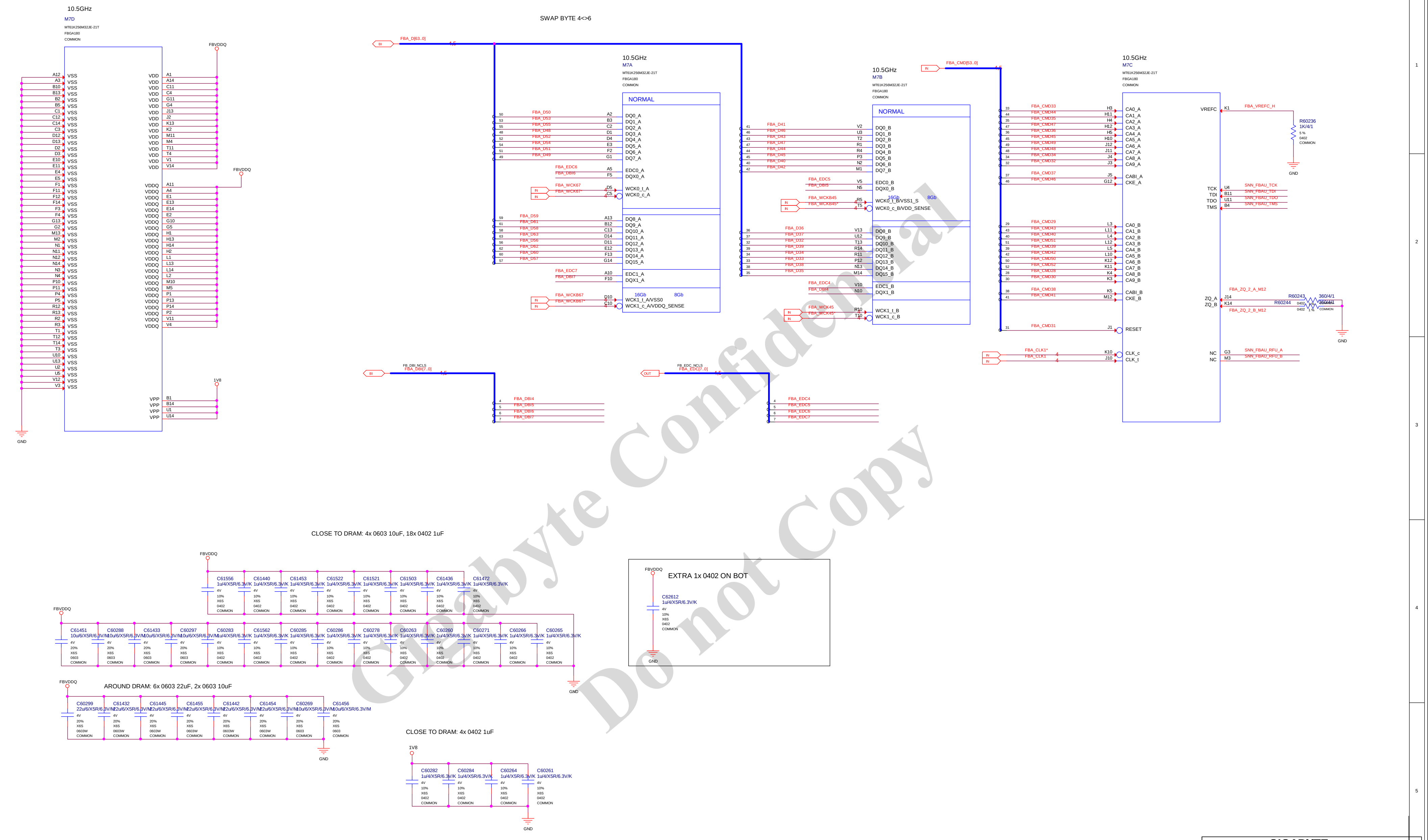
GIGABYTE

Title
MEMORY: FBA Partition 31..0

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020
Sheet 5 of 79

MEMORY: FBA Partition 63..32


10.5GHz
M7D
MT61K256M32JE-21T
FBGA180
COMMON
VSS
VDD
VDDQ
VPP
FBVDDQ
1V8
GND
SWAP BYTE 4<>6
FBA_D[63..0]
10.5GHz
M7A
NORMAL
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
16Gb
8Gb
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
10.5GHz
M7B
NORMAL
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
FBA_CMD[63..0]
10.5GHz
M7C
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
FBA_VREFC_H
R60236
1K/4/1
TCK
TDI
TDO
TMS
SNN_FBAU_TCK
SNN_FBAU_TDI
SNN_FBAU_TDO
SNN_FBAU_TMS
ZQ_A
ZQ_B
FBA_ZQ_2_A_M12
FBA_ZQ_2_B_M12
R60243
R60244
360/4/1
NC
SNN_FBAU_RFU_A
SNN_FBAU_RFU_B
FB_DBI_NCLS
FBA_DBI[7..0]
FB_EDC_NCLS
FBA_EDC[7..0]
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
EXTRA 1x 0402 ON BOT
C62612
1u/4/X5R/6.3V/K
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
CLOSE TO DRAM: 4x 0402 1uF
C60282
C60284
C60264
C60261

ASSEMBLY
PAGE DETAIL

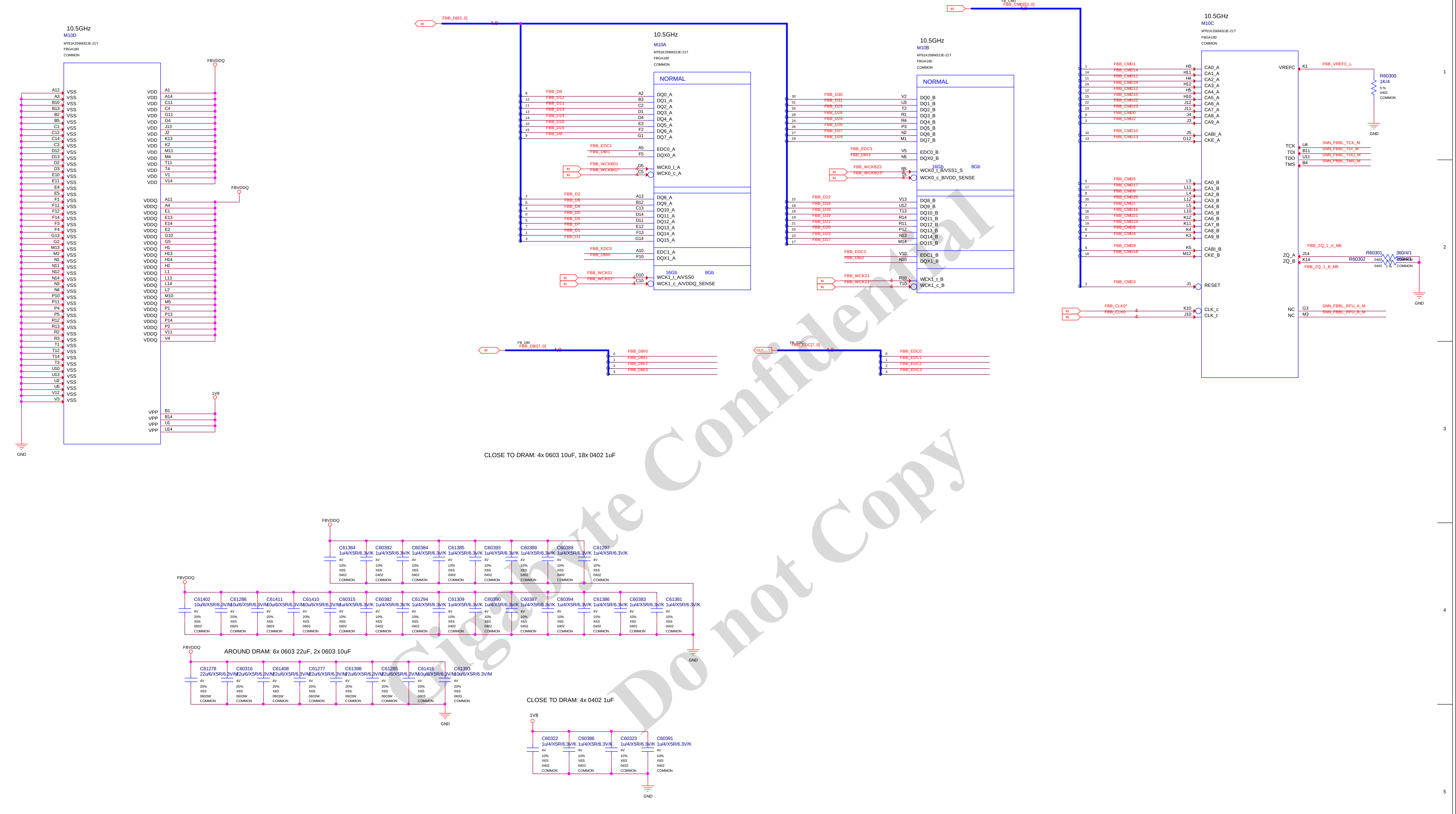
<ASSEMBLY_DESCRIPTION>
MEMORY: FBA PARTITION[63:32]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	MEMORY: FBA Partition 63..32	
Size: Custom	Document Number: GV-N3080AORUSX W-10GD	Rev: 1.0
Date: Wednesday, September 30, 2020	Sheet 6 of 79	

MEMORY: FBB Partition 31..0



10.5GHz
M10D
MT61K256M32JE-21T
FBGA180
COMMON
VSS
VDD
VDDQ
VPP
FBVDDQ
1V8
GND
10.5GHz
M10A
MT61K256M32JE-21T
FBGA180
COMMON
NORMAL
FBB_D[63..0]
BI
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
16Gb
8Gb
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
FBB_WCKB01
FBB_WCKB01*
FBB_WCK01
FBB_WCK01*
10.5GHz
M10B
MT61K256M32JE-21T
FBGA180
COMMON
NORMAL
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
FBB_WCKB23
FBB_WCKB23*
FBB_WCK23
FBB_WCK23*
FB_CMD
FBB_CMD[53..0]
10.5GHz
M10C
MT61K256M32JE-21T
FBGA180
COMMON
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
FBB_VREFC_L
R60300
1K/4
TCK
TDI
TDO
TMS
SNN_FBBL_TCK_M
SNN_FBBL_TDI_M
SNN_FBBL_TDO_M
SNN_FBBL_TMS_M
ZQ_A
ZQ_B
FBB_ZQ_1_A_M9
FBB_ZQ_1_B_M9
R60301
R60302
360/4/1
NC
NC
SNN_FBBL_RFU_A_M
SNN_FBBL_RFU_B_M
FBB_CLK0*
FBB_CLK0
FB_DBI
FBB_DBI[7..0]
FBB_DBI0
FBB_DBI1
FBB_DBI2
FBB_DBI3
FB_EDC
FBB_EDC[7..0]
FBB_EDC0
FBB_EDC1
FBB_EDC2
FBB_EDC3
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
C61384
C60392
C60384
C61385
C60393
C60389
C60388
C61297
1u/4/X5R/6.3V/K
C61402
C61286
C61411
C61410
C60315
C60382
C61294
C61309
C60390
C60387
C60394
C61386
C60383
C61381
10u/6/X5R/6.3V/M
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
C61278
C60316
C61408
C61277
C61398
C61285
C61416
C61393
22u/6/X5R/6.3V/M
CLOSE TO DRAM: 4x 0402 1uF
C60322
C60386
C60323
C60391

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
MEMORY: FBB PARTITION[31:0]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

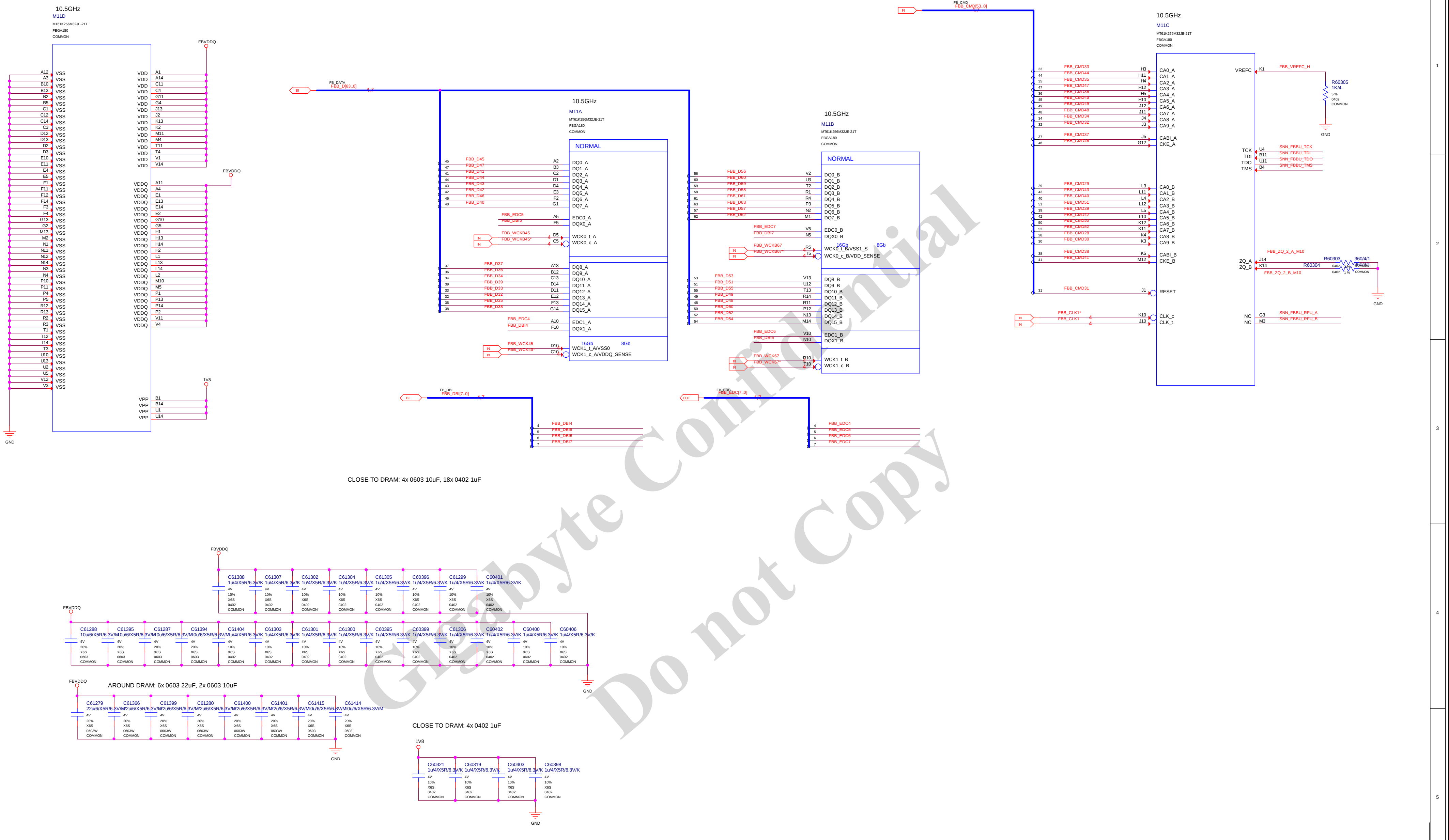
GIGABYTE

Title
MEMORY: FBB Partition 31..0

Size	Document Number	Rev
Custom	GV-N3080AORUSX W-10GD	1.0

Date: Wednesday, September 30, 2020 Sheet 7 of 79

MEMORY: FBB Partition 63..32


10.5GHz
M11D
MT61K256M32JE-21T
FBGA180
COMMON
VSS
VDD
VDDQ
VPP
FBVDDQ
1V8
GND
FB_DATA
FBB_D[63..0]
BI
M11A
NORMAL
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
16Gb
8Gb
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
M11B
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
FB_CMD
FBB_CMD[63..0]
IN
M11C
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
FBB_VREFC_H
R60305
1K/4
TCK
TDI
TDO
TMS
SNN_FBBU_TCK
SNN_FBBU_TDI
SNN_FBBU_TDO
SNN_FBBU_TMS
ZQ_A
ZQ_B
FBB_ZQ_2_A_M10
FBB_ZQ_2_B_M10
R60303
R60304
360/4/1
NC
SNN_FBBU_RFU_A
SNN_FBBU_RFU_B
FBB_CLK1*
FBB_CLK1
FB_DBI
FBB_DBI[7..0]
FB_EDC
FBB_EDC[7..0]
OUT
FBB_DBI4
FBB_DBI5
FBB_DBI6
FBB_DBI7
FBB_EDC4
FBB_EDC5
FBB_EDC6
FBB_EDC7
C61388
C61307
C61302
C61304
C61305
C60396
C61299
C60401
1u/4/X5R/6.3V/K
C61288
C61395
C61287
C61394
C61404
C61303
C61301
C61300
C60395
C60399
C61306
C60402
C60400
C60406
10u/6/X5R/6.3V/M
C61279
C61366
C61399
C61280
C61400
C61401
C61415
C61414
22u/6/X5R/6.3V/M
C60321
C60319
C60403
C60398

CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF

AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF

CLOSE TO DRAM: 4x 0402 1uF

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	MEMORY: FBB PARTITION[63:32]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

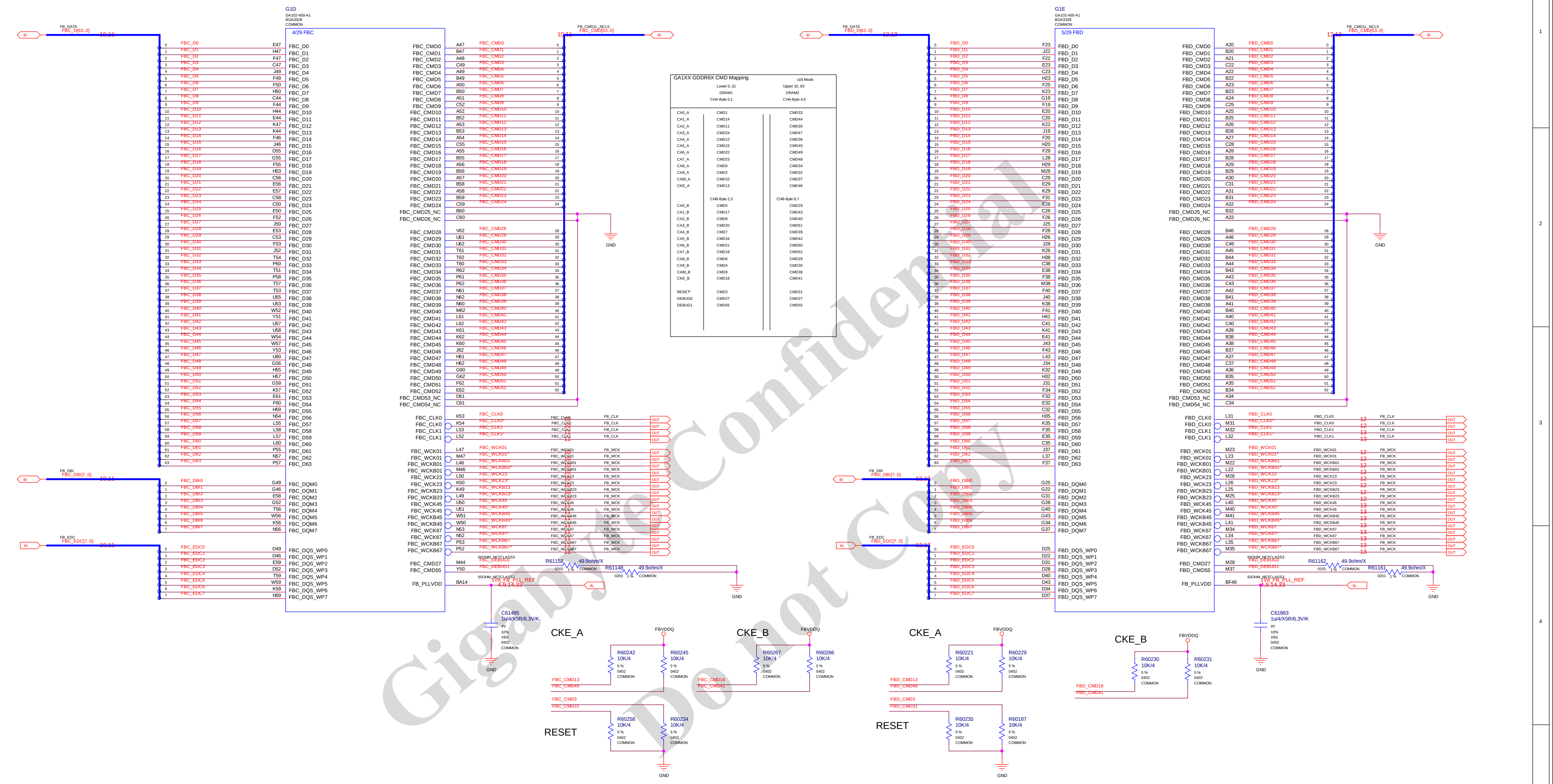
GIGABYTE

Title
MEMORY: FBB Partition 63..32

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020

MEMORY: GPU Partition C/D


G1D
GA102-400-A1
BGA3328
COMMON
4/29 FBC
FB_DATA
FBC_D[63..0]
FB_CMD1L_NCLS
FBC_CMD[53..0]
FB_DBI
FBC_DBI[7..0]
FB_EDC
FBC_EDC[7..0]
FBC_PLLVDD
1V8_FB_PLL_REF
R61158
49.9ohm/X
R61148
C61485
1u/4/X5R/6.3V/K
G1E
GA102-400-A1
BGA3328
COMMON
5/29 FBD
FBD_D[63..0]
FBD_CMD[53..0]
FBD_DBI[7..0]
FBD_EDC[7..0]
FBD_PLLVDD
R61162
R61161
C61863
1u/4/X5R/6.3V/K
CKE_A
CKE_B
RESET
FBVDDQ
R60242
R60245
R60267
R60266
R60221
R60229
R60230
R60231
R60258
R60234
R60235
R60187
10K/4
GND

GA1XX GDDR6X CMD Mapping	Lower 0..31 DRAM1 CHA-Byte 0,1	x16 Mode Upper 32..63 DRAM2 CHA-Byte 4,5
CA0_A	CMD1	CMD33
CA1_A	CMD14	CMD44
CA2_A	CMD11	CMD35
CA3_A	CMD24	CMD47
CA4_A	CMD12	CMD36
CA5_A	CMD15	CMD45
CA6_A	CMD22	CMD49
CA7_A	CMD23	CMD48
CA8_A	CMD0	CMD34
CA9_A	CMD2	CMD32
CABI_A	CMD10	CMD37
CKE_A	CMD13	CMD46
	CHB-Byte 2,3	CHB-Byte 6,7
CA0_B	CMD5	CMD29
CA1_B	CMD17	CMD43
CA2_B	CMD8	CMD40
CA3_B	CMD20	CMD51
CA4_B	CMD7	CMD39
CA5_B	CMD16	CMD42
CA6_B	CMD21	CMD50
CA7_B	CMD19	CMD52
CA8_B	CMD6	CMD28
CA9_B	CMD4	CMD30
CABI_B	CMD9	CMD38
CKE_B	CMD18	CMD41
RESET*	CMD3	CMD31
DEBUG0	CMD27	CMD27
DEBUG1	CMD55	CMD55

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	MEMORY: GPU PARTITION C/D

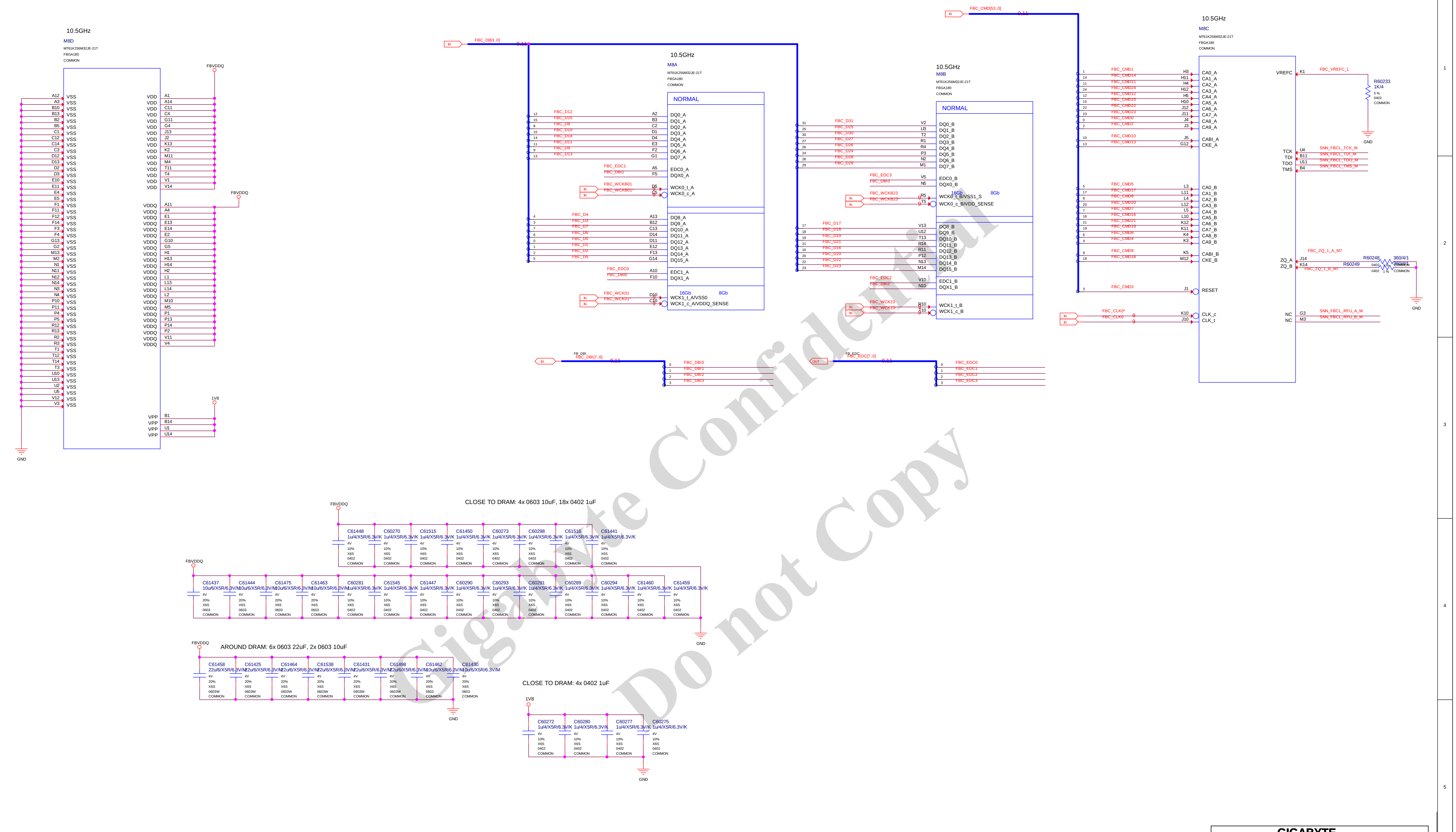
GIGABYTE

Title: MEMORY: GPU Partition C/D

Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0
Date: Wednesday, September 30, 2020
Sheet 9 of 79

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

MEMORY: FBC Partition 31..0



10.5GHz
M8D
MT61K256M32JE-21T
FBGA180
COMMON
FBVDDQ
VSS
VDD
VDDQ
VPP
1V8
GND
FBC_D[63..0]
FBC_CMD[53..0]
10.5GHz
M8A
NORMAL
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
16Gb
8Gb
10.5GHz
M8B
NORMAL
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
10.5GHz
M8C
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
TCK
TDI
TDO
TMS
ZQ_A
ZQ_B
NC
FBC_VREFC_L
R60233
1K/4
R60248
R60249
360/4/1
FBC_DBI[7..0]
FBC_EDC[7..0]
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
CLOSE TO DRAM: 4x 0402 1uF

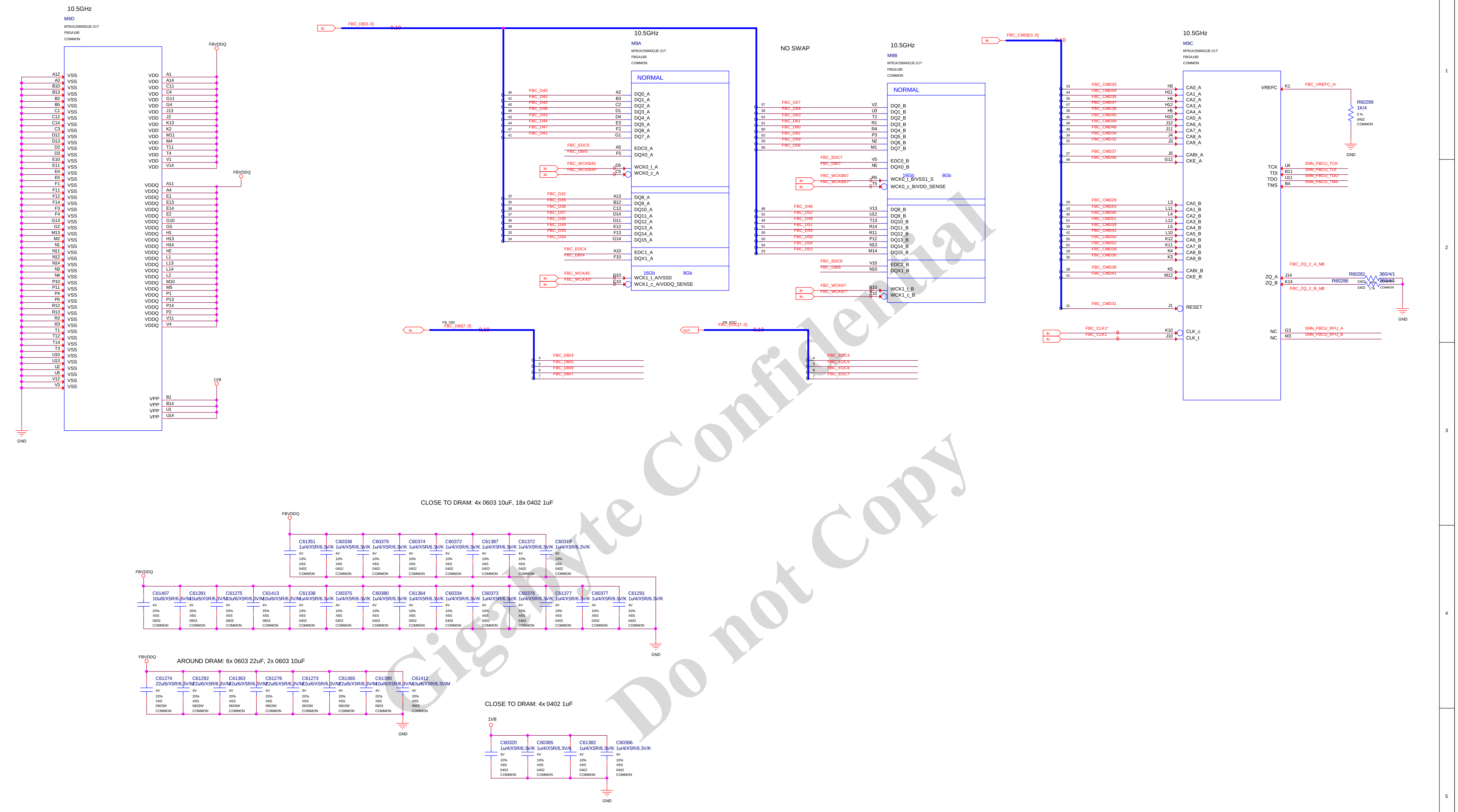
Gigabyte Confidential Do not Copy

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL MEMORY: FBC PARTITION[31:0]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE		
Title: MEMORY: FBC Partition 31..0		
Size: Custom	Document Number: GV-N3080AORUSX W-10GD	Rev: 1.0
Date: Wednesday, September 30, 2020	Sheet 10 of 79	

MEMORY: FBC Partition 63..32

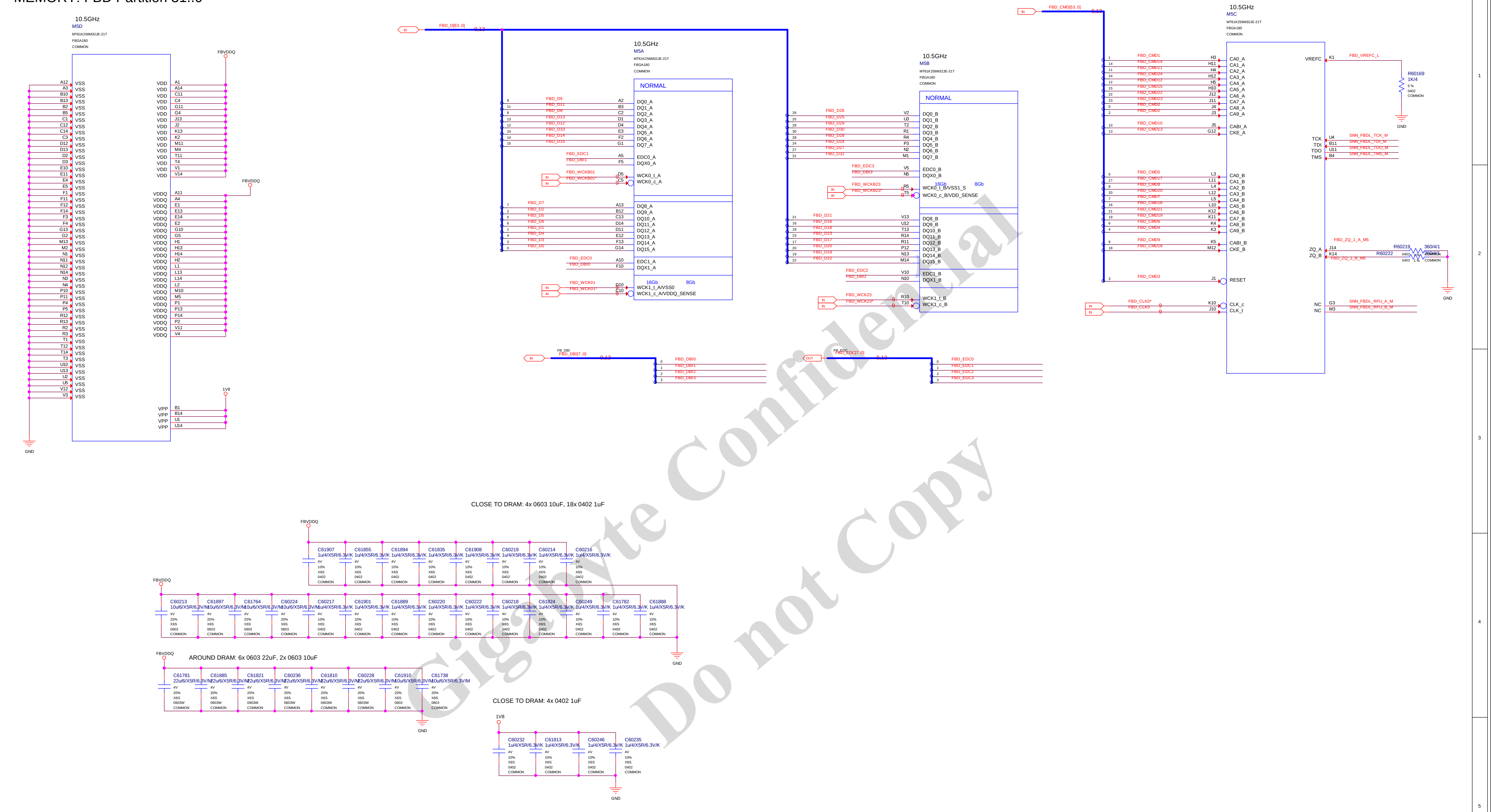

10.5GHz
M9D
MT61K256M32JE-21T
FBGA180
COMMON
VSS
VDD
VDDQ
VPP
FBVDDQ
1V8
GND
FBC_D[63..0]
10.5GHz
M9A
MT61K256M32JE-21T
FBGA180
COMMON
NORMAL
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
16Gb
8Gb
NO SWAP
10.5GHz
M9B
MT61K256M32JE-21T
FBGA180
COMMON
NORMAL
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
FBC_CMD[63..0]
10.5GHz
M9C
MT61K256M32JE-21T
FBGA180
COMMON
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
FBC_VREFC_H
R60299
1K/4
TCK
TDI
TDO
TMS
SNN_FBCU_TCK
SNN_FBCU_TDI
SNN_FBCU_TDO
SNN_FBCU_TMS
ZQ_A
ZQ_B
FBC_ZQ_2_A_M8
FBC_ZQ_2_B_M8
R60281
R60286
360/4/1
NC
SNN_FBCU_RFU_A
SNN_FBCU_RFU_B
FBC_CLK1*
FBC_CLK1
FB_DBI
FBC_DBI[7..0]
FB_EDC
FBC_EDC[7..0]
FBC_DBI4
FBC_DBI5
FBC_DBI6
FBC_DBI7
FBC_EDC4
FBC_EDC5
FBC_EDC6
FBC_EDC7
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
C61351
C60336
C60379
C60374
C60372
C61387
C61372
C60318
1u/4/X5R/6.3V/K
C61407
C61391
C61275
C61413
10u/6/X5R/6.3V/M
C61338
C60375
C60380
C61364
C60334
C60373
C60376
C61377
C60377
C61291
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
C61274
C61292
C61363
C61276
C61273
C61365
22u/6/X5R/6.3V/M
C61390
C61412
10u/6/X5R/6.3V/M
CLOSE TO DRAM: 4x 0402 1uF
C60320
C60365
C61382
C60366

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL MEMORY: FBC PARTITION[63:32]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
MEMORY: FBC Partition 63..32
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

MEMORY: FBD Partition 31..0



10.5GHz
M5D
MT61K256M32JE-21T
FBGA180
COMMON
FBVDDQ
1V8
GND
VSS
VDD
VDDQ
VPP
10.5GHz
M5A
NORMAL
FBD_D[63..0]
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
16Gb
8Gb
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
10.5GHz
M5B
NORMAL
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
FBD_CMD[53..0]
10.5GHz
M5C
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
FBD_VREFC_L
R60169
1K/4
TCK
TDI
TDO
TMS
SNN_FBDL_TCK_M
ZQ_A
ZQ_B
FBD_ZQ_1_A_M5
R60219
R60222
360/4/1
NC
SNN_FBDL_RFU_A_M
SNN_FBDL_RFU_B_M
FBD_DBI[7..0]
FBD_EDC[7..0]
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
CLOSE TO DRAM: 4x 0402 1uF

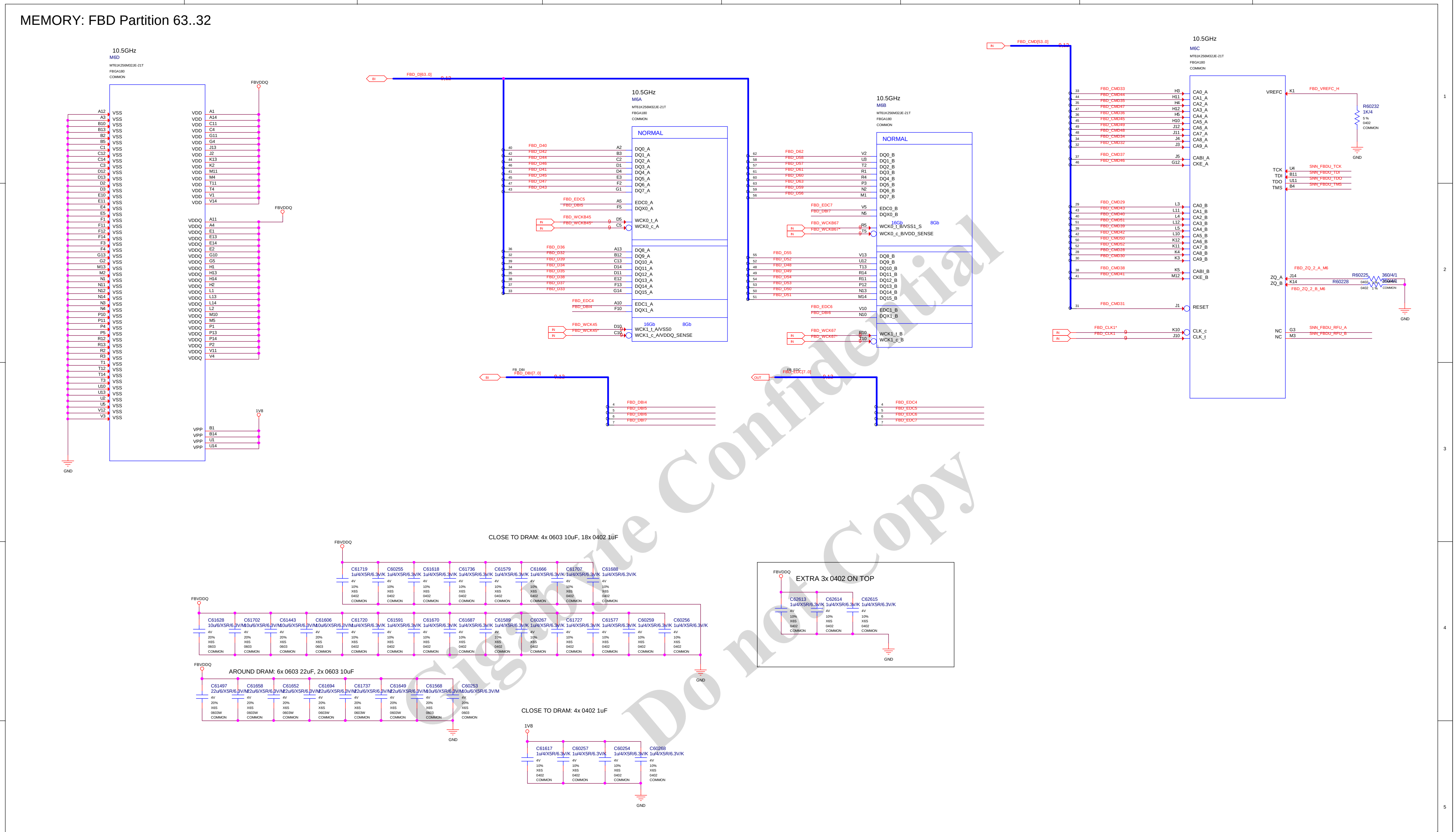
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL MEMORY: FBD PARTITION[31:0]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
MEMORY: FBD Partition 31..0
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 12 of 79

MEMORY: FBD Partition 63..32

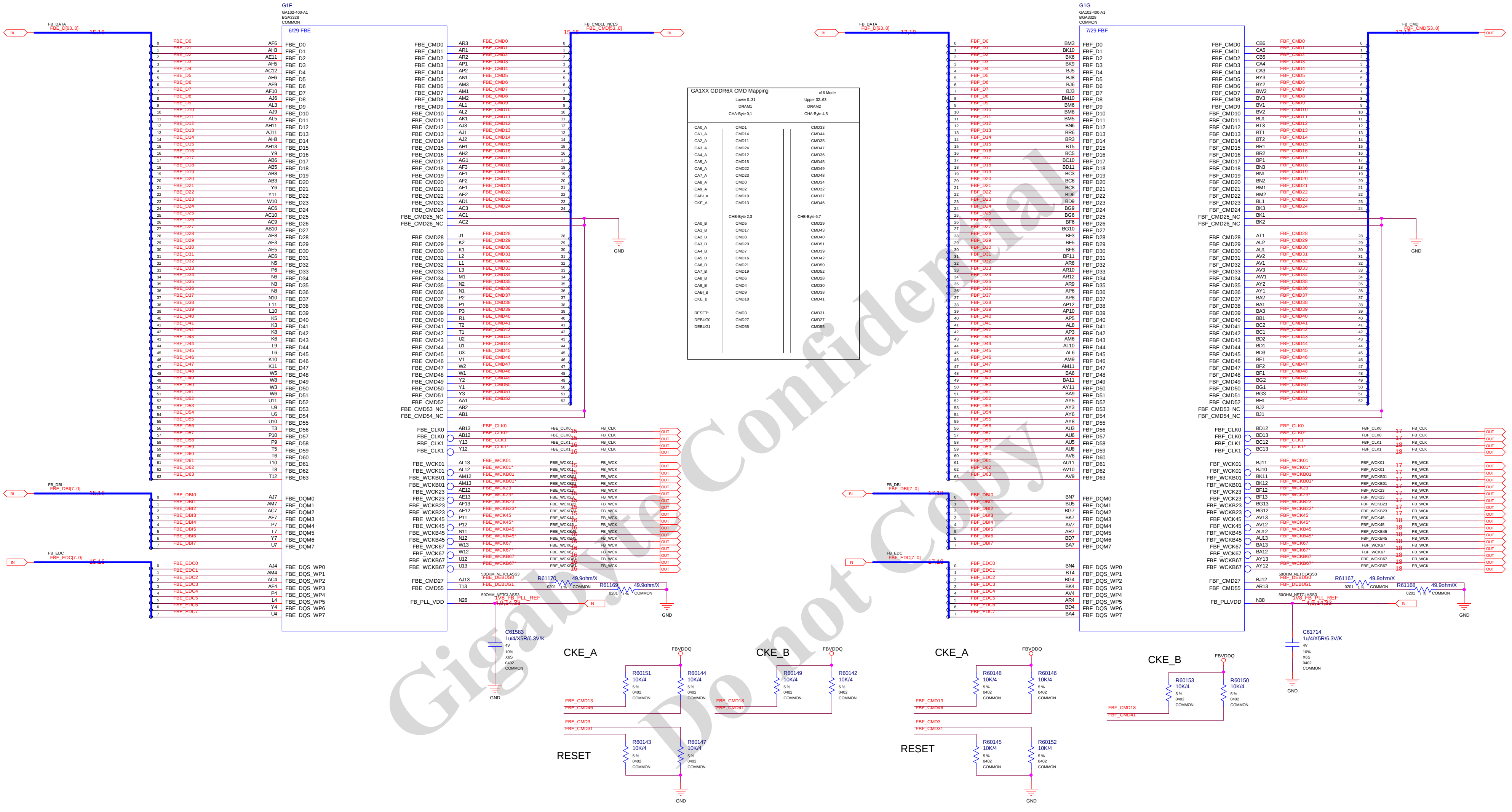

10.5GHz
M6D
MT61K256M32JE-21T
FBGA180
COMMON
FBVDDQ
VSS
VDD
VDDQ
VPP
1V8
GND
10.5GHz
M6A
NORMAL
FBD_D[63..0]
DQ0_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ15_A
EDC1_A
DQX1_A
16Gb
8Gb
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
10.5GHz
M6B
NORMAL
DQ0_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
FBD_DBI[7..0]
FBD_EDC[7..0]
FBD_CMD[53..0]
10.5GHz
M6C
CA0_A
CA9_A
CABI_A
CKE_A
CA0_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
FBD_VREFC_H
R60232
1K/4
TCK
TDI
TDO
TMS
SNN_FBDU_TCK
SNN_FBDU_TDI
SNN_FBDU_TDO
SNN_FBDU_TMS
ZQ_A
ZQ_B
FBD_ZQ_2_A_M6
FBD_ZQ_2_B_M6
R60225
R60228
360/4/1
NC
SNN_FBDU_RFU_A
SNN_FBDU_RFU_B
FBD_CLK1*
FBD_CLK1
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
EXTRA 3x 0402 ON TOP
CLOSE TO DRAM: 4x 0402 1uF
C61719
C60255
C61618
C61736
C61579
C61666
C61707
C61688
C61628
C61702
C61443
C61606
C61720
C61591
C61670
C61687
C61589
C60267
C61727
C61577
C60259
C60256
C61497
C61658
C61652
C61694
C61737
C61649
C61568
C60253
C62613
C62614
C62615
C61617
C60257
C60254
C60268
1u/4/X5R/6.3V/K
10u/6/X5R/6.3V/M
22u/6/X5R/6.3V/M

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL MEMORY: FBD PARTITION[63:32]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
MEMORY: FBD Partition 63..32
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

MEMORY: GPU Partition E/F


G1F
GA102-400-A1
BGA3328
COMMON
6/29 FBE
FB_DATA
FBE_D[63..0]
15,16
FB_CMD1L_NCLS
FBE_CMD[53..0]
FB_DBI
FBE_DBI[7..0]
FB_EDC
FBE_EDC[7..0]
BI
IN
OUT
FBE_CLK0
FBE_CLK1
FBE_WCK01
FBE_WCKB01
FBE_WCK23
FBE_WCKB23
FBE_WCK45
FBE_WCKB45
FBE_WCK67
FBE_WCKB67
FB_CLK
FB_WCK
FBE_DEBUG0
FBE_DEBUG1
FB_PLL_VDD
500HM_NETCLASS3
R61170
R61169
49.9ohm/X
1V8_FB_PLL_REF
4,8,14,33
C61583
1u/4/X5R/6.3V/K
GND
G1G
GA102-400-A1
BGA3328
COMMON
7/29 FBF
FB_DATA
FBF_D[63..0]
17,18
FB_CMD
FBF_CMD[53..0]
FB_DBI
FBF_DBI[7..0]
FB_EDC
FBF_EDC[7..0]
FBF_CLK0
FBF_CLK1
FBF_WCK01
FBF_WCKB01
FBF_WCK23
FBF_WCKB23
FBF_WCK45
FBF_WCKB45
FBF_WCK67
FBF_WCKB67
FBF_DEBUG0
FBF_DEBUG1
FB_PLLVDD
R61167
R61168
C61714
1u/4/X5R/6.3V/K
CKE_A
CKE_B
RESET
FBVDDQ
R60151 10K/4
R60144 10K/4
R60149 10K/4
R60142 10K/4
R60143 10K/4
R60147 10K/4
R60148 10K/4
R60146 10K/4
R60153 10K/4
R60150 10K/4
R60145 10K/4
R60152 10K/4
5 %
0402
COMMON
FBE_CMD13
FBE_CMD46
FBE_CMD18
FBE_CMD41
FBE_CMD3
FBE_CMD31
FBF_CMD13
FBF_CMD46
FBF_CMD18
FBF_CMD41
FBF_CMD3
FBF_CMD31

GA1XX GDDR6X CMD Mapping

x16 Mode

	Lower 0..31 DRAM1 CHA-Byte 0,1	Upper 32..63 DRAM2 CHA-Byte 4,5
CA0_A	CMD1	CMD33
CA1_A	CMD14	CMD44
CA2_A	CMD11	CMD35
CA3_A	CMD24	CMD47
CA4_A	CMD12	CMD36
CA5_A	CMD15	CMD45
CA6_A	CMD22	CMD49
CA7_A	CMD23	CMD48
CA8_A	CMD0	CMD34
CA9_A	CMD2	CMD32
CABI_A	CMD10	CMD37
CKE_A	CMD13	CMD46
	CHB-Byte 2,3	CHB-Byte 6,7
CA0_B	CMD5	CMD29
CA1_B	CMD17	CMD43
CA2_B	CMD8	CMD40
CA3_B	CMD20	CMD51
CA4_B	CMD7	CMD39
CA5_B	CMD16	CMD42
CA6_B	CMD21	CMD50
CA7_B	CMD19	CMD52
CA8_B	CMD6	CMD28
CA9_B	CMD4	CMD30
CABI_B	CMD9	CMD38
CKE_B	CMD18	CMD41
RESET*	CMD3	CMD31
DEBUG0	CMD27	CMD27
DEBUG1	CMD55	CMD55

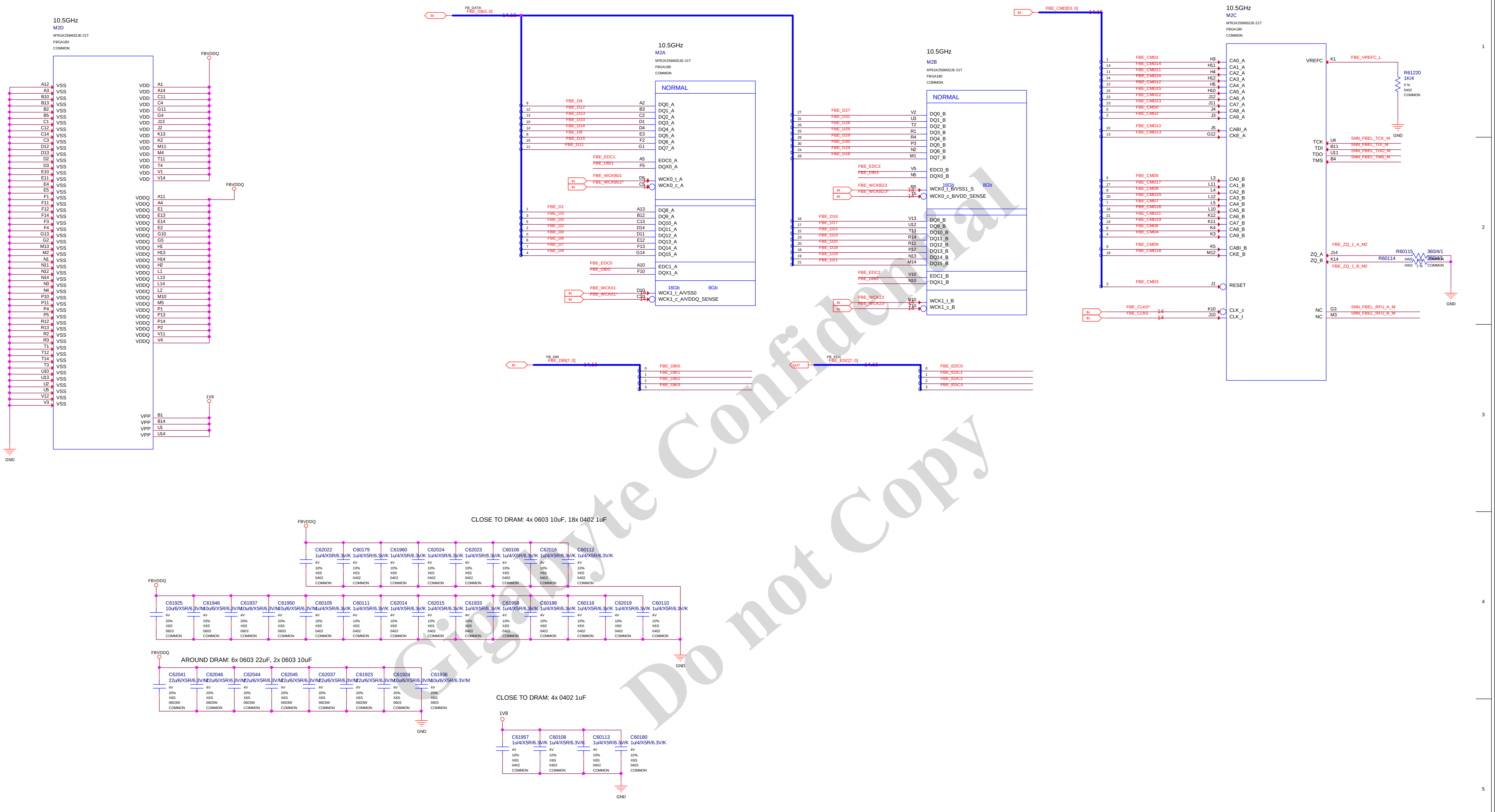
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL MEMORY: GPU PARTITION E/F

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
MEMORY: GPU Partition E/F
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 14 of 79

MEMORY: FBE Partition 31..0



10.5GHz
M2D
MT61K256M32JE-21T
FBGA180
COMMON
VSS
VDD
VDDQ
VPP
FBVDDQ
1V8
GND
10.5GHz
M2A
NORMAL
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
16Gb
8Gb
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
FB_DATA
FBE_D[63..0]
10.5GHz
M2B
NORMAL
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
10.5GHz
M2C
FBE_CMD[53..0]
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
FBE_VREFC_L
R61220
1K/4
TCK
TDI
TDO
TMS
SNN_FBEL_TCK_M
SNN_FBEL_TDI_M
SNN_FBEL_TDO_M
SNN_FBEL_TMS_M
ZQ_A
ZQ_B
FBE_ZQ_1_A_M2
FBE_ZQ_1_B_M2
R60115
R60114
360/4/1
NC
SNN_FBEL_RFU_A_M
SNN_FBEL_RFU_B_M
FB_DBI
FBE_DBI[7..0]
FB_EDC
FBE_EDC[7..0]
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
C62022 C60179 C61960 C62024 C62023 C60106 C62016 C60112
1u/4/X5R/6.3V/K
C61925 C61946 C61937 C61950
10u/6/X5R/6.3V/M
C60105 C60111 C62014 C62015 C61933 C61958 C60188 C60116 C62019 C60110
1u/4/X5R/6.3V/K
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
C62041 C62046 C62044 C62045 C62037 C61923
22u/6/X5R/6.3V/M
C61924 C61936
10u/6/X5R/6.3V/M
CLOSE TO DRAM: 4x 0402 1uF
C61957 C60108 C60113 C60180
1u/4/X5R/6.3V/K

ASSEMBLY
PAGE DETAIL

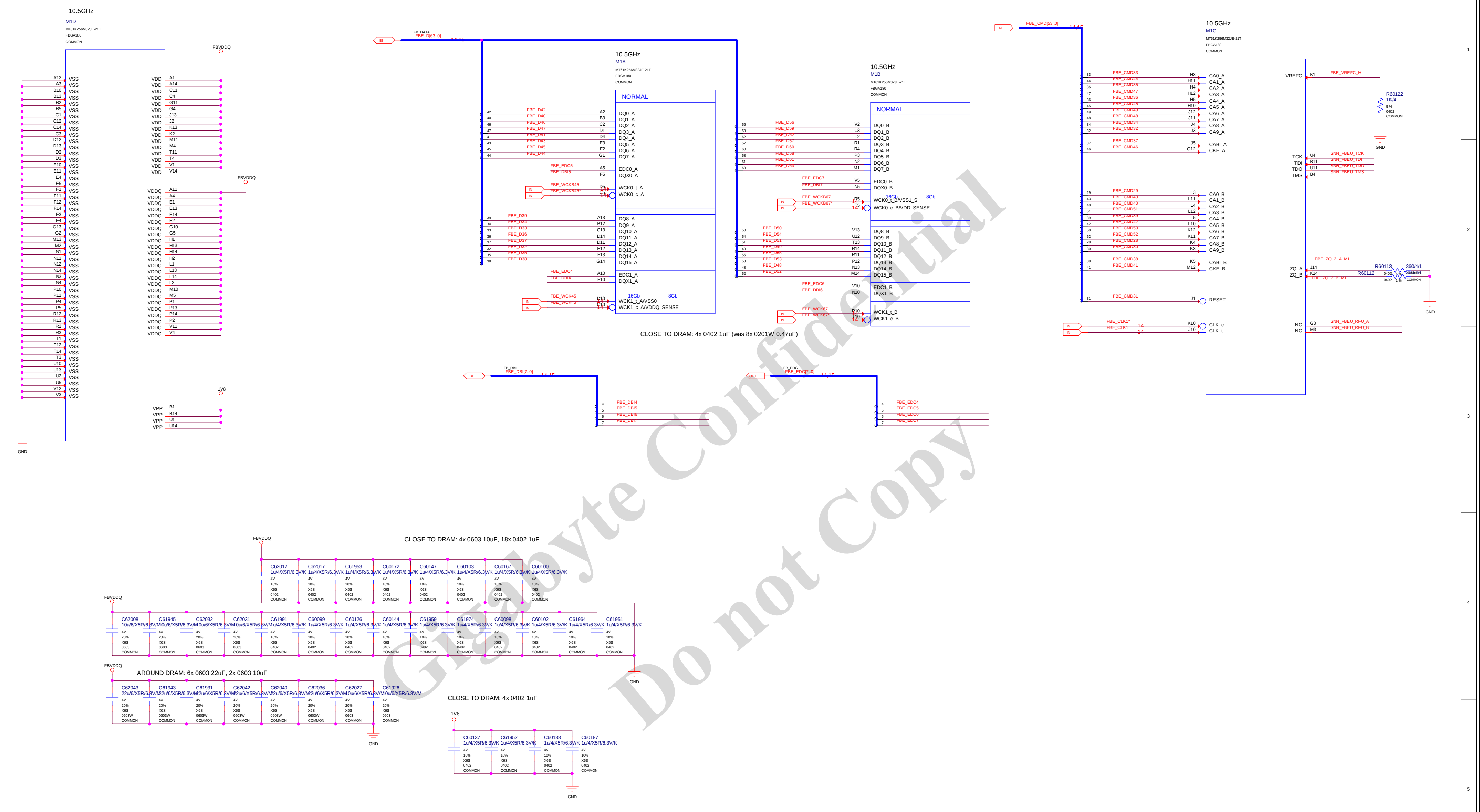
<ASSEMBLY_DESCRIPTION>
MEMORY: FBE PARTITION[31:0]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	MEMORY: FBE Partition 31..0		
Size Custom	Document Number GV-N3080AORUSX W-10GD		Rev 1.0
Date:	Wednesday, September 30, 2020	Sheet 15 of 79	

MEMORY: FBE Partition 63..32


10.5GHz
M1D
MT61K256M32JE-21T
FBGA180
COMMON
FBVDDQ
VSS
VDD
VDDQ
VPP
1V8
GND
10.5GHz
M1A
MT61K256M32JE-21T
FBGA180
COMMON
NORMAL
FB_DATA
FBE_D[63..0]
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
16Gb
8Gb
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
10.5GHz
M1B
MT61K256M32JE-21T
FBGA180
COMMON
NORMAL
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
CLOSE TO DRAM: 4x 0402 1uF (was 8x 0201W 0.47uF)
FBE_CMD[53..0]
10.5GHz
M1C
MT61K256M32JE-21T
FBGA180
COMMON
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
FBE_VREFC_H
R60122
1K/4
TCK
TDI
TDO
TMS
SNN_FBEU_TCK
SNN_FBEU_TDI
SNN_FBEU_TDO
SNN_FBEU_TMS
ZQ_A
ZQ_B
FBE_ZQ_2_A_M1
FBE_ZQ_2_B_M1
R60113
R60112
360/4/1
NC
SNN_FBEU_RFU_A
SNN_FBEU_RFU_B
FB_DBI
FBE_DBI[7..0]
FB_EDC
FBE_EDC[7..0]
FBE_DBI4
FBE_DBI5
FBE_DBI6
FBE_DBI7
FBE_EDC4
FBE_EDC5
FBE_EDC6
FBE_EDC7
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
CLOSE TO DRAM: 4x 0402 1uF

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
MEMORY: FBE PARTITION[63:32]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

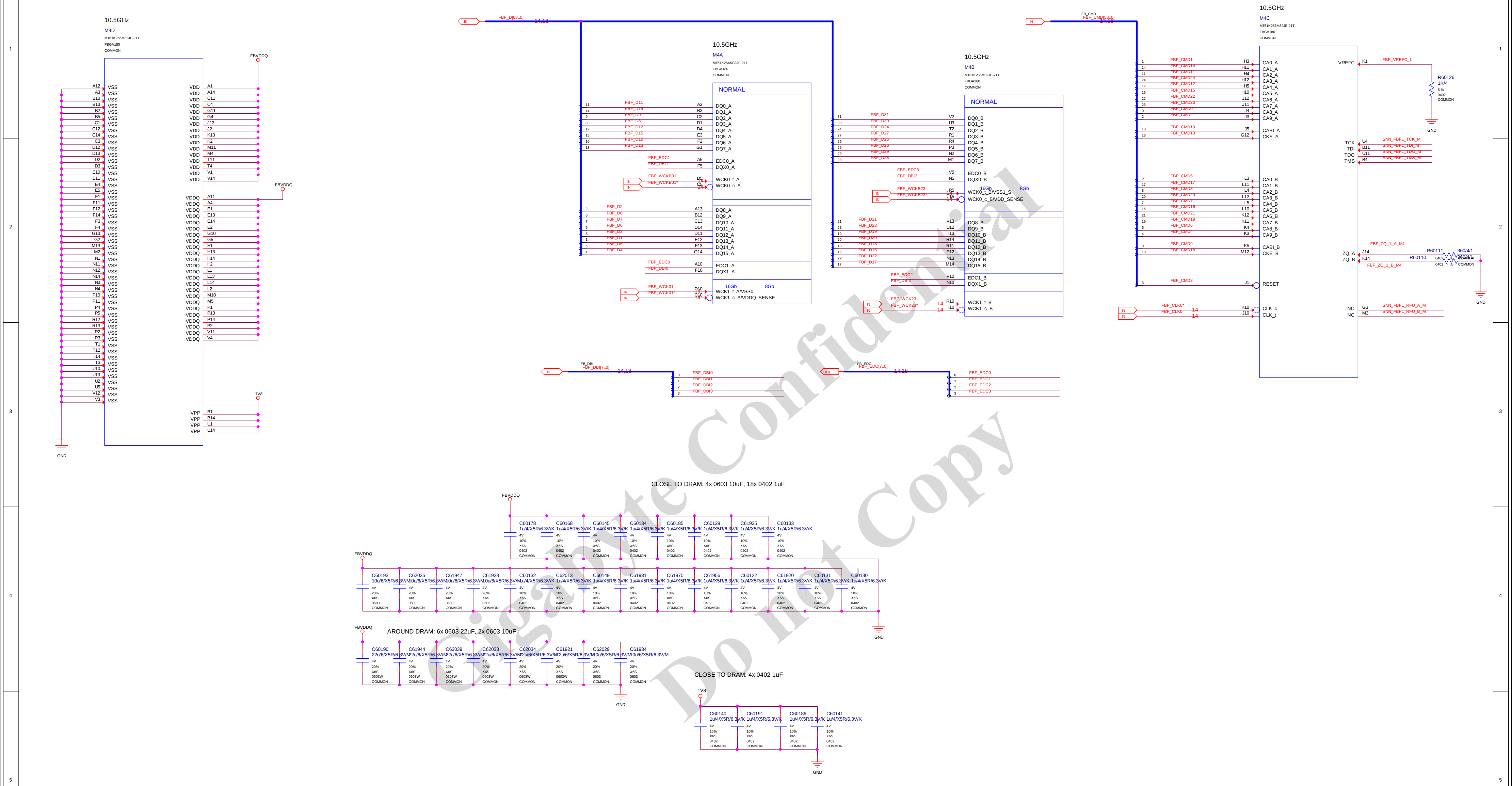
GIGABYTE

Title
MEMORY: FBE Partition 63..32

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020
Sheet 16 of 79

MEMORY: FBF Partition 31..0


10.5GHz
M4D
MT61K256M32JE-21T
FBGA180
COMMON
M4A
NORMAL
M4B
M4C
FBVDDQ
1V8
GND
FBF_D[63..0]
FB_CMD
FBF_CMD[53..0]
FB_DBI
FBF_DBI[7..0]
FB_EDC
FBF_EDC[7..0]
VREFC
FBF_VREFC_L
R60126
1K/4
RESET
CLK_c
CLK_t
FBF_CLK0*
FBF_CLK0
ZQ_A
ZQ_B
R60111
R60110
360/4/1
TCK
TDI
TDO
TMS
SNN_FBFL_TCK_M
SNN_FBFL_TDI_M
SNN_FBFL_TDO_M
SNN_FBFL_TMS_M
SNN_FBFL_RFU_A_M
SNN_FBFL_RFU_B_M
16Gb
8Gb
WCK0_t_A
WCK0_c_A
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
WCK1_t_B
WCK1_c_B
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
CLOSE TO DRAM: 4x 0402 1uF
C60178
C60168
C60145
C60134
C60185
C60129
C61935
C60133
C60193
C62035
C61947
C61938
C60132
C62013
C60149
C61981
C61970
C61956
C60122
C61920
C60131
C60130
C60190
C61944
C62039
C62033
C62034
C61921
C62029
C61934
C60140
C60191
C60186
C60141
1u/4/X5R/6.3V/K
10u/6/X5R/6.3V/M
22u/6/X5R/6.3V/M

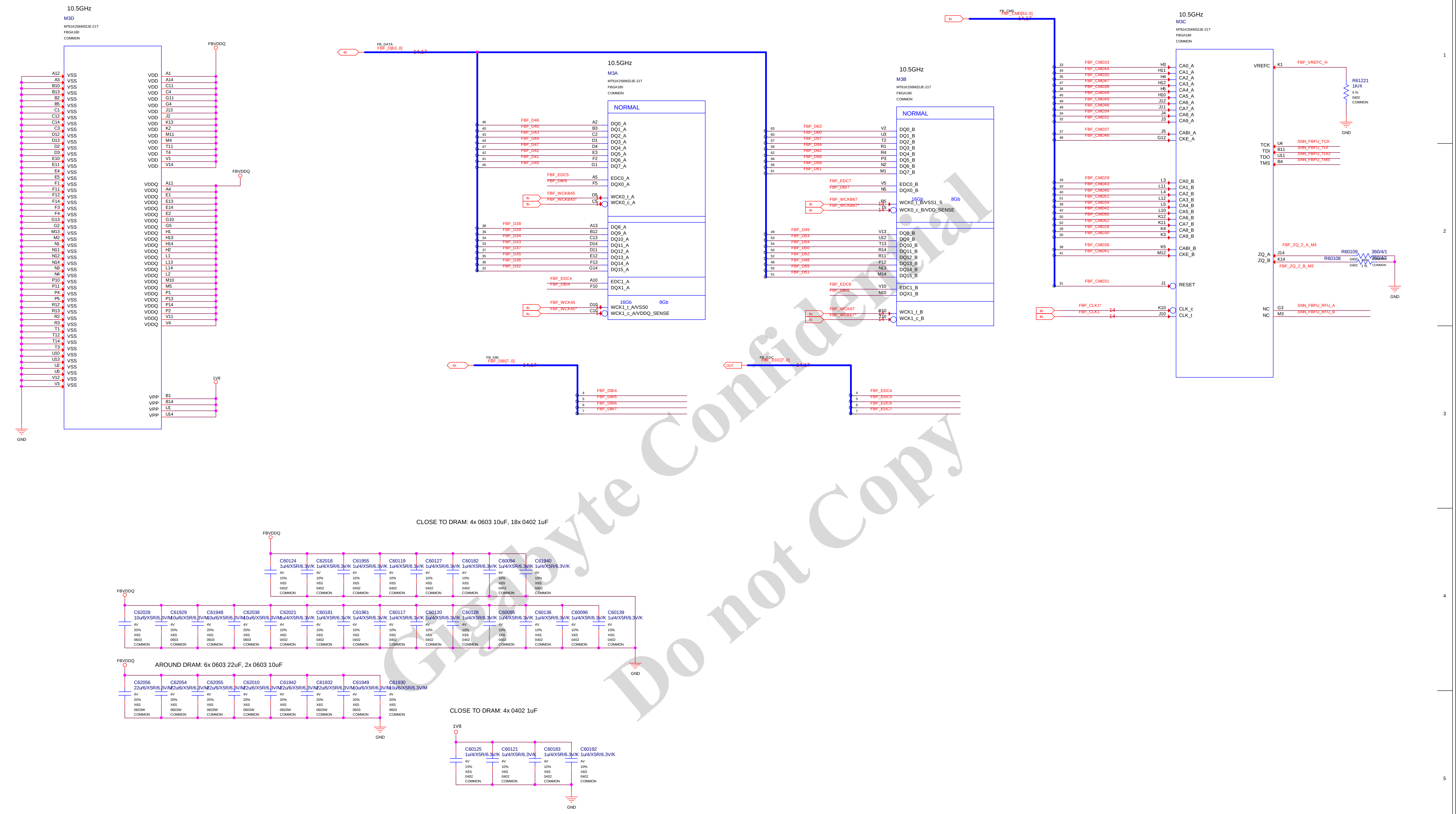
ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
MEMORY: FBF PARTITION[31:0]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
MEMORY: FBF Partition 31..0
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 17 of 79

MEMORY: FBF Partition 63..32


10.5GHz
M3D
MT61K256M32JE-21T
FBGA180
COMMON
FBVDDQ
VSS
VDD
VDDQ
VPP
1V8
GND
M3A
NORMAL
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
EDC0_A
DQX0_A
WCK0_t_A
WCK0_c_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
EDC1_A
DQX1_A
WCK1_t_A/VSS0
WCK1_c_A/VDDQ_SENSE
16Gb
8Gb
M3B
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
EDC0_B
DQX0_B
WCK0_t_B/VSS1_S
WCK0_c_B/VDD_SENSE
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
EDC1_B
DQX1_B
WCK1_t_B
WCK1_c_B
M3C
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
CA6_A
CA7_A
CA8_A
CA9_A
CABI_A
CKE_A
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
CA6_B
CA7_B
CA8_B
CA9_B
CABI_B
CKE_B
RESET
CLK_c
CLK_t
VREFC
TCK
TDI
TDO
TMS
ZQ_A
ZQ_B
NC
FBF_VREFC_H
R61221
1K/4
R60109
R60108
360/4/1
SNN_FBFU_TCK
SNN_FBFU_TDI
SNN_FBFU_TDO
SNN_FBFU_TMS
SNN_FBFU_RFU_A
SNN_FBFU_RFU_B
FBF_ZQ_2_A_M3
FBF_ZQ_2_B_M3
FB_DATA
FBF_D[63..0]
FB_CMD
FBF_CMD[53..0]
FB_DBI
FBF_DBI[7..0]
FB_EDC
FBF_EDC[7..0]
FBF_CLK1*
FBF_CLK1
FBF_CMD31
FBF_WCK45
FBF_WCK45*
FBF_WCK67
FBF_WCK67*
FBF_DBI4
FBF_DBI5
FBF_DBI6
FBF_DBI7
FBF_EDC4
FBF_EDC5
FBF_EDC6
FBF_EDC7
14,17
CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
CLOSE TO DRAM: 4x 0402 1uF
C60124
C62018
C61955
C60119
C60127
C60182
C60094
C61940
C62028
C61929
C61948
C62038
C62021
C60181
C61961
C60117
C60120
C60128
C60095
C60136
C60096
C60139
C62056
C62054
C62055
C62010
C61942
C61932
C61949
C61930
C60125
C60121
C60183
C60192
1u/4/X5R/6.3V/K
10u/6/X5R/6.3V/M
22u/6/X5R/6.3V/M
COMMON

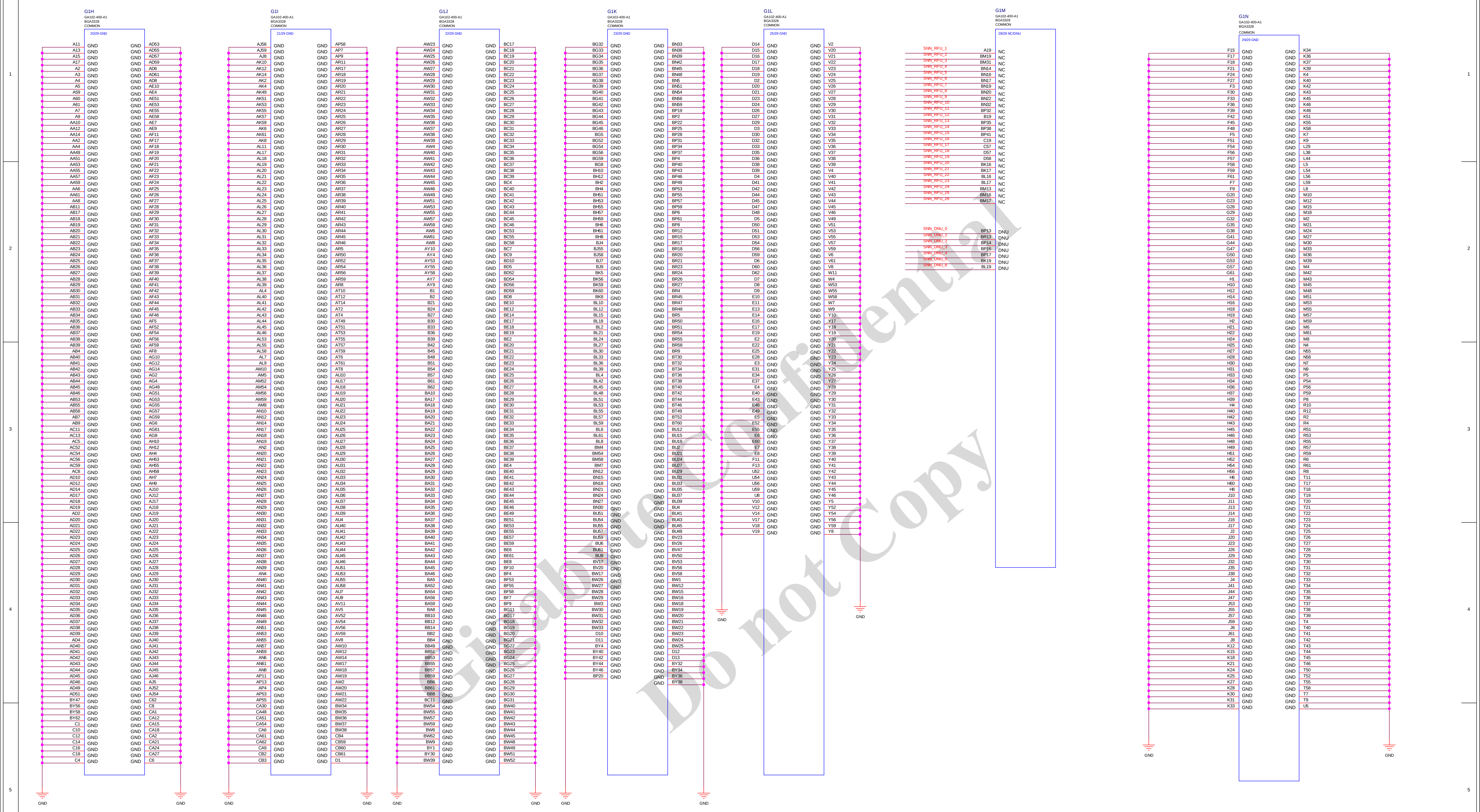
ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
MEMORY: FBF PARTITION[63:32]

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
MEMORY: FBF Partition 63..32
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

GPU GND, RFUs & RSVD


G1H
GA102-400-A1
BGA3328
COMMON
20/29 GND
G1I
GA102-400-A1
BGA3328
COMMON
21/29 GND
G1J
GA102-400-A1
BGA3328
COMMON
22/29 GND
G1K
GA102-400-A1
BGA3328
COMMON
23/29 GND
G1L
GA102-400-A1
BGA3328
COMMON
25/29 GND
G1M
GA102-400-A1
BGA3328
COMMON
28/29 NC/DNU
SNN_RFU_1 A19 NC
SNN_RFU_2 BM19 NC
SNN_RFU_3 BM31 NC
SNN_RFU_4 BN14 NC
SNN_RFU_5 BN16 NC
SNN_RFU_6 BN17 NC
SNN_RFU_7 BN19 NC
SNN_RFU_8 BN20 NC
SNN_RFU_9 BN22 NC
SNN_RFU_10 BN32 NC
SNN_RFU_11 BP32 NC
SNN_RFU_12 B19 NC
SNN_RFU_13 BP35 NC
SNN_RFU_14 BP38 NC
SNN_RFU_15 BP41 NC
SNN_RFU_16 C19 NC
SNN_RFU_17 C57 NC
SNN_RFU_18 D57 NC
SNN_RFU_19 D58 NC
SNN_RFU_20 BK16 NC
SNN_RFU_21 BK17 NC
SNN_RFU_22 BL16 NC
SNN_RFU_23 BL17 NC
SNN_RFU_24 BM13 NC
SNN_RFU_25 BM16 NC
SNN_RFU_26 BM17 NC
SNN_DNU_0 BP13 DNU
SNN_DNU_1 BR13 DNU
SNN_DNU_2 BP14 DNU
SNN_DNU_3 BP16 DNU
SNN_DNU_4 BP17 DNU
SNN_DNU_5 BK19 DNU
SNN_DNU_6 BL19 DNU
G1N
GA102-400-A1
BGA3328
COMMON
29/29 GND
GND

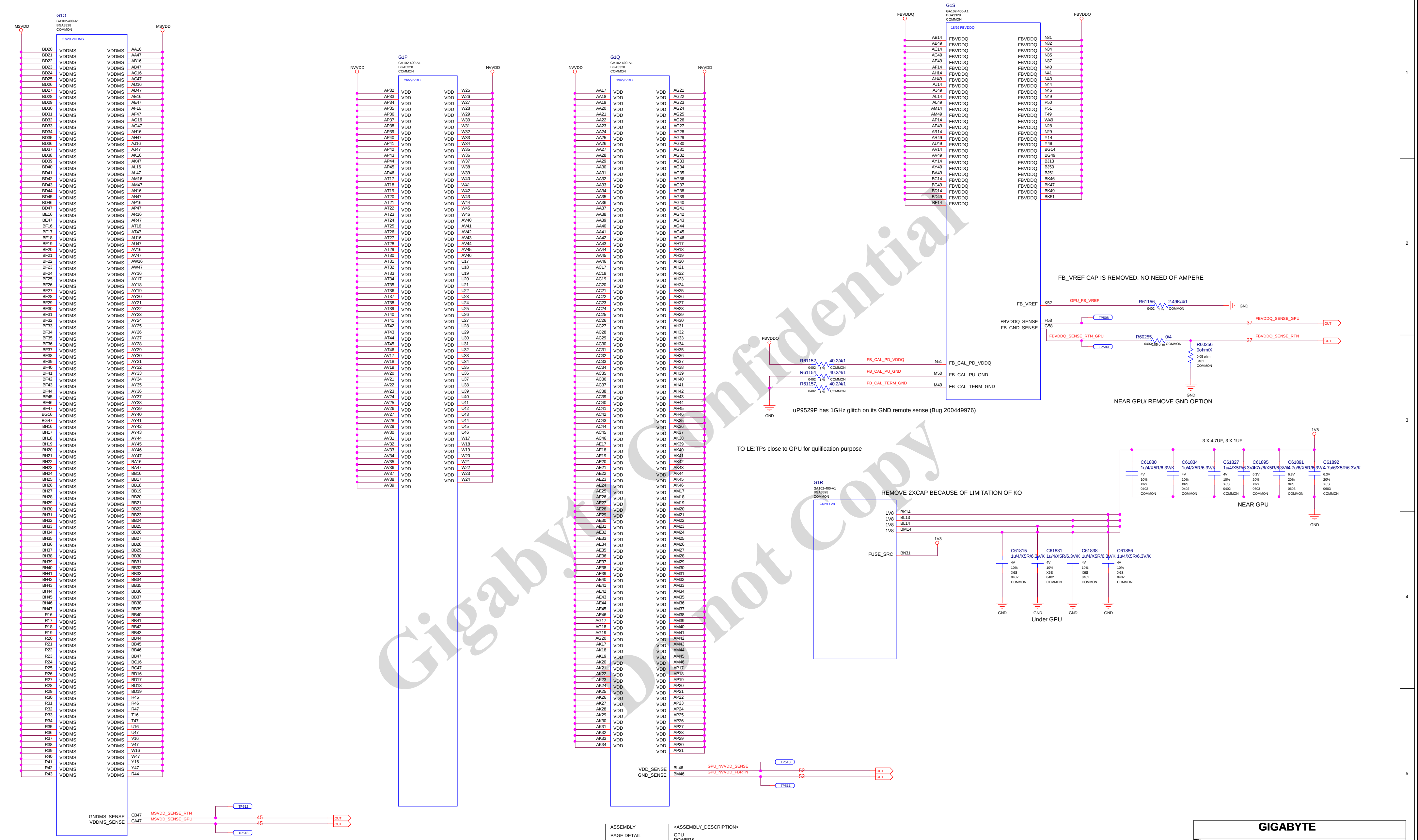
ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
GPU GND, RFUs & RSVD

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title: GPU GND, RFUs & RSVD
Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0
Date: Wednesday, September 30, 2020
Sheet 19 of 79

GPU PWR and GND


G1O
GA102-400-A1
BGA3328
COMMON
27/29 VDDMS
MSVDD
VDDMS
G1P
26/29 VDD
NVVDD
VDD
G1Q
19/29 VDD
G1S
18/29 FBVDDQ
FBVDDQ
FB_VREF
K52
GPU_FB_VREF
R61156
2.49K/4/1
GND
FB_VREF CAP IS REMOVED. NO NEED OF AMPERE
FBVDDQ_SENSE
FB_GND_SENSE
H58
G58
TP508
TP509
FBVDDQ_SENSE_GPU
FBVDDQ_SENSE_RTN_GPU
FBVDDQ_SENSE_RTN
R60255
0/4
R60256
0ohm/X
37
OUT
NEAR GPU/ REMOVE GND OPTION
R61152
R61154
R61157
40.2/4/1
FB_CAL_PD_VDDQ
FB_CAL_PU_GND
FB_CAL_TERM_GND
N51
M50
M49
uP9529P has 1GHz glitch on its GND remote sense (Bug 200449976)
TO LE:TPs close to GPU for qulification purpose
G1R
24/29 1V8
1V8
BK14
BL13
BL14
BM14
FUSE_SRC
BN31
REMOVE 2XCAP BECAUSE OF LIMITATION OF KO
3 X 4.7UF, 3 X 1UF
C61880
C61834
C61827
C61895
C61891
C61892
1u/4/X5R/6.3V/K
4.7u/6/X5R/6.3V/K
NEAR GPU
C61815
C61831
C61838
C61856
Under GPU
VDD_SENSE
GND_SENSE
BL46
BM46
GPU_NVVDD_SENSE
GPU_NVVDD_FBRTN
TP510
TP511
52
GNDMS_SENSE
VDDMS_SENSE
CB47
CA47
MSVDD_SENSE_RTN
MSVDD_SENSE_GPU
TP512
TP513
45

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL GPU POWERS

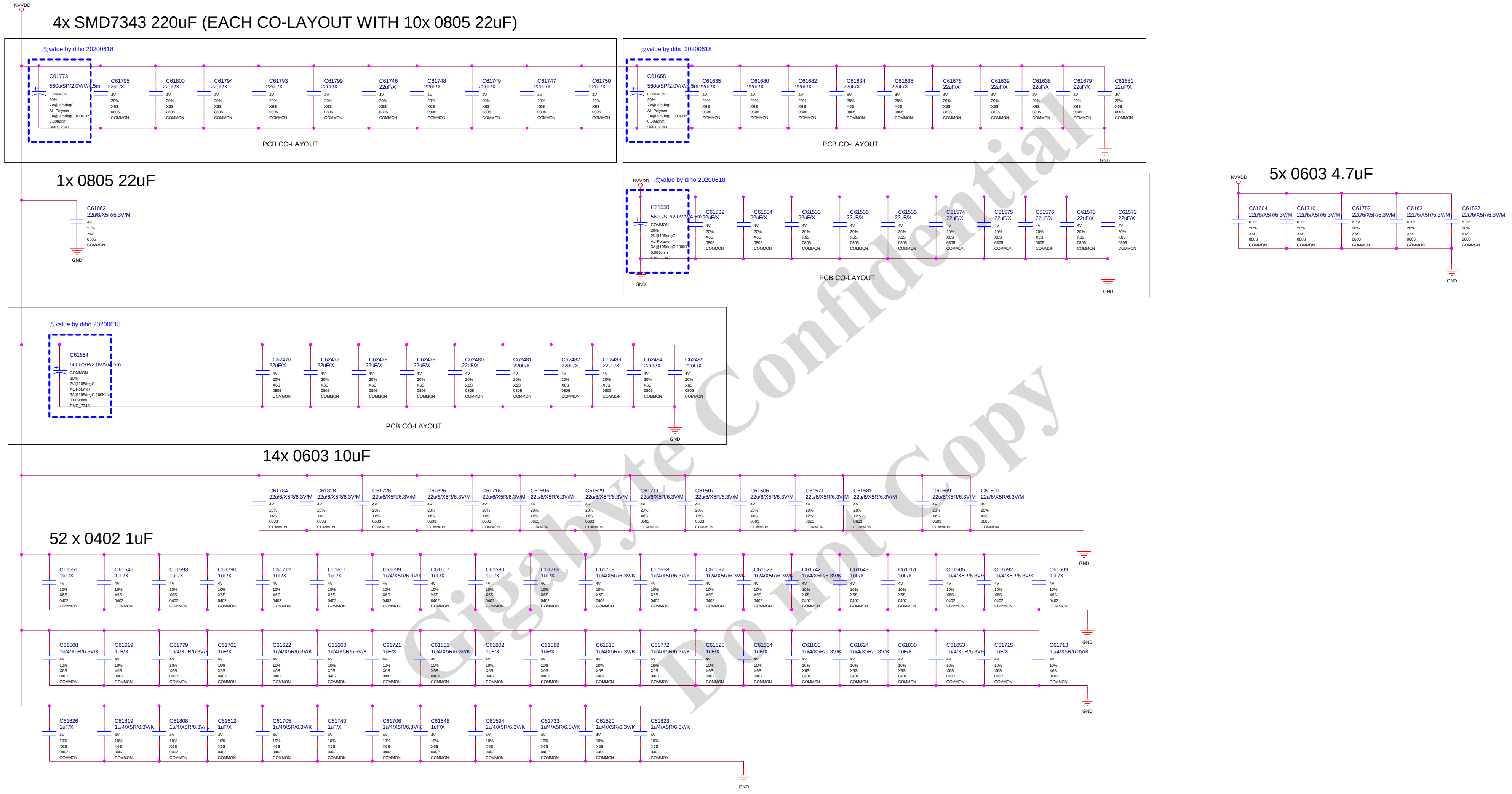
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
GPU PWR and GND
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

Page 21: GPU: NVVDD DECOUPLING

NVVDD

UNDER GPU


NVVDD
4x SMD7343 220uF (EACH CO-LAYOUT WITH 10x 0805 22uF)
改value by diho 20200618
C61773 560u/SP/2.0V/V/4.5m COMMON 20% 2V@105degC AL-Polymer 3A@105degC,100KHz 0.009ohm SMD_7343
C61795 22uF/X
C61800 22uF/X
C61794 22uF/X
C61793 22uF/X
C61799 22uF/X
C61746 22uF/X
C61748 22uF/X
C61749 22uF/X
C61747 22uF/X
C61750 22uF/X
4V 20% X6S 0805 COMMON
PCB CO-LAYOUT
C61655 560u/SP/2.0V/V/4.5m
C61635 22uF/X
C61680 22uF/X
C61682 22uF/X
C61634 22uF/X
C61636 22uF/X
C61678 22uF/X
C61639 22uF/X
C61638 22uF/X
C61679 22uF/X
C61681 22uF/X
GND
1x 0805 22uF
C61662 22u/6/X5R/6.3V/M 4V 20% X6S 0805 COMMON
C61550 560u/SP/2.0V/V/4.5m
C61532 22uF/X
C61534 22uF/X
C61533 22uF/X
C61536 22uF/X
C61535 22uF/X
C61574 22uF/X
C61575 22uF/X
C61576 22uF/X
C61573 22uF/X
C61572 22uF/X
5x 0603 4.7uF
C61604 22u/6/X5R/6.3V/M
C61710 22u/6/X5R/6.3V/M
C61753 22u/6/X5R/6.3V/M
C61621 22u/6/X5R/6.3V/M
C61537 22u/6/X5R/6.3V/M
6.3V 20% X6S 0603 COMMON
C61654 560u/SP/2.0V/V/4.5m
C62476 22uF/X
C62477 22uF/X
C62478 22uF/X
C62479 22uF/X
C62480 22uF/X
C62481 22uF/X
C62482 22uF/X
C62483 22uF/X
C62484 22uF/X
C62485 22uF/X
14x 0603 10uF
C61784 22u/6/X5R/6.3V/M
C61828 22u/6/X5R/6.3V/M
C61728 22u/6/X5R/6.3V/M
C61826 22u/6/X5R/6.3V/M
C61716 22u/6/X5R/6.3V/M
C61596 22u/6/X5R/6.3V/M
C61529 22u/6/X5R/6.3V/M
C61711 22u/6/X5R/6.3V/M
C61507 22u/6/X5R/6.3V/M
C61506 22u/6/X5R/6.3V/M
C61571 22u/6/X5R/6.3V/M
C61581 22u/6/X5R/6.3V/M
C61669 22u/6/X5R/6.3V/M
C61600 22u/6/X5R/6.3V/M
4V 20% X6S 0603 COMMON
52 x 0402 1uF
C61551 1uF/X
C61546 1uF/X
C61593 1uF/X
C61790 1uF/X
C61712 1uF/X
C61611 1uF/X
C61699 1u/4/X5R/6.3V/K
C61607 1uF/X
C61580 1uF/X
C61766 1uF/X
C61703 1u/4/X5R/6.3V/K
C61558 1u/4/X5R/6.3V/K
C61697 1u/4/X5R/6.3V/K
C61523 1u/4/X5R/6.3V/K
C61742 1u/4/X5R/6.3V/K
C61643 1uF/X
C61761 1uF/X
C61505 1u/4/X5R/6.3V/K
C61692 1u/4/X5R/6.3V/K
C61609 1uF/X
C61508 1u/4/X5R/6.3V/K
C61619 1uF/X
C61779 1u/4/X5R/6.3V/K
C61701 1uF/X
C61622 1u/4/X5R/6.3V/K
C61660 1u/4/X5R/6.3V/K
C61721 1uF/X
C61851 1u/4/X5R/6.3V/K
C61802 1uF/X
C61588 1uF/X
C61513 1u/4/X5R/6.3V/K
C61772 1u/4/X5R/6.3V/K
C61825 1uF/X
C61564 1uF/X
C61833 1u/4/X5R/6.3V/K
C61624 1u/4/X5R/6.3V/K
C61830 1uF/X
C61653 1u/4/X5R/6.3V/K
C61715 1uF/X
C61713 1u/4/X5R/6.3V/K
C61626 1uF/X
C61819 1u/4/X5R/6.3V/K
C61808 1u/4/X5R/6.3V/K
C61512 1uF/X
C61705 1u/4/X5R/6.3V/K
C61740 1uF/X
C61706 1u/4/X5R/6.3V/K
C61548 1uF/X
C61594 1u/4/X5R/6.3V/K
C61733 1u/4/X5R/6.3V/K
C61520 1u/4/X5R/6.3V/K
C61823 1u/4/X5R/6.3V/K
4V 10% X6S 0402 COMMON
GND

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
GPU DECOUPLING NVVDD

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

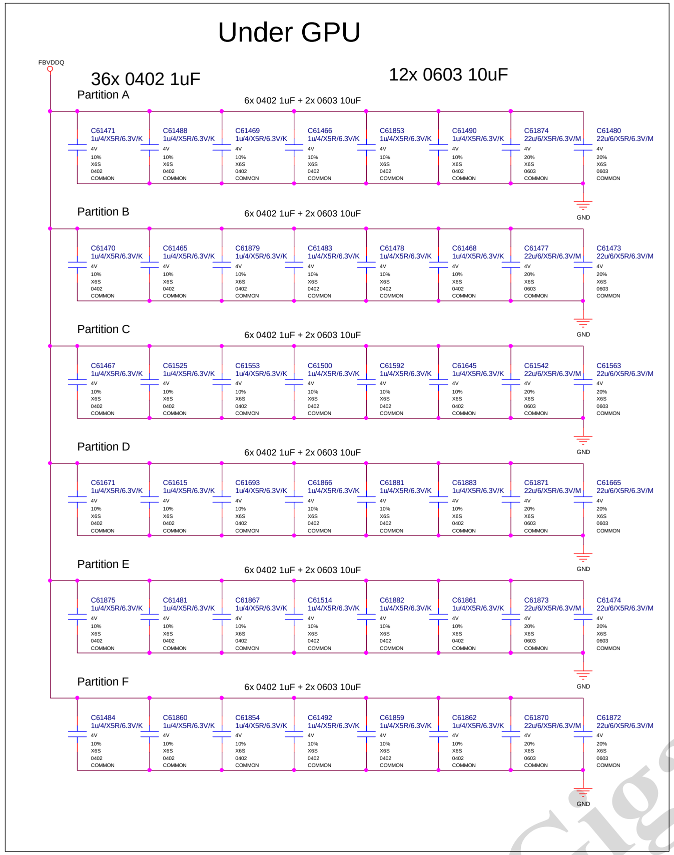
Title
Page 21: GPU: NVVDD DECOUPLING

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

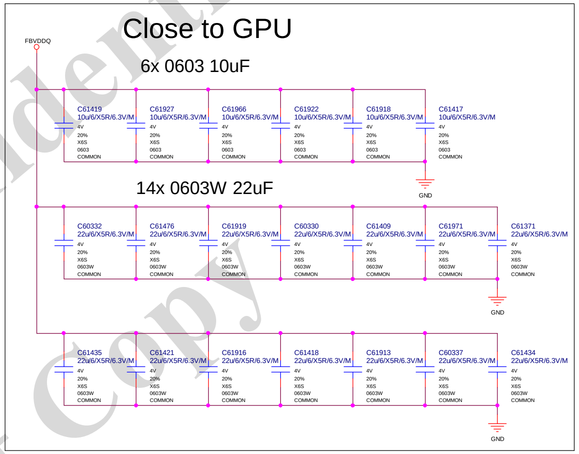
Date: Wednesday, September 30, 2020

Page 22: GPU: FBVDD DECOUPLING

FBVDDQ



Under GPU
FBVDDQ
36x 0402 1uF
12x 0603 10uF
Partition A
6x 0402 1uF + 2x 0603 10uF
C61471 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61488 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61469 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61466 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61853 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61490 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61874 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61480 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
GND
Partition B
6x 0402 1uF + 2x 0603 10uF
C61470 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61465 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61879 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61483 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61478 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61468 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61477 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61473 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
GND
Partition C
6x 0402 1uF + 2x 0603 10uF
C61467 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61525 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61553 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61500 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61592 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61645 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61542 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61563 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
GND
Partition D
6x 0402 1uF + 2x 0603 10uF
C61671 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61615 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61693 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61866 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61881 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61883 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61871 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61665 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
GND
Partition E
6x 0402 1uF + 2x 0603 10uF
C61875 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61481 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61867 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61514 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61882 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61861 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61873 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61474 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
GND
Partition F
6x 0402 1uF + 2x 0603 10uF
C61484 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61860 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61854 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61492 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61859 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61862 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61870 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61872 22u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
GND



Close to GPU
FBVDDQ
6x 0603 10uF
C61419 10u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61927 10u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61966 10u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61922 10u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61918 10u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
C61417 10u/6/X5R/6.3V/M 4V 20% X6S 0603 COMMON
GND
14x 0603W 22uF
C60332 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61476 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61919 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C60330 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61409 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61971 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61371 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
GND
C61435 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61421 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61916 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61418 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61913 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C60337 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
C61434 22u/6/X5R/6.3V/M 4V 20% X6S 0603W COMMON
GND

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL GPU DECOUPLING FBVDDQ

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

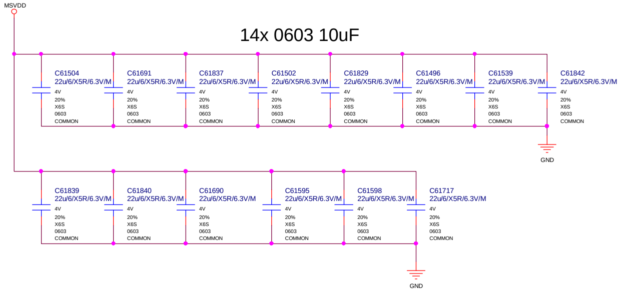
GIGABYTE
Title
Page 22: GPU: FBVDD DECOUPLING
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

Page 23: GPU: MSVDD DECOUPLING

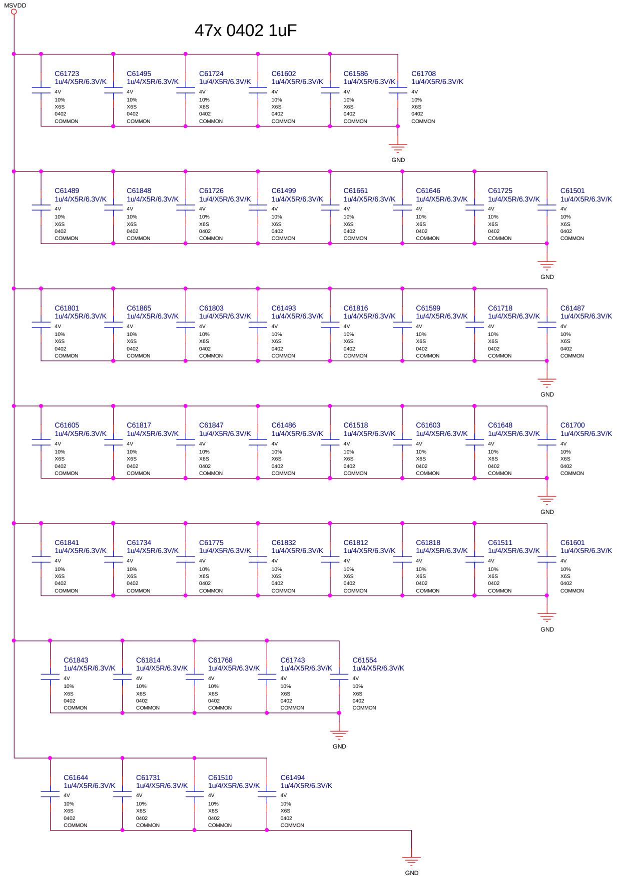
MSVDD

UNDER GPU

14x 0603 10uF

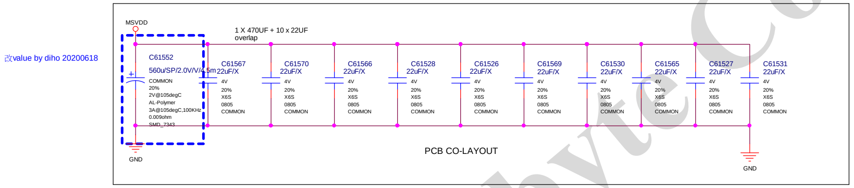

MSVDD
C61504
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61691
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61837
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61502
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61829
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61496
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61539
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61842
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
GND
C61839
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61840
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61690
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61595
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61598
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
C61717
22u/6/X5R/6.3V/M
4V
20%
X6S
0603
COMMON
GND

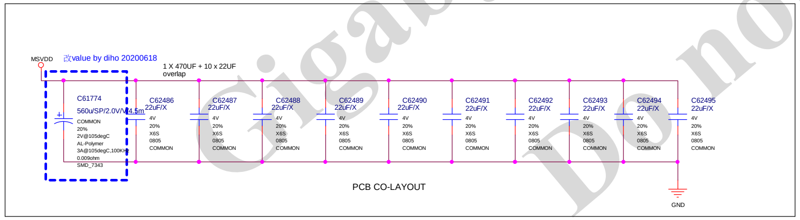
47x 0402 1uF


MSVDD
C61723
1u/4/X5R/6.3V/K
C61495
1u/4/X5R/6.3V/K
C61724
1u/4/X5R/6.3V/K
C61602
1u/4/X5R/6.3V/K
C61586
1u/4/X5R/6.3V/K
C61708
1u/4/X5R/6.3V/K
GND
C61489
1u/4/X5R/6.3V/K
C61848
1u/4/X5R/6.3V/K
C61726
1u/4/X5R/6.3V/K
C61499
1u/4/X5R/6.3V/K
C61661
1u/4/X5R/6.3V/K
C61646
1u/4/X5R/6.3V/K
C61725
1u/4/X5R/6.3V/K
C61501
1u/4/X5R/6.3V/K
GND
C61801
1u/4/X5R/6.3V/K
C61865
1u/4/X5R/6.3V/K
C61803
1u/4/X5R/6.3V/K
C61493
1u/4/X5R/6.3V/K
C61816
1u/4/X5R/6.3V/K
C61599
1u/4/X5R/6.3V/K
C61718
1u/4/X5R/6.3V/K
C61487
1u/4/X5R/6.3V/K
GND
C61605
1u/4/X5R/6.3V/K
C61817
1u/4/X5R/6.3V/K
C61847
1u/4/X5R/6.3V/K
C61486
1u/4/X5R/6.3V/K
C61518
1u/4/X5R/6.3V/K
C61603
1u/4/X5R/6.3V/K
C61648
1u/4/X5R/6.3V/K
C61700
1u/4/X5R/6.3V/K
GND
C61841
1u/4/X5R/6.3V/K
C61734
1u/4/X5R/6.3V/K
C61775
1u/4/X5R/6.3V/K
C61832
1u/4/X5R/6.3V/K
C61812
1u/4/X5R/6.3V/K
C61818
1u/4/X5R/6.3V/K
C61511
1u/4/X5R/6.3V/K
C61601
1u/4/X5R/6.3V/K
GND
C61843
1u/4/X5R/6.3V/K
C61814
1u/4/X5R/6.3V/K
C61768
1u/4/X5R/6.3V/K
C61743
1u/4/X5R/6.3V/K
C61554
1u/4/X5R/6.3V/K
GND
C61644
1u/4/X5R/6.3V/K
C61731
1u/4/X5R/6.3V/K
C61510
1u/4/X5R/6.3V/K
C61494
1u/4/X5R/6.3V/K
GND
4V
10%
X6S
0402
COMMON

REMOVED 3X 1uF 0402 DUE TO SPACE RESTRICTION

2x SMD7343 220uF (EACH CO-LAYOUT WITH 10x 22uF 0805)

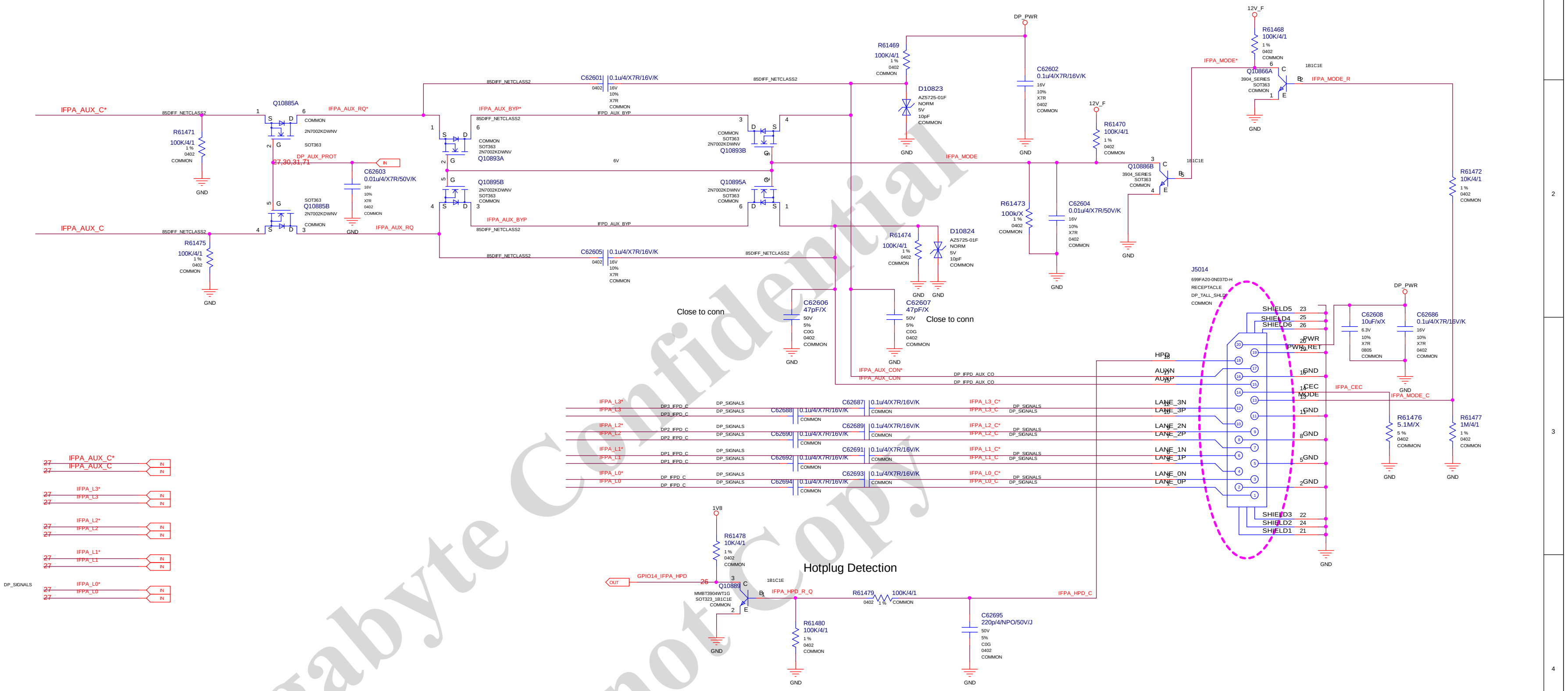

改value by diho 20200618
MSVDD
1 X 470UF + 10 x 22UF
overlap
C61552
560u/SP/2.0V/V/4.5m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C61567
22uF/X
C61570
22uF/X
C61566
22uF/X
C61528
22uF/X
C61526
22uF/X
C61569
22uF/X
C61530
22uF/X
C61565
22uF/X
C61527
22uF/X
C61531
22uF/X
4V
20%
X6S
0805
COMMON
GND
PCB CO-LAYOUT
GND


MSVDD
改value by diho 20200618
1 X 470UF + 10 x 22UF
overlap
C61774
560u/SP/2.0V/V/4.5m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C62486
22uF/X
C62487
22uF/X
C62488
22uF/X
C62489
22uF/X
C62490
22uF/X
C62491
22uF/X
C62492
22uF/X
C62493
22uF/X
C62494
22uF/X
C62495
22uF/X
4V
20%
X6S
0805
COMMON
PCB CO-LAYOUT
GND

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL GPU DECOUPLING MSVDD

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
Page 23: GPU: MSVDD DECOUPLING
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 23 of 79


IFPA_AUX_C*
IFPA_AUX_C
85DIFF_NETCLASS2
R61471
100K/4/1
1 %
0402
COMMON
GND
R61475
100K/4/1
Q10885A
2N7002KDWNV
SOT363
Q10885B
IFPA_AUX_RQ*
IFPA_AUX_RQ
DP_AUX_PROT
27,30,31,71
IN
C62603
0.01u/4/X7R/50V/K
IFPA_AUX_BYP*
IFPA_AUX_BYP
IFPD_AUX_BYP
Q10893A
Q10893B
Q10895A
Q10895B
6V
C62601
0.1u/4/X7R/16V/K
C62605
0.1u/4/X7R/16V/K
16V
10%
X7R
DP_PWR
R61469
100K/4/1
D10823
AZ5725-01F
NORM
5V
10pF
C62602
0.1u/4/X7R/16V/K
12V_F
R61468
100K/4/1
Q10866A
3904_SERIES
IFPA_MODE*
IFPA_MODE_R
1B1C1E
R61470
100K/4/1
IFPA_MODE
Q10886B
R61472
10K/4/1
R61473
100k/X
C62604
0.01u/4/X7R/16V/K
R61474
100K/4/1
D10824
AZ5725-01F
C62606
47pF/X
C62607
47pF/X
50V
C0G
Close to conn
Close to conn
J5014
699FA20-0N037D-H
RECEPTACLE
DP_TALL_SHLD
SHIELD5
SHIELD4
SHIELD6
PWR
PWR_RET
HPD
AUXN
AUXP
GND
CEC
MODE
LANE_3N
LANE_3P
LANE_2N
LANE_2P
LANE_1N
LANE_1P
LANE_0N
LANE_0P
SHIELD3
SHIELD2
SHIELD1
C62608
10uF/X/X
6.3V
0805
C62686
0.1u/4/X7R/16V/K
IFPA_CEC
IFPA_MODE_C
R61476
5.1M/X
R61477
1M/4/1
IFPA_AUX_CON*
IFPA_AUX_CON
DP_IFPD_AUX_CO
IFPA_L3*
IFPA_L3
IFPA_L2*
IFPA_L2
IFPA_L1*
IFPA_L1
IFPA_L0*
IFPA_L0
DP_SIGNALS
C62687
C62688
C62689
C62690
C62691
C62692
C62693
C62694
0.1u/4/X7R/16V/K
IFPA_L3_C*
IFPA_L3_C
IFPA_L2_C*
IFPA_L2_C
IFPA_L1_C*
IFPA_L1_C
IFPA_L0_C*
IFPA_L0_C
27
Hotplug Detection
1V8
R61478
10K/4/1
GPIO14_IFPA_HPD
OUT
26
Q10889
MMBT3904WT1G
SOT323_1B1C1E
IFPA_HPD_R_Q
R61479
100K/4/1
IFPA_HPD_C
R61480
100K/4/1
C62695
220p/4/NPO/50V/J

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
BLANK

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

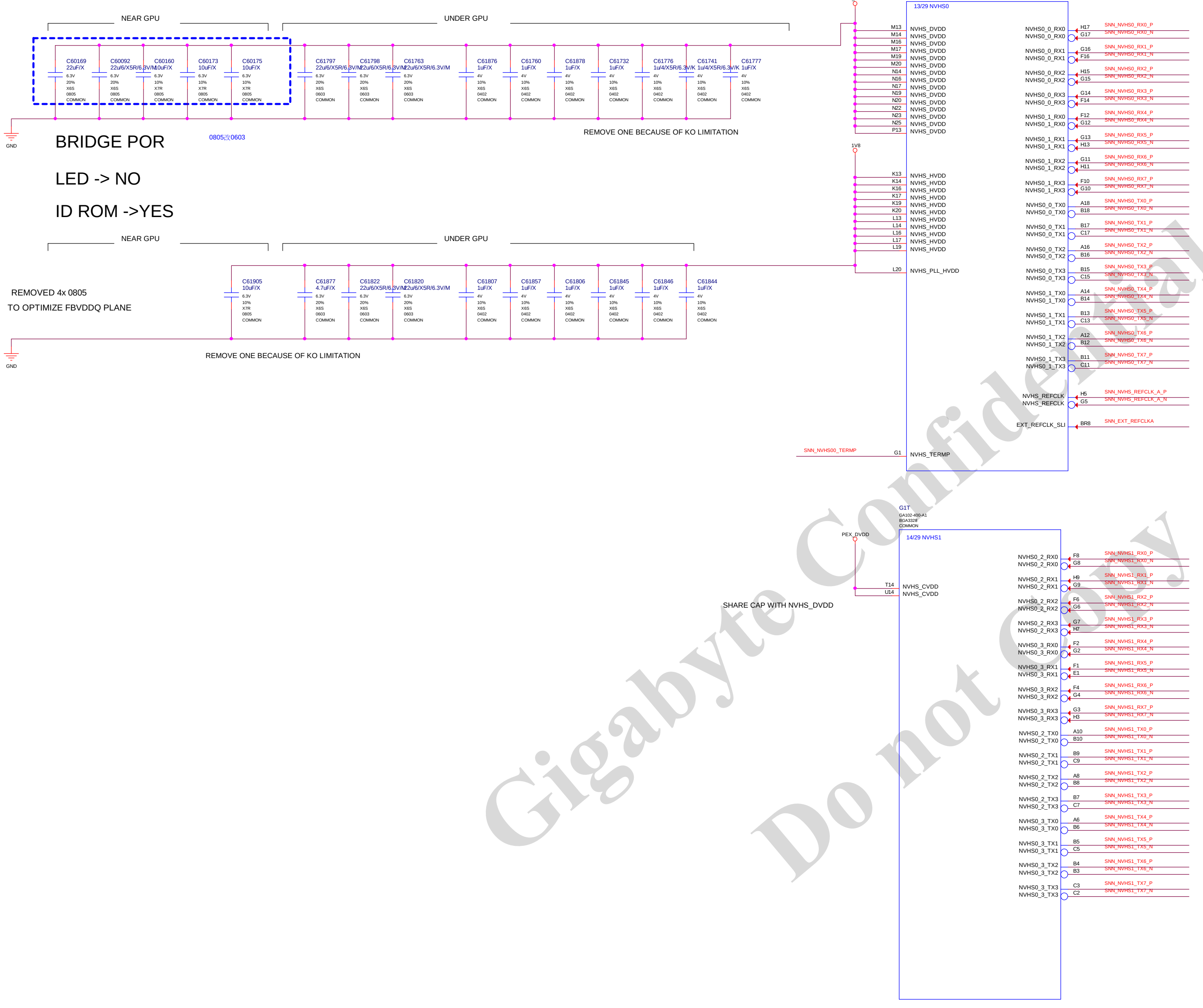
GIGABYTE

Title
Page 24 blank

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020
Sheet 24 of 79

NVHS Interface and FRAME LOCK


NEAR GPU
UNDER GPU
C60169 22uF/X 6.3V 20% X6S 0805 COMMON
C60092 22u/6/X5R/6.3V/M 6.3V 20% X6S 0805 COMMON
C60160 10uF/X 6.3V 10% X7R 0805 COMMON
C60173 10uF/X 6.3V 10% X7R 0805 COMMON
C60175 10uF/X 6.3V 10% X7R 0805 COMMON
C61797 22u/6/X5R/6.3V/M 6.3V 20% X6S 0603 COMMON
C61798 22u/6/X5R/6.3V/M 6.3V 20% X6S 0603 COMMON
C61763 22u/6/X5R/6.3V/M 6.3V 20% X6S 0603 COMMON
C61876 1uF/X 4V 10% X6S 0402 COMMON
C61760 1uF/X 4V 10% X6S 0402 COMMON
C61878 1uF/X 4V 10% X6S 0402 COMMON
C61732 1uF/X 4V 10% X6S 0402 COMMON
C61776 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61741 1u/4/X5R/6.3V/K 4V 10% X6S 0402 COMMON
C61777 1uF/X 4V 10% X6S 0402 COMMON
GND
BRIDGE POR
0805改0603
REMOVE ONE BECAUSE OF KO LIMITATION
LED -> NO
ID ROM ->YES
NEAR GPU
UNDER GPU
C61905 10uF/X 6.3V 10% X7R 0805 COMMON
C61877 4.7uF/X 6.3V 20% X6S 0603 COMMON
C61822 22u/6/X5R/6.3V/M 6.3V 20% X6S 0603 COMMON
C61820 22u/6/X5R/6.3V/M 6.3V 20% X6S 0603 COMMON
C61807 1uF/X 4V 10% X6S 0402 COMMON
C61857 1uF/X 4V 10% X6S 0402 COMMON
C61806 1uF/X 4V 10% X6S 0402 COMMON
C61845 1uF/X 4V 10% X6S 0402 COMMON
C61846 1uF/X 4V 10% X6S 0402 COMMON
C61844 1uF/X 4V 10% X6S 0402 COMMON
REMOVED 4x 0805
TO OPTIMIZE FBVDDQ PLANE
GND
REMOVE ONE BECAUSE OF KO LIMITATION
G1U
GA102-400-A1
BGA3328
COMMON
13/29 NVHS0
PEX_DVDD
M13 M14 M16 M17 M19 M20 N14 N16 N17 N19 N20 N22 N23 N25 P13 NVHS_DVDD
1V8
K13 K14 K16 K17 K19 K20 L13 L14 L16 L17 L19 NVHS_HVDD
L20 NVHS_PLL_HVDD
NVHS0_0_RX0 H17 SNN_NVHS0_RX0_P
NVHS0_0_RX0 G17 SNN_NVHS0_RX0_N
NVHS0_0_RX1 G16 SNN_NVHS0_RX1_P
NVHS0_0_RX1 F16 SNN_NVHS0_RX1_N
NVHS0_0_RX2 H15 SNN_NVHS0_RX2_P
NVHS0_0_RX2 G15 SNN_NVHS0_RX2_N
NVHS0_0_RX3 G14 SNN_NVHS0_RX3_P
NVHS0_0_RX3 F14 SNN_NVHS0_RX3_N
NVHS0_1_RX0 F12 SNN_NVHS0_RX4_P
NVHS0_1_RX0 G12 SNN_NVHS0_RX4_N
NVHS0_1_RX1 G13 SNN_NVHS0_RX5_P
NVHS0_1_RX1 H13 SNN_NVHS0_RX5_N
NVHS0_1_RX2 G11 SNN_NVHS0_RX6_P
NVHS0_1_RX2 H11 SNN_NVHS0_RX6_N
NVHS0_1_RX3 F10 SNN_NVHS0_RX7_P
NVHS0_1_RX3 G10 SNN_NVHS0_RX7_N
NVHS0_0_TX0 A18 SNN_NVHS0_TX0_P
NVHS0_0_TX0 B18 SNN_NVHS0_TX0_N
NVHS0_0_TX1 B17 SNN_NVHS0_TX1_P
NVHS0_0_TX1 C17 SNN_NVHS0_TX1_N
NVHS0_0_TX2 A16 SNN_NVHS0_TX2_P
NVHS0_0_TX2 B16 SNN_NVHS0_TX2_N
NVHS0_0_TX3 B15 SNN_NVHS0_TX3_P
NVHS0_0_TX3 C15 SNN_NVHS0_TX3_N
NVHS0_1_TX0 A14 SNN_NVHS0_TX4_P
NVHS0_1_TX0 B14 SNN_NVHS0_TX4_N
NVHS0_1_TX1 B13 SNN_NVHS0_TX5_P
NVHS0_1_TX1 C13 SNN_NVHS0_TX5_N
NVHS0_1_TX2 A12 SNN_NVHS0_TX6_P
NVHS0_1_TX2 B12 SNN_NVHS0_TX6_N
NVHS0_1_TX3 B11 SNN_NVHS0_TX7_P
NVHS0_1_TX3 C11 SNN_NVHS0_TX7_N
NVHS_REFCLK H5 SNN_NVHS_REFCLK_A_P
NVHS_REFCLK G5 SNN_NVHS_REFCLK_A_N
EXT_REFCLK_SLI BR8 SNN_EXT_REFCLKA
SNN_NVHS00_TERMP G1 NVHS_TERMP
G1T
GA102-400-A1
BGA3328
COMMON
14/29 NVHS1
PEX_DVDD
T14 NVHS_CVDD
U14 NVHS_CVDD
SHARE CAP WITH NVHS_DVDD
NVHS0_2_RX0 F8 SNN_NVHS1_RX0_P
NVHS0_2_RX0 G8 SNN_NVHS1_RX0_N
NVHS0_2_RX1 H9 SNN_NVHS1_RX1_P
NVHS0_2_RX1 G9 SNN_NVHS1_RX1_N
NVHS0_2_RX2 F6 SNN_NVHS1_RX2_P
NVHS0_2_RX2 G6 SNN_NVHS1_RX2_N
NVHS0_2_RX3 G7 SNN_NVHS1_RX3_P
NVHS0_2_RX3 H7 SNN_NVHS1_RX3_N
NVHS0_3_RX0 F2 SNN_NVHS1_RX4_P
NVHS0_3_RX0 G2 SNN_NVHS1_RX4_N
NVHS0_3_RX1 F1 SNN_NVHS1_RX5_P
NVHS0_3_RX1 E1 SNN_NVHS1_RX5_N
NVHS0_3_RX2 F4 SNN_NVHS1_RX6_P
NVHS0_3_RX2 G4 SNN_NVHS1_RX6_N
NVHS0_3_RX3 G3 SNN_NVHS1_RX7_P
NVHS0_3_RX3 H3 SNN_NVHS1_RX7_N
NVHS0_2_TX0 A10 SNN_NVHS1_TX0_P
NVHS0_2_TX0 B10 SNN_NVHS1_TX0_N
NVHS0_2_TX1 B9 SNN_NVHS1_TX1_P
NVHS0_2_TX1 C9 SNN_NVHS1_TX1_N
NVHS0_2_TX2 A8 SNN_NVHS1_TX2_P
NVHS0_2_TX2 B8 SNN_NVHS1_TX2_N
NVHS0_2_TX3 B7 SNN_NVHS1_TX3_P
NVHS0_2_TX3 C7 SNN_NVHS1_TX3_N
NVHS0_3_TX0 A6 SNN_NVHS1_TX4_P
NVHS0_3_TX0 B6 SNN_NVHS1_TX4_N
NVHS0_3_TX1 B5 SNN_NVHS1_TX5_P
NVHS0_3_TX1 C5 SNN_NVHS1_TX5_N
NVHS0_3_TX2 B4 SNN_NVHS1_TX6_P
NVHS0_3_TX2 B3 SNN_NVHS1_TX6_N
NVHS0_3_TX3 C3 SNN_NVHS1_TX7_P
NVHS0_3_TX3 C2 SNN_NVHS1_TX7_N

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	NVHS x16

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

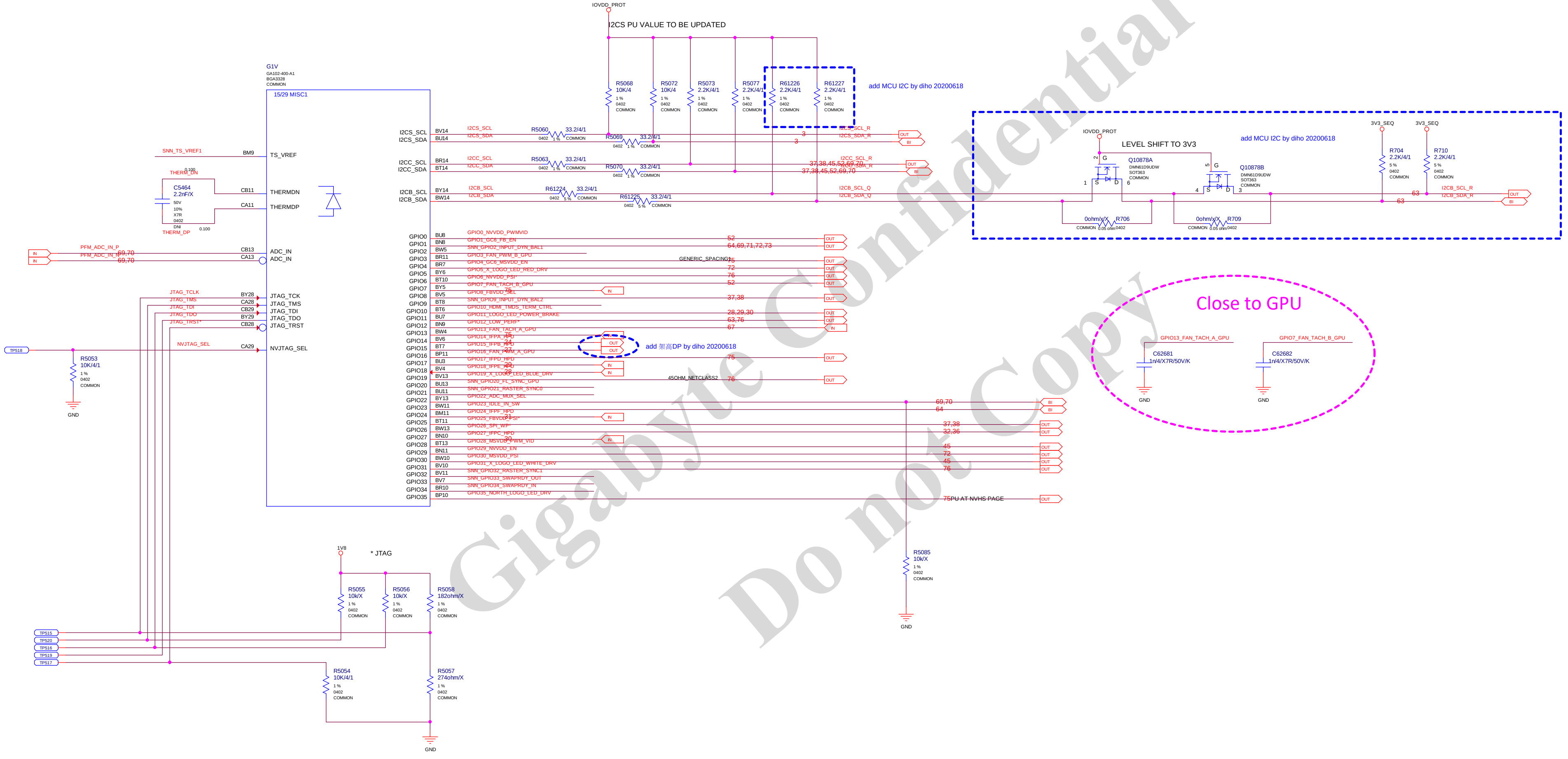
GIGABYTE

Title
NVHS Interface and FRAME LOCK

Size	Document Number	Rev
Custom	GV-N3080AORUSX W-10GD	1.0

Date: Wednesday, September 30, 2020 Sheet 25 of 79

MISC1: Fan, Thermal, JTAG, GPIO, STEREO


IOVDD_PROT
I2CS PU VALUE TO BE UPDATED
R5068 10K/4 1% 0402 COMMON
R5072 10K/4 1% 0402 COMMON
R5073 2.2K/4/1 1% 0402 COMMON
R5077 2.2K/4/1 1% 0402 COMMON
R61226 2.2K/4/1 1% 0402 COMMON
R61227 2.2K/4/1 1% 0402 COMMON
add MCU I2C by diho 20200618
G1V
GA102-400-A1
BGA3328
COMMON
15/29 MISC1
I2CS_SCL BV14 I2CS_SCL R5060 33.2/4/1 0402 1% COMMON
I2CS_SDA BU14 I2CS_SDA R5069 33.2/4/1 0402 1% COMMON
I2CS_SCL_R OUT 3
I2CS_SDA_R BI 3
I2CC_SCL BR14 I2CC_SCL R5063 33.2/4/1 0402 1% COMMON
I2CC_SDA BT14 I2CC_SDA R5070 33.2/4/1 0402 1% COMMON
I2CC_SCL_R OUT 37,38,45,52,69,70
I2CC_SDA_R BI 37,38,45,52,69,70
I2CB_SCL BY14 I2CB_SCL R61224 33.2/4/1 0402 5% COMMON
I2CB_SDA BW14 I2CB_SDA R61225 33.2/4/1 0402 5% COMMON
I2CB_SCL_Q
I2CB_SDA_Q
SNN_TS_VREF1 BM9 TS_VREF
THERM_DN 0.100
C5464 2.2nF/X 50V 10% X7R 0402 DNI
CB11 THERMDN
CA11 THERMDP
THERM_DP 0.100
IN PFM_ADC_IN_P 69,70 CB13 ADC_IN
IN PFM_ADC_IN_N 69,70 CA13 ADC_IN
JTAG_TCLK BY28 JTAG_TCK
JTAG_TMS CA28 JTAG_TMS
JTAG_TDI CB29 JTAG_TDI
JTAG_TDO BY29 JTAG_TDO
JTAG_TRST* CB28 JTAG_TRST
TP518 NVJTAG_SEL CA29 NVJTAG_SEL
R5053 10K/4/1 1% 0402 COMMON
GND
GPIO0 BU8 GPIO0_NVVDD_PWMVID 52 OUT
GPIO1 BN8 GPIO1_GC6_FB_EN 64,69,71,72,73 OUT
GPIO2 BW5 SNN_GPIO2_INPUT_DYN_BAL1
GPIO3 BR11 GPIO3_FAN_PWM_B_GPU GENERIC_SPACING1 75 OUT
GPIO4 BR7 GPIO4_GC6_MSVDD_EN 72 OUT
GPIO5 BY6 GPIO5_X_LOGO_LED_RED_DRV 76 OUT
GPIO6 BT10 GPIO6_NVVDD_PSI* 52 OUT
GPIO7 BY5 GPIO7_FAN_TACH_B_GPU 75 IN
GPIO8 BV5 GPIO8_FBVDD_SEL 37,38 OUT
GPIO9 BT8 SNN_GPIO9_INPUT_DYN_BAL2
GPIO10 BT6 GPIO10_HDMI_TMDS_TERM_CTRL 28,29,30 OUT
GPIO11 BU7 GPIO11_LOGO_LED_POWER_BRAKE 63,76 OUT
GPIO12 BN9 GPIO12_LOW_PERF* 67 IN
GPIO13 BW4 GPIO13_FAN_TACH_A_GPU 75 IN
GPIO14 BV6 GPIO14_IFPA_HPD 24 OUT
GPIO15 BT7 GPIO15_IFPB_HPD 27 OUT
GPIO16 BP11 GPIO16_FAN_PWM_A_GPU 75 OUT
add 架高DP by diho 20200618
GPIO17 BU3 GPIO17_IFPD_HPD 29 IN
GPIO18 BV4 GPIO18_IFPE_HPD 28 IN
GPIO19 BV13 GPIO19_X_LOGO_LED_BLUE_DRV 45OHM_NETCLASS2 76 OUT
GPIO20 BU13 SNN_GPIO20_FL_SYNC_GPU
GPIO21 BU11 SNN_GPIO21_RASTER_SYNC0
GPIO22 BY13 GPIO22_ADC_MUX_SEL 69,70 BI
GPIO23 BW11 GPIO23_IDLE_IN_SW 64 BI
GPIO24 BM11 GPIO24_IFPF_HPD 31 IN
GPIO25 BT11 GPIO25_FBVDD_PSI* 37,38 OUT
GPIO26 BW13 GPIO26_SPI_WP* 32,36 OUT
GPIO27 BN10 GPIO27_IFPC_HPD 30 IN
GPIO28 BT13 GPIO28_MSVDD_PWM_VID 45 OUT
GPIO29 BN11 GPIO29_NVVDD_EN 72 OUT
GPIO30 BW10 GPIO30_MSVDD_PSI 45 OUT
GPIO31 BV10 GPIO31_X_LOGO_LED_WHITE_DRV 76 OUT
GPIO32 BV11 SNN_GPIO32_RASTER_SYNC1
GPIO33 BV7 SNN_GPIO33_SWAPRDY_OUT
GPIO34 BR10 SNN_GPIO34_SWAPRDY_IN
GPIO35 BP10 GPIO35_NORTH_LOGO_LED_DRV 75 PU AT NVHS PAGE OUT
R5085 10k/X 1% 0402 COMMON
GND
IOVDD_PROT
LEVEL SHIFT TO 3V3
add MCU I2C by diho 20200618
Q10878A DMN61D9UDW SOT363 COMMON
Q10878B DMN61D9UDW SOT363 COMMON
G S D 1 2 6 4 5 3
0ohm/x/X R706 COMMON 0.05 ohm 0402
0ohm/x/X R709 COMMON 0.05 ohm 0402
3V3_SEQ
R704 2.2K/4/1 5% 0402 COMMON
R710 2.2K/4/1 5% 0402 COMMON
I2CB_SCL_R OUT 63
I2CB_SDA_R BI 63
Close to GPU
GPIO13_FAN_TACH_A_GPU
C62681 1n/4/X7R/50V/K
GND
GPIO7_FAN_TACH_B_GPU
C62682 1n/4/X7R/50V/K
GND
1V8
* JTAG
R5055 10k/X 1% 0402 COMMON
R5056 10k/X 1% 0402 COMMON
R5058 182ohm/X 1% 0402 COMMON
TP515
TP520
TP516
TP519
TP517
R5054 10K/4/1 1% 0402 COMMON
R5057 274ohm/X 1% 0402 COMMON
GND

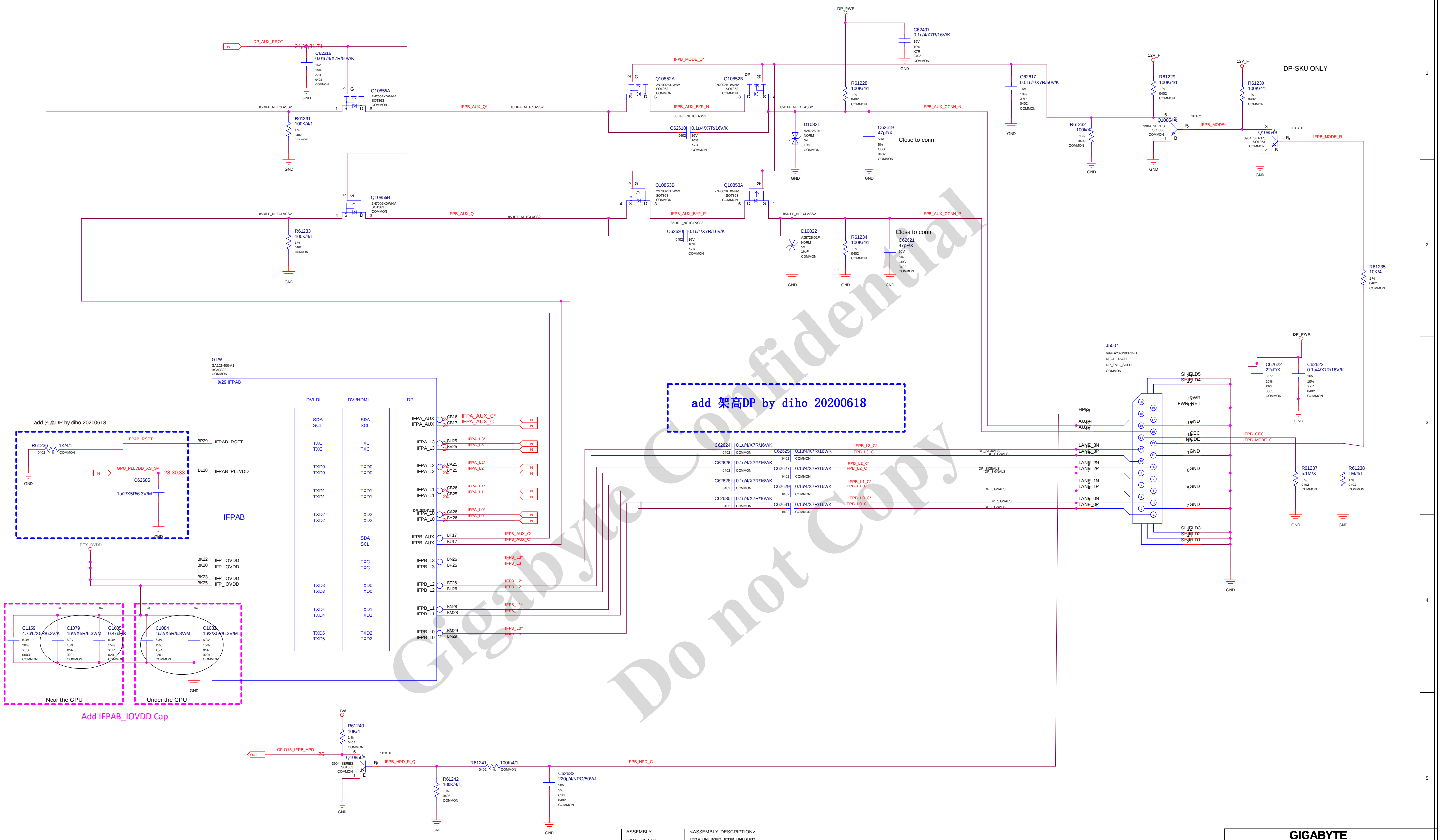
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL MISC: THERMAL, JTAG, GPIO

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	MISC1: Fan, Thermal, JTAG, GPIO, STEREO
Size	Custom
Document Number	GV-N3080AORUSX W-10GD
Rev	1.0
Date:	Wednesday, September 30, 2020
Sheet	26 of 79

IFPA UNUSED, IFPB UNUSED



DP_PWR
C62497 0.1u/4/X7R/16V/K
DP_AUX_PROT
24,30,31,71
C62616 0.01u/4/X7R/50V/K
Q10855A 2N7002KDWNV SOT363 COMMON
Q10852A
Q10852B
IFPB_MODE_Q*
IFPB_AUX_Q*
IFPB_AUX_BYP_N
IFPB_AUX_CONN_N
R61228 100K/4/1
C62617 0.01u/4/X7R/50V/K
12V_F
R61229 100K/4/1
R61230 100K/4/1
DP-SKU ONLY
R61231 100K/4/1
C62618 0.1u/4/X7R/16V/K
D10821 AZ5725-01F
C62619 47pF/X
Close to conn
R61232 100k/X
Q10854A 3904_SERIES SOT363
Q10854B
IFPB_MODE*
IFPB_MODE_R
Q10855B
Q10853B
Q10853A
IFPB_AUX_Q
IFPB_AUX_BYP_P
IFPB_AUX_CONN_P
R61233 100K/4/1
C62620 0.1u/4/X7R/16V/K
D10822 AZ5725-01F
R61234 100K/4/1
Close to conn
C62621 47pF/X
R61235 10K/4
85DIFF_NETCLASS2
GND
G1W GA102-400-A1 BGA3328 COMMON
9/29 IFPAB
DVI-DL
DVI/HDMI
DP
IFPA_AUX
IFPB_AUX
IFPA_L3 IFPA_L2 IFPA_L1 IFPA_L0
IFPB_L3 IFPB_L2 IFPB_L1 IFPB_L0
IFPAB_RSET
IFPAB_PLLVDD
IFPAB
IFP_IOVDD
PEX_DVDD
add 架高DP by diho 20200618
R61236 1K/4/1
FPAB_RSET
GPU_PLLVDD_XS_SP
28,30,33
C62685 1u/2/X5R/6.3V/M
C1159 4.7u/6/X5R/6.3V/K
C1079 1u/2/X5R/6.3V/M
C1085 0.47u/2/K
C1084 1u/2/X5R/6.3V/M
C1082 1u/2/X5R/6.3V/M
Near the GPU
Under the GPU
Add IFPAB_IOVDD Cap
add 架高DP by diho 20200618
C62624 0.1u/4/X7R/16V/K
C62625 0.1u/4/X7R/16V/K
C62626 0.1u/4/X7R/16V/K
C62627 0.1u/4/X7R/16V/K
C62628 0.1u/4/X7R/16V/K
C62629 0.1u/4/X7R/16V/K
C62630 0.1u/4/X7R/16V/K
C62631 0.1u/4/X7R/16V/K
IFPB_L3_C* IFPB_L2_C* IFPB_L1_C* IFPB_L0_C*
DP_SIGNALS
J5007 699FA20-0N037D-H RECEPTACLE DP_TALL_SHLD COMMON
SHIELD5 SHIELD4 PWR PWR_RET HPD AUXN AUXP GND CEC MODE LANE_3N LANE_3P LANE_2N LANE_2P LANE_1N LANE_1P LANE_0N LANE_0P SHIELD3 SHIELD2 SHIELD1
C62622 22uF/X
C62623 0.1u/4/X7R/16V/K
IFPB_CEC
IFPB_MODE_C
R61237 5.1M/X
R61238 1M/4/1
1V8
R61240 10K/4
GPIO15_IFPB_HPD
26
Q10856A 3904_SERIES SOT363
IFPB_HPD_R_Q
R61241 100K/4/1
IFPB_HPD_C
R61242 100K/4/1
C62632 220p/4/NPO/50V/J

ASSEMBLY

PAGE DETAIL

<ASSEMBLY_DESCRIPTION>

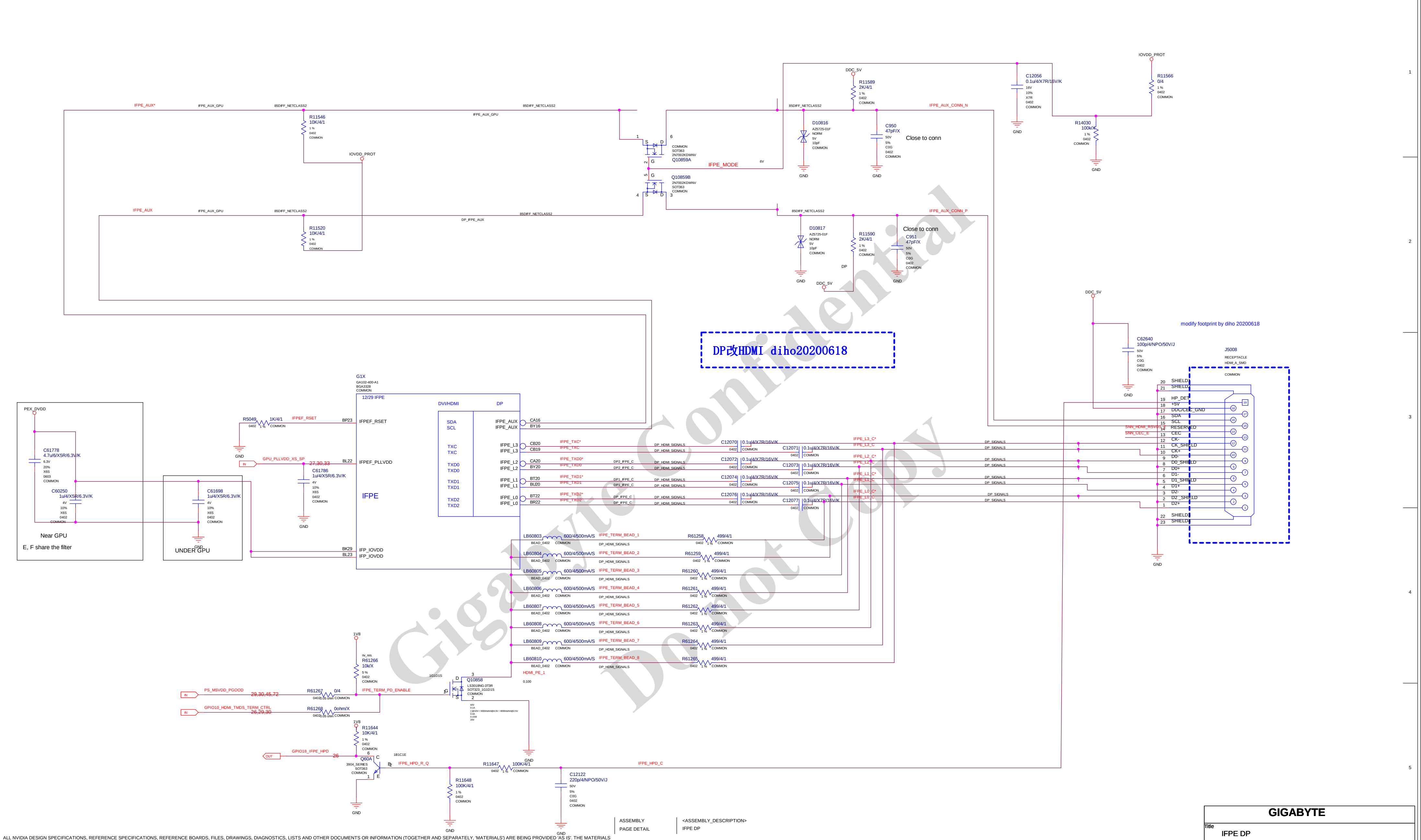
IFPA UNUSED, IFPB UNUSED

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	IFPA RISE DP, IFPB UNUSED	
Size Custom	Document Number GV-N3080AORUSX W-10GD	Rev 1.0
Date: Wednesday, September 30, 2020	Sheet 27 of 79	

IFPE DP

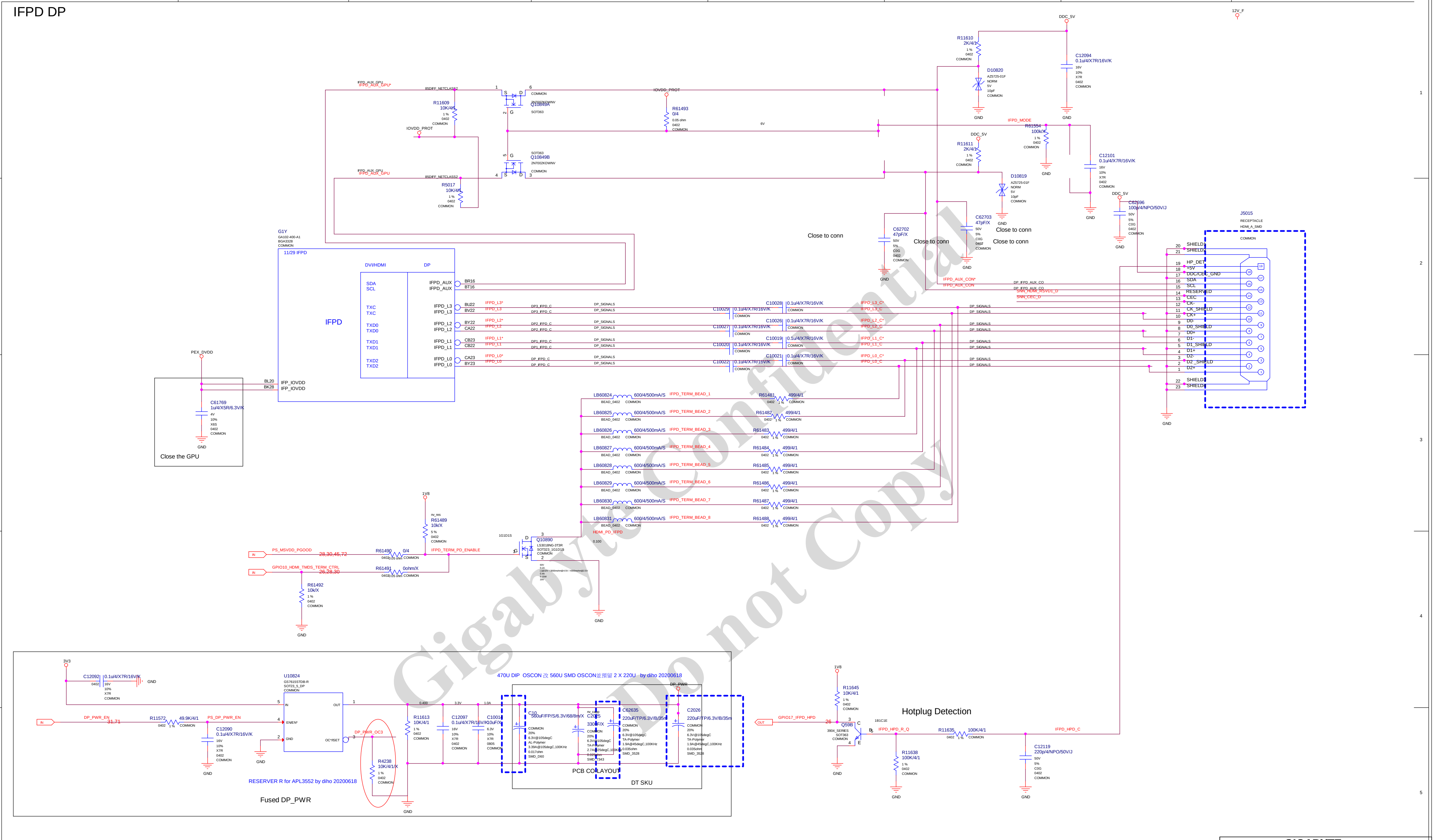

IFPE_AUX*
IFPE_AUX_GPU
85DIFF_NETCLASS2
R11546 10K/4/1
IOVDD_PROT
Q10859A 2N7002KDWN SOT363
Q10859B 2N7002KDWN SOT363
IFPE_MODE
6V
DDC_5V
R11589 2K/4/1
C12056 0.1u/4/X7R/16V/K
IOVDD_PROT
R11566 0/4
D10816 AZ5725-01F
C950 47pF/X
Close to conn
IFPE_AUX_CONN_N
R14030 100k/X
IFPE_AUX
DP_IFPE_AUX
R11520 10K/4/1
D10817 AZ5725-01F
R11590 2K/4/1
C951 47pF/X
Close to conn
IFPE_AUX_CONN_P
DP
DDC_5V
modify footprint by diho 20200618
C62640 100p/4/NPO/50V/J
J5008 RECEPTACLE HDMI_A_SMD
DP改HDMI diho20200618
G1X GA102-400-A1 BGA3328
12/29 IFPE
DVI/HDMI
DP
IFPEF_RSET
IFPEF_PLLVDD
IFPE
IFP_IOVDD
SDA SCL TXC TXD0 TXD1 TXD2
IFPE_AUX
IFPE_L3 IFPE_L2 IFPE_L1 IFPE_L0
R5049 1K/4/1
IFPEF_RSET
GPU_PLLVDD_XS_SP
27,30,33
C61786 1u/4/X5R/6.3V/K
PEX_DVDD
C61778 4.7u/6/X5R/6.3V/K
C60250 1u/4/X5R/6.3V/K
C61698 1u/4/X5R/6.3V/K
Near GPU
E, F share the filter
UNDER GPU
C12070 – C12077 0.1u/4/X7R/16V/K
IFPE_TXC* IFPE_TXC IFPE_TXD0* IFPE_TXD0 IFPE_TXD1* IFPE_TXD1 IFPE_TXD2* IFPE_TXD2
DP_HDMI_SIGNALS
IFPE_L3_C* IFPE_L3_C IFPE_L2_C* IFPE_L2_C IFPE_L1_C* IFPE_L1_C IFPE_L0_C* IFPE_L0_C
DP_SIGNALS
SNN_HDMI_RSVD
SNN_CEC_E
SHIELD +5V HP_DET DDC/CEC_GND SDA SCL RESERVED CEC CK- CK_SHIELD CK+ D0- D0_SHIELD D0+ D1- D1_SHIELD D1+ D2- D2_SHIELD D2+
LB60803 – LB60810 600/4/500mA/S
IFPE_TERM_BEAD_1 – IFPE_TERM_BEAD_8
R61258 – R61265 499/4/1
HDMI_PE_1
Q10858 LS3018NG-3T3R
1V8
R61266 10k/X
PS_MSVDD_PGOOD 29,30,45,72
R61267 0/4
IFPE_TERM_PD_ENABLE
GPIO10_HDMI_TMDS_TERM_CTRL 26,29,30
R61268 0ohm/X
1V8
R11644 10K/4/1
GPIO18_IFPE_HPD 26
Q60A 3904_SERIES SOT363
IFPE_HPD_R_Q
R11647 100K/4/1
R11648 100K/4/1
C12122 220p/4/NPO/50V/J
IFPE_HPD_C
GND

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL IFPE DP

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
IFPE DP
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 28 of 79

IFPD DP



DDC_5V
12V_F
R11610 2K/4/1
C12094 0.1u/4/X7R/16V/K
D10820 AZ5725-01F
IFPD_AUX_GPU
IFPD_AUX_GPU*
85DIFF_NETCLASS2
Q10849A 2N7002KDWNV SOT363
IOVDD_PROT
R11609 10K/4/1
R61493 0/4
6V
IFPD_MODE
R61554 100k/X
R11611 2K/4/1
C12101 0.1u/4/X7R/16V/K
D10819 AZ5725-01F
Q10849B 2N7002KDWNV SOT363
R5017 10K/4/1
C62696 100p/4/NPO/50V/J
J5015 RECEPTACLE HDMI_A_SMD
C62702 47pF/X
C62703 47pF/X
Close to conn
Close to conn
Close to conn
Close to conn
G1Y GA102-400-A1 BGA3328
11/29 IFPD
DVI/HDMI
DP
SDA
SCL
IFPD_AUX
IFPD_AUX
TXC
TXC
TXD0
TXD0
TXD1
TXD1
TXD2
TXD2
IFPD_L3
IFPD_L3
IFPD_L2
IFPD_L2
IFPD_L1
IFPD_L1
IFPD_L0
IFPD_L0
IFPD
BR16
BT16
BU22
BV22
BY22
CA22
CB23
CB22
CA23
BY23
IFPD_AUX_CON*
IFPD_AUX_CON
DP_IFPD_AUX_CO
C10028 0.1u/4/X7R/16V/K
C10029 0.1u/4/X7R/16V/K
C10026 0.1u/4/X7R/16V/K
C10027 0.1u/4/X7R/16V/K
C10019 0.1u/4/X7R/16V/K
C10020 0.1u/4/X7R/16V/K
C10021 0.1u/4/X7R/16V/K
C10022 0.1u/4/X7R/16V/K
SHIELD
HP_DET
+5V
DDC/CEC_GND
SDA
SCL
RESERVED
CEC
CK-
CK_SHIELD
CK+
D0-
D0_SHIELD
D0+
D1-
D1_SHIELD
D1+
D2-
D2_SHIELD
D2+
PEX_DVDD
BL20
BK28
IFP_IOVDD
IFP_IOVDD
C61769 1u/4/X5R/6.3V/K
Close the GPU
LB60824 600/4/500mA/S
LB60825 600/4/500mA/S
LB60826 600/4/500mA/S
LB60827 600/4/500mA/S
LB60828 600/4/500mA/S
LB60829 600/4/500mA/S
LB60830 600/4/500mA/S
LB60831 600/4/500mA/S
IFPD_TERM_BEAD_1
IFPD_TERM_BEAD_2
IFPD_TERM_BEAD_3
IFPD_TERM_BEAD_4
IFPD_TERM_BEAD_5
IFPD_TERM_BEAD_6
IFPD_TERM_BEAD_7
IFPD_TERM_BEAD_8
R61481 499/4/1
R61482 499/4/1
R61483 499/4/1
R61484 499/4/1
R61485 499/4/1
R61486 499/4/1
R61487 499/4/1
R61488 499/4/1
HDMI_PD_IFPD
1V8
R61489 10k/X
Q10890 LS3018NG-3T3R SOT323_1G1D1S
PS_MSVDD_PGOOD 28,30,45,72
R61490 0/4
IFPD_TERM_PD_ENABLE
GPIO10_HDMI_TMDS_TERM_CTRL 26,28,30
R61491 0ohm/X
R61492 10k/X
GND
3V3
C12092 0.1u/4/X7R/16V/K
U10824 GS7615STDB-R SOT23_5_DP
DP_PWR_EN 31,71
R11572 49.9K/4/1
PS_DP_PWR_EN
C12090 0.1u/4/X7R/16V/K
ENEN*
OUT
OC*/SET
DP_PWR_OC3
R11613 10K/4/1
C12097 0.1u/4/X7R/16V/K
C10014 10uF/X
470U DIP OSCON 改 560U SMD OSCON並預留 2 X 220U by diho 20200618
DP_PWR
C10 560uF/FP/S/6.3V/68/8m/X
C2005 330uF/X
C62635 220uF/TP/6.3V/B/35m
C2026 220uF/TP/6.3V/B/35m
PCB CO-LAYOUT
DT SKU
R4238 10K/4/1/X
RESERVER R for APL3552 by diho 20200618
Fused DP_PWR
R11645 10K/4/1
Q59B 3904_SERIES SOT363
GPIO17_IFPD_HPD 26
IFPD_HPD_R_Q
R11635 100K/4/1
IFPD_HPD_C
R11638 100K/4/1
C12119 220p/4/NPO/50V/J
Hotplug Detection

Gigabyte Confidential Do not Copy

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
IFPD DP

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

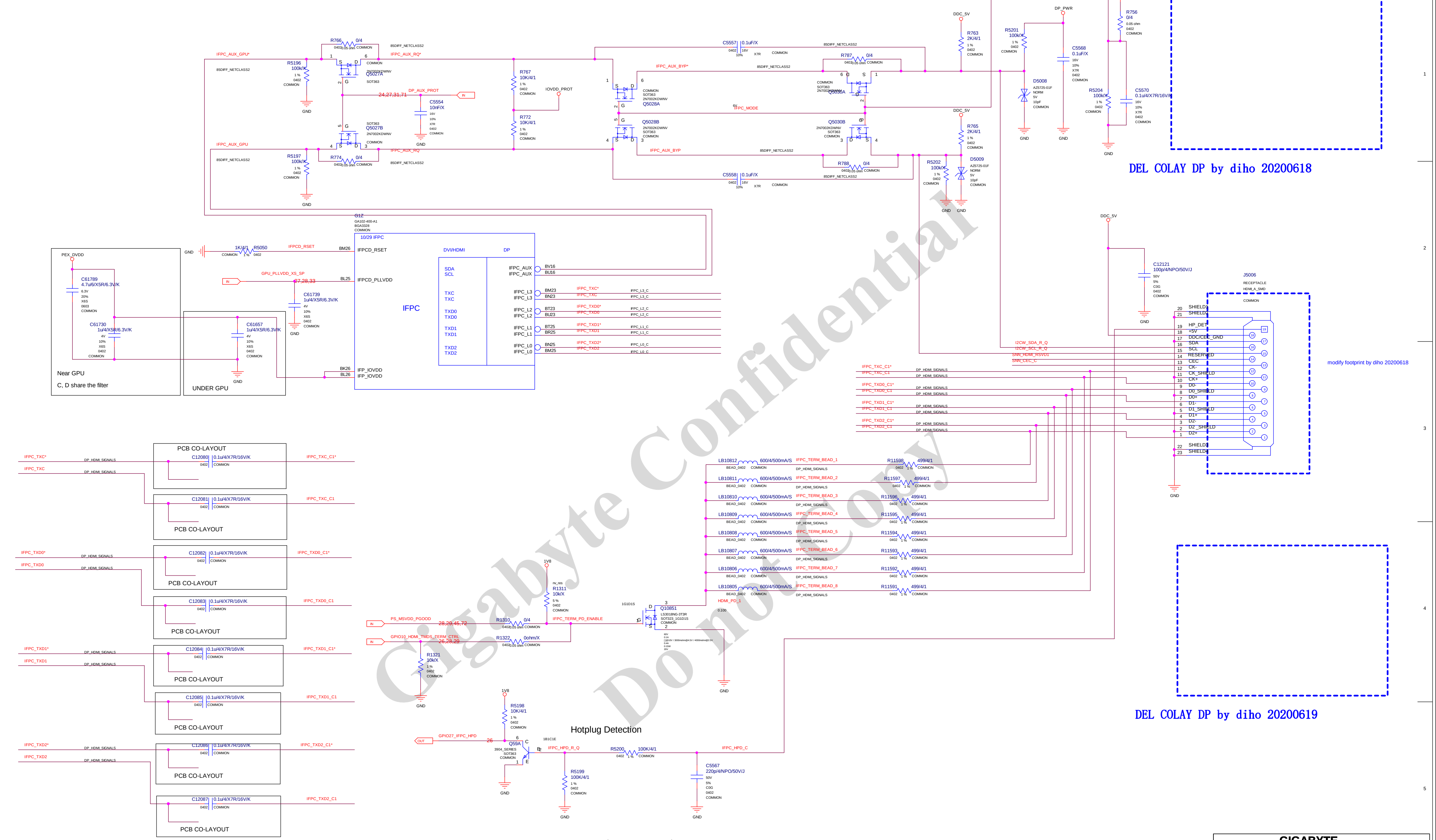
GIGABYTE

Title
IFPD DP

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020
Sheet 29 of 79

IFPC HDMI/DP


IOVDD_PROT
DP_PWR
DDC_5V
R766 0/4
R767 10K/4/1
R772 10K/4/1
R5196 100k/X
R5197 100k/X
R774 0/4
Q5027A
Q5027B
Q5028A
Q5028B
Q5030A
Q5030B
C5554 10nF/X
C5557 0.1uF/X
C5558 0.1uF/X
R787 0/4
R788 0/4
R763 2K/4/1
R765 2K/4/1
R5201 100k/X
R5202 100k/X
R5204 100k/X
R756 0/4
C5568 0.1uF/X
C5570 0.1u/4/X7R/16V/K
D5008
D5009
IFPC_AUX_GPU*
IFPC_AUX_GPU
IFPC_AUX_BQ*
IFPC_AUX_BQ
IFPC_AUX_BYP*
IFPC_AUX_BYP
IFPC_MODE
DP_AUX_PROT
85DIFF_NETCLASS2
DEL COLAY DP by diho 20200618
G1Z
GA102-400-A1
BGA3328
COMMON
10/29 IFPC
IFPCD_RSET
IFPCD_PLLVDD
DVI/HDMI
DP
SDA
SCL
TXC
TXD0
TXD1
TXD2
IFPC
IFPC_AUX
IFPC_L3
IFPC_L2
IFPC_L1
IFPC_L0
IFP_IOVDD
BM26
BL25
BK26
BL26
BV16
BU16
BM23
BN23
BT23
BU23
BT25
BR25
BN25
BM25
1K/4/1 R5050
GPU_PLLVDD_XS_SP
27,28,33
PEX_DVDD
C61789 4.7u/6/X5R/6.3V/K
C61739 1u/4/X5R/6.3V/K
C61730 1u/4/X5R/6.3V/K
C61657 1u/4/X5R/6.3V/K
Near GPU
C, D share the filter
UNDER GPU
DDC_5V
C12121 100p/4/NPO/50V/J
J5006
RECEPTACLE
HDMI_A_SMD
SHIELD1
SHIELD2
HP_DET
+5V
DDC/CEC_GND
SDA
SCL
RESERVED
CEC
CK-
CK_SHIELD
CK+
D0-
D0_SHIELD
D0+
D1-
D1_SHIELD
D1+
D2-
D2_SHIELD
D2+
SHIELD3
SHIELD4
modify footprint by diho 20200618
I2CW_SDA_R_Q
I2CW_SCL_R_Q
SNN_HDMI_RSVD1
SNN_CEC_C
IFPC_TXC*
IFPC_TXC
IFPC_TXD0*
IFPC_TXD0
IFPC_TXD1*
IFPC_TXD1
IFPC_TXD2*
IFPC_TXD2
IFPC_TXC_C1*
IFPC_TXC_C1
IFPC_TXD0_C1*
IFPC_TXD0_C1
IFPC_TXD1_C1*
IFPC_TXD1_C1
IFPC_TXD2_C1*
IFPC_TXD2_C1
DP_HDMI_SIGNALS
PCB CO-LAYOUT
C12080 0.1u/4/X7R/16V/K
C12081 0.1u/4/X7R/16V/K
C12082 0.1u/4/X7R/16V/K
C12083 0.1u/4/X7R/16V/K
C12084 0.1u/4/X7R/16V/K
C12085 0.1u/4/X7R/16V/K
C12086 0.1u/4/X7R/16V/K
C12087 0.1u/4/X7R/16V/K
LB10812 600/4/500mA/S
LB10811 600/4/500mA/S
LB10810 600/4/500mA/S
LB10809 600/4/500mA/S
LB10808 600/4/500mA/S
LB10807 600/4/500mA/S
LB10806 600/4/500mA/S
LB10805 600/4/500mA/S
IFPC_TERM_BEAD_1
IFPC_TERM_BEAD_2
IFPC_TERM_BEAD_3
IFPC_TERM_BEAD_4
IFPC_TERM_BEAD_5
IFPC_TERM_BEAD_6
IFPC_TERM_BEAD_7
IFPC_TERM_BEAD_8
R11598 499/4/1
R11597 499/4/1
R11596 499/4/1
R11595 499/4/1
R11594 499/4/1
R11593 499/4/1
R11592 499/4/1
R11591 499/4/1
1V8
R1311 10k/X
PS_MSVDD_PGOOD
28,29,45,72
R1310 0/4
IFPC_TERM_PD_ENABLE
GPIO10_HDMI_TMDS_TERM_CTRL
26,28,29
R1322 0ohm/X
R1321 10k/X
Q10851
LS3018NG-3T3R
SOT323_1G1D1S
HDMI_PD_1
DEL COLAY DP by diho 20200619
1V8
R5198 10K/4/1
GPIO27_IFPC_HPD
26
Q59A
3904_SERIES
SOT363
IFPC_HPD_R_Q
R5200 100K/4/1
IFPC_HPD_C
R5199 100K/4/1
C5567 220p/4/NPO/50V/J
Hotplug Detection
GND

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	IFPC HDMI/DP

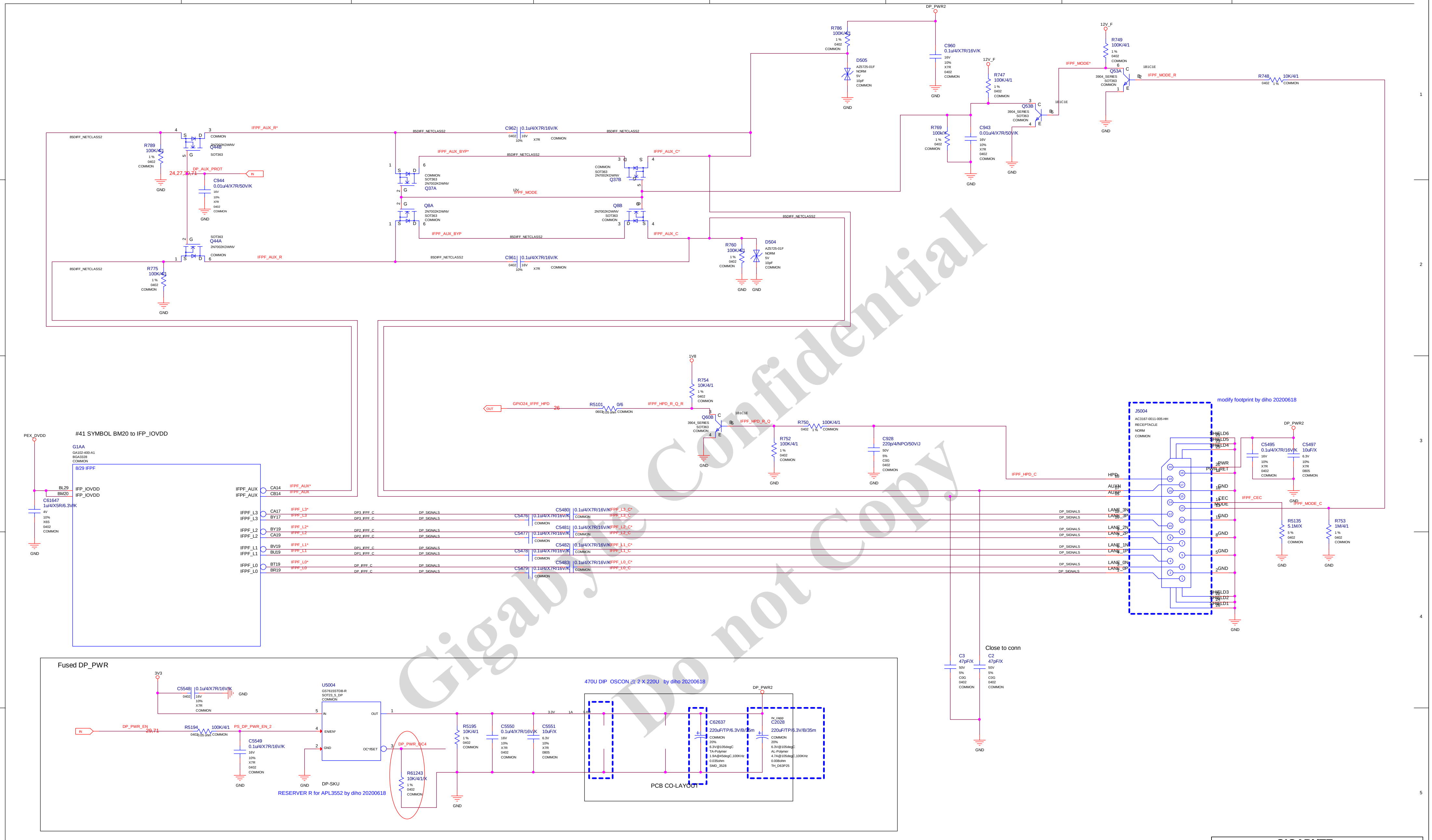
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
IFPC HDMI

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020 Sheet 30 of 79



DP_PWR2
R786 100K/4/1
D505 AZ5725-01F
C960 0.1u/4/X7R/16V/K
12V_F
R749 100K/4/1
R747 100K/4/1
Q53A 3904_SERIES
Q53B
IFPF_MODE*
IFPF_MODE_R
R748 10K/4/1
R769 100k/X
C943 0.01u/4/X7R/50V/K
85DIFF_NETCLASS2
IFPF_AUX_R*
C962 0.1u/4/X7R/16V/K
Q44B
R789 100K/4/1
DP_AUX_PROT
24,27,30,71
C944 0.01u/4/X7R/50V/K
Q37A 2N7002KDWNV
IFPF_AUX_BYP*
IFPF_AUX_C*
Q37B
12V
IFPF_MODE
Q8A
Q8B
IFPF_AUX_BYP
IFPF_AUX_C
Q44A 2N7002KDWNV
IFPF_AUX_R
C961 0.1u/4/X7R/16V/K
R775 100K/4/1
R760 100K/4/1
D504 AZ5725-01F
GND
1V8
R754 10K/4/1
GPIO24_IFPF_HPD
26
R5101 0/6
IFPF_HPD_R_Q_R
Q60B
IFPF_HPD_R_Q
R750 100K/4/1
R752 100K/4/1
C928 220p/4/NPO/50V/J
IFPF_HPD_C
J5004 AC3167-0011-005-HH RECEPTACLE
modify footprint by diho 20200618
PEX_DVDD
#41 SYMBOL BM20 to IFP_IOVDD
G1AA GA102-400-A1 BGA3328
8/29 IFPF
IFP_IOVDD
C61647 1u/4/X5R/6.3V/K
IFPF_AUX
IFPF_L3
IFPF_L2
IFPF_L1
IFPF_L0
IFPF_AUX*
C5480 C5476 C5481 C5477 C5482 C5478 C5483 C5479 0.1u/4/X7R/16V/K
IFPF_L3_C* IFPF_L3_C IFPF_L2_C* IFPF_L2_C IFPF_L1_C* IFPF_L1_C IFPF_L0_C* IFPF_L0_C
DP_SIGNALS
HPD AUXN AUXP LANE_3N LANE_3P LANE_2N LANE_2P LANE_1N LANE_1P LANE_0N LANE_0P
SHIELD6 SHIELD5 SHIELD4 PWR PWR_RET GND CEC MODE SHIELD3 SHIELD2 SHIELD1
IFPF_CEC
IFPF_MODE_C
C5495 0.1u/4/X7R/16V/K
C5497 10uF/X
R5135 5.1M/X
R753 1M/4/1
C3 47pF/X
C2 47pF/X
Close to conn
Fused DP_PWR
3V3
C5548 0.1u/4/X7R/16V/K
U5004 GS7615STDB-R SOT23_5_DP
IN OUT EN/EN* GND OC*/SET
DP_PWR_EN
29,71
R5194 100K/4/1
PS_DP_PWR_EN_2
C5549 0.1u/4/X7R/16V/K
DP-SKU
DP_PWR_OC4
R61243 10K/4/1/X
RESERVER R for APL3552 by diho 20200618
R5195 10K/4/1
C5550 0.1u/4/X7R/16V/K
C5551 10uF/X
470U DIP OSCON 改 2 X 220U by diho 20200618
C62637 220uF/TP/6.3V/B/35m
C2028 220uF/TP/6.3V/B/35m
PCB CO-LAYOUT

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
IFPF DP

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	IFPD DP	
Size Custom	Document Number GV-N3080AORUSX W-10GD	Rev 1.0
Date:	Wednesday, September 30, 2020	Sheet 31 of 79

MISC: ROM, Straps

H=High :Tied to 1.8V
M=Middle:Tied to 0.9V
L=Low :Tied to 0V

GROUP0

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]		
L	L	L	00000	RAMCFG MICRON 8Gb G6X 19Gbps x16 (161-0430-900)	<-A01 PCB
H	L	L	00100	RAMCFG MICRON 8Gb G6X 19Gbps x8 (161-0430-900)	
H	L	H	00101	RAMCFG MICRON 8Gb G6X 21Gbps x8 (161-0431-900)	
L	L	M	01000	RAMCFG MICRON 8Gb G6X 20Gbps x16 (161-0424-900)	
L	L	H	00001	RAMCFG MICRON 8Gb G6X 21Gbps x16 (161-0431-900)	<-OLD
L	M	H	01010	RAMCFG MICRON 8Gb G6X 19Gbps x16 (161-0430-900)	<-LATEST A02 PCB

ROM_SO	ROM_SI	ROM_SCLK	SMARTFAN[2:0],FS_OVERT	1:ENABLE 0:DISABLE	
H	H	H	0111	FS_OVERT ENABLE	DEFAULT
L	L	L	0000	FS_OVERT DISABLE	

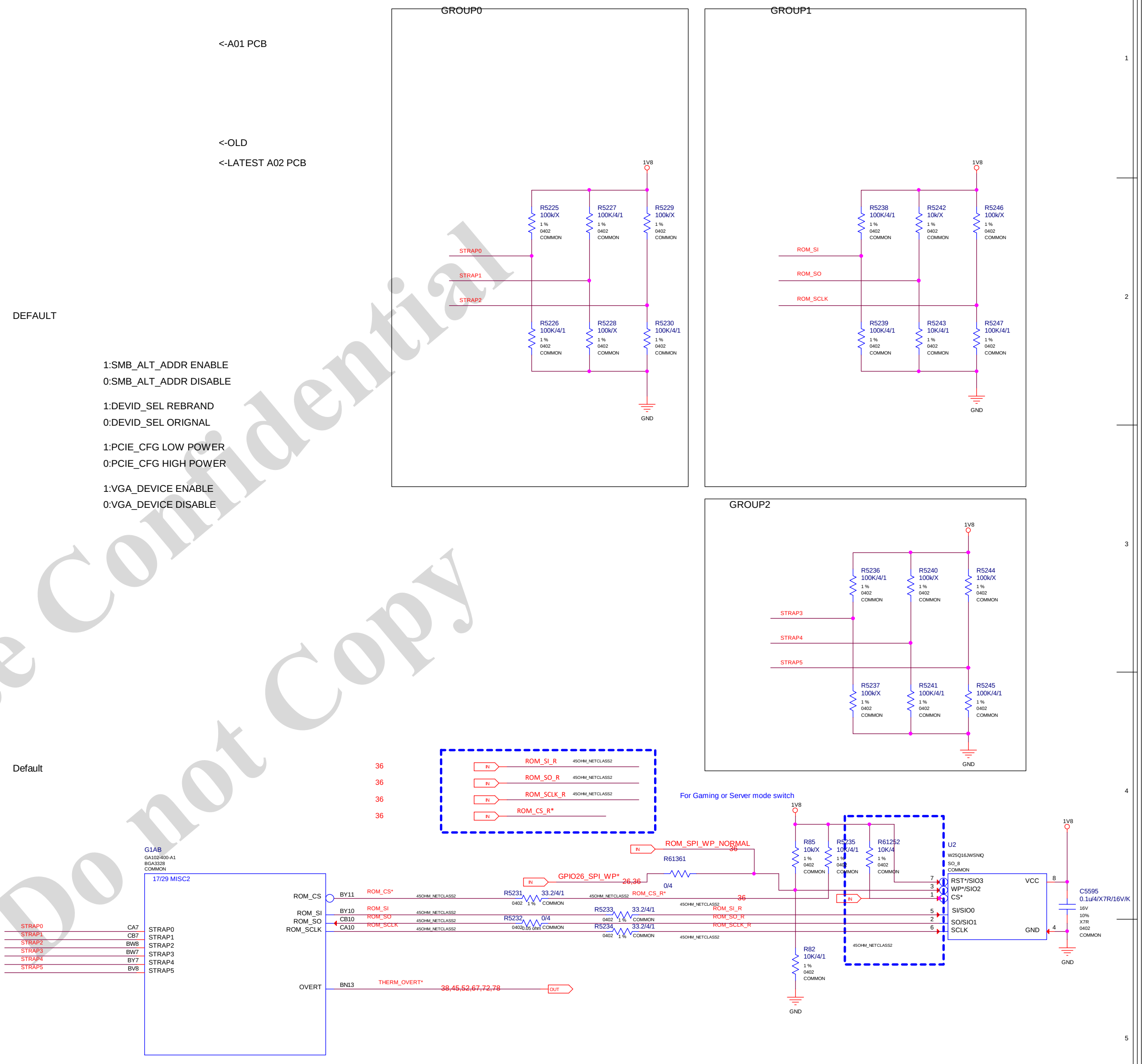
STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE	
M	H	H	1	1	1	1	
M	H	L	1	1	1	0	
M	L	H	1	1	0	1	
M	L	L	1	1	0	0	
L	H	M	1	0	1	1	
L	M	H	1	0	1	0	
L	M	L	1	0	0	1	
L	L	M	1	0	0	0	
H	H	H	0	1	1	1	
H	H	L	0	1	1	0	
H	L	H	0	1	0	1	
H	L	L	0	1	0	0	
L	H	H	0	0	1	1	
L	H	L	0	0	1	0	
L	L	H	0	0	0	1	Default
L	L	L	0	0	0	0	

1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE

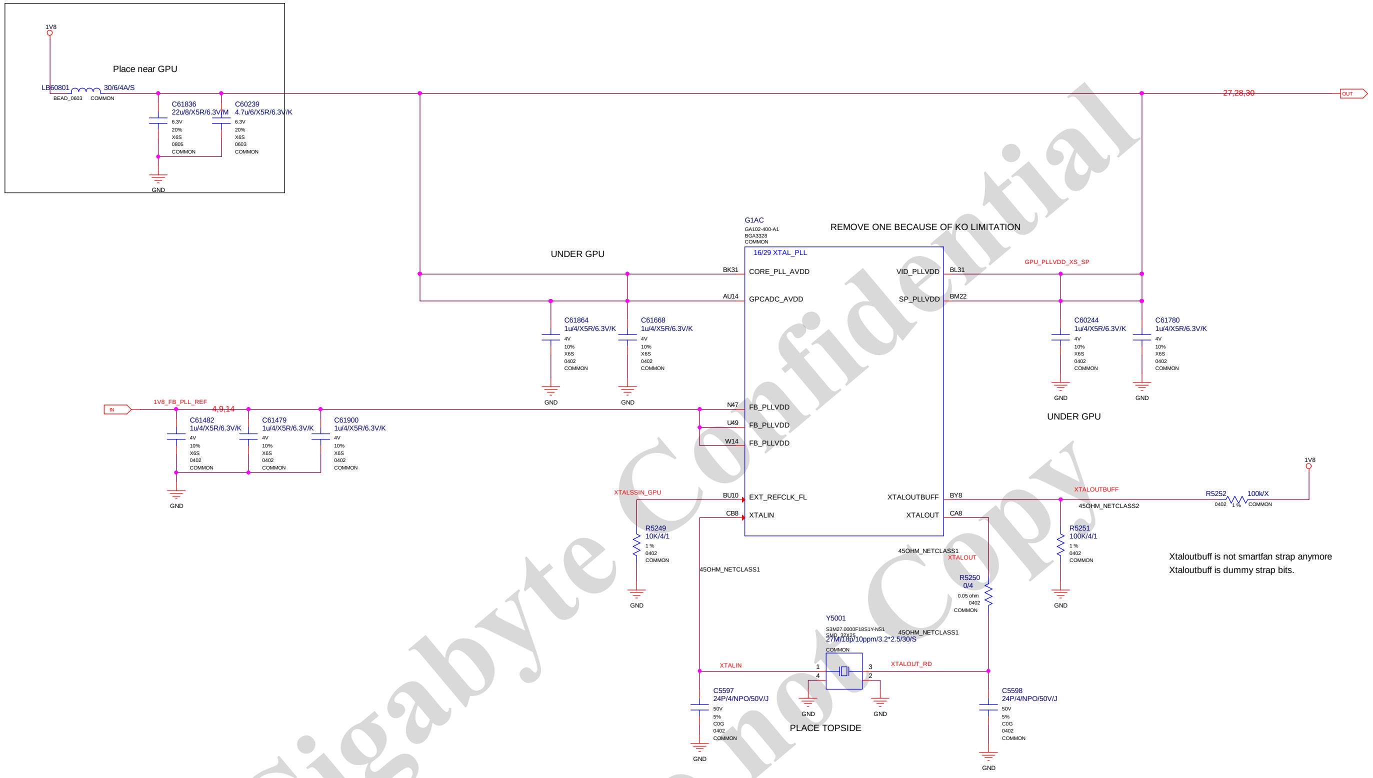

GROUP0
1V8
R5225
100k/X
1 %
0402
COMMON
R5227
100K/4/1
R5229
100k/X
STRAP0
STRAP1
STRAP2
R5226
100K/4/1
R5228
100k/X
R5230
100K/4/1
GND
GROUP1
R5238
100K/4/1
R5242
10k/X
R5246
100k/X
ROM_SI
ROM_SO
ROM_SCLK
R5239
100K/4/1
R5243
10K/4/1
R5247
100K/4/1
GROUP2
R5236
100K/4/1
R5240
100k/X
R5244
100k/X
STRAP3
STRAP4
STRAP5
R5237
100k/X
R5241
100K/4/1
R5245
100K/4/1
36
IN
ROM_SI_R
ROM_SO_R
ROM_SCLK_R
ROM_CS_R*
45OHM_NETCLASS2
For Gaming or Server mode switch
ROM_SPI_WP_NORMAL
R61361
0/4
GPIO26_SPI_WP*
26,36
G1AB
GA102-400-A1
BGA3328
17/29 MISC2
CA7
CB7
BW8
BW7
BY7
BV8
ROM_CS
BY11
BY10
CB10
CA10
OVERT
BN13
ROM_CS*
R5231
33.2/4/1
R5232
0/4
0.05 ohm
R5233
R5234
THERM_OVERT*
38,45,52,67,72,78
OUT
R85
10k/X
R5235
10K/4/1
R61252
10K/4
R82
10K/4/1
U2
W25Q16JWSNIQ
SO_8
RST*/SIO3
WP*/SIO2
CS*
SI/SIO0
SO/SIO1
SCLK
VCC
C5595
0.1u/4/X7R/16V/K
16V
10%
X7R

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL MISC. ROM, STRAPS

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
MISC: ROM, Straps
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

MISC: XTAL. PLL


1V8
Place near GPU
LB60801
30/6/4A/S
BEAD_0603
COMMON
C61836
22u/8/X5R/6.3V/M
6.3V
20%
X6S
0805
COMMON
C60239
4.7u/6/X5R/6.3V/K
6.3V
20%
X6S
0603
COMMON
GND
27,28,30
OUT
UNDER GPU
G1AC
GA102-400-A1
BGA3328
COMMON
REMOVE ONE BECAUSE OF KO LIMITATION
16/29 XTAL_PLL
BK31
CORE_PLL_AVDD
AU14
GPCADC_AVDD
VID_PLLVDD
BL31
SP_PLLVDD
BM22
GPU_PLLVDD_XS_SP
C61864
1u/4/X5R/6.3V/K
4V
10%
X6S
0402
COMMON
C61668
1u/4/X5R/6.3V/K
4V
10%
X6S
0402
COMMON
C60244
1u/4/X5R/6.3V/K
4V
10%
X6S
0402
COMMON
C61780
1u/4/X5R/6.3V/K
4V
10%
X6S
0402
COMMON
GND
UNDER GPU
IN
1V8_FB_PLL_REF
4,9,14
C61482
1u/4/X5R/6.3V/K
4V
10%
X6S
0402
COMMON
C61479
1u/4/X5R/6.3V/K
4V
10%
X6S
0402
COMMON
C61900
1u/4/X5R/6.3V/K
4V
10%
X6S
0402
COMMON
GND
N47
FB_PLLVDD
U49
FB_PLLVDD
W14
FB_PLLVDD
XTALSSIN_GPU
BU10
EXT_REFCLK_FL
CB8
XTALIN
XTALOUTBUFF
BY8
XTALOUT
CA8
XTALOUTBUFF
45OHM_NETCLASS2
R5252
100k/X
0402
1 %
COMMON
1V8
R5249
10K/4/1
1 %
0402
COMMON
R5251
100K/4/1
1 %
0402
COMMON
45OHM_NETCLASS1
45OHM_NETCLASS1
XTALOUT
R5250
0/4
0.05 ohm
0402
COMMON
Y5001
S3M27.0000F18S1Y-NS1
SMD_32X25
27M/18p/10ppm/3.2*2.5/30/S
COMMON
45OHM_NETCLASS1
XTALIN
1
4
3
2
XTALOUT_RD
C5597
24P/4/NPO/50V/J
50V
5%
C0G
0402
COMMON
C5598
24P/4/NPO/50V/J
50V
5%
C0G
0402
COMMON
GND
PLACE TOPSIDE

Xtaloutbuff is not smartfan strap anymore
Xtaloutbuff is dummy strap bits.

ASSEMBLY
PAGE DETAIL

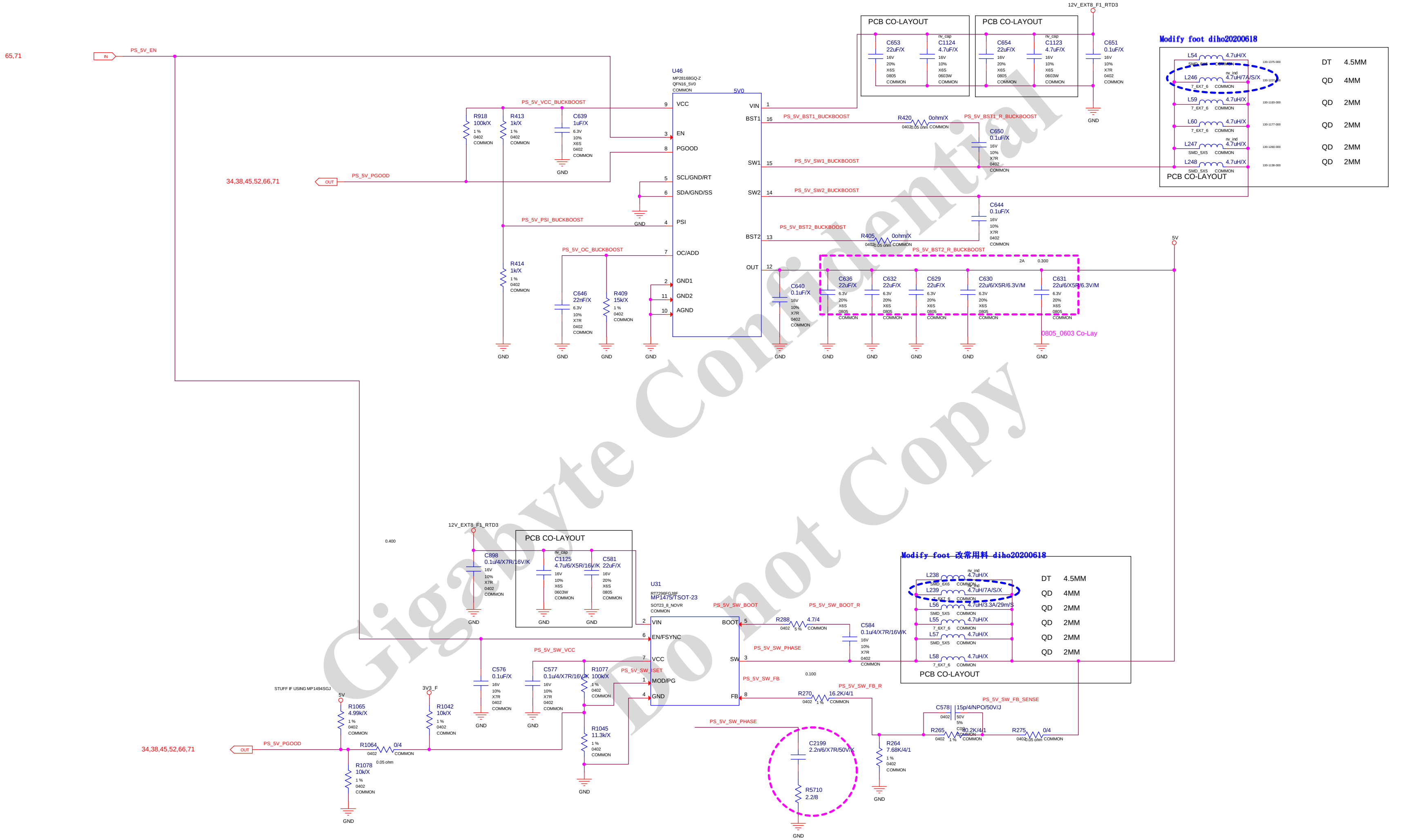
<ASSEMBLY_DESCRIPTION>
MISC. XTAL, PLL

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
MISC: XTAL. PLL
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 33 of 79

PS: 5V, 5V_BACKUP


65,71
IN
PS_5V_EN
34,38,45,52,66,71
OUT
PS_5V_PGOOD
PS_5V_VCC_BUCKBOOST
R918 100k/X 1 % 0402 COMMON
R413 1k/X 1 % 0402 COMMON
C639 1uF/X 6.3V 10% X6S 0402 COMMON
PS_5V_PSI_BUCKBOOST
R414 1k/X 1 % 0402 COMMON
PS_5V_OC_BUCKBOOST
C646 22nF/X 6.3V 10% X7R 0402 COMMON
R409 15k/X 1 % 0402 COMMON
U46
MP28168GQ-Z
QFN16_5V0
COMMON
5V0
9 VCC
3 EN
8 PGOOD
5 SCL/GND/RT
6 SDA/GND/SS
4 PSI
7 OC/ADD
2 GND1
11 GND2
10 AGND
VIN 1
BST1 16
SW1 15
SW2 14
BST2 13
OUT 12
12V_EXT8_F1_RTD3
PCB CO-LAYOUT
C653 22uF/X 16V 20% X6S 0805 COMMON
nv_cap
C1124 4.7uF/X 16V 10% X6S 0603W COMMON
PCB CO-LAYOUT
C654 22uF/X 16V 20% X6S 0805 COMMON
nv_cap
C1123 4.7uF/X 16V 10% X6S 0603W COMMON
C651 0.1uF/X 16V 10% X7R 0402 COMMON
PS_5V_BST1_BUCKBOOST
R420 0ohm/X 0402 0.05 ohm COMMON
PS_5V_BST1_R_BUCKBOOST
C650 0.1uF/X 16V 10% X7R 0402 COMMON
PS_5V_SW1_BUCKBOOST
PS_5V_SW2_BUCKBOOST
C644 0.1uF/X 16V 10% X7R 0402 COMMON
PS_5V_BST2_BUCKBOOST
R405 0ohm/X 0402 0.05 ohm COMMON
PS_5V_BST2_R_BUCKBOOST
2A 0.300
5V
C640 0.1uF/X 16V 10% X7R 0402 COMMON
C636 22uF/X 6.3V 20% X6S 0805 COMMON
C632 22uF/X 6.3V 20% X6S 0805 COMMON
C629 22uF/X 6.3V 20% X6S 0805 COMMON
C630 22u/6/X5R/6.3V/M 6.3V 20% X6S 0805 COMMON
C631 22u/6/X5R/6.3V/M 6.3V 20% X6S 0805 COMMON
0805_0603 Co-Lay
GND
Modify foot diho20200618
L54 4.7uH/X SMD_6X6 COMMON 130-1375-000 DT 4.5MM
nv_ind
L246 4.7uH/7A/S/X 7_6X7_6 COMMON 130-1227-000 QD 4MM
L59 4.7uH/X 7_6X7_6 COMMON 130-1193-000 QD 2MM
L60 4.7uH/X 7_6X7_6 COMMON 130-1177-000 QD 2MM
nv_ind
L247 4.7uH/X SMD_5X5 COMMON 130-1260-000 QD 2MM
L248 4.7uH/X SMD_5X5 COMMON 130-1138-000 QD 2MM
PCB CO-LAYOUT
0.400
12V_EXT8_F1_RTD3
C898 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
PCB CO-LAYOUT
nv_cap
C1125 4.7u/6/X5R/16V/K 16V 10% X6S 0603W COMMON
C581 22uF/X 16V 20% X6S 0805 COMMON
U31
RT7296FGJ8F
MP1475/TSOT-23
SOT23_8_NOVR
COMMON
2 VIN
6 EN/FSYNC
7 VCC
1 MOD/PG
4 GND
BOOT 5
SW 3
FB 8
PS_5V_SW_BOOT
R288 4.7/4 0402 5 % COMMON
PS_5V_SW_BOOT_R
C584 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
PS_5V_SW_PHASE
PS_5V_SW_VCC
C576 0.1uF/X 16V 10% X7R 0402 COMMON
C577 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
R1077 100k/X 1 % 0402 COMMON
PS_5V_SW_ISET
R1045 11.3k/X 1 % 0402 COMMON
PS_5V_SW_FB
0.100
R270 16.2K/4/1 0402 1 % COMMON
PS_5V_SW_FB_R
PS_5V_SW_FB_SENSE
C578 15p/4/NPO/50V/J 0402 50V 5% C0G
R265 40.2K/4/1 0402 1 % COMMON
R275 0/4 0402 0.05 ohm COMMON
R264 7.68K/4/1 1 % 0402 COMMON
PS_5V_SW_PHASE
C2199 2.2n/6/X7R/50V/K
R5710 2.2/8
STUFF IF USING MP1494SGJ
5V
R1065 4.99k/X 1 % 0402 COMMON
3V3_F
R1042 10k/X 1 % 0402 COMMON
34,38,45,52,66,71
OUT
PS_5V_PGOOD
R1064 0/4 0402 COMMON 0.05 ohm
R1078 10k/X 1 % 0402 COMMON
Modify foot 改常用料 diho20200618
nv_ind
L238 4.7uH/X SMD_6X6 COMMON DT 4.5MM
nv_ind
L239 4.7uH/7A/S/X 7_6X7_6 COMMON QD 4MM
L56 4.7uH/3.3A/29m/S SMD_5X5 COMMON QD 2MM
L55 4.7uH/X 7_6X7_6 COMMON QD 2MM
L57 4.7uH/X SMD_5X5 COMMON QD 2MM
L58 4.7uH/X 7_6X7_6 COMMON QD 2MM
PCB CO-LAYOUT
GND

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: 5V

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

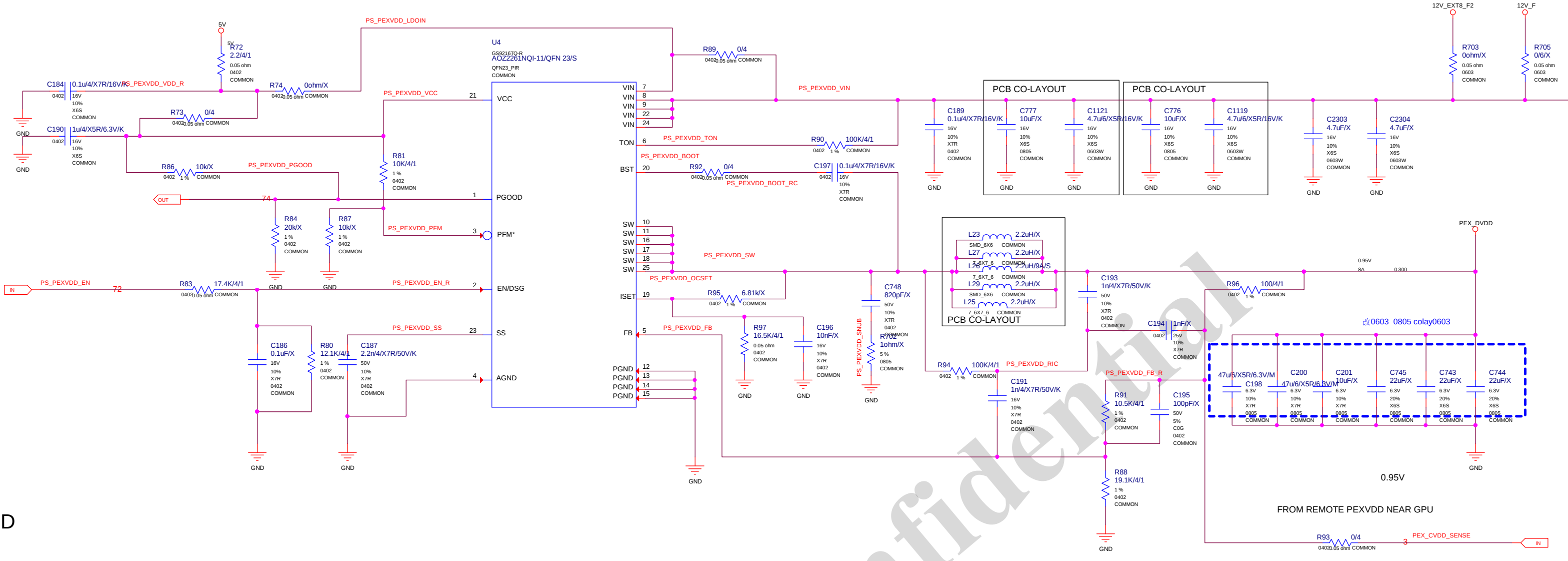
GIGABYTE

Title
PS: 5V, 5V_BACKUP

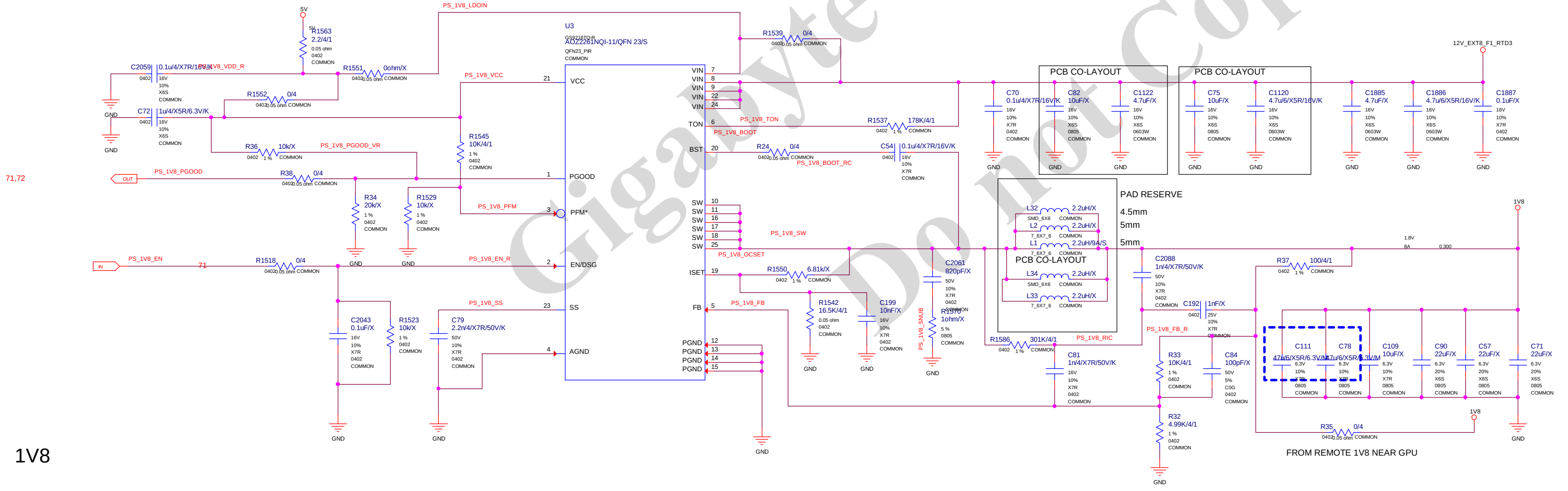
Size	Document Number	Rev
Custom	GV-N3080AORUSX W-10GD	1.0

Date: Wednesday, September 30, 2020

PS: PEX_DVDD 1V8 Rail


5V
R72 2.2/4/1
C184 0.1u/4/X7R/16V/K
C190 1u/4X5R/6.3V/K
PS_PEXVDD_VDD_R
R73 0/4
R74 0ohm/X
PS_PEXVDD_LDOIN
PS_PEXVDD_VCC
R86 10k/X
PS_PEXVDD_PGOOD
OUT
74
R81 10K/4/1
R84 20k/X
R87 10k/X
PS_PEXVDD_PFM
IN
PS_PEXVDD_EN
72
R83 17.4K/4/1
PS_PEXVDD_EN_R
PS_PEXVDD_SS
C186 0.1uF/X
R80 12.1K/4/1
C187 2.2n/4/X7R/50V/K
U4
AOZ2261NQI-11/QFN 23/S
VCC
PGOOD
PFM*
EN/DSG
SS
AGND
VIN
TON
BST
SW
ISET
FB
PGND
R89 0/4
PS_PEXVDD_VIN
PS_PEXVDD_TON
R90 100K/4/1
PS_PEXVDD_BOOT
R92 0/4
C197 0.1u/4/X7R/16V/K
PS_PEXVDD_BOOT_RC
PS_PEXVDD_SW
PS_PEXVDD_OCSET
R95 6.81k/X
PS_PEXVDD_FB
R97 16.5K/4/1
C196 10nF/X
C748 820pF/X
PS_PEXVDD_SNUB
R762 1ohm/X
R94 100K/4/1
PS_PEXVDD_RIC
C191 1n/4/X7R/50V/K
PCB CO-LAYOUT
L23 2.2uH/X
L27 2.2uH/X
L26 2.2uH/9A/S
L29 2.2uH/X
L25 2.2uH/X
C193 1n/4/X7R/50V/K
C189 0.1u/4/X7R/16V/K
C777 10uF/X
C1121 4.7u/6/X5R/16V/K
C776 10uF/X
C1119 4.7u/6/X5R/16V/K
C2303 4.7uF/X
C2304 4.7uF/X
12V_EXT8_F2
12V_F
12V_EXT8_F1
R703 0ohm/X
R705 0/6/X
R1302 0/6
PEX_DVDD
R96 100/4/1
C194 1nF/X
改0603 0805 colay0603
PS_PEXVDD_FB_R
R91 10.5K/4/1
C195 100pF/X
R88 19.1K/4/1
C198 47u/6/X5R/6.3V/M
C200 47u/6/X5R/6.3V/M
C201 10uF/X
C745 22uF/X
C743 22uF/X
C744 22uF/X
0.95V
FROM REMOTE PEXVDD NEAR GPU
R93 0/4
PEX_CVDD_SENSE
GND

PEX_DVDD


5V
R1563 2.2/4/1
C2059 0.1u/4/X7R/16V/K
PS_1V8_VDD_R
PS_1V8_LDOIN
R1551 0ohm/X
R1552 0/4
C72 1u/4X5R/6.3V/K
PS_1V8_VCC
R36 10k/X
PS_1V8_PGOOD_VR
R1545 10K/4/1
71,72
OUT
PS_1V8_PGOOD
R38 0/4
R34 20k/X
R1529 10k/X
PS_1V8_PFM
IN
PS_1V8_EN
71
R1518 0/4
PS_1V8_EN_R
PS_1V8_SS
C2043 0.1uF/X
R1523 10k/X
C79 2.2n/4/X7R/50V/K
U3
AOZ2261NQI-11/QFN 23/S
VCC
PGOOD
PFM*
EN/DSG
SS
AGND
VIN
TON
BST
SW
ISET
FB
PGND
R1539 0/4
PS_1V8_TON
R1537 178K/4/1
PS_1V8_BOOT
R24 0/4
C54 0.1u/4/X7R/16V/K
PS_1V8_BOOT_RC
PS_1V8_SW
PS_1V8_OCSET
R1550 6.81k/X
PS_1V8_FB
R1542 16.5K/4/1
C199 10nF/X
C2061 820pF/X
PS_1V8_SNUB
R1570 1ohm/X
R1586 301K/4/1
PS_1V8_RIC
C81 1n/4/X7R/50V/K
PAD RESERVE
4.5mm
5mm
5mm
PCB CO-LAYOUT
L32 2.2uH/X
L2 2.2uH/X
L1 2.2uH/9A/S
L34 2.2uH/X
L33 2.2uH/X
C2088 1n/4/X7R/50V/K
C70 0.1u/4/X7R/16V/K
C82 10uF/X
C1122 4.7uF/X
C75 10uF/X
C1120 4.7u/6/X5R/16V/K
C1885 4.7uF/X
C1886 4.7u/6/X5R/16V/K
C1887 0.1uF/X
12V_EXT8_F1_RTD3
1V8
R37 100/4/1
C192 1nF/X
PS_1V8_FB_R
R33 10K/4/1
C84 100pF/X
R32 4.99K/4/1
C111 47u/6/X5R/6.3V/M
C78 47u/6/X5R/6.3V/M
C109 10uF/X
C90 22uF/X
C57 22uF/X
C71 22uF/X
R35 0/4
FROM REMOTE 1V8 NEAR GPU
GND

1V8

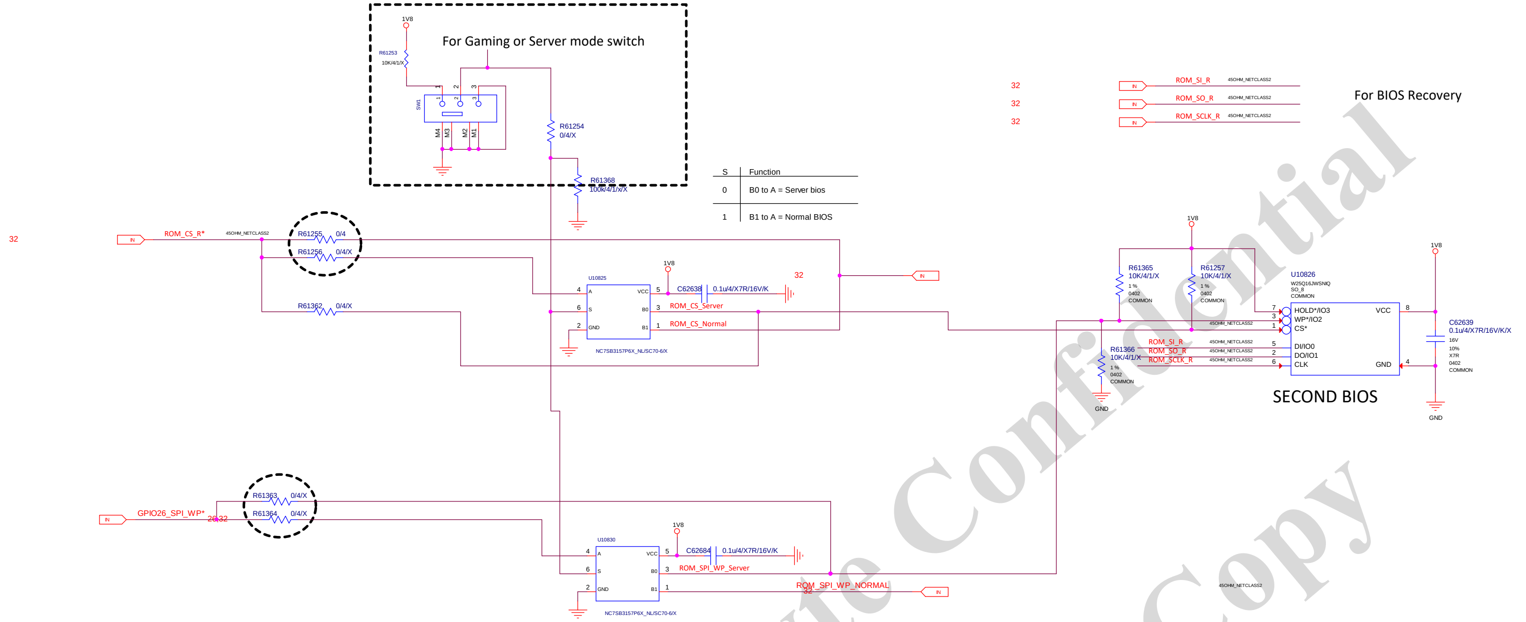
Gigabyte Confidential Do not Copy

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: PEX_DVDD and 1V8

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
PS: PEX_DVDD 1V8 Rail
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 35 of 79


For Gaming or Server mode switch
1V8
R61253
10K/4/1/X
SW1
1
2
3
M4
M3
M2
M1
R61254
0/4/X
R61368
100k/4/1/x/X
32
IN
ROM_CS_R*
45OHM_NETCLASS2
R61255
0/4
R61256
0/4/X
R61362
0/4/X
U10825
A
S
GND
VCC
B0
B1
4
6
2
5
3
1
1V8
C62638
0.1u/4/X7R/16V/K
ROM_CS_Server
ROM_CS_Normal
NC7SB3157P6X_NL/SC70-6/X
32
IN
For BIOS Recovery
32
32
32
IN
ROM_SI_R
ROM_SO_R
ROM_SCLK_R
45OHM_NETCLASS2
1V8
R61365
10K/4/1/X
1 %
0402
COMMON
R61257
10K/4/1/X
1 %
0402
COMMON
U10826
W25Q16JWSNIQ
SO_8
COMMON
HOLD*/IO3
WP*/IO2
CS*
DI/IO0
DO/IO1
CLK
VCC
GND
7
3
1
5
2
6
8
4
R61366
10K/4/1/X
1 %
0402
COMMON
GND
1V8
C62639
0.1u/4/X7R/16V/K/X
16V
10%
X7R
0402
COMMON
GND
SECOND BIOS
IN
GPIO26_SPI_WP*
26,32
R61363
0/4/X
R61364
0/4/X
U10830
1V8
C62684
0.1u/4/X7R/16V/K
ROM_SPI_WP_Server
ROM_SPI_WP_NORMAL
32
IN
NC7SB3157P6X_NL/SC70-6/X

S	Function
0	B0 to A = Server bios
1	B1 to A = Normal BIOS

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
BLANK

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

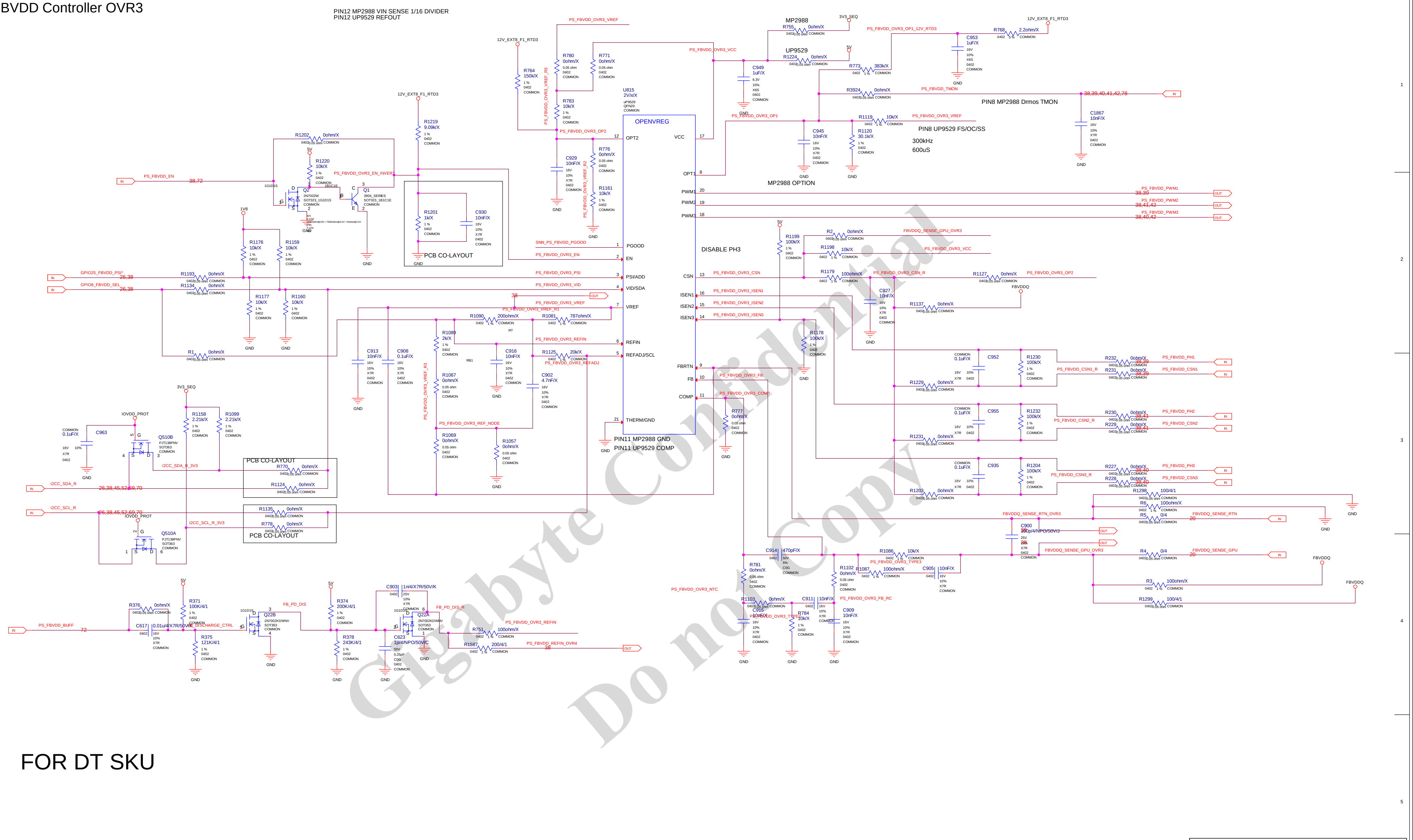
GIGABYTE

Title
DUAL BIOS

Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0
Date: Wednesday, September 30, 2020
Sheet 36 of 79

PS: FBVDD Controller OVR3

PIN12 MP2988 VIN SENSE 1/16 DIVIDER
PIN12 UP9529 REFOUT



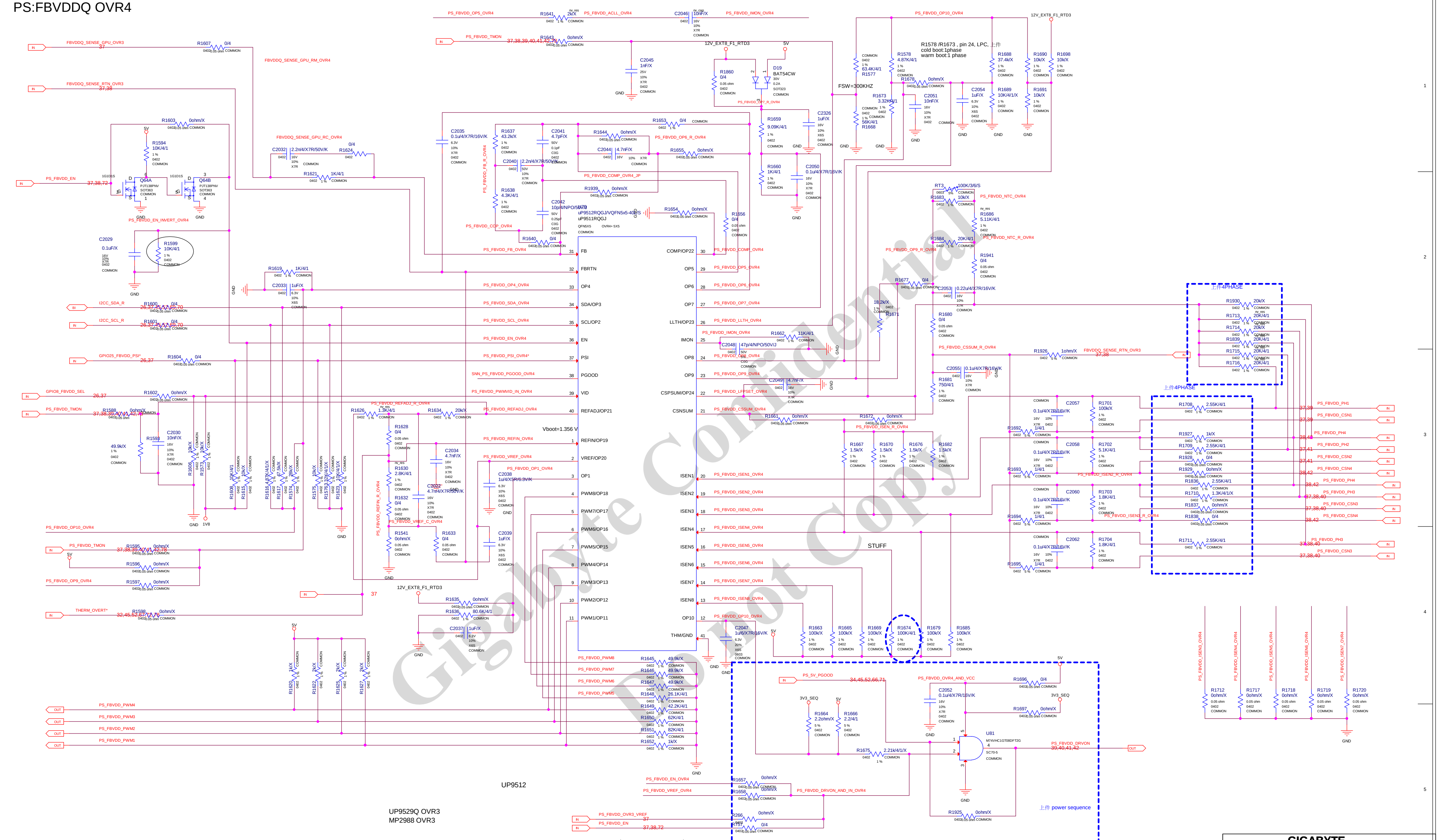
U815
2V/x/X
uP9529
QFN20
COMMON
OPENVREG
OPT2
VCC
OPT1
PWM1
PWM2
PWM3
PGOOD
EN
PSI/ADD
VID/SDA
VREF
REFIN
REFADJ/SCL
THERM/GND
CSN
ISEN1
ISEN2
ISEN3
FBRTN
FB
COMP
MP2988
UP9529
MP2988 OPTION
DISABLE PH3
PIN8 MP2988 Drmos TMON
PIN8 UP9529 FS/OC/SS
300kHz
600uS
PIN11 MP2988 GND
PIN11 UP9529 COMP
PCB CO-LAYOUT
PS_FBVDD_EN
PS_FBVDD_OVR3_EN
PS_FBVDD_OVR3_VREF
PS_FBVDD_OVR3_VCC
PS_FBVDD_OVR3_OP1
PS_FBVDD_OVR3_OP2
PS_FBVDD_OVR3_PSI
PS_FBVDD_OVR3_VID
PS_FBVDD_OVR3_REFIN
PS_FBVDD_OVR3_REFADJ
PS_FBVDD_OVR3_REF_NODE
PS_FBVDD_OVR3_CSN
PS_FBVDD_OVR3_ISEN1
PS_FBVDD_OVR3_ISEN2
PS_FBVDD_OVR3_ISEN3
PS_FBVDD_OVR3_FB
PS_FBVDD_OVR3_COMP
PS_FBVDD_OVR3_NTC
PS_FBVDD_TMON
PS_FBVDD_PWM1
PS_FBVDD_PWM2
PS_FBVDD_PWM3
PS_FBVDD_PH1
PS_FBVDD_CSN1
PS_FBVDD_PH2
PS_FBVDD_CSN2
PS_FBVDD_PH3
PS_FBVDD_CSN3
FBVDDQ_SENSE_GPU_OVR3
FBVDDQ_SENSE_RTN_OVR3
FBVDDQ_SENSE_RTN
FBVDDQ_SENSE_GPU
FBVDDQ
GPIO25_FBVDD_PSI*
GPIO8_FBVDD_SEL
I2CC_SDA_R
I2CC_SCL_R
I2CC_SDA_R_3V3
I2CC_SCL_R_3V3
IOVDD_PROT
SNN_PS_FBVDD_PGOOD
PS_FBVDD_BUFF
FB_PD_DIS
FB_PD_DIS_R
DISCHARGE_CTRL
PS_FBVDD_REFIN_OVR4
12V_EXT8_F1_RTD3
3V3_SEQ
5V
1V8
GND
Q1
Q2
Q226
Q22A
Q510A
Q510B
FOR DT SKU

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR ANY BUSINESS STANDARDS.

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: FBVDD Controller OVR3

GIGABYTE
Title
PS: FBVDD Controller OVR3
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 37 of 79

PS:FBVDDQ OVR4


UP9512
uP9512RQGJ/VQFN5x5-40/PS
FB
FBRTN
OP4
SDA/OP3
SCL/OP2
EN
PSI
PGOOD
VID
REFADJ/OP21
REFIN/OP19
VREFIN/OP20
OP1
PWM8/OP18
PWM7/OP17
PWM6/OP16
PWM5/OP15
PWM4/OP14
PWM3/OP13
PWM2/OP12
PWM1/OP11
COMP/OP22
OP5
OP6
OP7
LLTH/OP23
IMON
OP8
OP9
CSPSUM/OP24
CSNSUM
ISEN1
ISEN2
ISEN3
ISEN4
ISEN5
ISEN6
ISEN7
ISEN8
OP10
THM/GND
Vboot=1.356 V
FSW=300KHZ
R1578 /R1673 , pin 24, LPC, 上件
cold boot:1phase
warm boot:1 phase
上件4PHASE
上件4PHASE
STUFF
上件 power sequence
U81
M74VHC1G08DFT2G
SC70-5
Q64A
Q64B
PJT138PNV
D19
BAT54CW
PS_FBVDD_DRVON
PS_5V_PGOOD
12V_EXT8_F1_RTD3
5V
3V3_SEQ
GND
1V8

UP9529Q OVR3
MP2988 OVR3

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: FBVDDQ OVR4

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

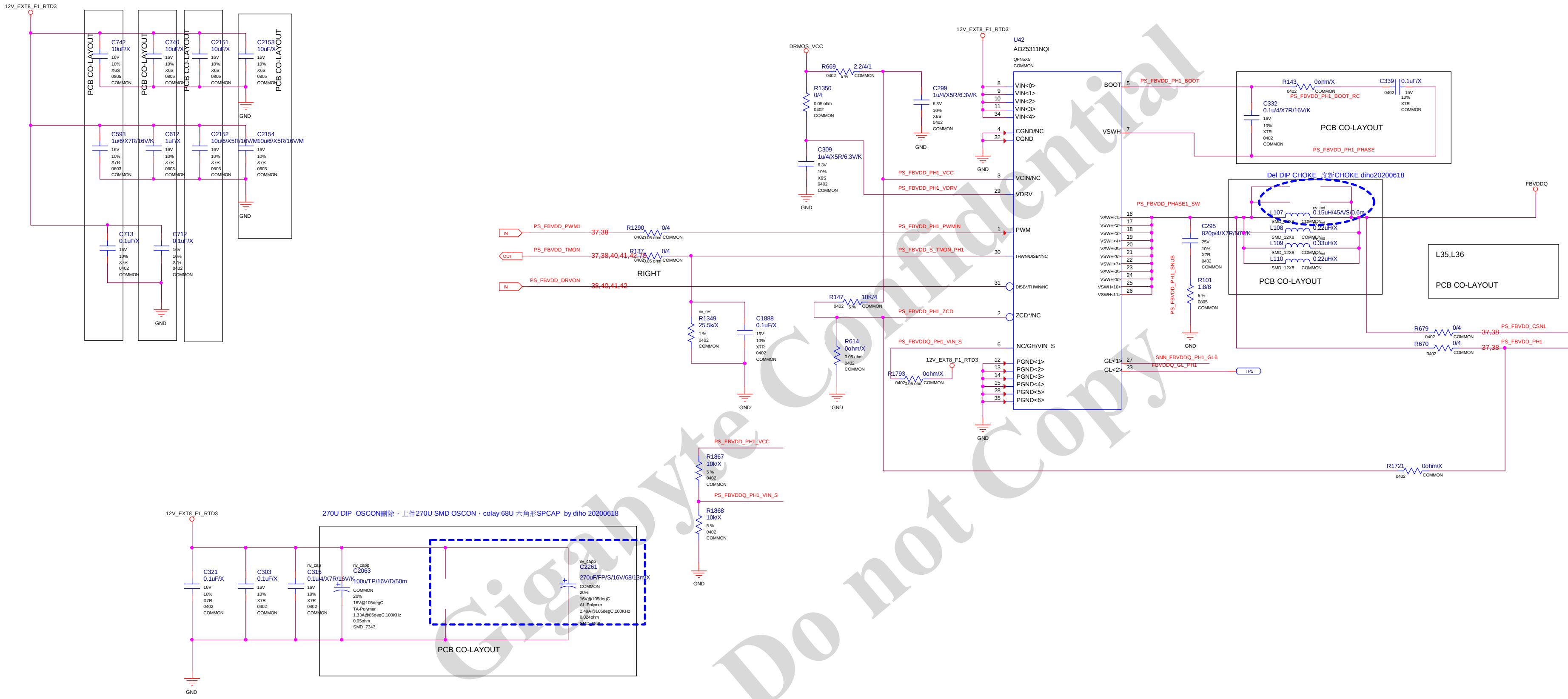
GIGABYTE

Title: PS:FBVDDQ OVR4

Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0

Date: Wednesday, September 30, 2020
Sheet 38 of 79

PS: FBVDD PH1


12V_EXT8_F1_RTD3
PCB CO-LAYOUT
C742 10uF/X 16V 10% X6S 0805 COMMON
C740 10uF/X 16V 10% X6S 0805 COMMON
C2151 10uF/X 16V 10% X6S 0805 COMMON
C2153 10uF/X 16V 10% X6S 0805 COMMON
C598 1u/6/X7R/16V/K 16V 10% X7R 0603 COMMON
C612 1uF/X 16V 10% X7R 0603 COMMON
C2152 10u/6/X5R/16V/M
C2154 10u/6/X5R/16V/M
C713 0.1uF/X 16V 10% X7R 0402 COMMON
C712 0.1uF/X 16V 10% X7R 0402 COMMON
GND
DRMOS_VCC
R669 2.2/4/1 0402 5 % COMMON
R1350 0/4 0.05 ohm 0402 COMMON
C299 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
C309 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
12V_EXT8_F1_RTD3
U42 AOZ5311NQI QFN5X5 COMMON
VIN<0> VIN<1> VIN<2> VIN<3> VIN<4>
CGND/NC CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1> PGND<2> PGND<3> PGND<4> PGND<5> PGND<6>
BOOT
VSWH
VSWH<1> … VSWH<11>
GL<1> GL<2>
PS_FBVDD_PH1_VCC
PS_FBVDD_PH1_VDRV
PS_FBVDD_PH1_PWMIN
PS_FBVDD_S_TMON_PH1
PS_FBVDD_PH1_ZCD
PS_FBVDDQ_PH1_VIN_S
IN PS_FBVDD_PWM1 37,38
R1290 0/4 0402 0.05 ohm COMMON
OUT PS_FBVDD_TMON 37,38,40,41,42,70
R137 0/4 0402 0.05 ohm COMMON
RIGHT
IN PS_FBVDD_DRVON 38,40,41,42
R147 10K/4 0402 5 % COMMON
nv_res R1349 25.5k/X 1 % 0402 COMMON
C1888 0.1uF/X 16V 10% X7R 0402 COMMON
R614 0ohm/X 0.05 ohm 0402 COMMON
R1793 0ohm/X 0402 0.05 ohm COMMON
PS_FBVDD_PH1_BOOT
R143 0ohm/X 0402 COMMON
PS_FBVDD_PH1_BOOT_RC
C339 0.1uF/X 0402 16V 10% X7R COMMON
C332 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
PCB CO-LAYOUT
PS_FBVDD_PH1_PHASE
Del DIP CHOKE，改新CHOKE diho20200618
FBVDDQ
PS_FBVDD_PHASE1_SW
L107 0.15uH/45A/S/0.6m
L108 0.22uH/X SMD_12X8 COMMON
L109 0.33uH/X SMD_12X8 COMMON
L110 0.22uH/X SMD_12X8 COMMON
C295 820p/4/X7R/50V/K 25V 10% X7R 0402 COMMON
R101 1.8/8 5 % 0805 COMMON
PS_FBVDD_PH1_SNUB
PCB CO-LAYOUT
L35,L36
PCB CO-LAYOUT
R679 0/4 0402 COMMON 37,38 PS_FBVDD_CSN1 OUT
R670 0/4 0402 COMMON 37,38 PS_FBVDD_PH1 OUT
SNN_FBVDDQ_PH1_GL6
FBVDDQ_GL_PH1
TP5
R1721 0ohm/X 0402 COMMON
PS_FBVDD_PH1_VCC
R1867 10k/X 5 % 0402 COMMON
PS_FBVDDQ_PH1_VIN_S
R1868 10k/X 5 % 0402 COMMON
12V_EXT8_F1_RTD3
270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
C321 0.1uF/X 16V 10% X7R 0402 COMMON
C303 0.1uF/X 16V 10% X7R 0402 COMMON
nv_cap C315 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
nv_capp C2063 100u/TP/16V/D/50m COMMON 20% 16V@105degC TA-Polymer 1.33A@85degC,100KHz 0.05ohm SMD_7343
nv_capp C2261 270uF/FP/S/16V/68/13m/X COMMON 20% 16V@105degC AL-Polymer 2.49A@105degC,100KHz 0.024ohm
PCB CO-LAYOUT

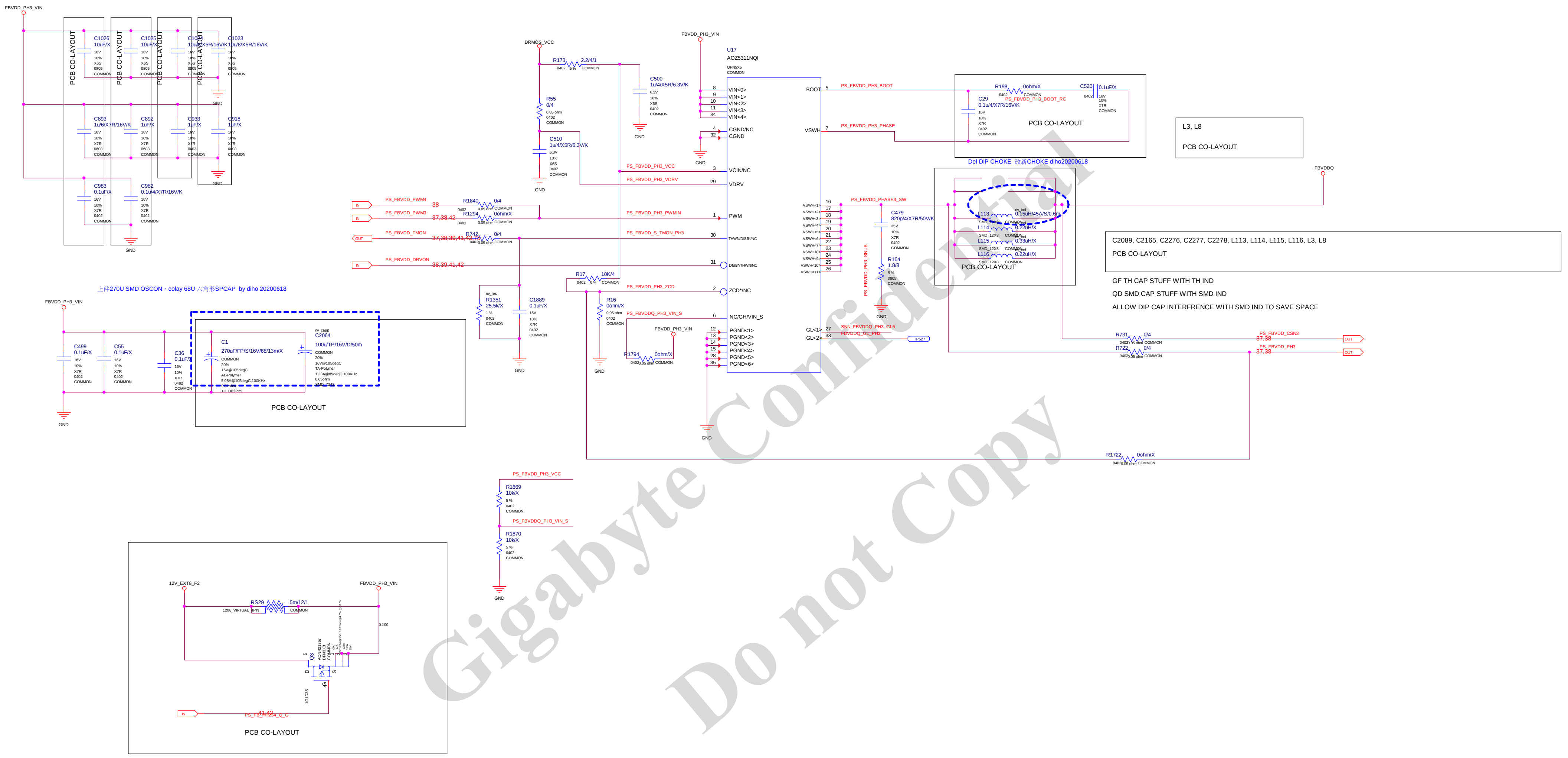
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: FBVDD PH1

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: FBVDD PH1
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

PS: FBVDD PH3


FBVDD_PH3_VIN
PCB CO-LAYOUT
C1026 10uF/X
C1025 10uF/X
C1024 10uF/X5R/16V/K
C1023 10u/8/X5R/16V/K
C893 1u/6/X7R/16V/K
C892 1uF/X
C933 1uF/X
C918 1uF/X
C983 0.1uF/X
C982 0.1u/4/X7R/16V/K
GND
上件270U SMD OSCON · colay 68U 六角形SPCAP by diho 20200618
C499 0.1uF/X
C55 0.1uF/X
C36 0.1uF/X
C1 270uF/FP/S/16V/68/13m/X
C2064 100u/TP/16V/D/50m
DRMOS_VCC
R173 2.2/4/1
R55 0/4
C510 1u/4/X5R/6.3V/K
C500 1u/4/X5R/6.3V/K
U17
AOZ5311NQI
QFN5X5
COMMON
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_FBVDD_PWM4
PS_FBVDD_PWM3
PS_FBVDD_TMON
PS_FBVDD_DRVON
R1840 0/4
R1294 0ohm/X
R742 0/4
R17 10K/4
R1351 25.5k/X
C1889 0.1uF/X
R16 0ohm/X
R1794 0ohm/X
PS_FBVDD_PH3_VCC
PS_FBVDD_PH3_VDRV
PS_FBVDD_PH3_PWMIN
PS_FBVDD_S_TMON_PH3
PS_FBVDD_PH3_ZCD
PS_FBVDDQ_PH3_VIN_S
PS_FBVDD_PH3_BOOT
PS_FBVDD_PH3_PHASE
PS_FBVDD_PHASE3_SW
PS_FBVDD_PH3_SNUB
SNN_FBVDDQ_PH3_GL6
FBVDDQ_GL_PH3
TP527
R198 0ohm/X
C520 0.1uF/X
C29 0.1u/4/X7R/16V/K
PS_FBVDD_PH3_BOOT_RC
Del DIP CHOKE 改新CHOKE diho20200618
L113 0.15uH/45A/S/0.6m
L114 0.22uH/X
L115 0.33uH/X
L116 0.22uH/X
C479 820p/4/X7R/50V/K
R164 1.8/8
FBVDDQ
R731 0/4
R722 0/4
R1722 0ohm/X
PS_FBVDD_CSN3
PS_FBVDD_PH3
OUT
IN
R1869 10k/X
R1870 10k/X
12V_EXT8_F2
RS29 5m/12/1
Q3
PS_FB_PH3_G
FBVDD PH3 INPUT ANTI-BACKDRIVE

L3, L8

PCB CO-LAYOUT

C2089, C2165, C2276, C2277, C2278, L113, L114, L115, L116, L3, L8

PCB CO-LAYOUT

GF TH CAP STUFF WITH TH IND

QD SMD CAP STUFF WITH SMD IND

ALLOW DIP CAP INTERFERENCE WITH SMD IND TO SAVE SPACE

FBVDD PH3 INPUT ANTI-BACKDRIVE

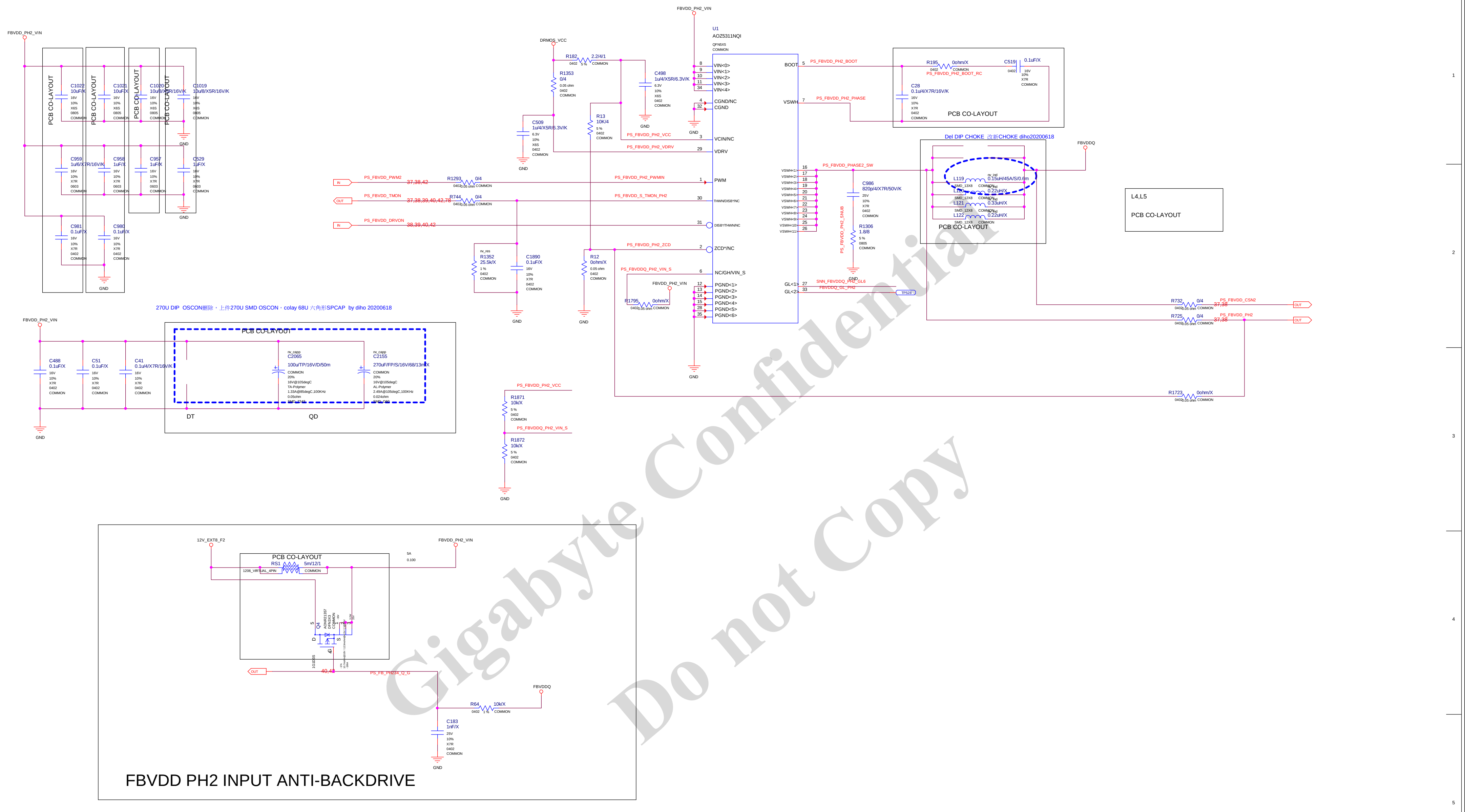
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: FBVDD PH3

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title PS: FBVDD PH3
Size Custom Document Number GV-N3080AORUSX W-10GD Rev 1.0
Date: Wednesday, September 30, 2020 Sheet 40 of 79

PS: FBVDD PH2

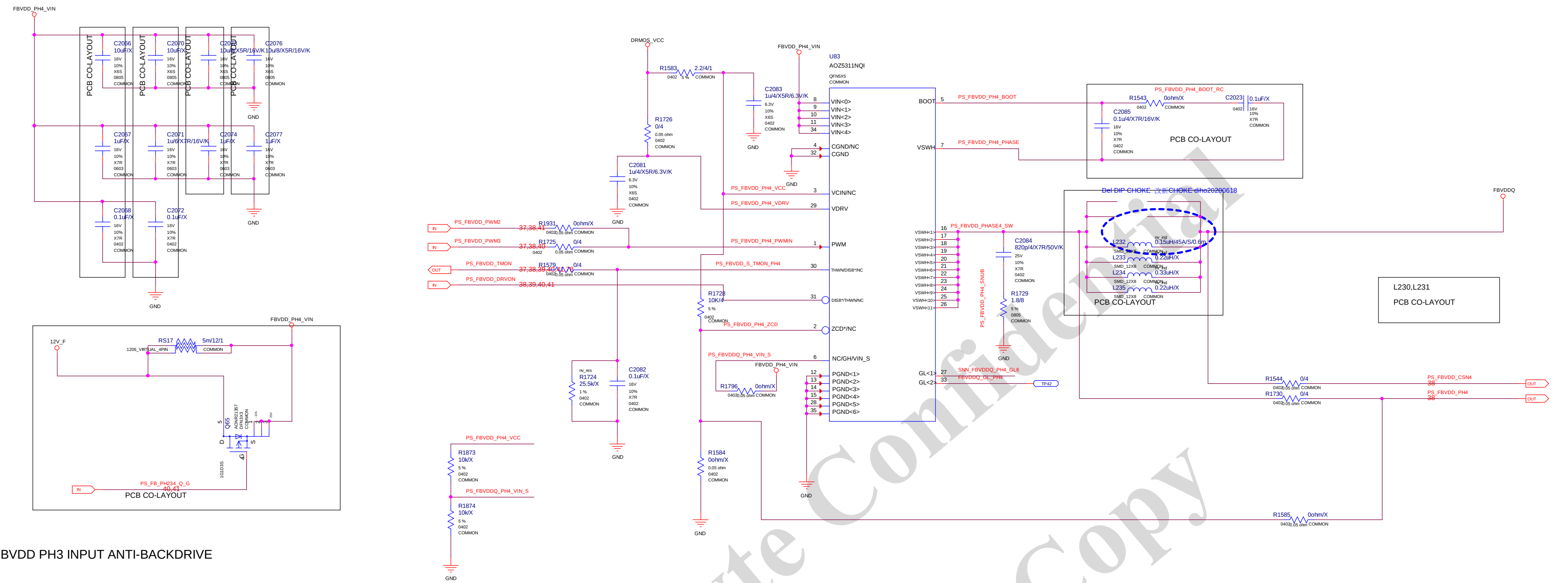

FBVDD_PH2_VIN
PCB CO-LAYOUT
C1022 10uF/X 16V 10% X6S 0805 COMMON
C1021 10uF/X 16V 10% X6S 0805 COMMON
C1020 10uF/X 16V 10% X6S 0805 COMMON
C1019 10u/8/X5R/16V/K 16V 10% X6S 0805 COMMON
C959 1u/6/X7R/16V/K 16V 10% X7R 0603 COMMON
C958 1uF/X 16V 10% X7R 0603 COMMON
C957 1uF/X 16V 10% X7R 0603 COMMON
C529 1uF/X 16V 10% X7R 0603 COMMON
C981 0.1uF/X 16V 10% X7R 0402 COMMON
C980 0.1uF/X 16V 10% X7R 0402 COMMON
GND
DRMOS_VCC
R182 2.2/4/1 0402 5% COMMON
R1353 0/4 0.05 ohm 0402 COMMON
C498 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
C509 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
R13 10K/4 5% 0402 COMMON
U1 AOZ5311NQI QFN5X5 COMMON
VIN<0> VIN<1> VIN<2> VIN<3> VIN<4>
CGND/NC CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1> PGND<2> PGND<3> PGND<4> PGND<5> PGND<6>
BOOT
VSWH
VSWH<1> … VSWH<11>
GL<1> GL<2>
PS_FBVDD_PH2_BOOT
PS_FBVDD_PH2_BOOT_RC
PS_FBVDD_PH2_PHASE
PS_FBVDD_PH2_VCC
PS_FBVDD_PH2_VDRV
PS_FBVDD_PWM2 37,38,42
R1293 0/4 0402 0.05 ohm COMMON
PS_FBVDD_PH2_PWMIN
PS_FBVDD_TMON 37,38,39,40,42,78
R744 0/4 0402 0.05 ohm COMMON
PS_FBVDD_S_TMON_PH2
PS_FBVDD_DRVON 38,39,40,42
PS_FBVDD_PH2_ZCD
PS_FBVDDQ_PH2_VIN_S
nv_res R1352 25.5k/X 1% 0402 COMMON
C1890 0.1uF/X 16V 10% X7R 0402 COMMON
R12 0ohm/X 0.05 ohm 0402 COMMON
R1795 0ohm/X 0402 0.05 ohm COMMON
R195 0ohm/X 0402 COMMON
C519 0.1uF/X 16V 10% X7R 0402 COMMON
C28 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
PCB CO-LAYOUT
Del DIP CHOKE 改新CHOKE diho20200618
PS_FBVDD_PHASE2_SW
C986 820p/4/X7R/50V/K 25V 10% X7R 0402 COMMON
R1306 1.8/8 5% 0805 COMMON
PS_FBVDD_PH2_SNUB
nv_ind L119 0.15uH/45A/S/0.6m SMD_13X8 COMMON
L120 0.22uH/X SMD_12X8 COMMON
L121 0.33uH/X SMD_12X8 COMMON
L122 0.22uH/X SMD_12X8 COMMON
FBVDDQ
L4,L5 PCB CO-LAYOUT
SNN_FBVDDQ_PH2_GL6
FBVDDQ_GL_PH2
TP528
R732 0/4 0402 0.05 ohm COMMON PS_FBVDD_CSN2 37,38
R725 0/4 0402 0.05 ohm COMMON PS_FBVDD_PH2 37,38
R1723 0ohm/X 0402 0.05 ohm COMMON
270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
C488 0.1uF/X 16V 10% X7R 0402 COMMON
C51 0.1uF/X 16V 10% X7R 0402 COMMON
C41 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
nv_capp C2065 100u/TP/16V/D/50m COMMON 20% 16V@105degC TA-Polymer 1.33A@85degC,100KHz 0.05ohm
nv_capp C2155 270uF/FP/S/16V/68/13mX COMMON 20% 16V@105degC AL-Polymer 2.49A@105degC,100KHz 0.024ohm
DT QD
PS_FBVDD_PH2_VCC
R1871 10k/X 5% 0402 COMMON
PS_FBVDDQ_PH2_VIN_S
R1872 10k/X 5% 0402 COMMON
12V_EXT8_F2
FBVDD_PH2_VIN
5A 0.100
PCB CO-LAYOUT
RS1 5m/12/1 1206_VIRTUAL_4PIN COMMON
Q4 AON6213S7 DFN5X3 COMMON
OUT 40,42 PS_FB_PH234_Q_G
R64 10k/X 0402 1% COMMON
C183 1nF/X 25V 10% X7R 0402 COMMON
FBVDD PH2 INPUT ANTI-BACKDRIVE

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: FBVDD PH2

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

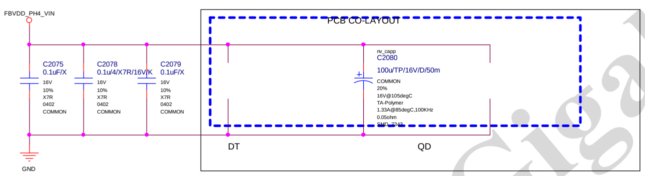
GIGABYTE
Title PS: FBVDD PH2
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 41 of 79

PS: FBVDD PH4


FBVDD_PH4_VIN
C2066 10uF/X 16V 10% X6S 0805 COMMON
C2070 10uF/X 16V 10% X6S 0805 COMMON
C2073 10uF/X 16V 10% X6S 0805 COMMON
C2076 10u/8/X5R/16V/K 16V 10% X6S 0805 COMMON
PCB CO-LAYOUT
C2067 1uF/X 16V 10% X7R 0603 COMMON
C2071 1u/6/X7R/16V/K 16V 10% X7R 0603 COMMON
C2074 1uF/X 16V 10% X7R 0603 COMMON
C2077 1uF/X 16V 10% X7R 0603 COMMON
C2068 0.1uF/X 16V 10% X7R 0402 COMMON
C2072 0.1uF/X 16V 10% X7R 0402 COMMON
GND
DRMOS_VCC
R1583 2.2/4/1 0402 1% COMMON
R1726 0/4 0.05 ohm 0402 COMMON
C2083 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
C2081 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
U83 AOZ5311NQI QFN5X5 COMMON
VIN<0> VIN<1> VIN<2> VIN<3> VIN<4>
CGND/NC CGND
VCIN/NC VDRV PWM THWN/DISB*/NC DISB*/THWN/NC ZCD*/NC NC/GH/VIN_S
PGND<1> PGND<2> PGND<3> PGND<4> PGND<5> PGND<6>
BOOT VSWH GL<1> GL<2>
VSWH<1> … VSWH<11>
PS_FBVDD_PH4_BOOT
PS_FBVDD_PH4_PHASE
PS_FBVDD_PH4_VCC
PS_FBVDD_PH4_VDRV
PS_FBVDD_PWM2 37,38,41 R1931 0ohm/X 0402 0.05 ohm COMMON
PS_FBVDD_PWM3 37,38,40 R1725 0/4 0402 0.05 ohm COMMON
PS_FBVDD_TMON 37,38,39,40,41 R1579 0/4 0402 0.05 ohm COMMON
PS_FBVDD_DRVON 38,39,40,41
PS_FBVDD_PH4_PWMIN
PS_FBVDD_S_TMON_PH4
R1728 10K/4 5% 0402 COMMON
PS_FBVDD_PH4_ZCD
PS_FBVDDQ_PH4_VIN_S
R1796 0ohm/X 0402 0.05 ohm COMMON
nv_res R1724 25.5k/X 1% 0402 COMMON
C2082 0.1uF/X 16V 10% X7R 0402 COMMON
R1584 0ohm/X 0.05 ohm 0402 COMMON
PS_FBVDD_PH4_BOOT_RC
R1543 0ohm/X 0402 COMMON
C2023 0.1uF/X 0402 16V 10% X7R COMMON
C2085 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
PCB CO-LAYOUT
Del DIP CHOKE 改新CHOKE diho20200618
FBVDDQ
PS_FBVDD_PHASE4_SW
C2084 820p/4/X7R/50V/K 25V 10% X7R 0402 COMMON
R1729 1.8/8 5% 0805 COMMON
PS_FBVDD_PH4_SNUB
L232 nv_ind 0.15uH/45A/S/0.6m SMD_12X8 COMMON
L233 0.22uH/X SMD_12X8 COMMON
L234 0.33uH/X SMD_12X8 COMMON
L235 0.22uH/X SMD_12X8 COMMON
PCB CO-LAYOUT
L230,L231
PCB CO-LAYOUT
SNN_FBVDDQ_PH4_GL6
FBVDDQ_GL_PH4
TP42
R1544 0/4 0402 0.05 ohm COMMON PS_FBVDD_CSN4 38 OUT
R1730 0/4 0402 0.05 ohm COMMON PS_FBVDD_PH4 38 OUT
R1585 0ohm/X 0402 0.05 ohm COMMON
PS_FBVDD_PH4_VCC
R1873 10k/X 5% 0402 COMMON
PS_FBVDDQ_PH4_VIN_S
R1874 10k/X 5% 0402 COMMON
12V_F
RS17 5m/12/1 1206_VIRTUAL_4PIN COMMON
Q65 AON7318 DFN3X3 COMMON
D G S
PS_FB_PH234_Q_G 40,41
IN
PCB CO-LAYOUT

FBVDD PH3 INPUT ANTI-BACKDRIVE

270U DIP OSCON 改2700U SMD OSCON並預留 2 X 100U by diho 20200618


FBVDD_PH4_VIN
C2075 0.1uF/X 16V 10% X7R 0402 COMMON
C2078 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
C2079 0.1uF/X 16V 10% X7R 0402 COMMON
GND
PCB CO-LAYOUT
nv_cappp C2080 100u/TP/16V/D/50m COMMON 20% 16V@105degC TA-Polymer 1.33A@85degC,100KHz 0.05ohm
DT
QD

上件4PHASE

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: FBVDD PH4

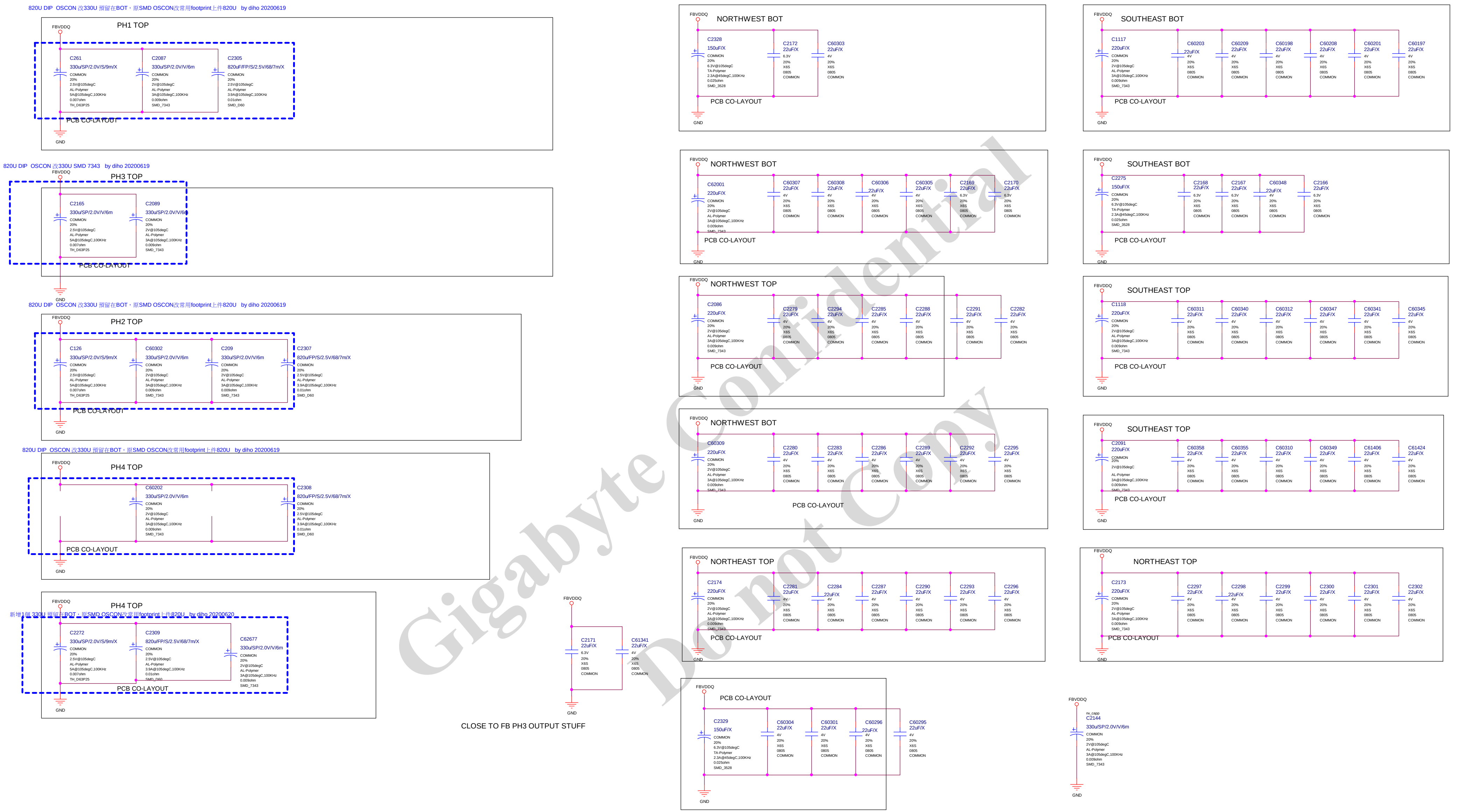
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: FBVDD PH4
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 42 of 79

PS: FBVDD OUTPUT CAP

3x 820uF TH FBVDD OUTPUT BULK CAPS

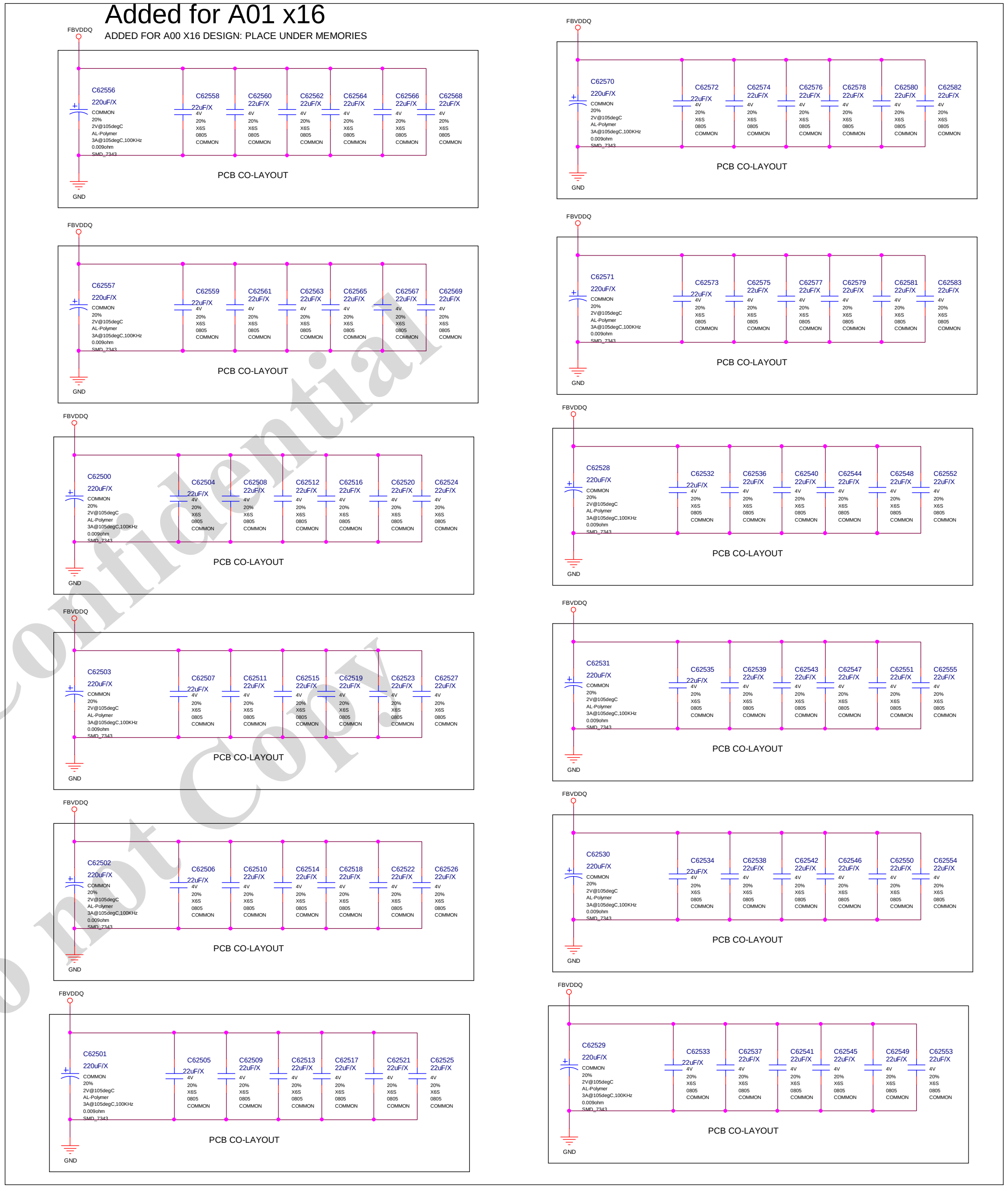

820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
PH1 TOP
FBVDDQ
C261
330u/SP/2.0V/S/9m/X
COMMON
20%
2.5V@105degC
AL-Polymer
5A@105degC,100KHz
0.007ohm
TH_D63P25
C2087
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C2305
820uF/FP/S/2.5V/68/7m/X
COMMON
20%
2.5V@105degC
AL-Polymer
3.9A@105degC,100KHz
0.01ohm
SMD_D60
PCB CO-LAYOUT
GND
820U DIP OSCON 改330U SMD 7343   by diho 20200619
PH3 TOP
C2165
330u/SP/2.0V/V/6m
C2089
330u/SP/2.0V/V/6m
PCB CO-LAYOUT
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
PH2 TOP
C126
330u/SP/2.0V/S/9m/X
C60302
330u/SP/2.0V/V/6m
C209
330u/SP/2.0V/V/6m
C2307
820u/FP/S/2.5V/68/7m/X
PCB CO-LAYOUT
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
PH4 TOP
C60202
330u/SP/2.0V/V/6m
C2308
820u/FP/S/2.5V/68/7m/X
PCB CO-LAYOUT
PH4 TOP
新增1個 330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200620
C2272
330u/SP/2.0V/S/9m/X
C2309
820u/FP/S/2.5V/68/7m/X
C62677
330u/SP/2.0V/V/6m
PCB CO-LAYOUT
C2171
22uF/X
C61341
22uF/X
CLOSE TO FB PH3 OUTPUT STUFF
NORTHWEST BOT
C2328
150uF/X
C2172
22uF/X
C60303
22uF/X
PCB CO-LAYOUT
SOUTHEAST BOT
C1117
220uF/X
C60203
C60209
C60198
C60208
C60201
C60197
22uF/X
PCB CO-LAYOUT
NORTHWEST BOT
C62001
220uF/X
C60307
C60308
C60306
C60305
C2169
C2170
22uF/X
PCB CO-LAYOUT
SOUTHEAST BOT
C2275
150uF/X
C2168
C2167
C60348
C2166
22uF/X
PCB CO-LAYOUT
NORTHWEST TOP
C2086
220uF/X
C2279
C2294
C2285
C2288
C2291
C2282
22uF/X
PCB CO-LAYOUT
SOUTHEAST TOP
C1118
220uF/X
C60311
C60340
C60312
C60347
C60341
C60345
22uF/X
PCB CO-LAYOUT
NORTHWEST BOT
C60309
220uF/X
C2280
C2283
C2286
C2289
C2292
C2295
22uF/X
PCB CO-LAYOUT
SOUTHEAST TOP
C2091
220uF/X
C60358
C60355
C60310
C60349
C61406
C61424
22uF/X
PCB CO-LAYOUT
NORTHEAST TOP
C2174
220uF/X
C2281
C2284
C2287
C2290
C2293
C2296
22uF/X
PCB CO-LAYOUT
NORTHEAST TOP
C2173
220uF/X
C2297
C2298
C2299
C2300
C2301
C2302
22uF/X
PCB CO-LAYOUT
PCB CO-LAYOUT
C2329
150uF/X
C60304
C60301
C60296
C60295
22uF/X
nv_capp
C2144
330u/SP/2.0V/V/6m
GND

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: FBVDD OUTPUT CAP

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
PS: FBVDD OUTPUT CAP
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 43 of 79


Added for A01 x16
ADDED FOR A00 X16 DESIGN: PLACE UNDER MEMORIES
FBVDDQ
GND
PCB CO-LAYOUT
C62556 220uF/X
C62558 22uF/X
C62560 22uF/X
C62562 22uF/X
C62564 22uF/X
C62566 22uF/X
C62568 22uF/X
C62557 220uF/X
C62559 22uF/X
C62561 22uF/X
C62563 22uF/X
C62565 22uF/X
C62567 22uF/X
C62569 22uF/X
C62500 220uF/X
C62504 22uF/X
C62508 22uF/X
C62512 22uF/X
C62516 22uF/X
C62520 22uF/X
C62524 22uF/X
C62503 220uF/X
C62507 22uF/X
C62511 22uF/X
C62515 22uF/X
C62519 22uF/X
C62523 22uF/X
C62527 22uF/X
C62502 220uF/X
C62506 22uF/X
C62510 22uF/X
C62514 22uF/X
C62518 22uF/X
C62522 22uF/X
C62526 22uF/X
C62501 220uF/X
C62505 22uF/X
C62509 22uF/X
C62513 22uF/X
C62517 22uF/X
C62521 22uF/X
C62525 22uF/X
C62570 220uF/X
C62572 22uF/X
C62574 22uF/X
C62576 22uF/X
C62578 22uF/X
C62580 22uF/X
C62582 22uF/X
C62571 220uF/X
C62573 22uF/X
C62575 22uF/X
C62577 22uF/X
C62579 22uF/X
C62581 22uF/X
C62583 22uF/X
C62528 220uF/X
C62532 22uF/X
C62536 22uF/X
C62540 22uF/X
C62544 22uF/X
C62548 22uF/X
C62552 22uF/X
C62531 220uF/X
C62535 22uF/X
C62539 22uF/X
C62543 22uF/X
C62547 22uF/X
C62551 22uF/X
C62555 22uF/X
C62530 220uF/X
C62534 22uF/X
C62538 22uF/X
C62542 22uF/X
C62546 22uF/X
C62550 22uF/X
C62554 22uF/X
C62529 220uF/X
C62533 22uF/X
C62537 22uF/X
C62541 22uF/X
C62545 22uF/X
C62549 22uF/X
C62553 22uF/X
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
4V
X6S
0805

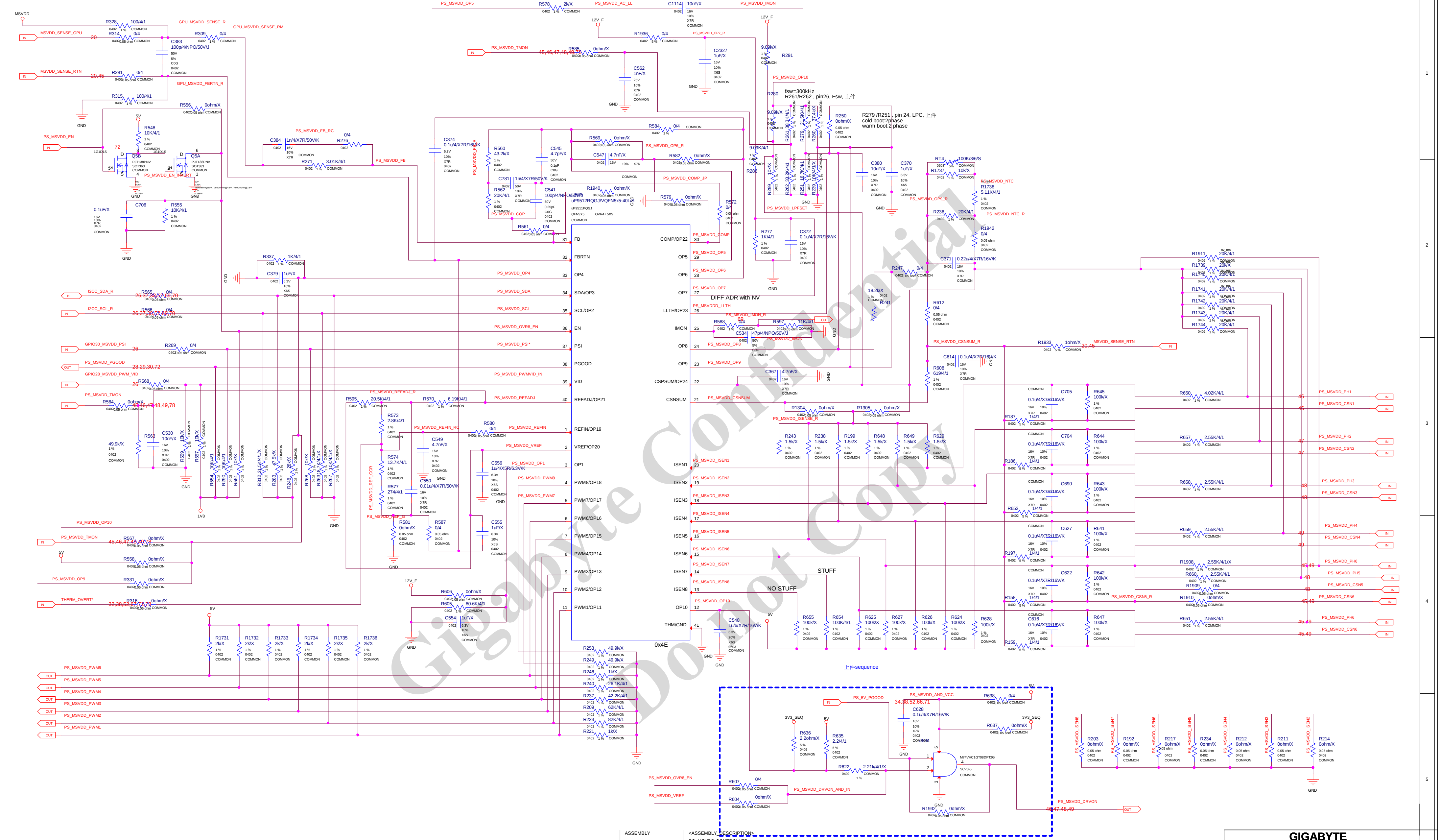
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: FBVDD_OUTPUT_CAP_NEAR_MEMORY

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: FBVDD OUTPUT CAP_NEAR
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 44 of 79

PS: MSVDD


MSVDD
MSVDD_SENSE_GPU
MSVDD_SENSE_RTN
GPU_MSVDD_SENSE_R
GPU_MSVDD_SENSE_RM
GPU_MSVDD_FBRTN_R
PS_MSVDD_EN
PS_MSVDD_EN_INPUT
PS_MSVDD_FB_RC
PS_MSVDD_FB
PS_MSVDD_OP5
PS_MSVDD_AC_LL
PS_MSVDD_IMON
PS_MSVDD_TMON
PS_MSVDD_OP7_R
PS_MSVDD_OP10
PS_MSVDD_OP6_R
PS_MSVDD_COMP_JP
PS_MSVDD_COP
PS_MSVDD_LPFSET
PS_MSVDD_NTC
PS_MSVDD_NTC_R
PS_MSVDD_OP9_R
fsw=300KHz
R261/R262 , pin26, Fsw, 上件
R279 /R251 , pin 24, LPC, 上件
cold boot:2phase
warm boot:2 phase
uP9512RQGJ/VQFN5x5-40L
uP9511PQGJ
QFN5X5
OVR4+ 5X5
FB
FBRTN
OP4
SDA/OP3
SCL/OP2
EN
PSI
PGOOD
VID
REFADJ/OP21
REFIN/OP19
VREF/OP20
OP1
PWM8/OP18
PWM7/OP17
PWM6/OP16
PWM5/OP15
PWM4/OP14
PWM3/OP13
PWM2/OP12
PWM1/OP11
COMP/OP22
OP5
OP6
OP7
LLTH/OP23
IMON
OP8
OP9
CSPSUM/OP24
CSNSUM
ISEN1
ISEN2
ISEN3
ISEN4
ISEN5
ISEN6
ISEN7
ISEN8
OP10
THM/GND
0x4E
DIFF ADR with NV
STUFF
NO STUFF
I2CC_SDA_R
I2CC_SCL_R
GPIO30_MSVDD_PSI
PS_MSVDD_PGOOD
GPIO28_MSVDD_PWM_VID
THERM_OVERT*
PS_MSVDD_PWM1
PS_MSVDD_PWM2
PS_MSVDD_PWM3
PS_MSVDD_PWM4
PS_MSVDD_PWM5
PS_MSVDD_PWM6
PS_MSVDD_PH1
PS_MSVDD_CSN1
PS_MSVDD_PH2
PS_MSVDD_CSN2
PS_MSVDD_PH3
PS_MSVDD_CSN3
PS_MSVDD_PH4
PS_MSVDD_CSN4
PS_MSVDD_PH5
PS_MSVDD_CSN5
PS_MSVDD_PH6
PS_MSVDD_CSN6
上件sequence
PS_5V_PGOOD
PS_MSVDD_AND_VCC
3V3_SEQ
5V
12V_F
1V8
GND
M74VHC1G708DFT2G
SC70-5
PS_MSVDD_DRVON_AND_IN
PS_MSVDD_DRVON
PS_MSVDD_OVR8_EN
PS_MSVDD_VREF

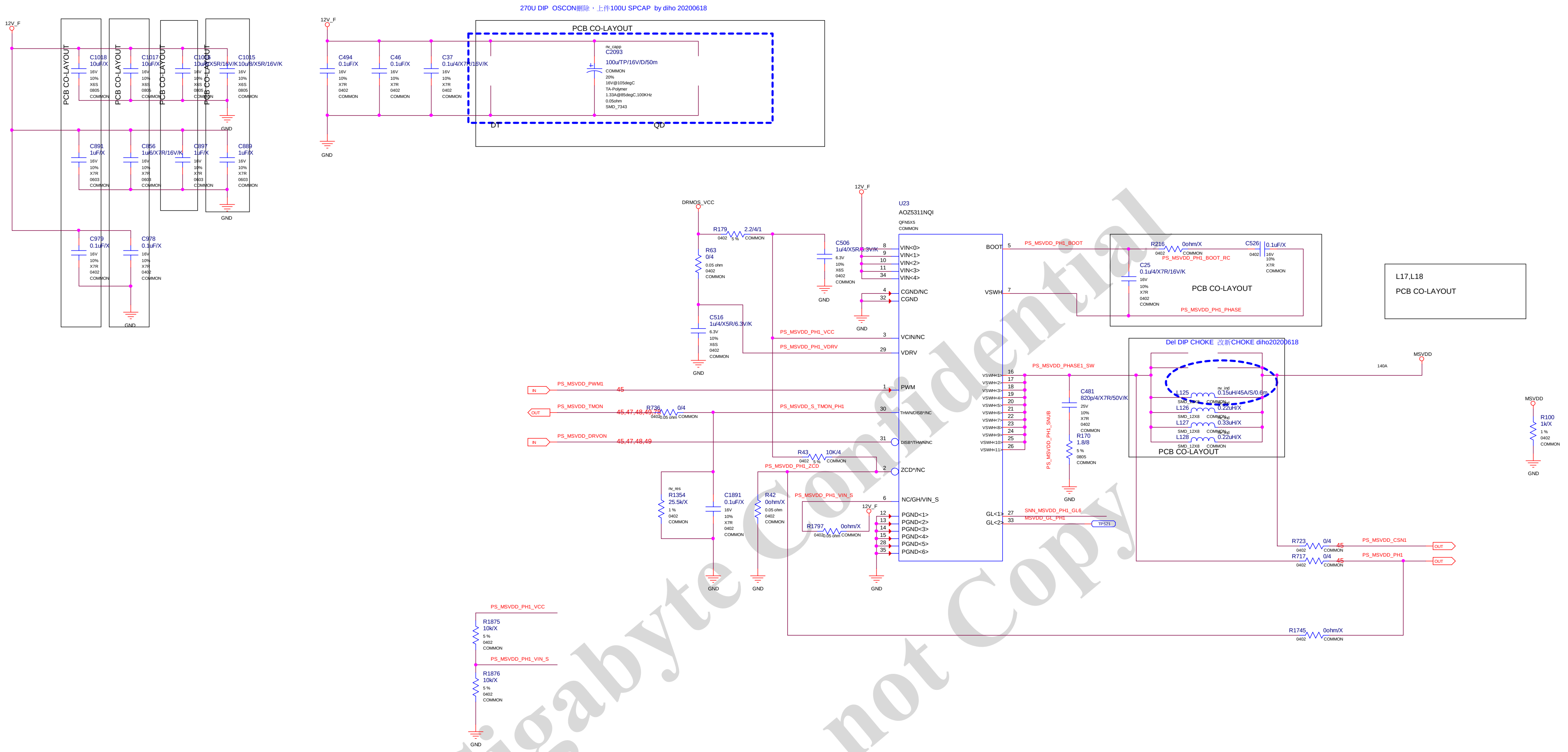
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: MSVDD CONTROLLER

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: MSVDD
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 45 of 79

PS: MSVDD Phase 1



270U DIP OSCON刪除，上件100U SPCAP by diho 20200618
PCB CO-LAYOUT
12V_F
C1018 10uF/X
C1017 10uF/X
C1016 10uF/X5R/16V/K
C1015 10uF/X5R/16V/K
C891 1uF/X
C856 1uF/X7R/16V/K
C897 1uF/X
C889 1uF/X
C979 0.1uF/X
C978 0.1uF/X
C494 0.1uF/X
C46 0.1uF/X
C37 0.1u/4/X7R/16V/K
C2093 100u/TP/16V/D/50m
GND
DRMOS_VCC
R179 2.2/4/1
R63 0/4
C506 1u/4/X5R/6.3V/K
C516 1u/4/X5R/6.3V/K
U23
AOZ5311NQI
QFN5X5
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_MSVDD_PH1_BOOT
R216 0ohm/X
C526 0.1uF/X
PS_MSVDD_PH1_BOOT_RC
C25 0.1u/4/X7R/16V/K
PS_MSVDD_PH1_PHASE
L17,L18
PCB CO-LAYOUT
Del DIP CHOKE 改新CHOKE diho20200618
PS_MSVDD_PHASE1_SW
C481 820p/4/X7R/50V/K
R170 1.8/8
PS_MSVDD_PH1_SNUB
L125 0.15uH/45A/S/0.6m
L126 0.22uH/X
L127 0.33uH/X
L128 0.22uH/X
MSVDD
140A
R100 1k/X
PS_MSVDD_PH1_VCC
PS_MSVDD_PH1_VDRV
PS_MSVDD_PWM1
PS_MSVDD_TMON
PS_MSVDD_DRVON
PS_MSVDD_S_TMON_PH1
R736 0/4
45,47,48,49,78
45,47,48,49
R43 10K/4
PS_MSVDD_PH1_ZCD
R1354 25.5k/X
C1891 0.1uF/X
R42 0ohm/X
PS_MSVDD_PH1_VIN_S
R1797 0ohm/X
SNN_MSVDD_PH1_GL6
MSVDD_GL_PH1
TP521
R723 0/4
R717 0/4
PS_MSVDD_CSN1
PS_MSVDD_PH1
R1745 0ohm/X
R1875 10k/X
R1876 10k/X
IN
OUT

Gigabyte Confidential Do not Copy

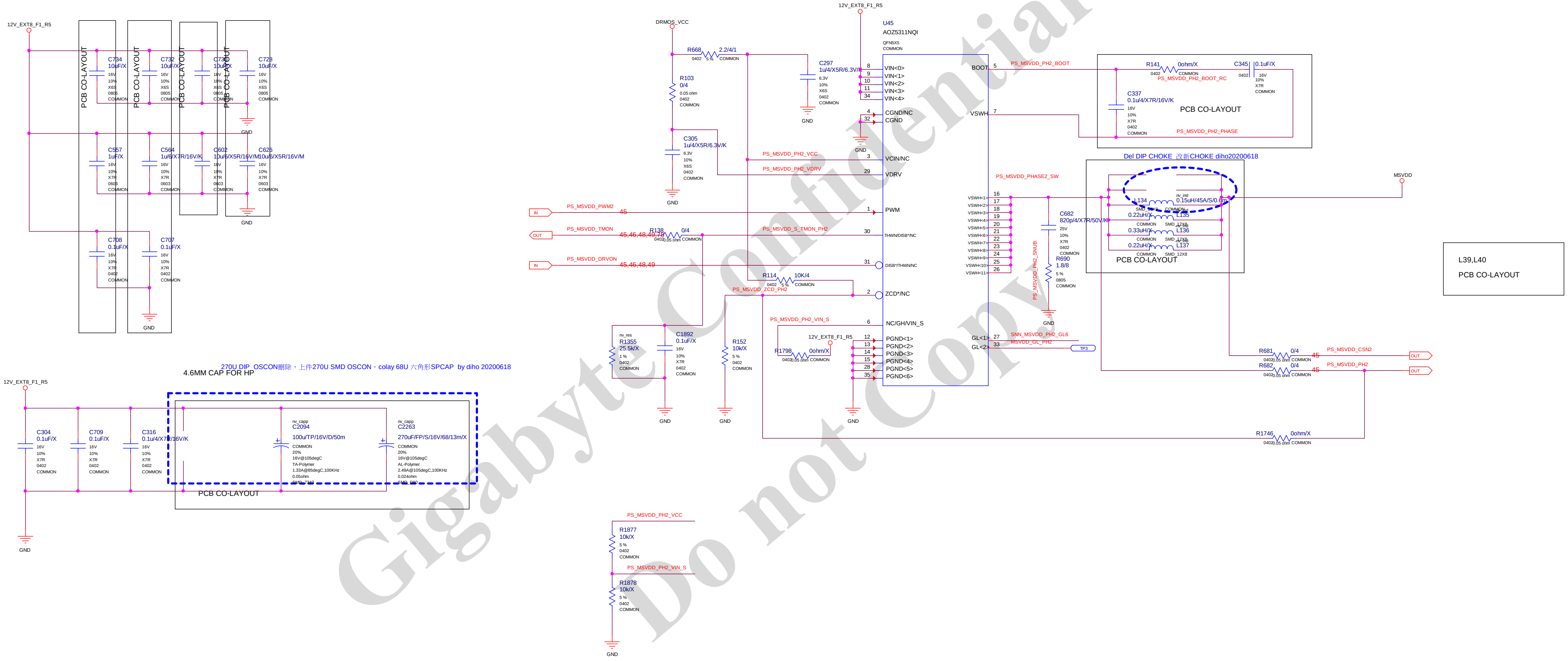
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: MSVDD PH1

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title PS: MSVDD Phase 1
Size Custom Document Number GV-N3080AORUSX W-10GD Rev 1.0
Date: Wednesday, September 30, 2020 Sheet 46 of 79

PS: MSVDD PH 2


12V_EXT8_F1_R5
PCB CO-LAYOUT
C734 10uF/X 16V 10% X6S 0805 COMMON
C732 10uF/X 16V 10% X6S 0805 COMMON
C730 10uF/X 16V 10% X6S 0805 COMMON
C728 10uF/X 16V 10% X6S 0805 COMMON
GND
C557 1uF/X 16V 10% X7R 0603 COMMON
C564 1u/6/X7R/16V/K 16V 10% X7R 0603 COMMON
C602 10u/6/X5R/16V/M 16V 10% X7R 0603 COMMON
C626 10u/6/X5R/16V/M 16V 10% X7R 0603 COMMON
C708 0.1uF/X 16V 10% X7R 0402 COMMON
C707 0.1uF/X 16V 10% X7R 0402 COMMON
270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
4.6MM CAP FOR HP
C304 0.1uF/X 16V 10% X7R 0402 COMMON
C709 0.1uF/X 16V 10% X7R 0402 COMMON
C316 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
nv_capp C2094 100u/TP/16V/D/50m COMMON 20% 16V@105degC TA-Polymer 1.33A@85degC,100KHz 0.05ohm SMD_7343
nv_capp C2263 270uF/FP/S/16V/68/13m/X COMMON 20% 16V@105degC AL-Polymer 2.49A@105degC,100KHz 0.024ohm SMD_D60
DRMOS_VCC
R668 2.2/4/1 0402 5 % COMMON
R103 0/4 0.05 ohm 0402 COMMON
C305 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
C297 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
U45 AOZ5311NQI QFN5X5 COMMON
VIN<0> 8
VIN<1> 9
VIN<2> 10
VIN<3> 11
VIN<4> 34
CGND/NC 4
CGND 32
VCIN/NC 3
VDRV 29
PWM 1
THWN/DISB*/NC 30
DISB*/THWN/NC 31
ZCD*/NC 2
NC/GH/VIN_S 6
PGND<1> 12
PGND<2> 13
PGND<3> 14
PGND<4> 15
PGND<5> 28
PGND<6> 35
BOOT 5
VSWH 7
VSWH<1> 16
VSWH<2> 17
VSWH<3> 18
VSWH<4> 19
VSWH<5> 20
VSWH<6> 21
VSWH<7> 22
VSWH<8> 23
VSWH<9> 24
VSWH<10> 25
VSWH<11> 26
GL<1> 27
GL<2> 33
IN PS_MSVDD_PWM2 45
OUT PS_MSVDD_TMON 45,46,48,49,79
IN PS_MSVDD_DRVON 45,46,48,49
R138 0/4 0402 0.05 ohm COMMON
PS_MSVDD_PH2_VCC
PS_MSVDD_PH2_VDRV
PS_MSVDD_S_TMON_PH2
R114 10K/4 0402 5 % COMMON
PS_MSVDD_ZCD_PH2
PS_MSVDD_PH2_VIN_S
nv_res R1355 25.5k/X 1 % 0402 COMMON
C1892 0.1uF/X 16V 10% X7R 0402 COMMON
R152 10k/X 5 % 0402 COMMON
R1798 0ohm/X 0402 0.05 ohm COMMON
PS_MSVDD_PH2_BOOT
R141 0ohm/X 0402 COMMON
PS_MSVDD_PH2_BOOT_RC
C345 0.1uF/X 0402 16V 10% X7R COMMON
C337 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
PS_MSVDD_PH2_PHASE
Del DIP CHOKE 改新CHOKE diho20200618
PS_MSVDD_PHASE2_SW
C682 820p/4/X7R/50V/K 25V 10% X7R 0402 COMMON
R690 1.8/8 5 % 0805 COMMON
PS_MSVDD_PH2_SNUB
nv_ind L134 0.15uH/45A/S/0.6m SMD_12X8 COMMON
nv_ind L135 0.22uH/X COMMON SMD_12X8
nv_ind L136 0.33uH/X COMMON SMD_12X8
nv_ind L137 0.22uH/X COMMON SMD_12X8
MSVDD
SNN_MSVDD_PH2_GL6
MSVDD_GL_PH2
TP3
R681 0/4 0402 0.05 ohm COMMON 45 PS_MSVDD_CSN2 OUT
R682 0/4 0402 0.05 ohm COMMON 45 PS_MSVDD_PH2 OUT
R1746 0ohm/X 0402 0.05 ohm COMMON
L39,L40
PCB CO-LAYOUT
PS_MSVDD_PH2_VCC
R1877 10k/X 5 % 0402 COMMON
PS_MSVDD_PH2_VIN_S
R1878 10k/X 5 % 0402 COMMON
GND

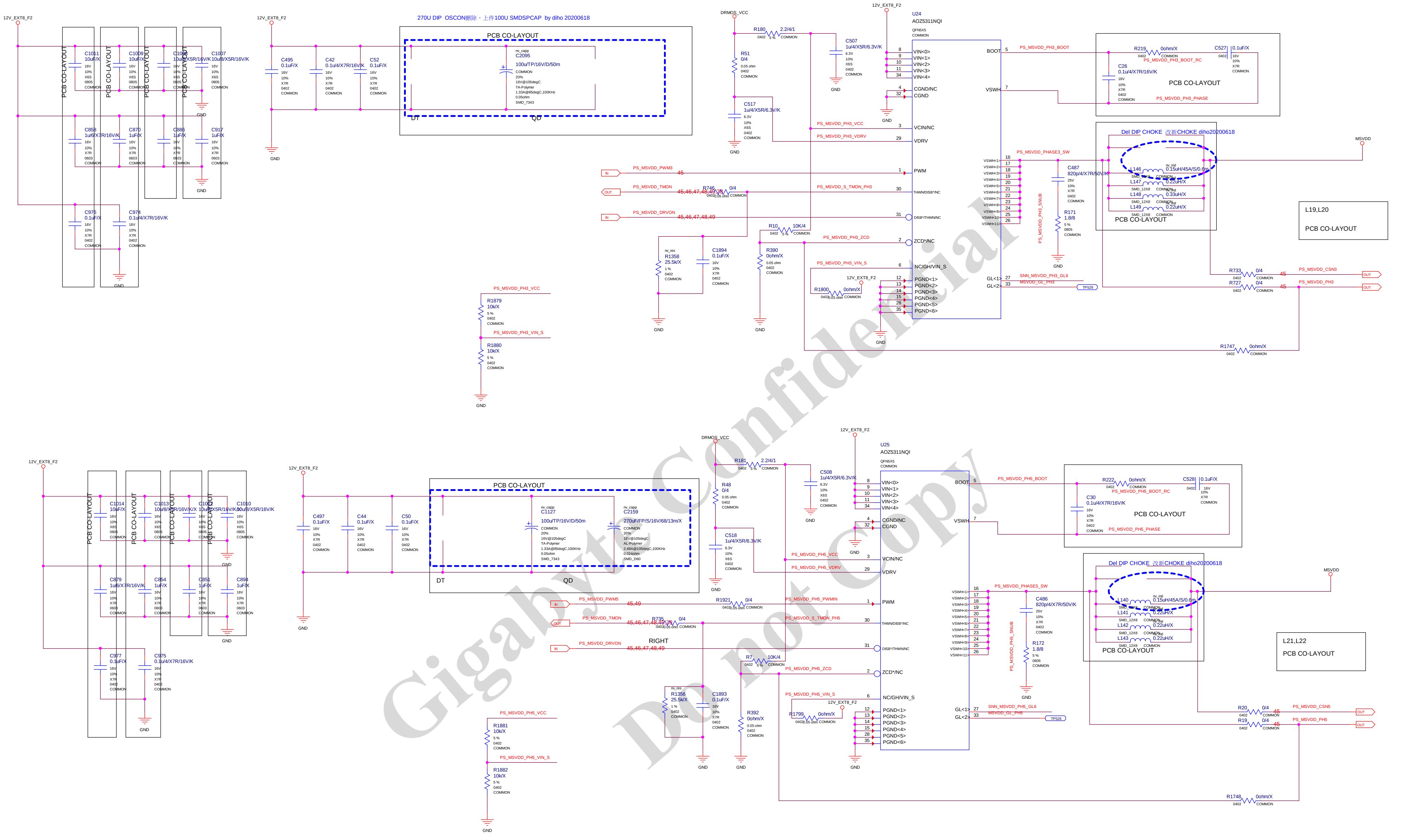
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: MSVDD PH2

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: MSVDD Phase 2
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 47 of 79

PS:MSVDD Phase 3, 5


12V_EXT8_F2
PCB CO-LAYOUT
C1011 10uF/X 16V 10% X6S 0805 COMMON
C1009 10uF/X
C1008 10uF/X5R/16V/K
C1007 10u/8/X5R/16V/K
C858 1u/6/X7R/16V/K
C870 1uF/X
C886 1uF/X
C917 1uF/X
C976 0.1uF/X
C974 0.1u/4/X7R/16V/K
GND
C495 0.1uF/X
C42 0.1u/4/X7R/16V/K
C52 0.1uF/X
270U DIP OSCON刪除，上件100U SMDSPCAP by diho 20200618
PCB CO-LAYOUT
nv_capp
C2095
100u/TP/16V/D/50m
COMMON 20% 16V@105degC TA-Polymer 1.33A@85degC,100KHz 0.05ohm SMD_7343
DT
QD
DRMOS_VCC
R180 2.2/4/1
R51 0/4
C507 1u/4/X5R/6.3V/K
C517 1u/4/X5R/6.3V/K
U24
AOZ5311NQI
QFN5X5
COMMON
VIN<0> VIN<1> VIN<2> VIN<3> VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1> PGND<2> PGND<3> PGND<4> PGND<5> PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_MSVDD_PH3_BOOT
R219 0ohm/X
C527 0.1uF/X
PS_MSVDD_PH3_BOOT_RC
C26 0.1u/4/X7R/16V/K
PS_MSVDD_PH3_PHASE
PS_MSVDD_PH3_VCC
PS_MSVDD_PH3_VDRV
PS_MSVDD_PWM3
PS_MSVDD_TMON
PS_MSVDD_DRVON
R746 0/4
45,46,47,48,49
PS_MSVDD_S_TMON_PH3
R10 10K/4
PS_MSVDD_PH3_ZCD
PS_MSVDD_PH3_VIN_S
R1358 25.5k/X
C1894 0.1uF/X
R390 0ohm/X
R1800 0ohm/X
R1879 10k/X
R1880 10k/X
Del DIP CHOKE 改新CHOKE diho20200618
MSVDD
PS_MSVDD_PHASE3_SW
C487 820p/4/X7R/50V/K
L146 0.15uH/45A/S/0.6m
L147 0.22uH/X
L148 0.33uH/X
L149 0.22uH/X
R171 1.8/8
PS_MSVDD_PH3_SNUB
SNN_MSVDD_PH3_GL6
MSVDD_GL_PH3
TP529
L19,L20
PCB CO-LAYOUT
R733 0/4
R727 0/4
PS_MSVDD_CSN3
PS_MSVDD_PH3
R1747 0ohm/X
C1014 10uF/X
C1013 10u/8/X5R/16V/K
C1012 10u/8/X5R/16V/K
C1010 10u/8/X5R/16V/K
C879 1u/6/X7R/16V/K
C854 1uF/X
C851 1uF/X
C894 1uF/X
C977 0.1uF/X
C975 0.1u/4/X7R/16V/K
C497 0.1uF/X
C44 0.1uF/X
C50 0.1uF/X
C1127 100u/TP/16V/D/50m
C2159 270uF/FP/S/16V/68/13m/X
R181 2.2/4/1
R48 0/4
C508 1u/4/X5R/6.3V/K
C518 1u/4/X5R/6.3V/K
U25
AOZ5311NQI
PS_MSVDD_PH5_BOOT
R222 0ohm/X
C528 0.1uF/X
PS_MSVDD_PH5_BOOT_RC
C30 0.1u/4/X7R/16V/K
PS_MSVDD_PH5_PHASE
PS_MSVDD_PH5_VCC
PS_MSVDD_PH5_VDRV
PS_MSVDD_PWM5
R1921 0/4
PS_MSVDD_PH5_PWMIN
R735 0/4
PS_MSVDD_S_TMON_PH5
RIGHT
R7 10K/4
PS_MSVDD_PH5_ZCD
PS_MSVDD_PH5_VIN_S
R1356 25.5k/X
C1893 0.1uF/X
R392 0ohm/X
R1799 0ohm/X
R1881 10k/X
R1882 10k/X
PS_MSVDD_PHASE5_SW
C486 820p/4/X7R/50V/K
L140 0.15uH/45A/S/0.6m
L141 0.22uH/X
L142 0.22uH/X
L143 0.22uH/X
R172 1.8/8
PS_MSVDD_PH5_SNUB
SNN_MSVDD_PH5_GL6
MSVDD_GL_PH5
TP526
L21,L22
PCB CO-LAYOUT
R20 0/4
R19 0/4
PS_MSVDD_CSN5
PS_MSVDD_PH5
R1748 0ohm/X

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: MSVDD PH3 and PH5

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

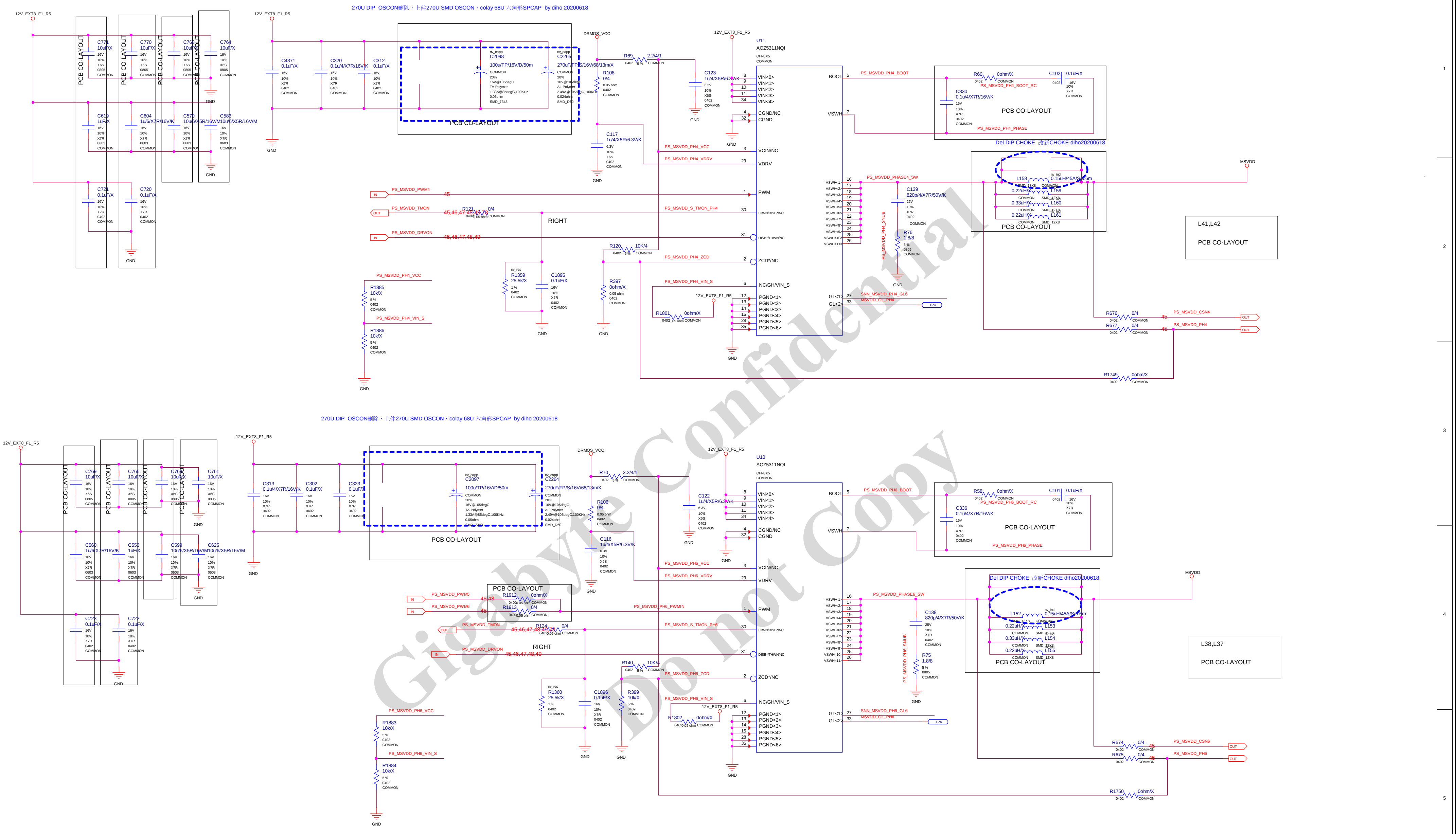
GIGABYTE

Title
PS: MSVDD Phase 3,5

Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0

Date: Wednesday, September 30, 2020

PS: MSVDD PH 4,6



270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
12V_EXT8_F1_R5
DRMOS_VCC
U11
AOZ5311NQI
QFN5X5
U10
C771 10uF/X
C770 10uF/X
C768 10uF/X
C764 10uF/X
C619 1uF/X
C604 1u/6/X7R/16V/K
C570 10u/6/X5R/16V/M
C583 10u/6/X5R/16V/M
C721 0.1uF/X
C720 0.1uF/X
C4371 0.1uF/X
C320 0.1u/4/X7R/16V/K
C312 0.1uF/X
C2098 100u/TP/16V/D/50m
C2265 270uF/FP/S/16V/68/13m/X
R69 2.2/4/1
R108 0/4
C123 1u/4/X5R/6.3V/K
C117 1u/4/X5R/6.3V/K
BOOT
VSWH
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
GL<1>
GL<2>
R60 0ohm/X
C102 0.1uF/X
C330 0.1u/4/X7R/16V/K
PS_MSVDD_PH4_BOOT
PS_MSVDD_PH4_BOOT_RC
PS_MSVDD_PH4_PHASE
PCB CO-LAYOUT
Del DIP CHOKE 改新CHOKE diho20200618
L158 0.15uH/45A/SMD/6m
L159 0.22uH/X
L160 0.33uH/X
L161 0.22uH/X
C139 820p/4/X7R/50V/K
R76 1.8/8
PS_MSVDD_PHASE4_SW
PS_MSVDD_PH4_SNUB
MSVDD
L41,L42
PCB CO-LAYOUT
PS_MSVDD_PWM4
PS_MSVDD_TMON
PS_MSVDD_DRVON
45,46,47,48,49
R121 0/4
RIGHT
PS_MSVDD_S_TMON_PH4
PS_MSVDD_PH4_VCC
PS_MSVDD_PH4_VDRV
R120 10K/4
PS_MSVDD_PH4_ZCD
PS_MSVDD_PH4_VIN_S
R1885 10k/X
R1886 10k/X
R1359 25.5k/X
C1895 0.1uF/X
R397 0ohm/X
R1801 0ohm/X
SNN_MSVDD_PH4_GL6
MSVDD_GL_PH4
TP4
R676 0/4
R677 0/4
PS_MSVDD_CSN4
PS_MSVDD_PH4
R1749 0ohm/X
GND
C769 10uF/X
C766 10uF/X
C765 10uF/X
C761 10uF/X
C560 1u/6/X7R/16V/K
C553 1uF/X
C599 10u/6/X5R/16V/M
C625 10u/6/X5R/16V/M
C723 0.1uF/X
C722 0.1uF/X
C313 0.1u/4/X7R/16V/K
C302 0.1uF/X
C323 0.1uF/X
C2097 100u/TP/16V/D/50m
C2264 270uF/FP/S/16V/68/13m/X
R70 2.2/4/1
R106 0/4
C122 1u/4/X5R/6.3V/K
C116 1u/4/X5R/6.3V/K
R58 0ohm/X
C101 0.1uF/X
C336 0.1u/4/X7R/16V/K
PS_MSVDD_PH6_BOOT
PS_MSVDD_PH6_BOOT_RC
PS_MSVDD_PH6_PHASE
PS_MSVDD_PHASE6_SW
L152 0.15uH/45A/SMD/6m
L153 0.22uH/X
L154 0.33uH/X
L155 0.22uH/X
C138 820p/4/X7R/50V/K
R75 1.8/8
PS_MSVDD_PH6_SNUB
L38,L37
PS_MSVDD_PWM5
PS_MSVDD_PWM6
R1912 0ohm/X
R1913 0/4
PS_MSVDD_PH6_PWMIN
R124 0/4
PS_MSVDD_S_TMON_PH6
PS_MSVDD_PH6_VCC
PS_MSVDD_PH6_VDRV
R140 10K/4
PS_MSVDD_PH6_ZCD
PS_MSVDD_PH6_VIN_S
R1883 10k/X
R1884 10k/X
R1360 25.5k/X
C1896 0.1uF/X
R399 10k/X
R1802 0ohm/X
SNN_MSVDD_PH6_GL6
MSVDD_GL_PH6
TP6
R674 0/4
R675 0/4
PS_MSVDD_CSN6
PS_MSVDD_PH6
R1750 0ohm/X

Gigabyte Confidential Do not Copy

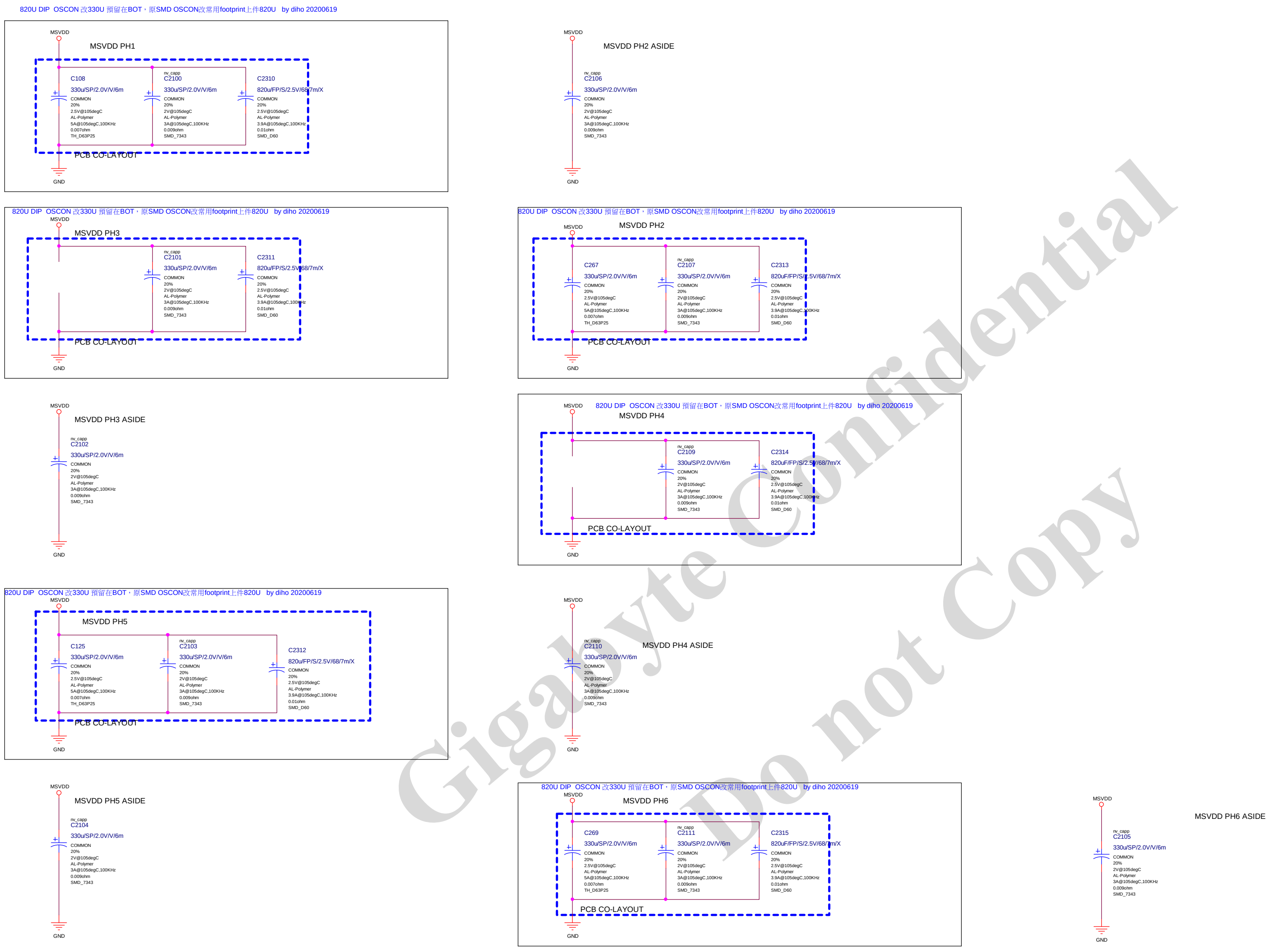
ASSEMBLY
PAGE DETAIL
<ASSEMBLY_DESCRIPTION>
PS: MSVDD PH4 and PH6

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	PS: MSVDD Phase 4,6	
Size: Custom	Document Number: GV-N3080AORUSX W-10GD	Rev: 1.0
Date: Wednesday, September 30, 2020	Sheet 49 of 79	

PS:MSVDD OUTPUT CAP (TOP)


820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
MSVDD
MSVDD PH1
C108
330u/SP/2.0V/V/6m
COMMON
20%
2.5V@105degC
AL-Polymer
5A@105degC,100KHz
0.007ohm
TH_D63P25
nv_capp
C2100
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C2310
820u/FP/S/2.5V/68/7m/X
COMMON
20%
2.5V@105degC
AL-Polymer
3.9A@105degC,100KHz
0.01ohm
SMD_D60
PCB CO-LAYOUT
GND
MSVDD
MSVDD PH2 ASIDE
nv_capp
C2106
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
GND
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
MSVDD
MSVDD PH3
nv_capp
C2101
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C2311
820u/FP/S/2.5V/68/7m/X
COMMON
20%
2.5V@105degC
AL-Polymer
3.9A@105degC,100KHz
0.01ohm
SMD_D60
PCB CO-LAYOUT
GND
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
MSVDD
MSVDD PH2
C267
330u/SP/2.0V/V/6m
COMMON
20%
2.5V@105degC
AL-Polymer
5A@105degC,100KHz
0.007ohm
TH_D63P25
nv_capp
C2107
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C2313
820uF/FP/S/2.5V/68/7m/X
COMMON
20%
2.5V@105degC
AL-Polymer
3.9A@105degC,100KHz
0.01ohm
SMD_D60
PCB CO-LAYOUT
GND
MSVDD
MSVDD PH3 ASIDE
nv_capp
C2102
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
GND
MSVDD
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
MSVDD PH4
nv_capp
C2109
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C2314
820uF/FP/S/2.5V/68/7m/X
COMMON
20%
2.5V@105degC
AL-Polymer
3.9A@105degC,100KHz
0.01ohm
SMD_D60
PCB CO-LAYOUT
GND
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
MSVDD
MSVDD PH5
C125
330u/SP/2.0V/V/6m
COMMON
20%
2.5V@105degC
AL-Polymer
5A@105degC,100KHz
0.007ohm
TH_D63P25
nv_capp
C2103
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C2312
820u/FP/S/2.5V/68/7m/X
COMMON
20%
2.5V@105degC
AL-Polymer
3.9A@105degC,100KHz
0.01ohm
SMD_D60
PCB CO-LAYOUT
GND
MSVDD
nv_capp
C2110
330u/SP/2.0V/V/6m
MSVDD PH4 ASIDE
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
GND
MSVDD
MSVDD PH5 ASIDE
nv_capp
C2104
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
GND
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U   by diho 20200619
MSVDD
MSVDD PH6
C269
330u/SP/2.0V/V/6m
COMMON
20%
2.5V@105degC
AL-Polymer
5A@105degC,100KHz
0.007ohm
TH_D63P25
nv_capp
C2111
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C2315
820uF/FP/S/2.5V/68/7m/X
COMMON
20%
2.5V@105degC
AL-Polymer
3.9A@105degC,100KHz
0.01ohm
SMD_D60
PCB CO-LAYOUT
GND
MSVDD
MSVDD PH6 ASIDE
nv_capp
C2105
330u/SP/2.0V/V/6m
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
GND

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: MSVDD OUTPUT CAP(TOP)

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS:MSVDD OUTPUT CAP (TOP)

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020
Sheet 50 of 79

BLANK

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL BLANK

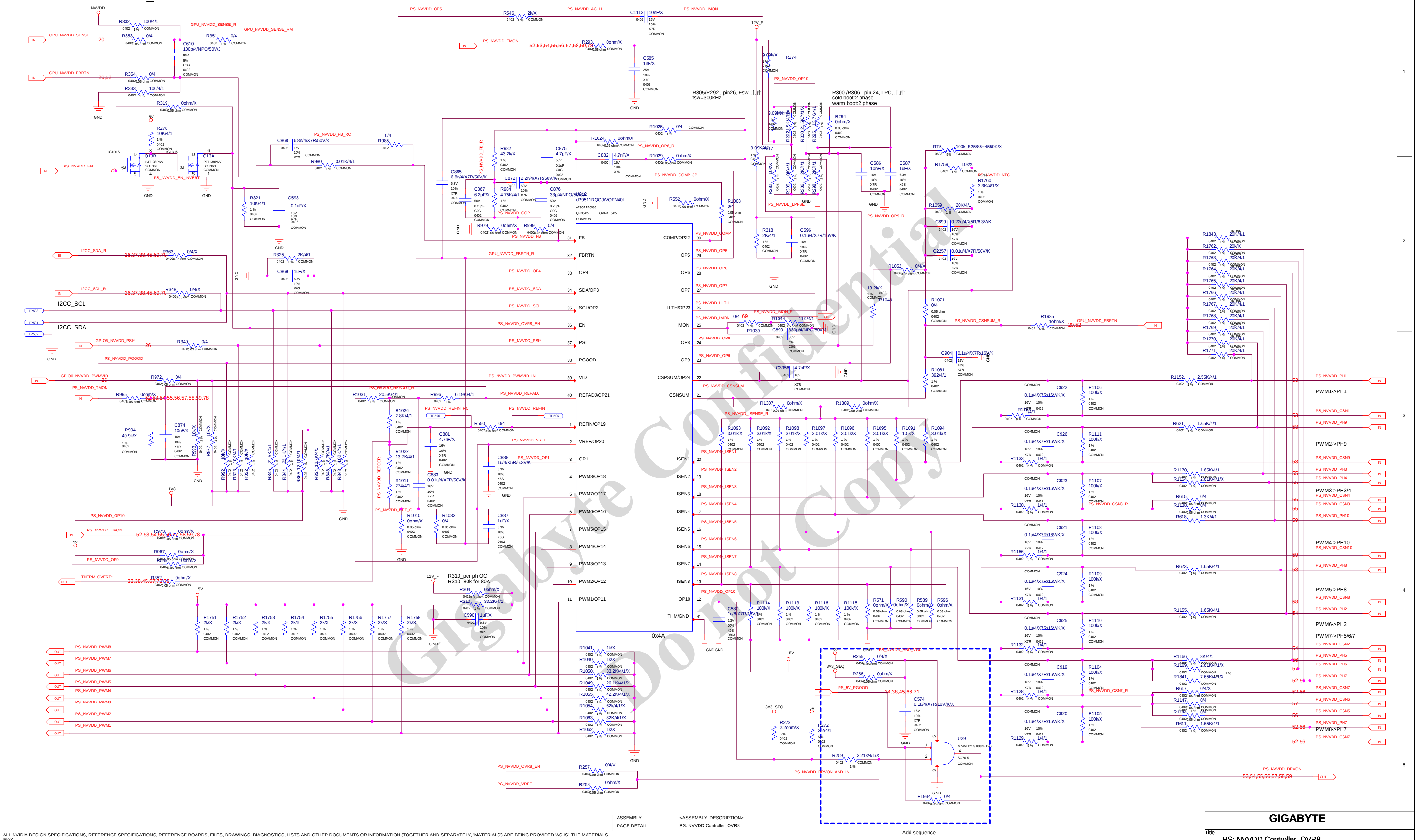
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
BLANK

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 51 of 79

PS: NVVDD Controller_OVR8


uP9511RQGJ/VQFN40L
U812
FB
FBRTN
OP4
SDA/OP3
SCL/OP2
EN
PSI
PGOOD
VID
REFADJ/OP21
REFIN/OP19
VREF/OP20
OP1
PWM8/OP18
PWM7/OP17
PWM6/OP16
PWM5/OP15
PWM4/OP14
PWM3/OP13
PWM2/OP12
PWM1/OP11
COMP/OP22
OP5
OP6
OP7
LLTH/OP23
IMON
OP8
OP9
CSPSUM/OP24
CSNSUM
ISEN1
ISEN2
ISEN3
ISEN4
ISEN5
ISEN6
ISEN7
ISEN8
OP10
THM/GND
0x4A
R305/R292 , pin26, Fsw, 上件
fsw=300kHz
R300 /R306 , pin 24, LPC, 上件
cold boot:2 phase
warm boot:2 phase
R310_per ph OC
R310=80k for 80A
PWM1->PH1
PWM2->PH9
PWM3->PH3/4
PWM4->PH10
PWM5->PH8
PWM6->PH2
PWM7->PH5/6/7
PWM8->PH7
U29
M74VHC1G708DFT2G
Add sequence
GPU_NVVDD_SENSE
GPU_NVVDD_FBRTN
PS_NVVDD_EN
I2CC_SDA_R
I2CC_SCL_R
I2CC_SCL
I2CC_SDA
GPIO6_NVVDD_PSI*
PS_NVVDD_PGOOD
GPIO0_NVVDD_PWMVID
PS_NVVDD_TMON
THERM_OVERT*
PS_NVVDD_PWM8
PS_NVVDD_PWM7
PS_NVVDD_PWM6
PS_NVVDD_PWM5
PS_NVVDD_PWM4
PS_NVVDD_PWM3
PS_NVVDD_PWM2
PS_NVVDD_PWM1
PS_NVVDD_DRVON
PS_5V_PGOOD
NVVDD
12V_F
5V
1V8
3V3_SEQ
GND

Gigabyte Confidential Do not Copy

ASSEMBLY
PAGE DETAIL

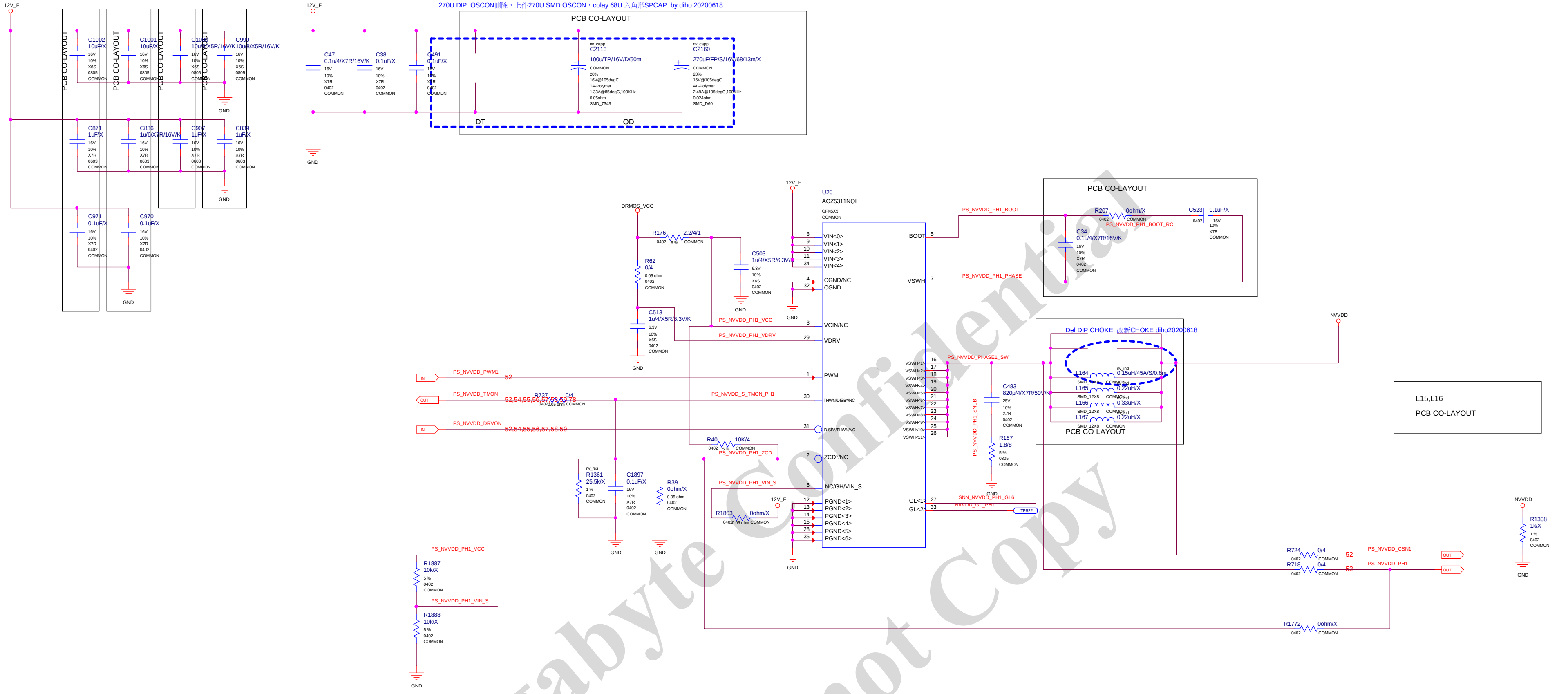
<ASSEMBLY_DESCRIPTION>
PS: NVVDD Controller_OVR8

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	PS: NVVDD Controller_OVR8		
Size: Custom	Document Number: GV-N3080AORUSX W-10GD		Rev: 1.0
Date: Wednesday, September 30, 2020	Sheet 52 of 79		

PS: NVVDD Phase 1



12V_F
C1002 10uF/X
C1001 10uF/X
C1000 10uF/X5R/16V/K
C999 10uF/X5R/16V/K
C871 1uF/X
C836 1u/8/X7R/16V/K
C907 1uF/X
C839 1uF/X
C971 0.1uF/X
C970 0.1uF/X
PCB CO-LAYOUT
GND
C47 0.1u/4/X7R/16V/K
C38 0.1uF/X
C491 0.1uF/X
270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
C2113 100uF/TP/16V/D/50m
C2160 270uF/FP/S/16V/68/13m/X
DT
QD
DRMOS_VCC
R176 2.2/4/1
R62 0/4
C503 1u/4/X5R/6.3V/K
C513 1u/4/X5R/6.3V/K
U20
AOZ5311NQI
QFN5X5
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_NVVDD_PH1_VCC
PS_NVVDD_PH1_VDRV
PS_NVVDD_PWM1
PS_NVVDD_TMON
PS_NVVDD_DRVON
PS_NVVDD_S_TMON_PH1
R737 0/4
R40 10K/4
PS_NVVDD_PH1_ZCD
R1361 25.5k/X
C1897 0.1uF/X
R39 0ohm/X
PS_NVVDD_PH1_VIN_S
R1803 0ohm/X
PS_NVVDD_PH1_BOOT
R207 0ohm/X
C523 0.1uF/X
PS_NVVDD_PH1_BOOT_RC
C34 0.1u/4/X7R/16V/K
PS_NVVDD_PH1_PHASE
PS_NVVDD_PHASE1_SW
Del DIP CHOKE 改新CHOKE diho20200618
L164 0.15uH/45A/S/0.6m
L165 0.22uH/X
L166 0.33uH/X
L167 0.22uH/X
C483 820p/4/X7R/50V/K
R167 1.8/8
PS_NVVDD_PH1_SNUB
SNN_NVVDD_PH1_GL6
NVVDD_GL_PH1
TP522
NVVDD
L15,L16
PCB CO-LAYOUT
R724 0/4
R718 0/4
PS_NVVDD_CSN1
PS_NVVDD_PH1
R1772 0ohm/X
R1308 1k/X
R1887 10k/X
R1888 10k/X

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: NVVDD PH1 (PWM1)

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LIST AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

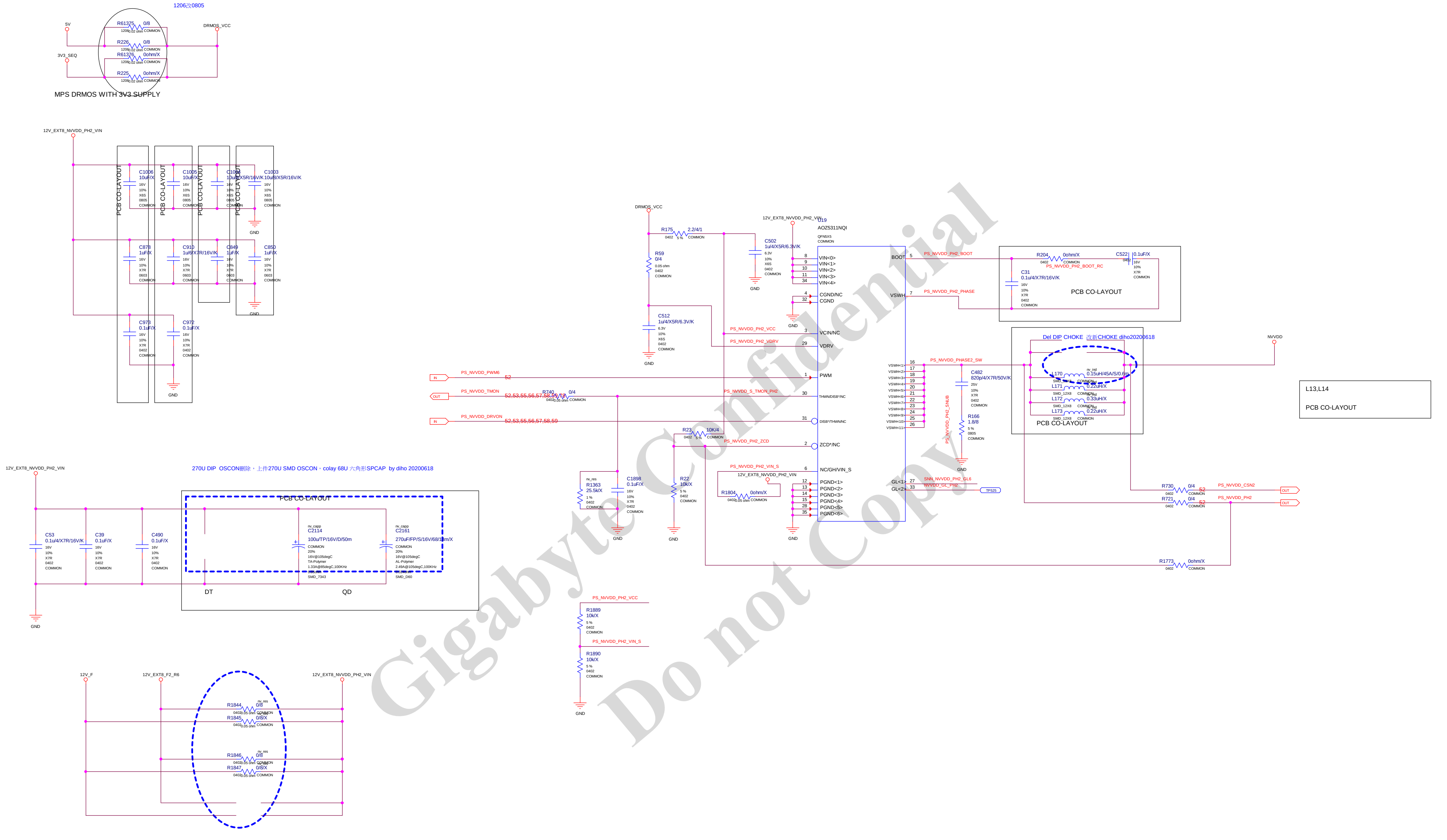
GIGABYTE

Title: PS: NVVDD Phase 1

Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0

Date: Wednesday, September 30, 2020 Sheet 53 of 79

PS: NVVDD Phase 2


1206改0805
5V
DRMOS_VCC
3V3_SEQ
R61375 0/8 1206 0.02 ohm COMMON
R225 0/8 1206 0.02 ohm COMMON
R61376 0ohm/X 1206 0.02 ohm COMMON
R225 0ohm/X 1206 0.02 ohm COMMON
MPS DRMOS WITH 3V3 SUPPLY
12V_EXT8_NVVDD_PH2_VIN
PCB CO-LAYOUT
C1006 10uF/X 16V 10% X6S 0805 COMMON
C1005 10uF/X 16V 10% X6S 0805 COMMON
C1004 10uF/8/X5R/16V/K 16V 10% X6S 0805 COMMON
C1003 10uF/8/X5R/16V/K 16V 10% X6S 0805 COMMON
C878 1uF/X 16V 10% X7R 0603 COMMON
C910 1u/6/X7R/16V/K 16V 10% X7R 0603 COMMON
C849 1uF/X 16V 10% X7R 0603 COMMON
C850 1uF/X 16V 10% X7R 0603 COMMON
C973 0.1uF/X 16V 10% X7R 0402 COMMON
C972 0.1uF/X 16V 10% X7R 0402 COMMON
GND
DRMOS_VCC
R175 2.2/4/1 0402 5 % COMMON
R59 0/4 0.05 ohm 0402 COMMON
C502 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
C512 1u/4/X5R/6.3V/K 6.3V 10% X6S 0402 COMMON
U19 AOZ5311NQI QFN5X5 COMMON
VIN<0> VIN<1> VIN<2> VIN<3> VIN<4>
CGND/NC CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1> PGND<2> PGND<3> PGND<4> PGND<5> PGND<6>
BOOT
VSWH
VSWH<1> … VSWH<11>
GL<1> GL<2>
PS_NVVDD_PH2_VCC
PS_NVVDD_PH2_VDRV
PS_NVVDD_PWM6 52
PS_NVVDD_TMON 52,53,55,56,57,58,59
PS_NVVDD_DRVON 52,53,55,56,57,58,59
R740 0/4 0402 0.05 ohm COMMON
PS_NVVDD_S_TMON_PH2
R23 10K/4 0402 5 % COMMON
PS_NVVDD_PH2_ZCD
PS_NVVDD_PH2_VIN_S
R1804 0ohm/X 0402 0.05 ohm COMMON
R1363 25.5k/X 1 % 0402 COMMON
C1898 0.1uF/X 16V 10% X7R 0402 COMMON
R22 10K/X 5 % 0402 COMMON
PS_NVVDD_PH2_BOOT
R204 0ohm/X 0402 COMMON
PS_NVVDD_PH2_BOOT_RC
C522 0.1uF/X 0402 16V 10% X7R COMMON
C31 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
PS_NVVDD_PH2_PHASE
PCB CO-LAYOUT
Del DIP CHOKE 改新CHOKE diho20200618
NVVDD
PS_NVVDD_PHASE2_SW
L170 0.15uH/45A/S/0.6m
L171 0.22uH/X SMD_12X8 COMMON
L172 0.33uH/X SMD_12X8 COMMON
L173 0.22uH/X SMD_12X8 COMMON
C482 820p/4/X7R/50V/K 25V 10% X7R 0402 COMMON
R166 1.8/8 5 % 0805 COMMON
PS_NVVDD_PH2_SNUB
L13,L14
PCB CO-LAYOUT
SNN_NVVDD_PH2_GL6
NVVDD_GL_PH2
TP525
R730 0/4 0402 COMMON 52 PS_NVVDD_CSN2
R721 0/4 0402 COMMON 52 PS_NVVDD_PH2
R1773 0ohm/X 0402 COMMON
270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
C53 0.1u/4/X7R/16V/K 16V 10% X7R 0402 COMMON
C39 0.1uF/X 16V 10% X7R 0402 COMMON
C490 0.1uF/X 16V 10% X7R 0402 COMMON
C2114 100uF/TP/16V/D/50m COMMON 20% 16V@105degC TA-Polymer 1.33A@85degC,100KHz SMD_7343
C2161 270uF/FP/S/16V/68/18m/X COMMON 20% 16V@105degC AL-Polymer 2.49A@105degC,100KHz SMD_D60
DT
QD
PS_NVVDD_PH2_VCC
R1889 10k/X 5 % 0402 COMMON
PS_NVVDD_PH2_VIN_S
R1890 10k/X 5 % 0402 COMMON
12V_F
12V_EXT8_F2_R6
12V_EXT8_NVVDD_PH2_VIN
R1844 0/8 0402 0.05 ohm COMMON
R1845 0/8/X 0402 0.05 ohm COMMON
R1846 0/8 0402 0.05 ohm COMMON
R1847 0/8/X 0402 0.05 ohm COMMON

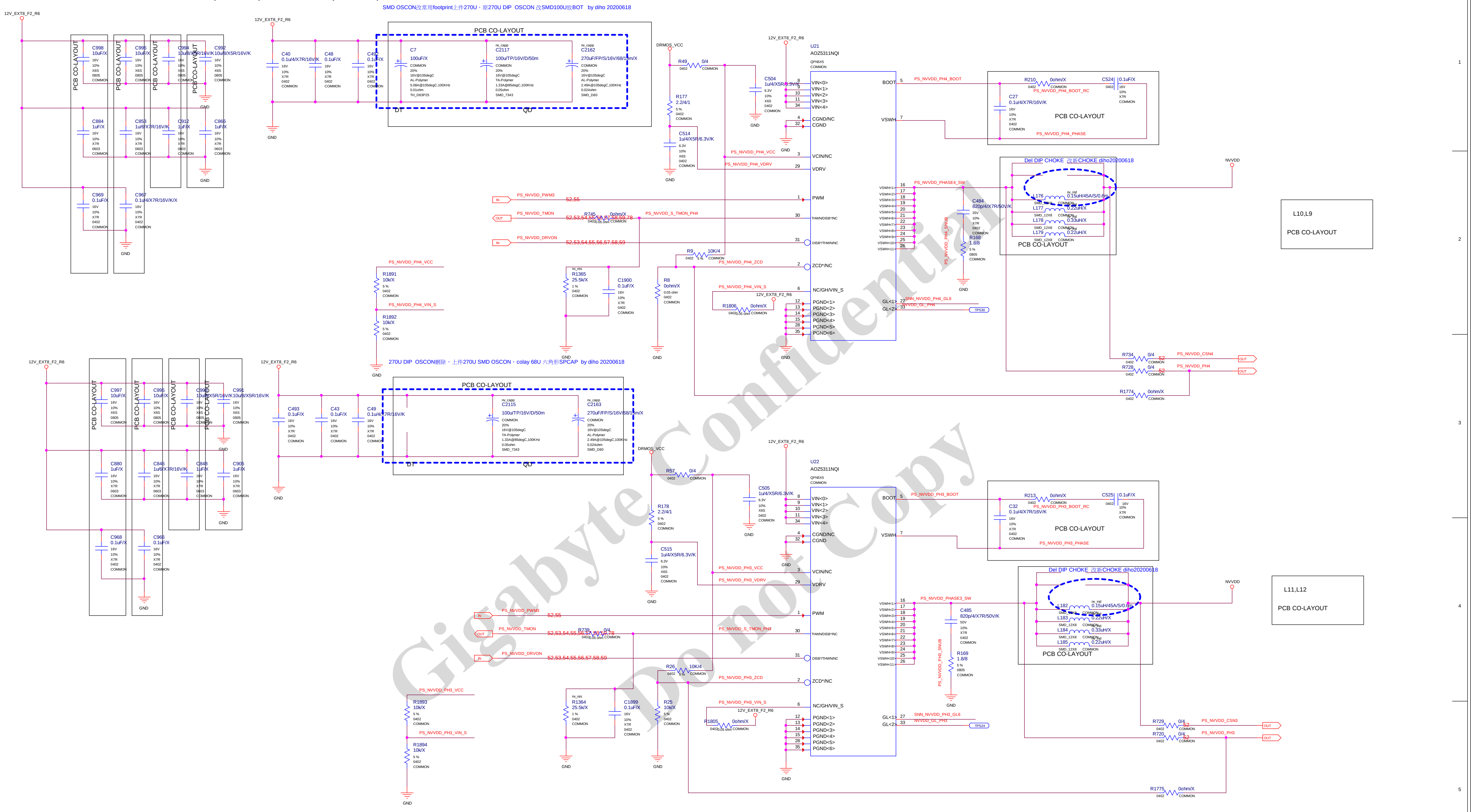
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: NVVDD PH2(PWM6)

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title: PS: NVVDD Phase 2
Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0
Date: Wednesday, September 30, 2020
Sheet 54 of 79

PS: NVVDD Phase 3 (PWM6), PHASE 4(PWM2)


SMD OSCON改常用footprint上件270U，原270U DIP OSCON 改SMD100U放BOT by diho 20200618

270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618

Del DIP CHOKE 改新CHOKE diho20200618

12V_EXT8_F2_R6
PCB CO-LAYOUT
C998 10uF/X
C996 10uF/X
C994 10uF/X5R/16V/K
C992 10uF/X5R/16V/K
C884 1uF/X
C853 1u/6/X7R/16V/K
C912 1uF/X
C865 1uF/X
C969 0.1uF/X
C967 0.1u/4/X7R/16V/K/X
C40 0.1u/4/X7R/16V/K
C48 0.1uF/X
C402 0.1uF/X
C7 100uF/X
C2117 100u/TP/16V/D/50m
C2162 270uF/FP/S/16V/68/15m/X
GND
DT
QD
DRMOS_VCC
R49 0/4
R177 2.2/4/1
C514 1u/4/X5R/6.3V/K
C504 1u/4/X5R/6.3V/K
U21
AOZ5311NQI
QFN5X5
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_NVVDD_PH4_BOOT
PS_NVVDD_PH4_BOOT_RC
PS_NVVDD_PH4_PHASE
R210 0ohm/X
C524 0.1uF/X
C27 0.1u/4/X7R/16V/K
PS_NVVDD_PH4_VCC
PS_NVVDD_PH4_VDRV
PS_NVVDD_PWM3
PS_NVVDD_TMON
PS_NVVDD_DRVON
PS_NVVDD_S_TMON_PH4
R745 0ohm/X
R9 10K/4
PS_NVVDD_PH4_ZCD
PS_NVVDD_PH4_VIN_S
R1806 0ohm/X
R1891 10k/X
R1892 10k/X
PS_NVVDD_PH4_VIN_S
R1365 25.5k/X
C1900 0.1uF/X
R8 0ohm/X
PS_NVVDD_PHASE4_SW
L176 0.15uH/45A/S/0.6m
L177 0.22uH/X
L178 0.33uH/X
L179 0.22uH/X
C484 820p/4/X7R/50V/K
R168 1.8/8
PS_NVVDD_PH4_SNUB
SNN_NVVDD_PH4_GL6
NVVDD_GL_PH4
TP530
NVVDD
L10,L9
PCB CO-LAYOUT
R734 0/4
R728 0/4
PS_NVVDD_CSN4
PS_NVVDD_PH4
R1774 0ohm/X
C997 10uF/X
C995 10uF/X
C990 10uF/X5R/16V/K
C991 10uF/X5R/16V/K
C880 1uF/X
C846 1u/6/X7R/16V/K
C848 1uF/X
C905 1uF/X
C968 0.1uF/X
C966 0.1uF/X
C493 0.1uF/X
C43 0.1uF/X
C49 0.1u/4/X7R/16V/K
C2115 100u/TP/16V/D/50m
C2163 270uF/FP/S/16V/68/15m/X
R57 0/4
R178 2.2/4/1
C515 1u/4/X5R/6.3V/K
C505 1u/4/X5R/6.3V/K
U22
AOZ5311NQI
PS_NVVDD_PH3_BOOT
PS_NVVDD_PH3_BOOT_RC
PS_NVVDD_PH3_PHASE
R213 0ohm/X
C525 0.1uF/X
C32 0.1u/4/X7R/16V/K
PS_NVVDD_PH3_VCC
PS_NVVDD_PH3_VDRV
PS_NVVDD_PWM6
PS_NVVDD_TMON
PS_NVVDD_DRVON
PS_NVVDD_S_TMON_PH3
R739 0ohm/X
R26 10K/4
PS_NVVDD_PH3_ZCD
PS_NVVDD_PH3_VIN_S
R1805 0ohm/X
R1893 10k/X
R1894 10k/X
R1364 25.5k/X
C1899 0.1uF/X
R25 10k/X
PS_NVVDD_PHASE3_SW
L182 0.15uH/45A/S/0.6m
L183 0.22uH/X
L184 0.33uH/X
L185 0.22uH/X
C485 820p/4/X7R/50V/K
R169 1.8/8
PS_NVVDD_PH3_SNUB
SNN_NVVDD_PH3_GL6
NVVDD_GL_PH3
TP524
L11,L12
PCB CO-LAYOUT
R729 0/4
R720 0/4
PS_NVVDD_CSN3
PS_NVVDD_PH3
R1775 0ohm/X
52,55
52,53,54,55,56,57,58,59
52,53,54,55,56,57,58,59,78

ASSEMBLY
PAGE DETAIL

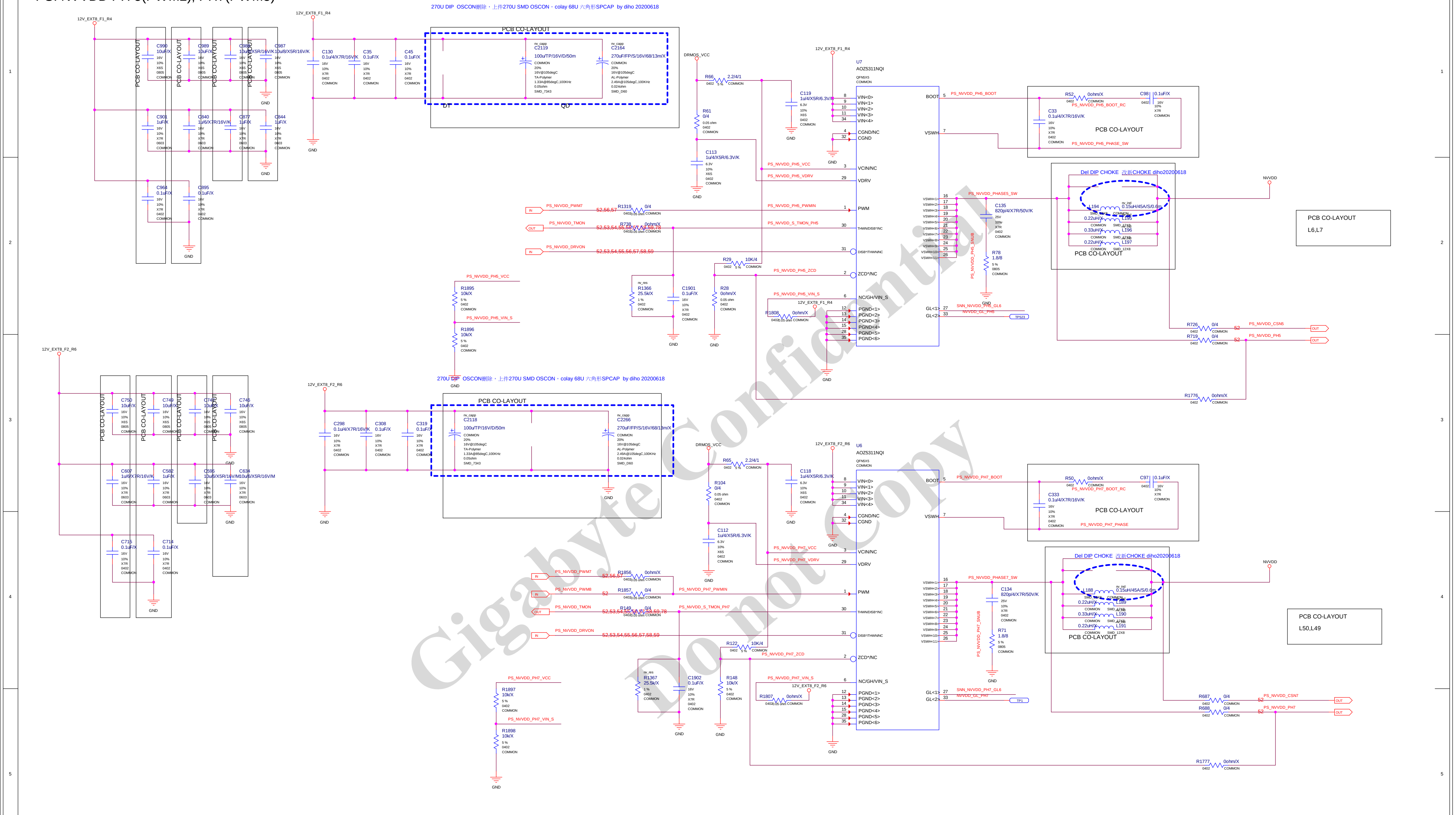
<ASSEMBLY_DESCRIPTION>
PS: NVVDD PH3 (PWM3) and PH4 (PWM3)

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title	PS: NVVDD Phase 3,4	
Size Custom	Document Number GV-N3080AORUSX W-10GD	Rev 1.0
Date:	Wednesday, September 30, 2020	Sheet 55 of 79

PS: NVVDD PH 5(PWM2), PH7(PWM3)



270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
PCB CO-LAYOUT
12V_EXT8_F1_R4
12V_EXT8_F2_R6
C2119 100uF/TP/16V/D/50m
C2164 270uF/FP/S/16V/68/13m/X
C2118 100uF/TP/16V/D/50m
C2266 270uF/FP/S/16V/68/13m/X
DRMOS_VCC
U7 AOZ5311NQI
U6 AOZ5311NQI
VIN<0> VIN<1> VIN<2> VIN<3> VIN<4>
CGND/NC CGND
VCIN/NC VDRV PWM THWN/DISB*/NC DISB*/THWN/NC ZCD*/NC NC/GH/VIN_S
PGND<1> PGND<2> PGND<3> PGND<4> PGND<5> PGND<6>
BOOT VSWH GL<1> GL<2>
PS_NVVDD_PH5_BOOT
PS_NVVDD_PH5_BOOT_RC
PS_NVVDD_PH5_PHASE_SW
PS_NVVDD_PHASE5_SW
PS_NVVDD_PH5_VCC
PS_NVVDD_PH5_VDRV
PS_NVVDD_PWM7
PS_NVVDD_PH5_PWMIN
PS_NVVDD_TMON
PS_NVVDD_S_TMON_PH5
PS_NVVDD_DRVON
PS_NVVDD_PH5_ZCD
PS_NVVDD_PH5_VIN_S
SNN_NVVDD_PH5_GL6
PS_NVVDD_CSN5
PS_NVVDD_PH5
PS_NVVDD_PH7_BOOT
PS_NVVDD_PH7_BOOT_RC
PS_NVVDD_PH7_PHASE
PS_NVVDD_PHASE7_SW
PS_NVVDD_PH7_VCC
PS_NVVDD_PH7_VDRV
PS_NVVDD_PWM8
PS_NVVDD_PH7_PWMIN
PS_NVVDD_S_TMON_PH7
PS_NVVDD_PH7_ZCD
PS_NVVDD_PH7_VIN_S
SNN_NVVDD_PH7_GL6
PS_NVVDD_CSN7
PS_NVVDD_PH7
Del DIP CHOKE 改新CHOKE diho20200618
L194 0.15uH/45A/S/0.6m
L188 0.15uH/45A/S/0.6m
PCB CO-LAYOUT L6,L7
PCB CO-LAYOUT L50,L49
NVVDD
GND
IN
OUT
TP523
TP1

Gigabyte Confidential Do not Copy

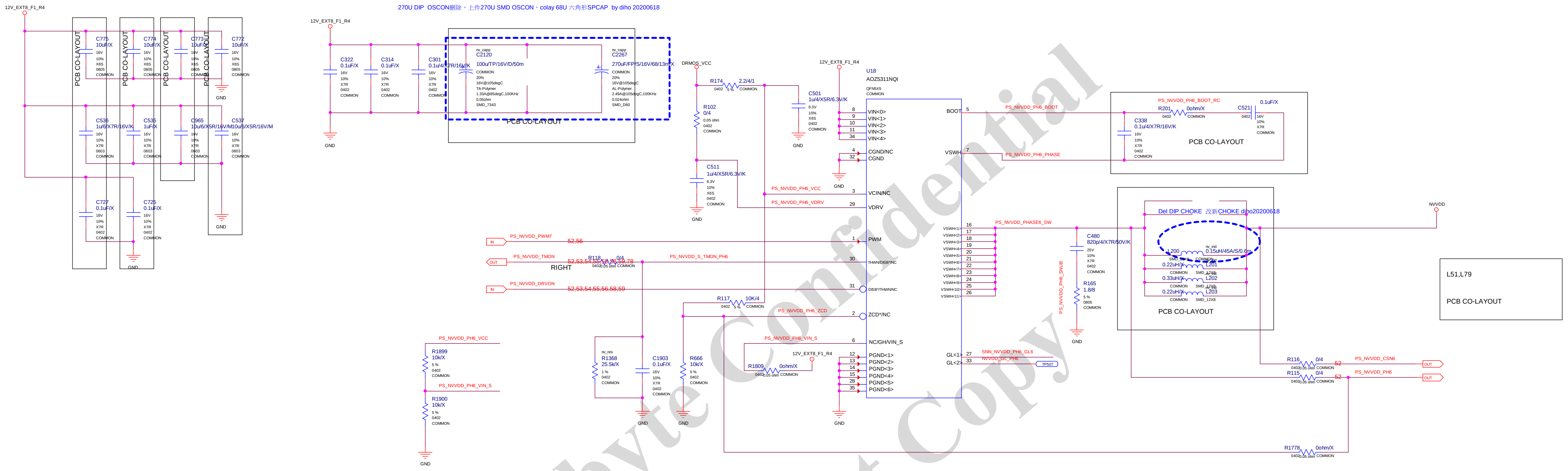
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: NVVDD PH5(PWM7) and PH7(PWM8)

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: NVVDD Phase 5,7
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 56 of 79

PS: NVVDD Phase 6(PWM7)



12V_EXT8_F1_R4
PCB CO-LAYOUT
C775 10uF/X
C774 10uF/X
C773 10uF/X
C772 10uF/X
C536 1u/6/X7R/16V/K
C535 1uF/X
C965 10u/6/X5R/16V/M
C537 10u/6/X5R/16V/M
C727 0.1uF/X
C725 0.1uF/X
GND
270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
C322 0.1uF/X
C314 0.1uF/X
C301 0.1u/4/X7R/16V/K
C2120 100u/TP/16V/D/50m
C2267 270uF/FPS/16V/68/13m/X
PCB CO-LAYOUT
DRMOS_VCC
R174 2.2/4/1
C501 1u/4/X5R/6.3V/K
R102 0/4
C511 1u/4/X5R/6.3V/K
U18 AOZ5311NQI
VIN<0> VIN<1> VIN<2> VIN<3> VIN<4>
CGND/NC CGND
VCIN/NC
VDRV
PWM
THWN/DISB#/NC
DISB#/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1> PGND<2> PGND<3> PGND<4> PGND<5> PGND<6>
BOOT
VSWH
GL<1> GL<2>
PS_NVVDD_PH6_BOOT_RC
PS_NVVDD_PH6_BOOT
R201 0ohm/X
C521 0.1uF/X
C338 0.1u/4/X7R/16V/K
PCB CO-LAYOUT
PS_NVVDD_PH6_PHASE
PS_NVVDD_PH6_VCC
PS_NVVDD_PH6_VDRV
PS_NVVDD_PHASE6_SW
C480 820p/4/X7R/50V/K
R165 1.8/8
PS_NVVDD_PH6_SNUB
Del DIP CHOKE 改新CHOKE diho20200618
L200 0.15uH/45A/S/0.6m
L201 0.22uH/X
L202 0.33uH/X
L203 0.22uH/X
PCB CO-LAYOUT
NVVDD
L51,L79
PCB CO-LAYOUT
PS_NVVDD_PWM7 52,56
PS_NVVDD_TMON R118 0/4 52,53,54,55,56,58,59
RIGHT
PS_NVVDD_S_TMON_PH6
PS_NVVDD_DRVON 52,53,54,55,56,58,59
R117 10K/4
PS_NVVDD_PH6_ZCD
PS_NVVDD_PH6_VIN_S
R1809 0ohm/X
SNN_NVVDD_PH6_GL6
NVVDD_GL_PH6
TP507
R116 0/4 52 PS_NVVDD_CSN6
R115 0/4 52 PS_NVVDD_PH6
R1778 0ohm/X
PS_NVVDD_PH6_VCC
R1899 10k/X
PS_NVVDD_PH6_VIN_S
R1900 10k/X
R1368 25.5k/X
C1903 0.1uF/X
R666 10k/X

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: NVVDD PH6 (PWM7)

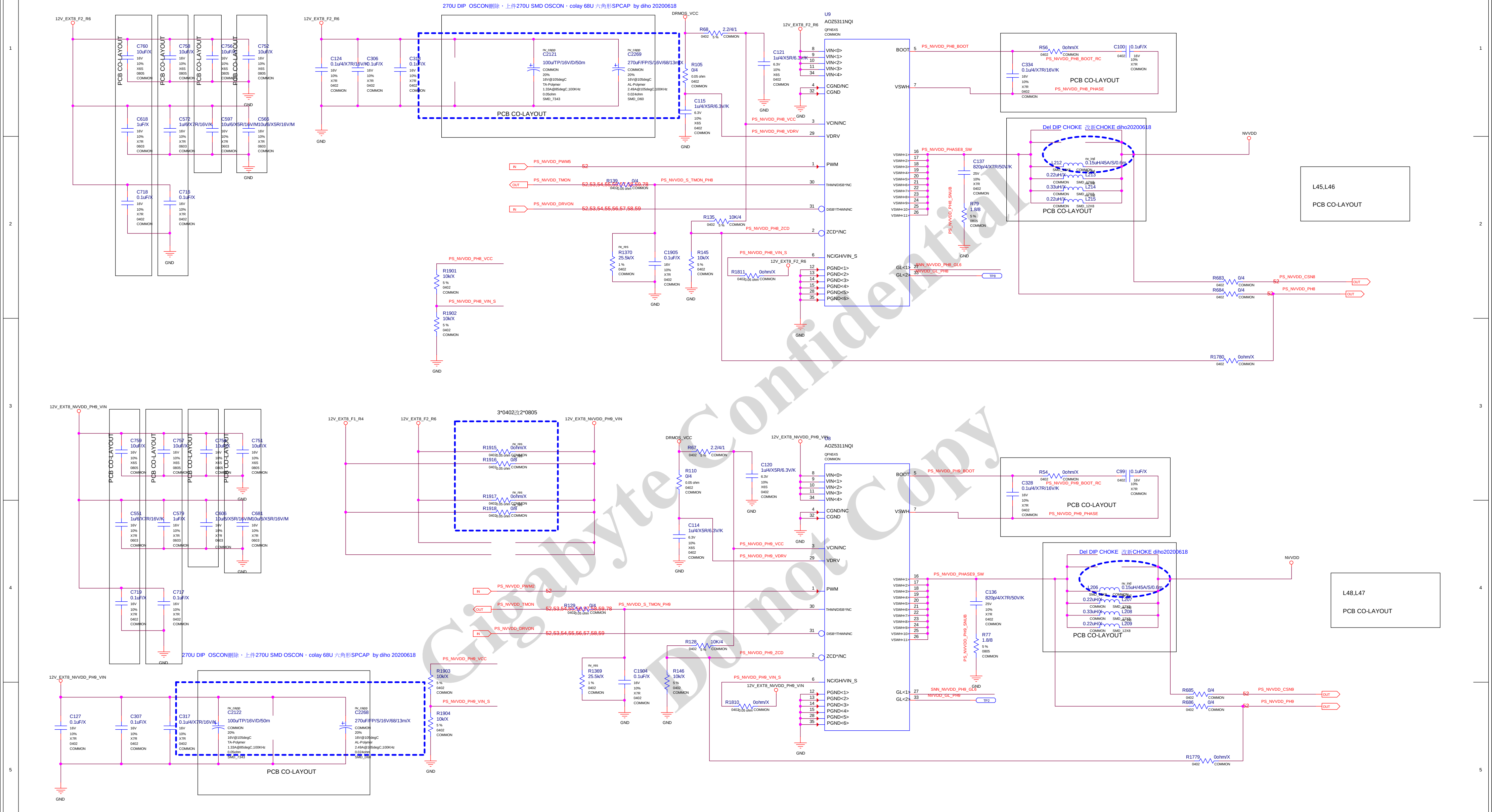
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: NVVDD Phase6

Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0
Date: Wednesday, September 30, 2020
Sheet 57 of 79

PS: NVVDD PH 8 (PWM5), PH 9(PWM8)


270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
12V_EXT8_F2_R6
PCB CO-LAYOUT
C760 10uF/X
C758 10uF/X
C756 10uF/X
C752 10uF/X
C618 1uF/X
C572 1u/6/X7R/16V/K
C597 10u/6/X5R/16V/M
C566 10u/6/X5R/16V/M
C718 0.1uF/X
C716 0.1uF/X
C124 0.1u/4/X7R/16V/K
C306 0.1uF/X
C313 0.1uF/X
C2121 100u/TP/16V/D/50m
C2269 270uF/FP/S/16V/68/13m/X
DRMOS_VCC
R68 2.2/4/1
R105 0/4
C115 1u/4/X5R/6.3V/K
C121 1u/4/X5R/6.3V/K
U9
AOZ5311NQI
BOOT
VSWH
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
GL<1>
GL<2>
PS_NVVDD_PH8_BOOT
R56 0ohm/X
C100 0.1uF/X
C334 0.1u/4/X7R/16V/K
PS_NVVDD_PH8_BOOT_RC
PS_NVVDD_PH8_PHASE
Del DIP CHOKE 改置CHOKE diho20200618
L212 0.15uH/45A/S/0.6m
L213 0.22uH/X
L214 0.33uH/X
L215 0.22uH/X
NVVDD
L45,L46
PCB CO-LAYOUT
PS_NVVDD_PHASE8_SW
C137 820p/4/X7R/50V/K
R79 1.8/8
PS_NVVDD_PH8_SNUB
PS_NVVDD_PWM5
PS_NVVDD_TMON
PS_NVVDD_DRVON
R139 0/4
PS_NVVDD_S_TMON_PH8
52,53,54,55,56,57,58,59
R135 10K/4
PS_NVVDD_PH8_ZCD
PS_NVVDD_PH8_VCC
PS_NVVDD_PH8_VDRV
PS_NVVDD_PH8_VIN_S
R1370 25.5k/X
C1905 0.1uF/X
R145 10k/X
R1811 0ohm/X
R1901 10k/X
R1902 10k/X
SNN_NVVDD_PH8_GL6
NVVDD_GL_PH8
TP8
R683 0/4
PS_NVVDD_CSN8
R684 0/4
PS_NVVDD_PH8
R1780 0ohm/X
12V_EXT8_NVVDD_PH9_VIN
12V_EXT8_F1_R4
3*0402改2*0805
C759 10uF/X
C757 10uF/X
C753 10uF/X
C751 10uF/X
C551 1u/6/X7R/16V/K
C579 1uF/X
C606 10u/6/X5R/16V/M
C681 10u/6/X5R/16V/M
C719 0.1uF/X
C717 0.1uF/X
R1915 0ohm/X
R1916 0/8
R1917 0ohm/X
R1918 0/8
R67 2.2/4/1
R110 0/4
C120 1u/4/X5R/6.3V/K
C114 1u/4/X5R/6.3V/K
U8
AOZ5311NQI
PS_NVVDD_PH9_BOOT
R54 0ohm/X
C99 0.1uF/X
C328 0.1u/4/X7R/16V/K
PS_NVVDD_PH9_BOOT_RC
PS_NVVDD_PH9_PHASE
PS_NVVDD_PHASE9_SW
C136 820p/4/X7R/50V/K
R77 1.8/8
PS_NVVDD_PH9_SNUB
L206 0.15uH/45A/S/0.6m
L207 0.22uH/X
L208 0.33uH/X
L209 0.22uH/X
L48,L47
PS_NVVDD_PWM2
R129 0/4
PS_NVVDD_S_TMON_PH9
R128 10K/4
PS_NVVDD_PH9_ZCD
PS_NVVDD_PH9_VCC
PS_NVVDD_PH9_VDRV
PS_NVVDD_PH9_VIN_S
R1369 25.5k/X
C1904 0.1uF/X
R146 10k/X
R1810 0ohm/X
R1903 10k/X
R1904 10k/X
SNN_NVVDD_PH9_GL6
NVVDD_GL_PH9
TP2
R685 0/4
PS_NVVDD_CSN9
R686 0/4
PS_NVVDD_PH9
R1779 0ohm/X
C127 0.1uF/X
C307 0.1uF/X
C317 0.1u/4/X7R/16V/K
C2122 100uTP/16V/D/50m
C2268 270uF/FP/S/16V/68/13m/X
270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
GND
IN
OUT

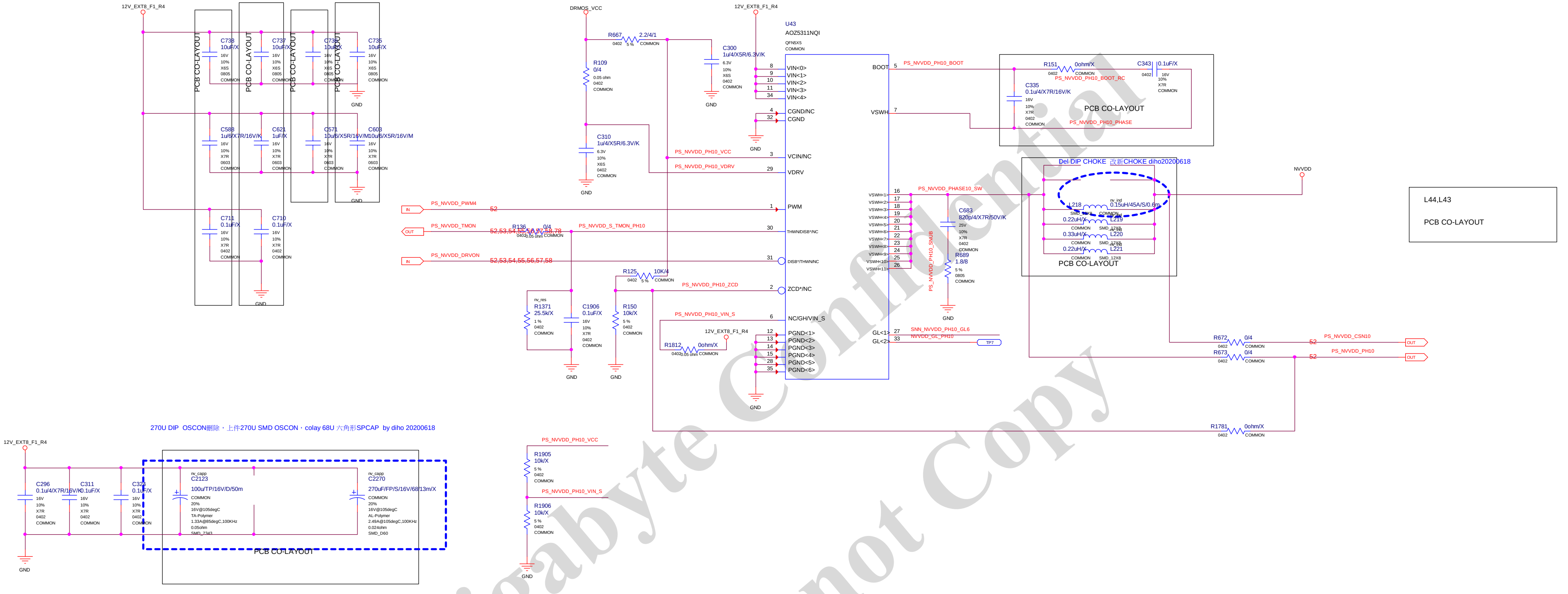
ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: NVVDD PH8(PWM5) and PH9(PWM2)

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: NVVDD Phase8
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

PS: NVVDD Phase 10 (PWM8)


12V_EXT8_F1_R4
PCB CO-LAYOUT
C738 10uF/X 16V 10% X6S 0805 COMMON
C737 10uF/X 16V 10% X6S 0805 COMMON
C736 10uF/X
C735 10uF/X 16V 10% X6S 0805 COMMON
C588 1u/6/X7R/16V/K
C621 1uF/X
C571 10u/6/X5R/16V/M
C603 10u/6/X5R/16V/M
C711 0.1uF/X
C710 0.1uF/X
GND
DRMOS_VCC
R667 2.2/4/1 0402 5 % COMMON
R109 0/4 0.05 ohm 0402 COMMON
C300 1u/4/X5R/6.3V/K
C310 1u/4/X5R/6.3V/K
U43 AOZ5311NQI QFN5X5 COMMON
BOOT
VSWH
VIN<0> VIN<1> VIN<2> VIN<3> VIN<4>
CGND/NC CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1> PGND<2> PGND<3> PGND<4> PGND<5> PGND<6>
GL<1> GL<2>
PS_NVVDD_PH10_BOOT
PS_NVVDD_PH10_VCC
PS_NVVDD_PH10_VDRV
PS_NVVDD_PWM4
PS_NVVDD_TMON
PS_NVVDD_S_TMON_PH10
PS_NVVDD_DRVON
52
52,53,54,55,56,57,58
R136 0/4 0402 0.05 ohm COMMON
R125 10K/4 0402 5 % COMMON
PS_NVVDD_PH10_ZCD
PS_NVVDD_PH10_VIN_S
R1371 25.5k/X 1 % 0402 COMMON
C1906 0.1uF/X 16V 10% X7R 0402 COMMON
R150 10k/X 5 % 0402 COMMON
R1812 0ohm/X 0402 0.05 ohm COMMON
SNN_NVVDD_PH10_GL6
NVVDD_GL_PH10
TP7
R151 0ohm/X 0402 COMMON
C343 0.1uF/X 0402 16V 10% X7R COMMON
C335 0.1u/4/X7R/16V/K
PS_NVVDD_PH10_BOOT_RC
PS_NVVDD_PH10_PHASE
PCB CO-LAYOUT
Del DIP CHOKE 改新CHOKE diho20200618
NVVDD
L218 0.15uH/45A/S/0.6m
L219 0.22uH/X
L220 0.33uH/X
L221 0.22uH/X
PS_NVVDD_PHASE10_SW
C683 820p/4/X7R/50V/K
R689 1.8/8 5 % 0805 COMMON
PS_NVVDD_PH10_SNUB
R672 0/4 0402 COMMON
R673 0/4 0402 COMMON
PS_NVVDD_CSN10
PS_NVVDD_PH10
OUT
IN
R1781 0ohm/X 0402 COMMON
L44,L43
PCB CO-LAYOUT
270U DIP OSCON刪除，上件270U SMD OSCON，colay 68U 六角形SPCAP by diho 20200618
C296 0.1u/4/X7R/16V/K
C311 0.1uF/X
C321 0.1uF/X
C2123 100uF/TP/16V/D/50m COMMON 20% 16V@105degC TA-Polymer 1.33A@85degC,100KHz 0.05ohm SMD_7343
C2270 270uF/FP/S/16V/6813m/X COMMON 20% 16V@105degC AL-Polymer 2.49A@105degC,100KHz 0.024ohm SMD_D60
PS_NVVDD_PH10_VCC
R1905 10k/X 5 % 0402 COMMON
PS_NVVDD_PH10_VIN_S
R1906 10k/X 5 % 0402 COMMON

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: NVVDD PH10 (PWM4)

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: NVVDD Phase10
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

PCB CO-LAYOUT

C131, C132, C133, C140, C141, C142, C2106, C2107, C2133, C2134, C2135, C2137, C264, C265, C266, C267, C61, C64, C65, C66, C67, C68, C69, C77, C80, C83, C88

PCB CO-LAYOUT

C103, C105, C106, C107, C108, C110, C1208, C125, C1254, C1256, C1267, C128, C144, C145, C146, C151, C152, C153, C154, C159, C160, C161, C162, C170, C173, C2092, C2100, C2101, C2102, C2103, C2104, C2138, C2139, C2140, C2141, C2142, C2143, C2144, C2272, C230, C231, C232, C233, C243, C245, C246, C248, C253, C254, C255, C256, C270, C274, C275, C276, C283, C289, C290, C291, C60202, C62004, C62005

C163, C164, C166, C167, C2087, C2105, C2109, C2110, C2111, C224, C225, C261, C268, C269, C60354, C61428, C62, C63, C89, C91, C96

PCB CO-LAYOUT

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	Colayout_Notes

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
COLAY NOTE

Size	Document Number	Rev
Custom	GV-N3080AORUSX W-10GD	1.0

Date: Wednesday, September 30, 2020

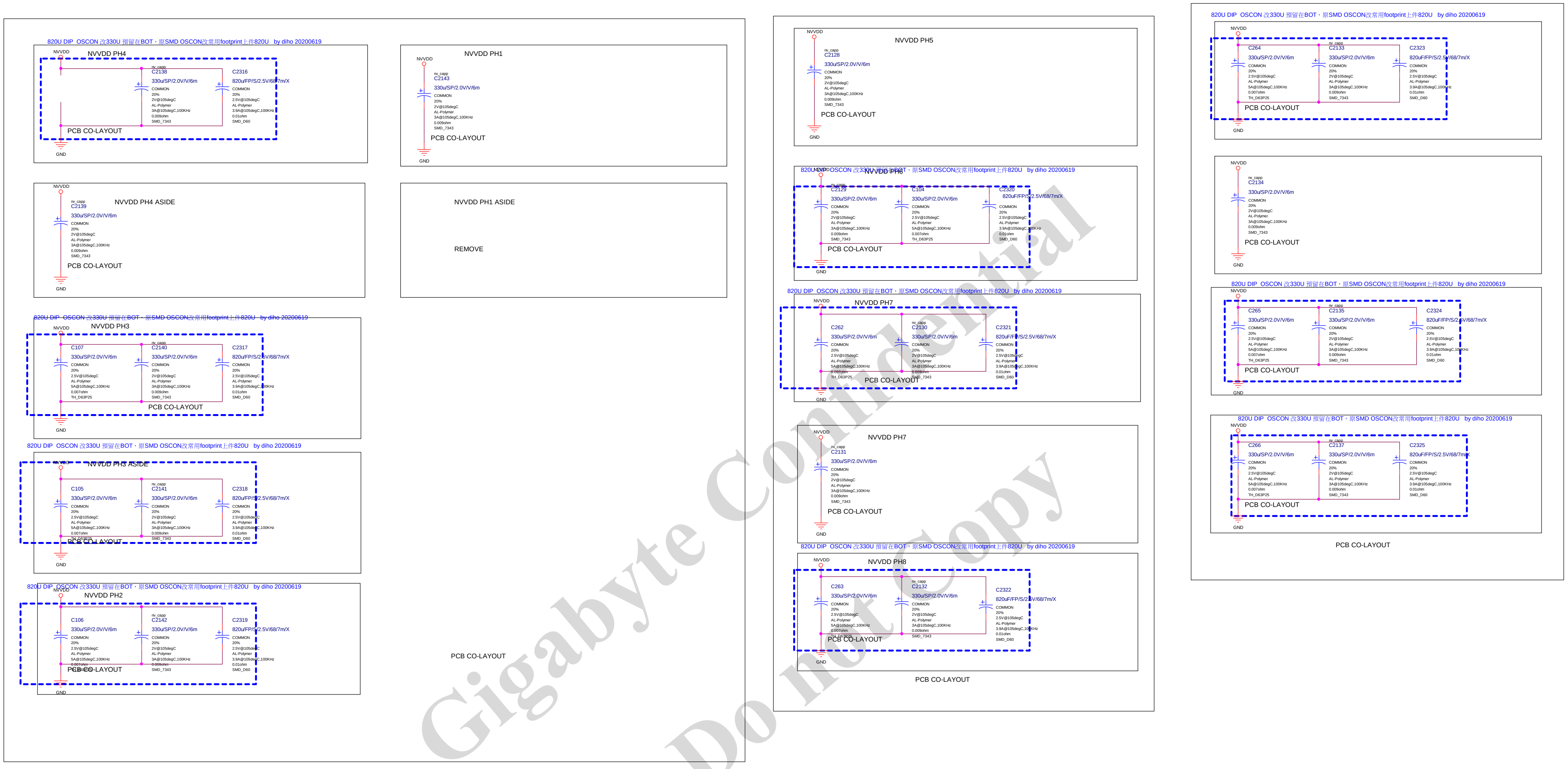
BLANK

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL BLANK

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title BLANK
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020 Sheet 61 of 79

PS: NVVDD OUTPUT CAP(TOP)


NVVDD PH4
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U by diho 20200619
C2138
330u/SP/2.0V/V/6m
C2316
820u/FP/S/2.5V/68/7m/X
PCB CO-LAYOUT
NVVDD PH1
C2143
330u/SP/2.0V/V/6m
PCB CO-LAYOUT
NVVDD PH4 ASIDE
C2139
330u/SP/2.0V/V/6m
PCB CO-LAYOUT
NVVDD PH1 ASIDE
REMOVE
NVVDD PH3
C107
C2140
C2317
PCB CO-LAYOUT
NVVDD PH3 ASIDE
C105
C2141
C2318
PCB CO-LAYOUT
NVVDD PH2
C106
C2142
C2319
PCB CO-LAYOUT
PCB CO-LAYOUT
NVVDD PH5
C2128
330u/SP/2.0V/V/6m
PCB CO-LAYOUT
NVVDD PH6
C2129
C104
C2320
820uF/FP/S/2.5V/68/7m/X
PCB CO-LAYOUT
NVVDD PH7
C262
C2130
C2321
PCB CO-LAYOUT
NVVDD PH7
C2131
PCB CO-LAYOUT
NVVDD PH8
C263
C2132
C2322
PCB CO-LAYOUT
PCB CO-LAYOUT
C264
C2133
C2323
PCB CO-LAYOUT
C2134
PCB CO-LAYOUT
C265
C2135
C2324
PCB CO-LAYOUT
C266
C2137
C2325
PCB CO-LAYOUT
PCB CO-LAYOUT
NVVDD
GND

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: NVVDD OUTPUT CAP(TOP)

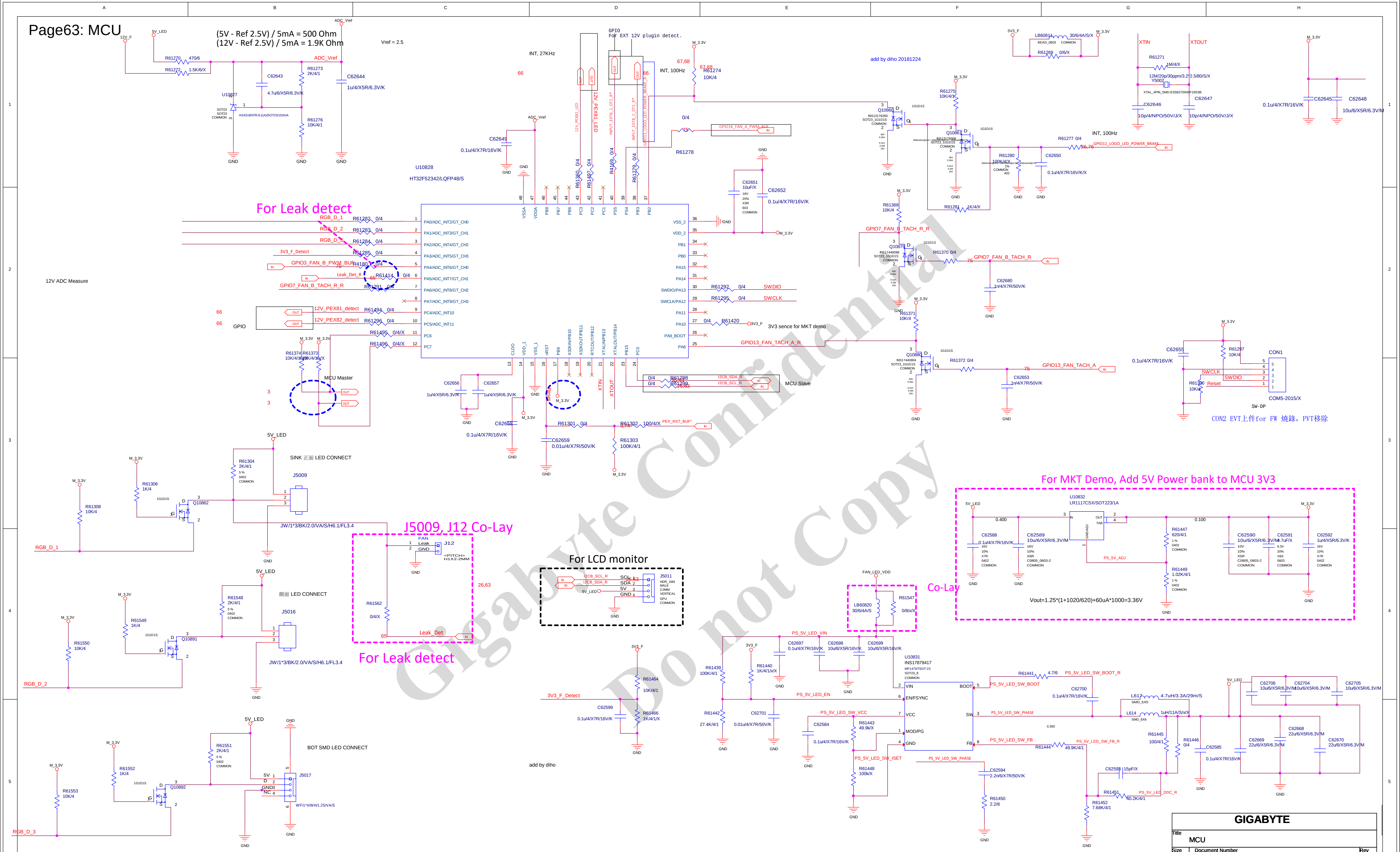
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PS: NVVDD OUTPUT CAP(TOP)

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 62 of 79

Page63: MCU


(5V - Ref 2.5V) / 5mA = 500 Ohm
(12V - Ref 2.5V) / 5mA = 1.9K Ohm
Vref = 2.5
ADC_Vref
12V ADC Measure
U10827
AS431BNTR-E1(A)/SOT23/150mA
R61270 470/6
R61272 1.5K/6/X
R61273 2K/4/1
R61276 10K/4/1
C62643 4.7u/6/X5R/6.3V/K
C62644 1u/4/X5R/6.3V/K
C62649 0.1u/4/X7R/16V/K
INT, 27KHz
INT, 100Hz
GPIO For EXT 12V plugin detect.
R61274 10K/4
R61278
GPIO16_FAN_A_PWM_BUF
12V_PEX82_LED
12V_PEX81_LED
INPUT_EXTB_1_DT2_R*
INPUT_EXTB_2_DT2_R*
GPIO11_LOGO_LED_POWER_BRAKE
U10828
HT32F52342/LQFP48/S
For Leak detect
RGB_D_1
RGB_D_2
RGB_D_3
3V3_F_Detect
GPIO3_FAN_B_PWM_BUF
Leak_Det_R
GPIO7_FAN_B_TACH_R_R
12V_PEX81_detect
12V_PEX82_detect
GPIO
PA0/ADC_INT2/GT_CH0
PA1/ADC_INT3/GT_CH1
PA2/ADC_INT4/GT_CH2
PA3/ADC_INT5/GT_CH3
PA4/ADC_INT6/GT_CH0
PA5/ADC_INT7/GT_CH1
PA6/ADC_INT8/GT_CH2
PA7/ADC_INT9/GT_CH3
PC4/ADC_INT10
PC5/ADC_INT11
PC6
PC7
VSS_2
VDD_2
SWDIO/PA13
SWCLK/PA12
PA9_BOOT
SWDIO
SWCLK
3V3 sence for MKT demo
GPIO13_FAN_TACH_A_R
I2CB_SDA_R
I2CB_SCL_R
MCU Slave
MCU Master
XTIN
XTOUT
12M/20p/30ppm/3.2*2.5/80/S/X
Y5002
add by diho 20181224
Q10860
Q10863
Q10879
Q10880
GPIO7_FAN_B_TACH_R
GPIO13_FAN_TACH_A
CON1
COM5-2015/X
SW-DP
Reset
CON2 EVT上件for FW 燒錄，PVT移除
PEX_RST_BUF*
SINK 正面 LED CONNECT
J5009
JW/1*3/BK/2.0/VA/S/H6.1/FL3.4
J5009, J12 Co-Lay
J12
FAN
Leak
GND
<PITCH> H1X2-2MM
For LCD monitor
J5011
HDR_1M4 MALE 2.0MM VERTICAL GPU COMMON
SCL
SDA
5V
GND
側面 LED CONNECT
J5016
JW/1*3/BK/2.0/VA/S/H6.1/FL3.4
For Leak detect
Leak_Det
BOT SMD LED CONNECT
J5017
WF/1*4/WH/1.25/VA/S
add by diho
For MKT Demo, Add 5V Power bank to MCU 3V3
U10832
LR1117CSX/SOT223/1A
Vout=1.25*(1+1020/620)+60uA*1000=3.36V
PS_5V_ADJ
Co-Lay
FAN_LED_VDD
LB60820 30/6/4A/S
R61547 0/8/X
U10831
INS17879417
MP1475/TSOT-23
PS_5V_LED_VIN
PS_5V_LED_EN
PS_5V_LED_SW_VCC
PS_5V_LED_SW_ISET
PS_5V_LED_SW_BOOT
PS_5V_LED_SW_BOOT_R
PS_5V_LED_SW_PHASE
PS_5V_LED_SW_FB
PS_5V_LED_SW_FB_R
PS_5V_LED_DDC_R
VIN
EN/FSYNC
VCC
MOD/PG
GND
BOOT
SW
FB
L617 4.7uH/3.3A/29m/S
L614 1uH/11A/S/x/X
M_3.3V
5V_LED
3V3_F
12V_F
GND

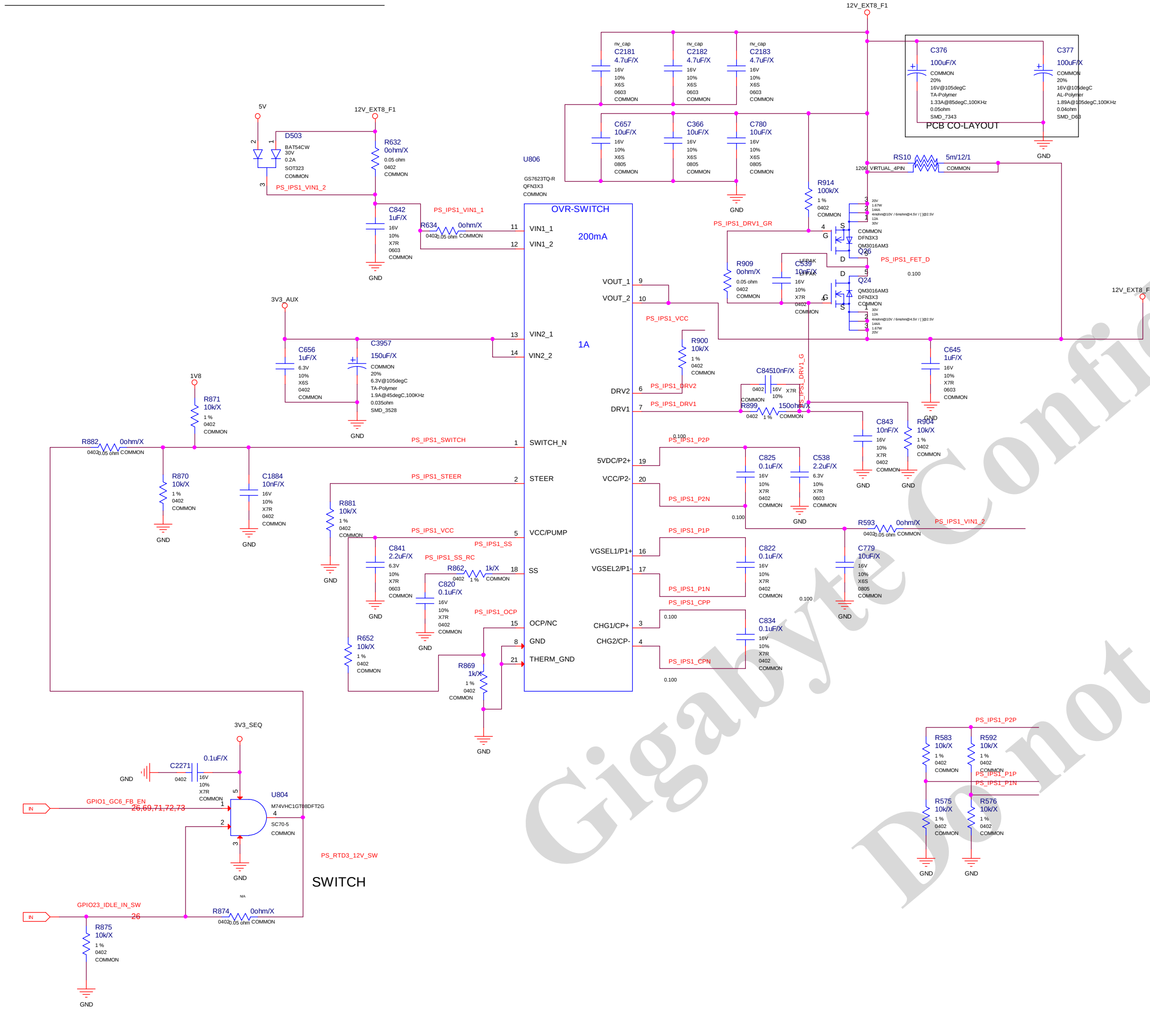
GIGABYTE			
Title	MCU		
Size	Document Number		Rev
Custom	GV-N3080AORUSX W-10GD		1.0
Date:	Wednesday, September 30, 2020	Sheet 63	of 79

CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

PS: INPUT SWITCH RTD3

AND GATE LOGIC FOR P-BOARD

GPIO1	GPIO23	SWITCH	VOUT
0	0	0	12V_F
0	1	0	12V_F
1	0	0	12V_F
1	1	1	3V3A



12V_EXT8_F1
C2181 4.7uF/X 16V 10% X6S 0603 COMMON
C2182 4.7uF/X 16V 10% X6S 0603 COMMON
C2183 4.7uF/X 16V 10% X6S 0603 COMMON
C657 10uF/X 16V 10% X6S 0805 COMMON
C366 10uF/X 16V 10% X6S 0805 COMMON
C780 10uF/X 16V 10% X6S 0805 COMMON
C376 100uF/X COMMON 20% 16V@105degC TA-Polymer 1.33A@85degC,100KHz 0.05ohm SMD_7343
C377 100uF/X COMMON 20% 16V@105degC AL-Polymer 1.89A@105degC,100KHz 0.04ohm SMD_D63
PCB CO-LAYOUT
RS10 5m/12/1 COMMON
1206_VIRTUAL_4PIN
5V
D503 BAT54CW 30V 0.2A SOT323 COMMON
12V_EXT8_F1
R632 0ohm/X 0.05 ohm 0402 COMMON
PS_IPS1_VIN1_2
U806 GS7623TQ-R QFN2X3 COMMON
OVR-SWITCH
200mA
1A
C842 1uF/X 16V 10% X7R 0603 COMMON
PS_IPS1_VIN1_1
R634 0ohm/X 0402 0.05 ohm COMMON
VIN1_1 11
VIN1_2 12
VOUT_1 9
VOUT_2 10
VIN2_1 13
VIN2_2 14
DRV2 6
DRV1 7
SWITCH_N 1
STEER 2
VCC/PUMP 5
SS 18
OCP/NC 15
GND 8
THERM_GND 21
5VDC/P2+ 19
VCC/P2- 20
VGSEL1/P1+ 16
VGSEL2/P1- 17
CHG1/CP+ 3
CHG2/CP- 4
R914 100k/X 1% 0402 COMMON
PS_IPS1_DRV1_GR
Q26 QM3016AM3 DFN3X3 COMMON
Q24 QM3016AM3 DFN3X3 COMMON
PS_IPS1_FET_D
R909 0ohm/X 0.05 ohm 0402 COMMON
C539 10nF/X 16V 10% X7R 0402 COMMON
12V_EXT8_F1_RTD3
C645 1uF/X 16V 10% X7R 0603 COMMON
3V3_AUX
C656 1uF/X 6.3V 10% X6S 0402 COMMON
C3957 150uF/X COMMON 20% 6.3V@105degC TA-Polymer 1.9A@45degC,100KHz 0.035ohm SMD_3528
1V8
R871 10k/X 1% 0402 COMMON
PS_IPS1_VCC
R900 10k/X 1% 0402 COMMON
PS_IPS1_DRV2
PS_IPS1_DRV1
C845 10nF/X 0402 16V 10% X7R COMMON
R899 150ohm/X 0402 1% COMMON
PS_IPS1_DRV1_G
C843 10nF/X 16V 10% X7R 0402 COMMON
R904 10k/X 1% 0402 COMMON
R882 0ohm/X 0402 0.05 ohm COMMON
PS_IPS1_SWITCH
PS_IPS1_STEER
R870 10k/X 1% 0402 COMMON
C1884 10nF/X 16V 10% X7R 0402 COMMON
R881 10k/X 1% 0402 COMMON
PS_IPS1_P2P
PS_IPS1_P2N
C825 0.1uF/X 16V 10% X7R 0402 COMMON
C538 2.2uF/X 6.3V 10% X7R 0603 COMMON
R593 0ohm/X 0402 0.05 ohm COMMON
PS_IPS1_VIN1_2
PS_IPS1_VCC
PS_IPS1_SS
C841 2.2uF/X 6.3V 10% X7R 0603 COMMON
PS_IPS1_SS_RC
R862 1k/X 0402 1% COMMON
C820 0.1uF/X 16V 10% X7R 0402 COMMON
PS_IPS1_P1P
PS_IPS1_P1N
C822 0.1uF/X 16V 10% X7R 0402 COMMON
C779 10uF/X 16V 10% X6S 0805 COMMON
PS_IPS1_OCP
R652 10k/X 1% 0402 COMMON
R869 1k/X 1% 0402 COMMON
PS_IPS1_CPP
PS_IPS1_CPN
C834 0.1uF/X 16V 10% X7R 0402 COMMON
PS_IPS1_P2P
R583 10k/X 1% 0402 COMMON
R592 10k/X 1% 0402 COMMON
PS_IPS1_P1P
PS_IPS1_P1N
R575 10k/X 1% 0402 COMMON
R576 10k/X 1% 0402 COMMON
3V3_SEQ
C2271 0.1uF/X 0402 16V 10% X7R COMMON
U804 M74VHC1G08DFT2G SC70-5 COMMON
GPIO1_GC6_FB_EN 26,69,71,72,73
GPIO23_IDLE_IN_SW 26
R874 0ohm/X 0402 0.05 ohm COMMON
R875 10k/X 1% 0402 COMMON
PS_RTD3_12V_SW
SWITCH
GND

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: INPUT SWITCH RTD3

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

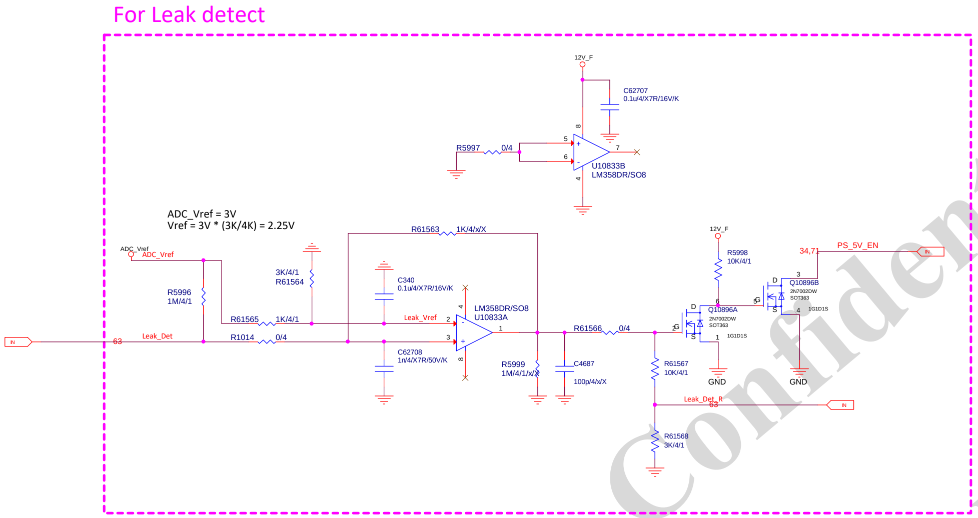
GIGABYTE

Title
PS: INPUT SWITCH RTD3

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020
Sheet 64 of 79

0805 COLAY 0603 diho 2018.12.02


For Leak detect
12V_F
C62707
0.1u/4/X7R/16V/K
R5997
0/4
5
6
8
4
7
U10833B
LM358DR/SO8
ADC_Vref = 3V
Vref = 3V * (3K/4K) = 2.25V
R61563
1K/4/x/X
ADC_Vref
ADC_Vref
R5996
1M/4/1
3K/4/1
R61564
C340
0.1u/4/X7R/16V/K
R61565
1K/4/1
Leak_Vref
2
3
4
8
1
LM358DR/SO8
U10833A
IN
63
Leak_Det
R1014
0/4
C62708
1n/4/X7R/50V/K
R5999
1M/4/1/x/X
C4687
100p/4/x/X
R61566
0/4
12V_F
R5998
10K/4/1
D
G
S
Q10896A
2N7002DW
SOT363
1G1D1S
6
2
1
D
G
S
Q10896B
2N7002DW
SOT363
1G1D1S
3
5
4
34,71
PS_5V_EN
IN
GND
GND
R61567
10K/4/1
Leak_Det_R
63
IN
R61568
3K/4/1

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL BLANK

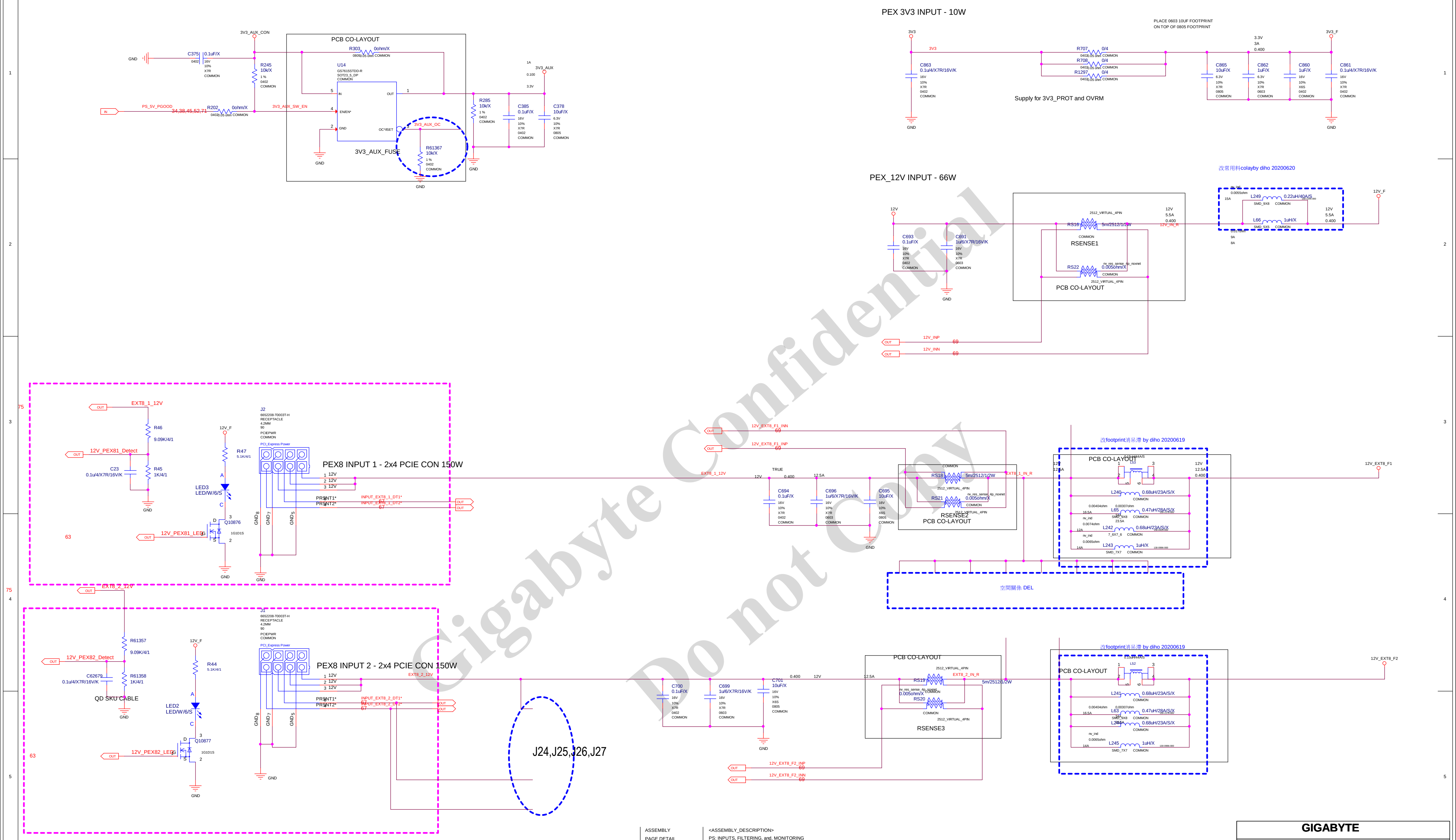
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
LED

Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0
Date: Wednesday, September 30, 2020
Sheet 65 of 79

PS: Inputs, Filtering, and Monitoring


PEX 3V3 INPUT - 10W
3V3_AUX_CON
PCB CO-LAYOUT
R303 0ohm/X
U14
GS7615STDD-R
IN
OUT
EN/EN*
GND
OC*/ISET
3V3_AUX_FUSE
C375 0.1uF/X
R245 10k/X
PS_5V_PGOOD
34,38,45,52,71
R202 0ohm/X
3V3_AUX_SW_EN
3V3_AUX_OC
R61367 10k/X
R285 10k/X
C385 0.1uF/X
C378 10uF/X
3V3_AUX
1A
0.100
3.3V
GND
3V3
C863 0.1u/4/X7R/16V/K
R707 0/4
R708 0/4
R1297 0/4
PLACE 0603 10UF FOOTPRINT ON TOP OF 0805 FOOTPRINT
Supply for 3V3_PROT and OVRM
C865 10uF/X
C862 1uF/X
C860 1uF/X
C861 0.1u/4/X7R/16V/K
3V3_F
3.3V
3A
0.400
PEX_12V INPUT - 66W
12V
C693 0.1uF/X
C691 1u/6/X7R/16V/K
2512_VIRTUAL_4PIN
RS16 5m/2512/1/2W
RSENSE1
RS22 0.005ohm/X
12V_IN_R
5.5A
0.400
改常用料colayby diho 20200620
L249 0.22uH/40A/S
L66 1uH/X
12V_F
12V_INP 69
12V_INN 69
EXT8_1_12V
R46 9.09K/4/1
12V_PEX81_Detect
C23 0.1u/4/X7R/16V/K
R45 1K/4/1
12V_F
R47 5.1K/4/1
LED3 LED/W/6/S
Q10876
12V_PEX81_LED
63
75
J2
6652208-T0003T-H RECEPTACLE 4.2MM 90 PCIEPWR COMMON
PCI_Express Power
PEX8 INPUT 1 - 2x4 PCIE CON 150W
PRSNT1*
PRSNT2*
INPUT_EXT8_1_DT1* 67
INPUT_EXT8_1_DT2* 67
12V_EXT8_F1_INN 69
12V_EXT8_F1_INP 69
TRUE
0.400
12.5A
C694 0.1uF/X
C696 1u/6/X7R/16V/K
C695 10uF/X
RS18 5m/2512/1/2W
RS21 0.005ohm/X
RSENSE2
EXT8_1_IN_R
改footprint消呆滞 by diho 20200619
L240 0.68uH/23A/S/X
L65 0.47uH/28A/S/X
L242 0.68uH/23A/S/X
L243 1uH/X
12V_EXT8_F1
空間關係 DEL
EXT8_2_12V
R61357 9.09K/4/1
12V_PEX82_Detect
C62679 0.1u/4/X7R/16V/K
R61358 1K/4/1
QD SKU CABLE
R44 5.1K/4/1
LED2 LED/W/6/S
Q10877
12V_PEX82_LED
J1
PEX8 INPUT 2 - 2x4 PCIE CON 150W
INPUT_EXT8_2_DT1* 67
INPUT_EXT8_2_DT2* 67
J24,J25,J26,J27
C700 0.1uF/X
C699 1u/6/X7R/16V/K
C701 10uF/X
RS19
RS20
RSENSE3
EXT8_2_IN_R
5m/2512/1/2W
L241 0.68uH/23A/S/X
L63 0.47uH/28A/S/X
L244 0.68uH/23A/S/X
L245 1uH/X
12V_EXT8_F2
12V_EXT8_F2_INP 69
12V_EXT8_F2_INN 69

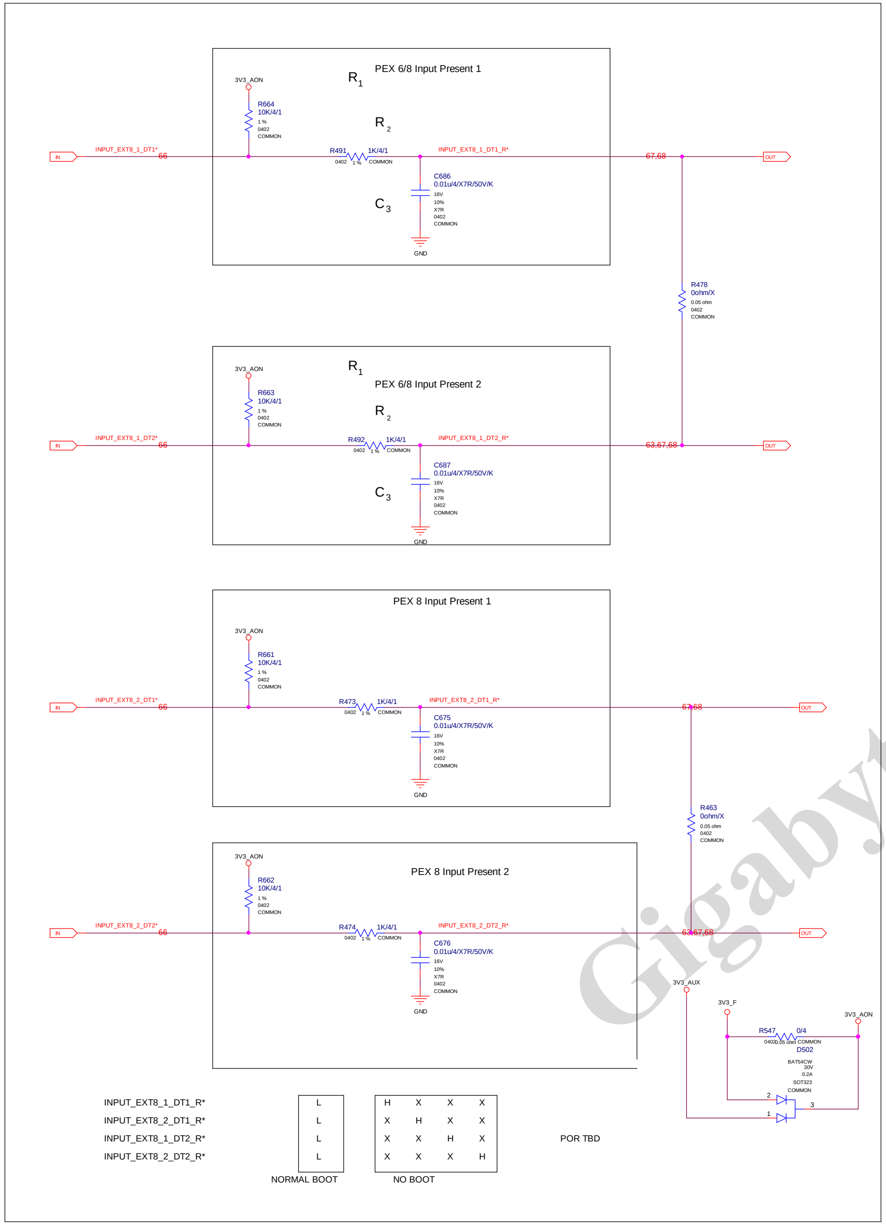
ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: INPUTS, FILTERING, and MONITORING

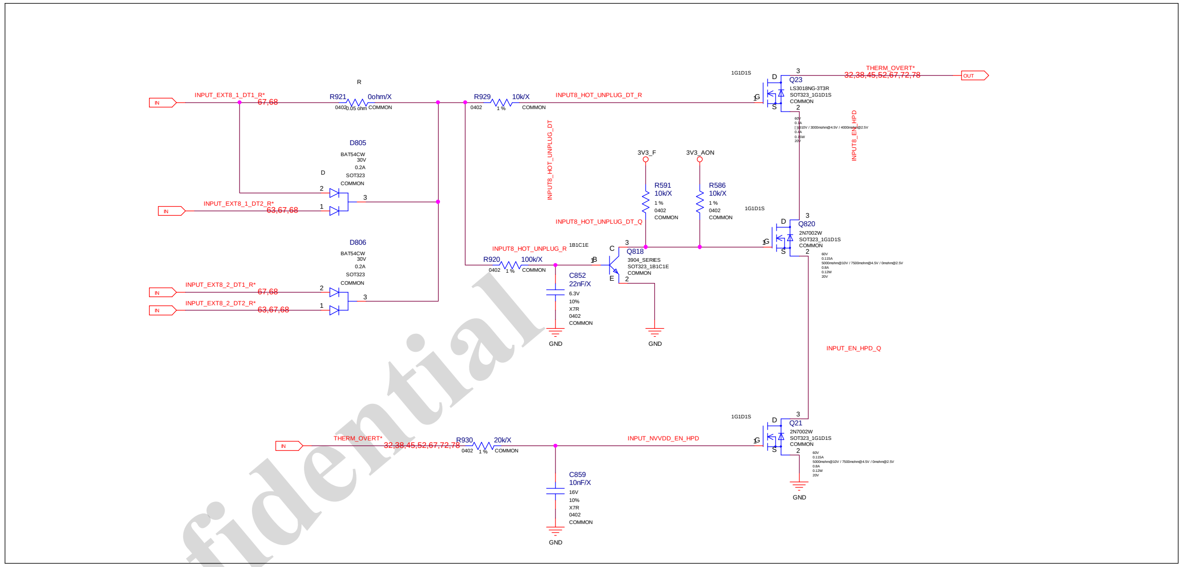
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR ANY INDUSTRY STANDARDS.

GIGABYTE
Title
PS: Inputs, Filtering, and Monitoring
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 66 of 79

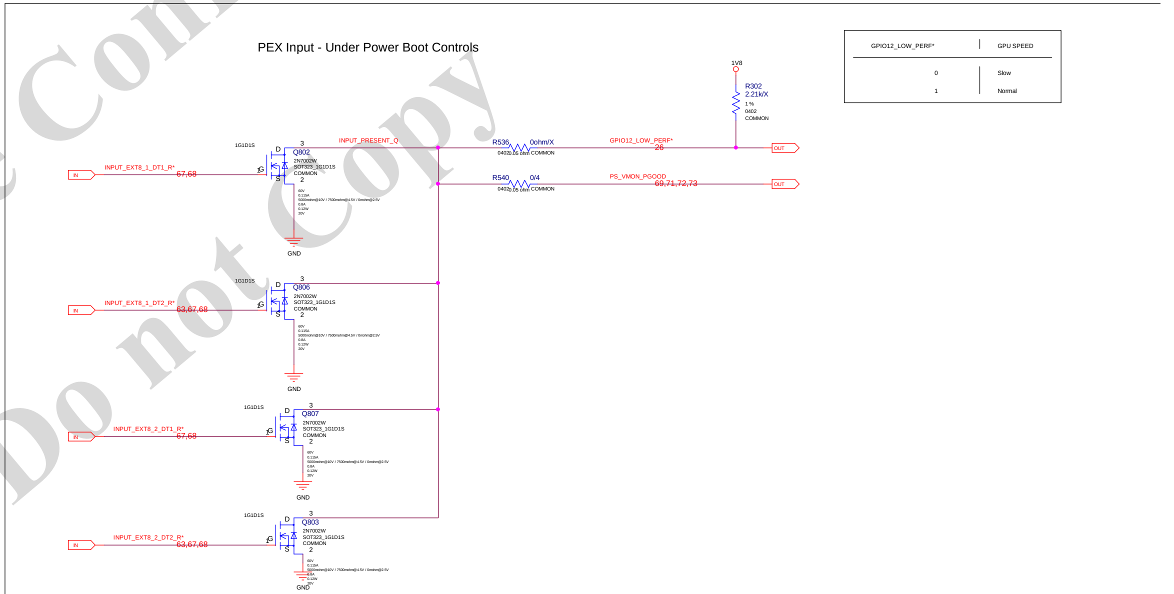
PS: 12V Current Steering & Hot Unplug Detect


PEX 6/8 Input Present 1
PEX 6/8 Input Present 2
PEX 8 Input Present 1
PEX 8 Input Present 2
R1
R2
C3
3V3_AON
R664 10K/4/1
R663 10K/4/1
R661 10K/4/1
R662 10K/4/1
R491 1K/4/1
R492 1K/4/1
R473 1K/4/1
R474 1K/4/1
C686 0.01u/4/X7R/50V/K
C687 0.01u/4/X7R/50V/K
C675 0.01u/4/X7R/50V/K
C676 0.01u/4/X7R/50V/K
R478 0ohm/X
R463 0ohm/X
INPUT_EXT8_1_DT1*
INPUT_EXT8_1_DT2*
INPUT_EXT8_2_DT1*
INPUT_EXT8_2_DT2*
INPUT_EXT8_1_DT1_R*
INPUT_EXT8_1_DT2_R*
INPUT_EXT8_2_DT1_R*
INPUT_EXT8_2_DT2_R*
66
67,68
63,67,68
IN
OUT
GND
3V3_AUX
3V3_F
R547 0/4
D502
BAT54CW
POR TBD

	NORMAL BOOT	NO BOOT			
INPUT_EXT8_1_DT1_R*	L	H	X	X	X
INPUT_EXT8_2_DT1_R*	L	X	H	X	X
INPUT_EXT8_1_DT2_R*	L	X	X	H	X
INPUT_EXT8_2_DT2_R*	L	X	X	X	H


INPUT_EXT8_1_DT1_R*
INPUT_EXT8_1_DT2_R*
INPUT_EXT8_2_DT1_R*
INPUT_EXT8_2_DT2_R*
R921 0ohm/X
R929 10k/X
INPUT8_HOT_UNPLUG_DT_R
INPUT8_HOT_UNPLUG_DT
INPUT8_HOT_UNPLUG_DT_Q
INPUT8_HOT_UNPLUG_R
D805
D806
BAT54CW
Q23
LS3018NG-3T3R
THERM_OVERT*
32,38,45,52,67,72,78
INPUT8_EN_HPD
3V3_F
3V3_AON
R591 10k/X
R586 10k/X
Q820
2N7002W
Q818
3904_SERIES
R920 100k/X
C852 22nF/X
INPUT_EN_HPD_Q
Q21
2N7002W
R930 20k/X
INPUT_NVVDD_EN_HPD
C859 10nF/X
GND

PEX Input - Under Power Boot Controls


INPUT_EXT8_1_DT1_R*
INPUT_EXT8_1_DT2_R*
INPUT_EXT8_2_DT1_R*
INPUT_EXT8_2_DT2_R*
Q802
Q806
Q807
Q803
2N7002W
INPUT_PRESENT_Q
R536 0ohm/X
GPIO12_LOW_PERF*
26
R540 0/4
PS_VMON_PGOOD
69,71,72,73
1V8
R302 2.21k/X
GND

GPIO12_LOW_PERF*	GPU SPEED
0	Slow
1	Normal

A 2 x 4 auxiliary power connector plug from the power supply unit must not use the 75 W sense coding (Sense1=Open and Sense0=Ground) to avoid end-user confusion.

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
PS: HOT UNPLUG

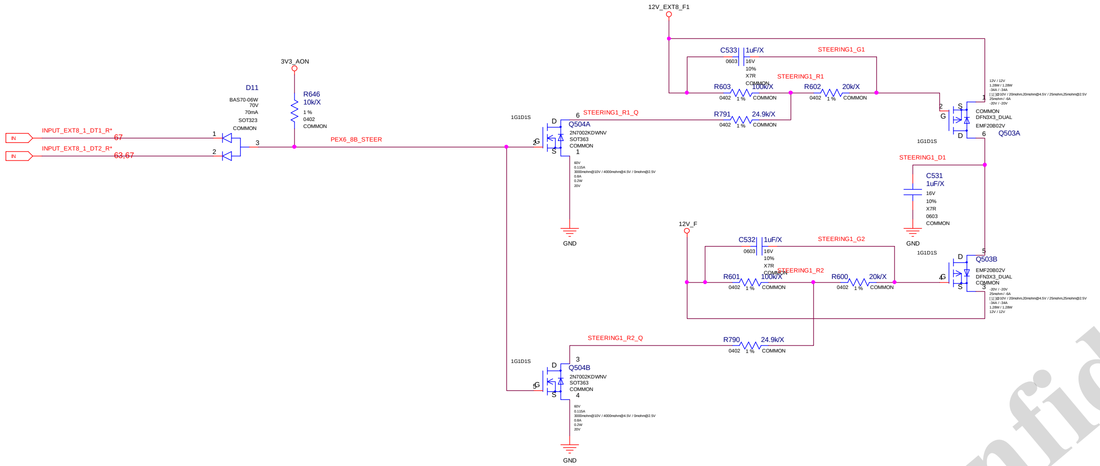
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
PS: 12V Current Steering & Hot Unplug Detect
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 67 of 79

PS: Discrete Steering

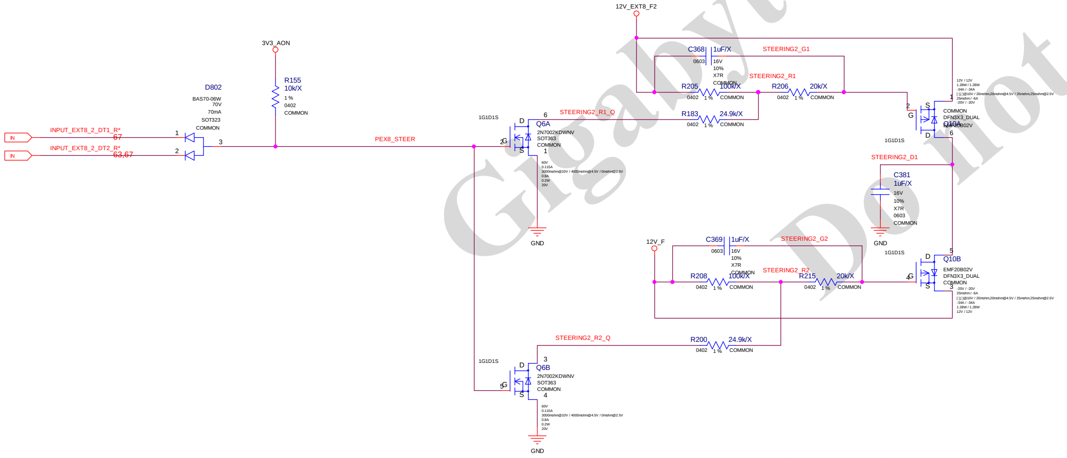
12V CURRENT STEERING (UNDER POWER BOOT):

PEX12V AND 12V_EXT8_F1


12V_EXT8_F1
3V3_AON
D11
BAS70-06W
R646
10k/X
INPUT_EXT8_1_DT1_R*
INPUT_EXT8_1_DT2_R*
67
63,67
PEX6_8B_STEER
Q504A
2N7002KDWNV
STEERING1_R1_Q
R791 24.9k/X
R603 100k/X
R602 20k/X
C533 1uF/X
STEERING1_G1
STEERING1_R1
Q503A
EMF20B02V
DFN3X3_DUAL
STEERING1_D1
C531 1uF/X
GND
12V_F
C532 1uF/X
STEERING1_G2
STEERING1_R2
R601 100k/X
R600 20k/X
Q503B
STEERING1_R2_Q
R790 24.9k/X
Q504B
2N7002KDWNV
GND

NO STUFF BY DEFAULT REF ONLY

PEX12V AND 12V_EXT8_F2


12V_EXT8_F2
3V3_AON
D802
BAS70-06W
R155
10k/X
INPUT_EXT8_2_DT1_R*
INPUT_EXT8_2_DT2_R*
67
63,67
PEX8_STEER
Q6A
2N7002KDWNV
STEERING2_R1_Q
R183 24.9k/X
R205 100k/X
R206 20k/X
C368 1uF/X
STEERING2_G1
STEERING2_R1
Q10A
EMF20B02V
DFN3X3_DUAL
STEERING2_D1
C381 1uF/X
GND
12V_F
C369 1uF/X
STEERING2_G2
STEERING2_R2
R208 100k/X
R215 20k/X
Q10B
STEERING2_R2_Q
R200 24.9k/X
Q6B
2N7002KDWNV
GND

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: Discrete Steering

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

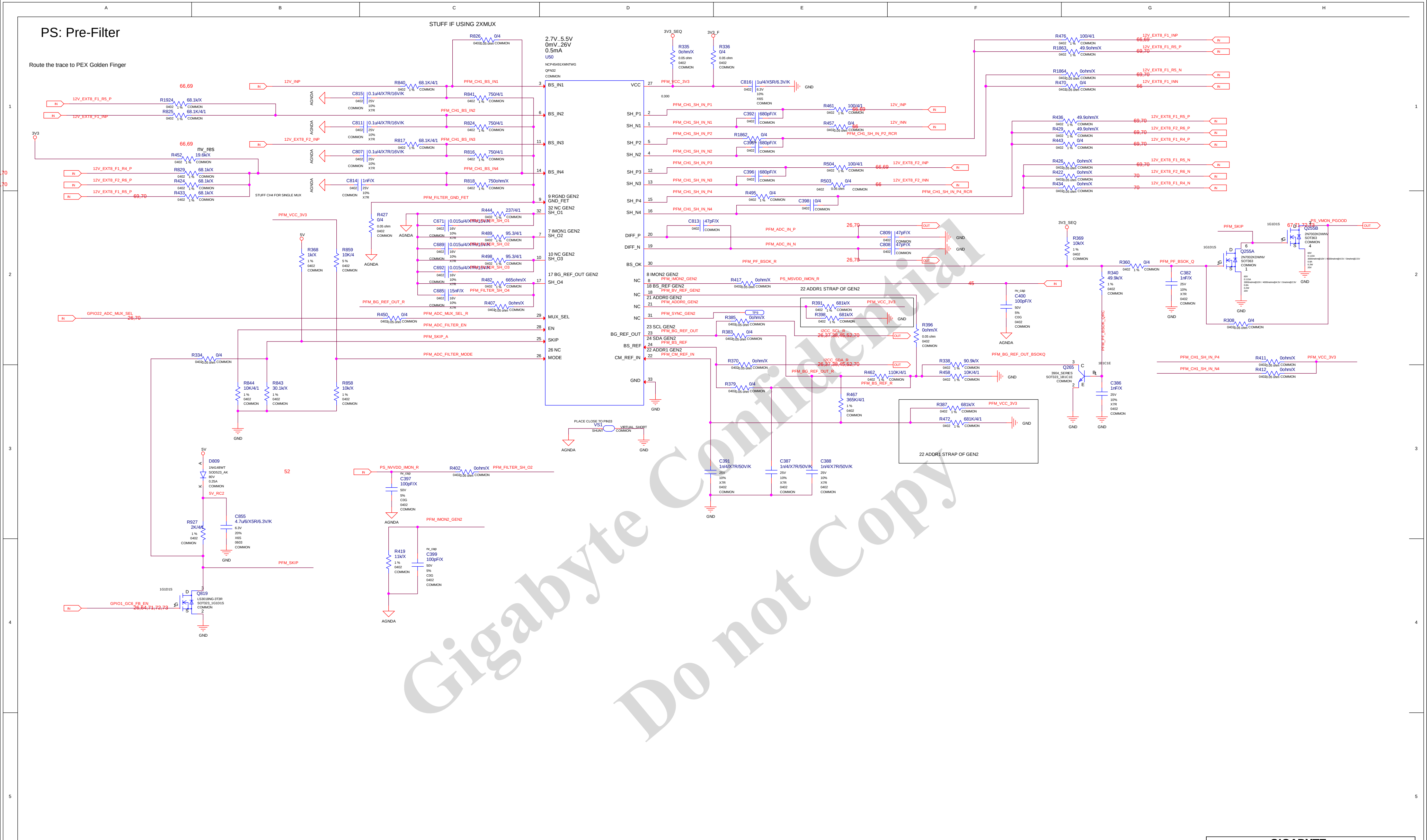
GIGABYTE

Title
PS: Discrete Steering

Size: Custom
Document Number: GV-N3080AORUSX W-10GD
Rev: 1.0

Date: Wednesday, September 30, 2020 Sheet 68 of 79

PS: Pre-Filter


Route the trace to PEX Golden Finger
STUFF IF USING 2XMUX
2.7V..5.5V
0mV..26V
0.5mA
U50
NCP45491XMNTWG
QFN32
COMMON
BS_IN1
BS_IN2
BS_IN3
BS_IN4
9 RGND GEN2 GND_FET
32 NC GEN2 SH_O1
7 IMON1 GEN2 SH_O2
10 NC GEN2 SH_O3
17 BG_REF_OUT GEN2 SH_O4
MUX_SEL
EN
SKIP
26 NC MODE
VCC
SH_P1
SH_N1
SH_P2
SH_N2
SH_P3
SH_N3
SH_P4
SH_N4
DIFF_P
DIFF_N
BS_OK
NC
BG_REF_OUT
BS_REF
CM_REF_IN
GND
8 IMON2 GEN2
18 BS_REF GEN2
21 ADDR0 GEN2
23 SCL GEN2
24 SDA GEN2
22 ADDR1 GEN2
12V_EXT8_F1_R5_P
12V_EXT8_F1_INP
12V_EXT8_F1_R4_P
12V_EXT8_F2_R6_P
12V_EXT8_F1_R5_P
12V_INP
12V_EXT8_F2_INP
12V_EXT8_F1_INN
12V_EXT8_F1_R5_N
12V_EXT8_F1_R6_N
12V_EXT8_F1_R4_N
12V_EXT8_F2_INN
12V_INN
PFM_CH1_BS_IN1
PFM_CH1_BS_IN2
PFM_CH1_BS_IN3
PFM_CH1_BS_IN4
PFM_FILTER_GND_FET
PFM_FILTER_SH_O1
PFM_FILTER_SH_O2
PFM_FILTER_SH_O3
PFM_FILTER_SH_O4
PFM_VCC_3V3
PFM_CH1_SH_IN_P1
PFM_CH1_SH_IN_N1
PFM_CH1_SH_IN_P2
PFM_CH1_SH_IN_N2
PFM_CH1_SH_IN_P3
PFM_CH1_SH_IN_N3
PFM_CH1_SH_IN_P4
PFM_CH1_SH_IN_N4
PFM_CH1_SH_IN_P2_RCR
PFM_CH1_SH_IN_P4_RCR
PFM_ADC_IN_P
PFM_ADC_IN_N
PFM_PF_BSOK_R
PFM_PF_BSOK_Q
PFM_IMON2_GEN2
PS_MSVDD_IMON_R
PFM_BV_REF_GEN2
PFM_ADDR0_GEN2
PFM_SYNC_GEN2
PFM_BG_REF_OUT
PFM_BS_REF
PFM_CM_REF_IN
PFM_BG_REF_OUT_R
PFM_BS_REF_R
PFM_BG_REF_OUT_BSOKQ
PFM_ADC_MUX_SEL_R
PFM_ADC_FILTER_EN
PFM_SKIP_A
PFM_ADC_FILTER_MODE
PFM_SKIP
PS_VMON_PGOOD
GPIO22_ADC_MUX_SEL
GPIO1_GC6_FB_EN
PS_NVVDD_IMON_R
PFM_FILTER_SH_O2
PFM_IMON2_GEN2
I2CC_SCL_R
I2CC_SDA_R
22 ADDR1 STRAP OF GEN2
STUFF CH4 FOR SINGLE MUX
PLACE CLOSE TO PIN33
VS1 SHUNT VIRTUAL_SHORT
nv_res
nv_cap
3V3
3V3_SEQ
3V3_F
5V
5V_RC2
AGNDA
GND
IN
OUT
Q255A 2N7002KDWNV SOT363
Q255B 2N7002KDWNV SOT363
Q265 3904_SERIES SOT323_1B1C1E
Q819 LS3018NG-3T3R SOT323_1G1D1S
D809 1N4148WT SOD523_AK
TP9
R826 0/4
R840 68.1K/4/1
R841 750/4/1
R824 750/4/1
R817 68.1K/4/1
R816 750/4/1
R818 750ohm/X
R1924 68.1k/X
R825 68.1K/4/1
R452 19.6k/X
R829 68.1k/X
R424 68.1k/X
R433 68.1k/X
R427 0/4
R444 237/4/1
R489 95.3/4/1
R498 95.3/4/1
R482 665ohm/X
R407 0ohm/X
R450 0/4
R368 1k/X
R859 10K/4
R334 0/4
R844 10K/4/1
R843 30.1k/X
R858 10k/X
R927 2K/4/1
R402 0ohm/X
R419 11k/X
R335 0ohm/X
R336 0/4
R461 100/4/1
R457 0/4
R1862 0/4
R504 100/4/1
R503 0/4
R495 0/4
R417 0ohm/X
R391 681k/X
R398 681k/X
R385 0ohm/X
R383 0/4
R370 0ohm/X
R379 0/4
R462 110K/4/1
R467 365K/4/1
R387 681k/X
R472 681K/4/1
R338 90.9k/X
R458 10K/4/1
R396 0ohm/X
R476 100/4/1
R1863 49.9ohm/X
R1864 0ohm/X
R470 0/4
R436 49.9ohm/X
R429 49.9ohm/X
R443 0/4
R426 0ohm/X
R422 0ohm/X
R434 0ohm/X
R369 10k/X
R360 0/4
R340 49.9k/X
R308 0/4
R411 0ohm/X
R412 0ohm/X
C815 0.1u/4/X7R/16V/K
C811 0.1u/4/X7R/16V/K
C807 0.1u/4/X7R/16V/K
C814 1nF/X
C671 0.015u/4/X7R/16V/K
C689 0.015u/4/X7R/16V/K
C692 0.015u/4/X7R/16V/K
C685 15nF/X
C816 1u/4/X5R/6.3V/K
C392 680pF/X
C390 680pF/X
C396 680pF/X
C398 0/4
C813 47pF/X
C809 47pF/X
C808 47pF/X
C400 100pF/X
C382 1nF/X
C386 1nF/X
C391 1n/4/X7R/50V/K
C387 1n/4/X7R/50V/K
C388 1n/4/X7R/50V/K
C397 100pF/X
C399 100pF/X
C855 4.7u/6/X5R/6.3V/K
66,69
69,70
26,70
45
52
26,37,38,45,62,70
26,64,71,72,73
67,71,72,73

ASSEMBLY <ASSEMBLY_DESCRIPTION>

PAGE DETAIL PS: PREFILTER

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

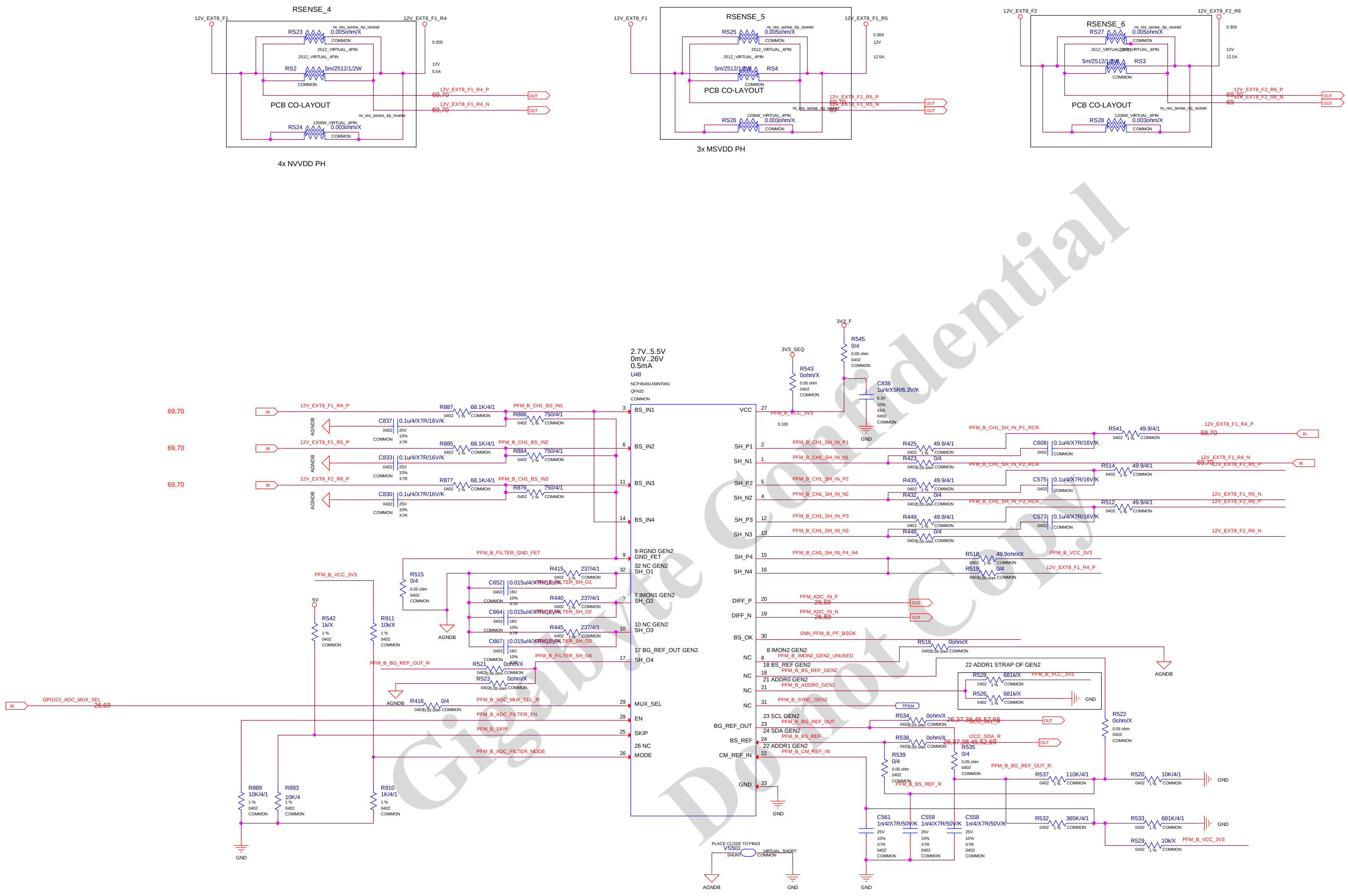
GIGABYTE

Title
PS: Pre-Filter

Size	Document Number	Rev
Custom	GV-N3080AORUSX W-10GD	1.0

Date: Wednesday, September 30, 2020 Sheet 69 of 79

PS: Pre-Filter B

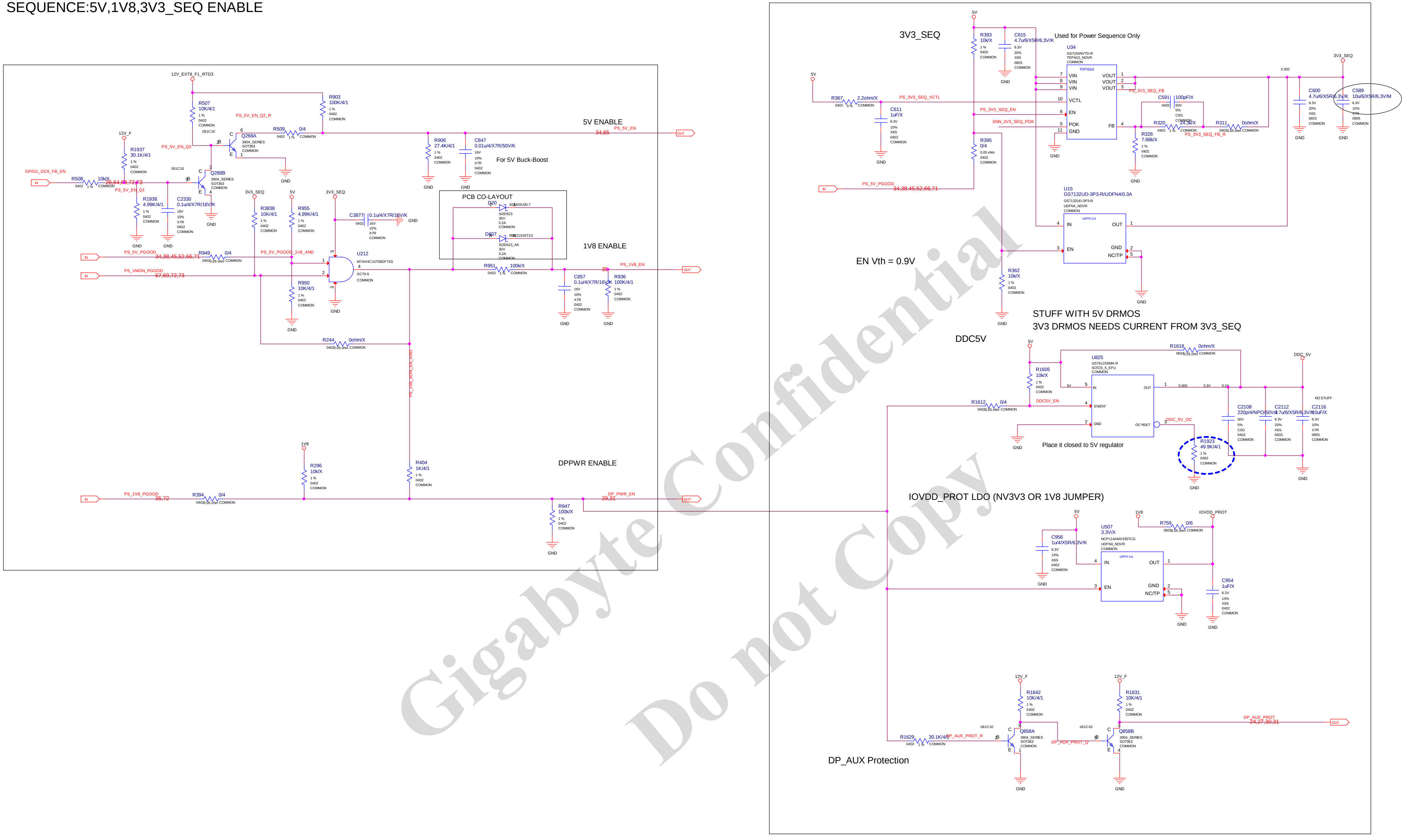

RSENSE_4
12V_EXT8_F1
12V_EXT8_F1_R4
RS23 0.005ohm/X
RS2 5m/2512/1/2W
RS24 0.003ohm/X
PCB CO-LAYOUT
4x NVVDD PH
RSENSE_5
12V_EXT8_F1_R5
RS25 0.005ohm/X
RS4
RS26 0.003ohm/X
3x MSVDD PH
RSENSE_6
12V_EXT8_F2
12V_EXT8_F2_R6
RS27 0.005ohm/X
RS3
RS28 0.003ohm/X
12V_EXT8_F1_R4_P
12V_EXT8_F1_R4_N
12V_EXT8_F1_R5_P
12V_EXT8_F1_R5_N
12V_EXT8_F2_R6_P
12V_EXT8_F2_R6_N
2.7V..5.5V
0mV..26V
0.5mA
U48
NCP45491XMNTWG
QFN32
BS_IN1
BS_IN2
BS_IN3
BS_IN4
VCC
SH_P1
SH_N1
SH_P2
SH_N2
SH_P3
SH_N3
SH_P4
SH_N4
DIFF_P
DIFF_N
BS_OK
RGND GEN2 GND_FET
NC GEN2 SH_O1
IMON1 GEN2 SH_O2
NC GEN2 SH_O3
BG_REF_OUT GEN2 SH_O4
MUX_SEL
EN
SKIP
NC MODE
IMON2 GEN2
BS_REF GEN2
ADDR0 GEN2
SCL GEN2
SDA GEN2
ADDR1 GEN2
BG_REF_OUT
BS_REF
CM_REF_IN
GND
22 ADDR1 STRAP OF GEN2
3V3_F
3V3_SEQ
R545 0/4
R543 0ohm/X
C838 1u/4/X5R/6.3V/K
PFM_B_VCC_3V3
PFM_B_CH1_BS_IN1
PFM_B_CH1_BS_IN2
PFM_B_CH1_BS_IN3
R887 68.1K/4/1
R886 750/4/1
R885 68.1K/4/1
R884 750/4/1
R877 68.1K/4/1
R876 750/4/1
C837 0.1u/4/X7R/16V/K
C833 0.1u/4/X7R/16V/K
C830 0.1u/4/X7R/16V/K
AGNDB
PFM_B_FILTER_GND_FET
R515 0/4
R415 237/4/1
R440 237/4/1
R445 237/4/1
C652 0.015u/4/X7R/16V/K
C664 0.015u/4/X7R/16V/K
C667 0.015u/4/X7R/16V/K
PFM_B_FILTER_SH_O1
PFM_B_FILTER_SH_O2
PFM_B_FILTER_SH_O3
PFM_B_FILTER_SH_O4
PFM_B_BG_REF_OUT_R
R521 0ohm/X
R523 0ohm/X
5V
R542 1k/X
R911 10k/X
GPIO22_ADC_MUX_SEL
R416 0/4
PFM_B_ADC_MUX_SEL_R
PFM_B_ADC_FILTER_EN
PFM_B_SKIP
PFM_B_ADC_FILTER_MODE
R889 10K/4/1
R893 10K/4
R910 1K/4/1
PFM_B_CH1_SH_IN_P1
PFM_B_CH1_SH_IN_N1
PFM_B_CH1_SH_IN_P2
PFM_B_CH1_SH_IN_N2
PFM_B_CH1_SH_IN_P3
PFM_B_CH1_SH_IN_N3
PFM_B_CH1_SH_IN_P4_N4
PFM_B_CH1_SH_IN_P1_RCR
PFM_B_CH1_SH_IN_P2_RCR
PFM_B_CH1_SH_IN_P3_RCR
R425 49.9/4/1
R423 0/4
R435 49.9/4/1
R432 0/4
R449 49.9/4/1
R448 0/4
C608 0.1u/4/X7R/16V/K
C575 0.1u/4/X7R/16V/K
C573 0.1u/4/X7R/16V/K
R541 49.9/4/1
R514 49.9/4/1
R512 49.9/4/1
R518 49.9ohm/X
R519 0/4
PFM_ADC_IN_P
PFM_ADC_IN_N
SNN_PFM_B_PF_BSOK
R516 0ohm/X
PFM_B_IMON2_GEN2_UNUSED
PFM_B_BS_REF_GEN2
PFM_B_ADDR0_GEN2
PFM_B_SYNC_GEN2
PFM_B_BG_REF_OUT
PFM_B_BS_REF
PFM_B_CM_REF_IN
R528 681k/X
R526 681k/X
R534 0ohm/X
R538 0ohm/X
I2CC_SCL_R
I2CC_SDA_R
TP504
R522 0ohm/X
R539 0/4
R535 0/4
PFM_B_BS_REF_R
PFM_B_BG_REF_OUT_R
R537 110K/4/1
R520 10K/4/1
R532 365K/4/1
R533 681K/4/1
R529 10k/X
C561 1n/4/X7R/50V/K
C559 1n/4/X7R/50V/K
C558 1n/4/X7R/50V/K
PLACE CLOSE TO PIN33
VS501
SHUNT
VIRTUAL_SHORT
IN
OUT
69,70
26,69
26,37,38,45,52,69

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PS: PREFILTER B

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title PS: Pre-Filter B
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 70 of 79

SEQUENCE:5V,1V8,3V3_SEQ ENABLE


5V ENABLE
For 5V Buck-Boost
PCB CO-LAYOUT
1V8 ENABLE
DPPWR ENABLE
12V_EXT8_F1_RTD3
R507 10K/4/1
R903 100K/4/1
Q268A 3904_SERIES
Q268B 3904_SERIES
R509 0/4
PS_5V_EN_Q2_R
PS_5V_EN_Q2
PS_5V_EN_Q1
PS_5V_EN
GPIO1_GC6_FB_EN
R508 10k/X
R1937 30.1K/4/1
R1938 4.99K/4/1
C2330 0.1u/4/X7R/16V/K
R906 27.4K/4/1
C847 0.01u/4/X7R/50V/K
D20 SDM20U30-7
D807 RB521S30T1G
R3838 10K/4/1
R955 4.99K/4/1
C3877 0.1u/4/X7R/16V/K
U212 M74VHC1G708DFT2G
PS_5V_PGOOD
PS_VMON_PGOOD
PS_5V_PGOOD_1V8_AND
R949 0/4
R950 10K/4/1
R951 100k/X
C857 0.1u/4/X7R/16V/K
R936 100K/4/1
PS_1V8_EN
R244 0ohm/X
PS_1V8_AON_EN_AND
R296 10k/X
R404 1K/4/1
PS_1V8_PGOOD
R394 0/4
R947 100k/X
DP_PWR_EN
3V3_SEQ
Used for Power Sequence Only
R393 10k/X
C615 4.7u/6/X5R/6.3V/K
U34 GS7155NVTD-R
R367 2.2ohm/X
PS_3V3_SEQ_VCTL
C611 1uF/X
PS_3V3_SEQ_EN
SNN_3V3_SEQ_POK
R395 0/4
PS_3V3_SEQ_FB
C591 100pF/X
R320 24.3K/X
R311 0ohm/X
PS_3V3_SEQ_FB_R
R326 7.68k/X
C600 4.7u/6/X5R/6.3V/K
C589 10u/6/X5R/6.3V/M
U15 GS7132UD-3P3-R/UDFN4/0.3A
EN Vth = 0.9V
R362 10k/X
STUFF WITH 5V DRMOS
3V3 DRMOS NEEDS CURRENT FROM 3V3_SEQ
DDC5V
R1618 0ohm/X
U825 GS7612S5MA-R
R1605 10k/X
R1612 0/4
DDC5V_EN
DDC_5V_OC
C2108 220p/4/NPO/50V/J
C2112 4.7u/6/X5R/6.3V/K
C2116 10uF/X
NO STUFF
R1923 49.9K/4/1
Place it closed to 5V regulator
IOVDD_PROT LDO (NV3V3 OR 1V8 JUMPER)
R759 0/6
IOVDD_PROT
U507 3.3V/X NCP114AMX330TCG
C956 1u/4/X5R/6.3V/K
C954 1uF/X
R1642 10K/4/1
R1631 10K/4/1
Q858A 3904_SERIES
Q858B 3904_SERIES
R1629 30.1K/4/1
DP_AUX_PROT_R
DP_AUX_PROT_Q
DP_AUX_PROT
DP_AUX Protection

ASSEMBLY

PAGE DETAIL

<ASSEMBLY_DESCRIPTION>

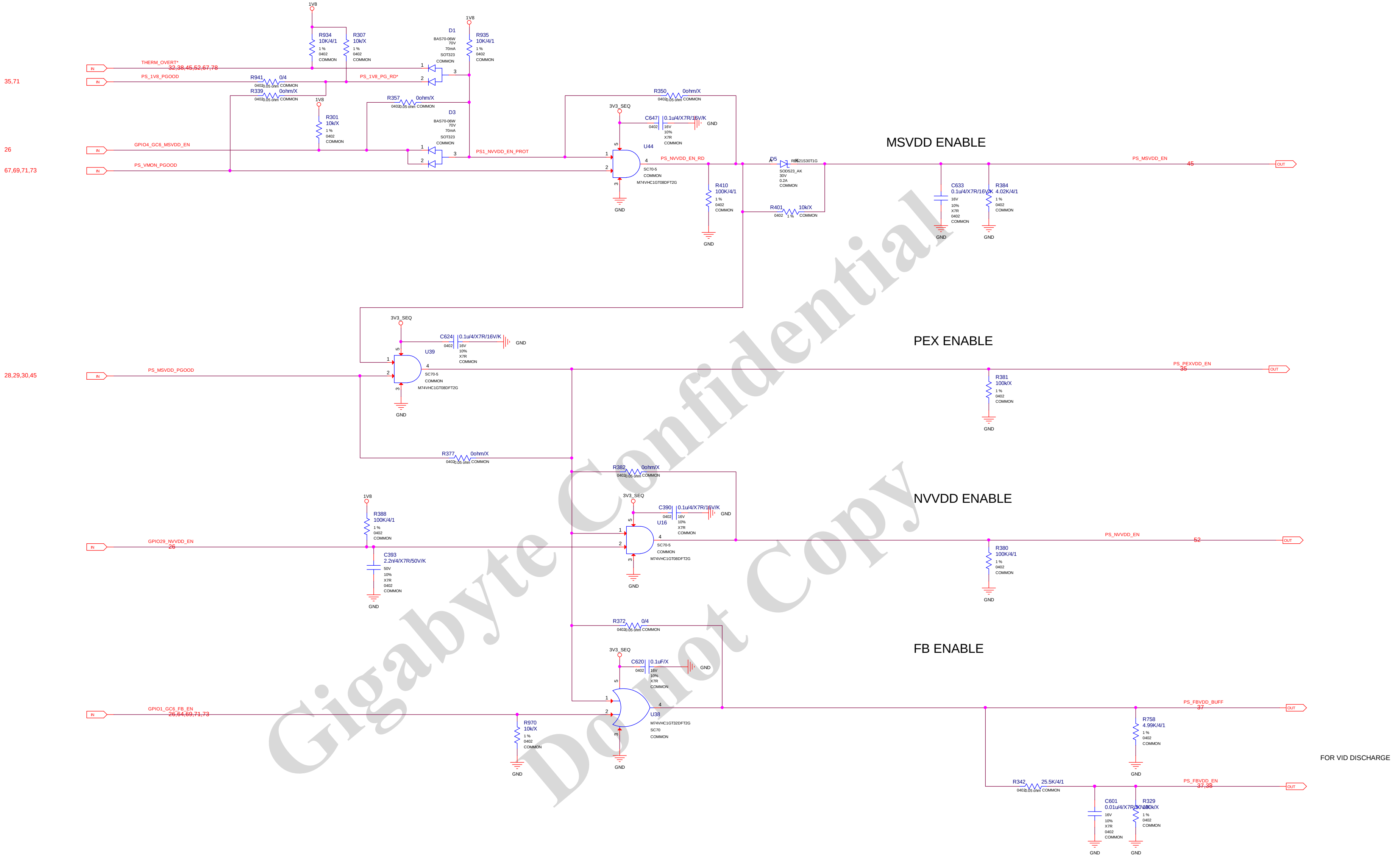
Sequence: 5V, 1V8, 3V3_SEQ

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
SEQUENCE:5V,1V8,3V3_SEQ ENABLE
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 71 of 79

SEQUENCE:NV,PEX,FB ENABLE


MSVDD ENABLE
PEX ENABLE
NVVDD ENABLE
FB ENABLE
FOR VID DISCHARGE
THERM_OVERT*
32,38,45,52,67,78
35,71
PS_1V8_PGOOD
26
GPIO4_GC6_MSVDD_EN
67,69,71,73
PS_VMON_PGOOD
1V8
R934 10K/4/1
R307 10k/X
R941 0/4
R339 0ohm/X
R301 10k/X
R357 0ohm/X
PS_1V8_PG_RD*
D1 BAS70-06W
D3 BAS70-06W
R935 10K/4/1
PS1_NVVDD_EN_PROT
3V3_SEQ
R350 0ohm/X
C647 0.1u/4/X7R/16V/K
U44
M74VHC1GT08DFT2G
PS_NVVDD_EN_RD
R410 100K/4/1
D5 RB521S30T1G
R401 10k/X
C633 0.1u/4/X7R/16V/K
R384 4.02K/4/1
PS_MSVDD_EN
45
GND
28,29,30,45
PS_MSVDD_PGOOD
C624 0.1u/4/X7R/16V/K
U39
PS_PEXVDD_EN
35
R381 100k/X
R377 0ohm/X
R382 0ohm/X
C390 0.1u/4/X7R/16V/K
U16
GPIO29_NVVDD_EN
26
R388 100K/4/1
C393 2.2n/4/X7R/50V/K
PS_NVVDD_EN
52
R380 100K/4/1
R372 0/4
C620 0.1uF/X
U38
M74VHC1G32DFT2G
GPIO1_GC6_FB_EN
26,64,69,71,73
R970 10k/X
PS_FBVDD_BUFF
37
R758 4.99K/4/1
R342 25.5K/4/1
PS_FBVDD_EN
37,38
C601 0.01u/4/X7R/50V/K
R329 100k/X
IN
OUT

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
Sequence: NV, PEX, FB EN

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

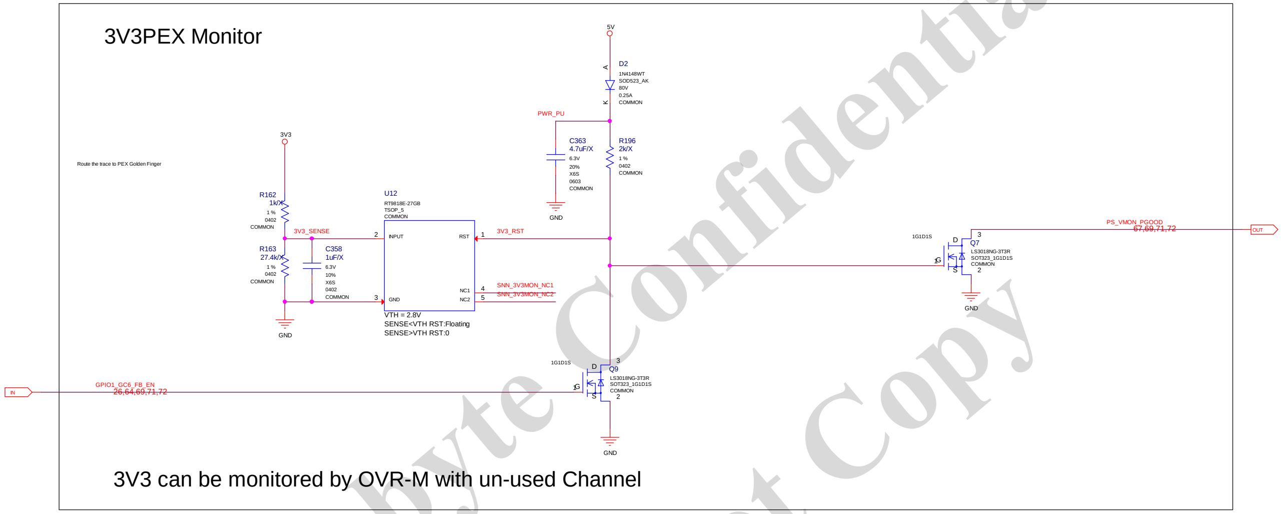
Title
SEQUENCE:NV,PEX,FB ENABLE

Size	Document Number	Rev
Custom	GV-N3080AORUSX W-10GD	1.0

Date: Wednesday, September 30, 2020

Sequence: 3V3 MONITOR

3V3PEX Monitor


Route the trace to PEX Golden Finger
3V3
R162
1k/X
1 %
0402
COMMON
3V3_SENSE
R163
27.4k/X
1 %
0402
COMMON
C358
1uF/X
6.3V
10%
X6S
0402
COMMON
GND
U12
RT9818E-27GB
TSOP_5
COMMON
2
INPUT
RST
1
3
GND
NC1
4
NC2
5
3V3_RST
SNN_3V3MON_NC1
SNN_3V3MON_NC2
VTH = 2.8V
SENSE<VTH RST:Floating
SENSE>VTH RST:0
5V
A
D2
1N4148WT
SOD523_AK
80V
0.25A
COMMON
K
PWR_PU
C363
4.7uF/X
6.3V
20%
X6S
0603
COMMON
GND
R196
2k/X
1 %
0402
COMMON
1G1D1S
D
Q7
3
G
1
S
2
LS3018NG-3T3R
SOT323_1G1D1S
COMMON
GND
PS_VMON_PGOOD
67,69,71,72
OUT
IN
GPIO1_GC6_FB_EN
26,64,69,71,72
1G1D1S
D
Q9
3
G
1
S
2
LS3018NG-3T3R
SOT323_1G1D1S
COMMON
GND

3V3 can be monitored by OVR-M with un-used Channel

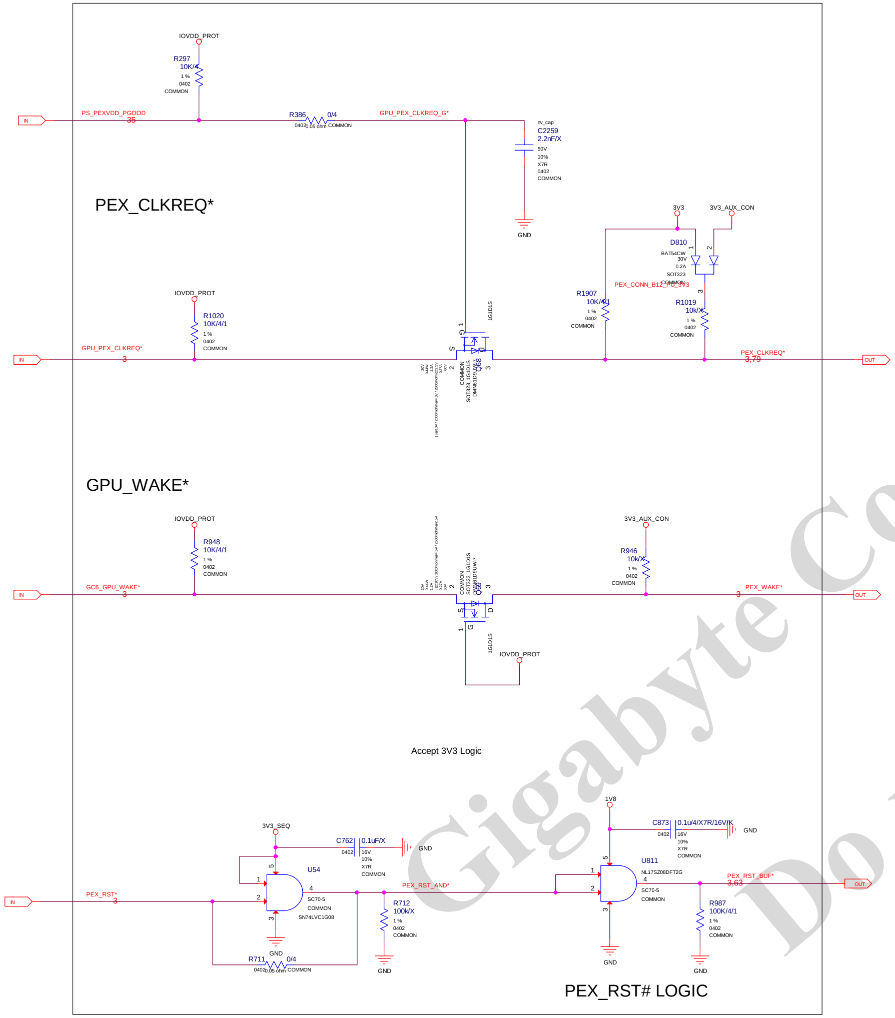
ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
Sequence: 3V3 MONITOR

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
Sequence: 3V3 MONITOR
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 73 of 79

SEQUENCE:MISC


PEX_CLKREQ*
IOVDD_PROT
R297
10K/4
1 %
0402
COMMON
IN
PS_PEXVDD_PGOOD
35
R386
0/4
0402
0.05 ohm
COMMON
GPU_PEX_CLKREQ_G*
nv_cap
C2259
2.2nF/X
50V
10%
X7R
0402
COMMON
GND
3V3
3V3_AUX_CON
D810
BAT54CW
30V
0.2A
SOT323
COMMON
PEX_CONN_B12_PU_3V3
R1907
10K/4/1
1 %
0402
COMMON
R1019
10k/X
1 %
0402
COMMON
IOVDD_PROT
R1020
10K/4/1
1 %
0402
COMMON
GPU_PEX_CLKREQ*
3
G
S
D
1G1D1S
Q68
DMN61D9UW-7
SOT323_1G1D1S
COMMON
PEX_CLKREQ*
3,79
OUT
GPU_WAKE*
IOVDD_PROT
R948
10K/4/1
1 %
0402
COMMON
IN
GC6_GPU_WAKE*
3
Q69
DMN61D9UW-7
SOT323_1G1D1S
COMMON
1G1D1S
IOVDD_PROT
3V3_AUX_CON
R946
10k/X
1 %
0402
COMMON
PEX_WAKE*
3
OUT
Accept 3V3 Logic
3V3_SEQ
C762
0.1uF/X
0402
16V
10%
X7R
COMMON
GND
U54
SC70-5
COMMON
SN74LVC1G08
IN
PEX_RST*
3
R711
0/4
0402
0.05 ohm
COMMON
GND
PEX_RST_AND*
R712
100k/X
1 %
0402
COMMON
GND
1V8
C873
0.1u/4/X7R/16V/K
0402
16V
10%
X7R
COMMON
GND
U811
NL17SZ08DFT2G
SC70-5
COMMON
GND
PEX_RST_BUF*
3,63
OUT
R987
100K/4/1
1 %
0402
COMMON
GND
PEX_RST# LOGIC

ASSEMBLY
PAGE DETAIL

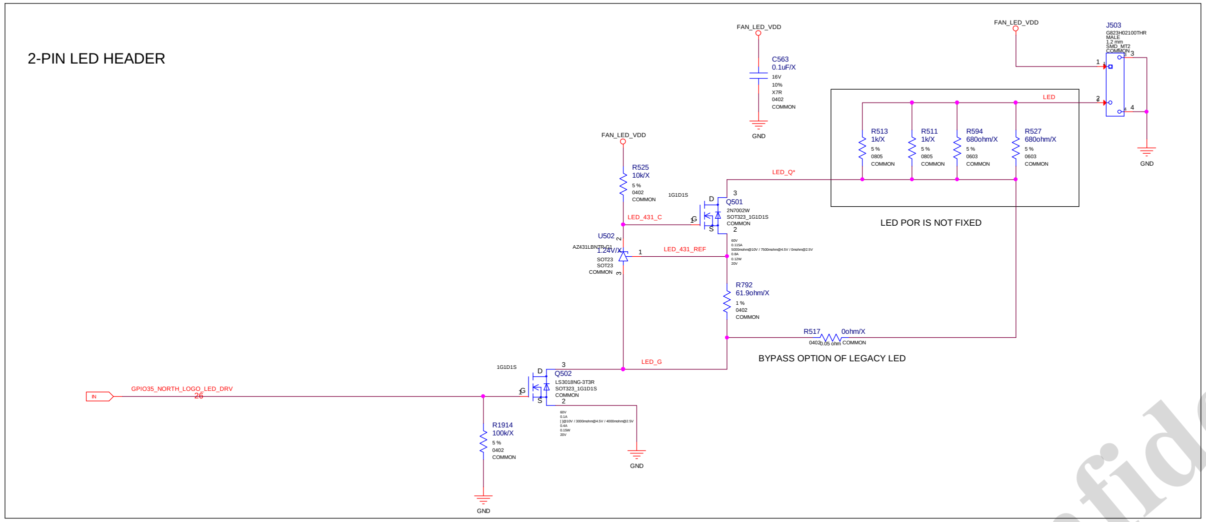
<ASSEMBLY_DESCRIPTION>
Sequence: MISC

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

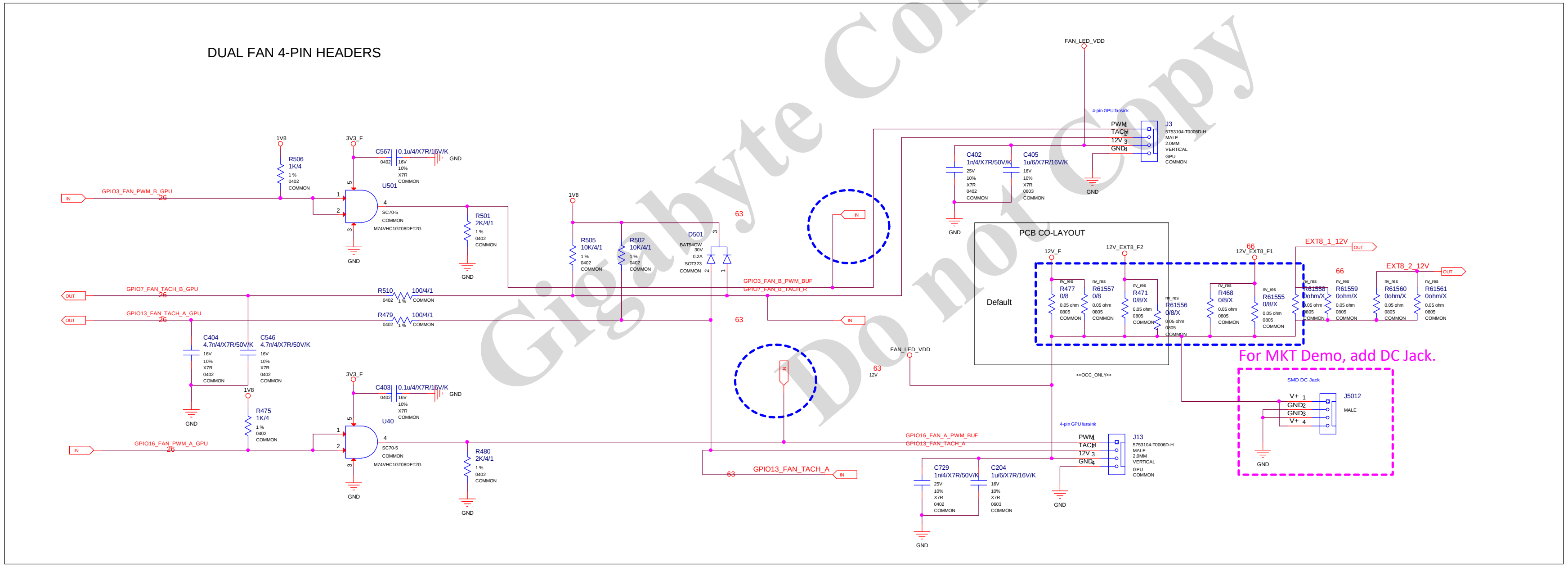
GIGABYTE
Title
SEQUENCE:MISC
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020
Sheet 74 of 79

MISC: LED & FAN

2-PIN LED HEADER


FAN_LED_VDD
C563
0.1uF/X
16V
10%
X7R
0402
COMMON
GND
FAN_LED_VDD
J503
G823M02100THR
MALE
1.2 mm
SMD_MT2
COMMON
LED
GND
R513
1k/X
R511
1k/X
R594
680ohm/X
R527
680ohm/X
5 %
0805
0603
COMMON
LED POR IS NOT FIXED
FAN_LED_VDD
R525
10k/X
5 %
0402
COMMON
1G1D1S
LED_Q*
Q501
2N7002W
SOT323_1G1D1S
COMMON
LED_431_C
U502
AZ431LBNTR-G1
1.24V/X
SOT23
SOT23
COMMON
LED_431_REF
60V
0.115A
5000mohm@10V / 7500mohm@4.5V / 0mohm@2.5V
0.8A
0.12W
20V
R792
61.9ohm/X
1 %
0402
COMMON
R517
0ohm/X
0402
0.05 ohm
COMMON
BYPASS OPTION OF LEGACY LED
LED_G
1G1D1S
Q502
LS3018NG-3T3R
SOT323_1G1D1S
COMMON
60V
0.1A
[ ]@10V / 3000mohm@4.5V / 4000mohm@2.5V
0.4A
0.15W
20V
GPIO35_NORTH_LOGO_LED_DRV
26
IN
R1914
100k/X
5 %
0402
COMMON
GND

DUAL FAN 4-PIN HEADERS


FAN_LED_VDD
4-pin GPU fansink
PWM
TACH
12V
GND
J3
5753104-T0006D-H
MALE
2.0MM
VERTICAL
GPU
COMMON
C402
1n/4/X7R/50V/K
25V
10%
X7R
0402
COMMON
C405
1u/6/X7R/16V/K
16V
10%
X7R
0603
COMMON
GND
1V8
3V3_F
C567
0.1u/4/X7R/16V/K
0402
16V
10%
X7R
COMMON
GND
R506
1K/4
1 %
0402
COMMON
U501
SC70-5
COMMON
M74VHC1G708DFT2G
GPIO3_FAN_PWM_B_GPU
26
IN
R501
2K/4/1
1 %
0402
COMMON
GND
1V8
R505
10K/4/1
R502
10K/4/1
D501
BAT54CW
30V
0.2A
SOT323
COMMON
63
IN
GPIO3_FAN_B_PWM_BUF
GPIO7_FAN_B_TACH_R
GPIO7_FAN_TACH_B_GPU
OUT
R510
100/4/1
0402
1 %
COMMON
GPIO13_FAN_TACH_A_GPU
R479
100/4/1
63
C404
4.7n/4/X7R/50V/K
C546
4.7n/4/X7R/50V/K
16V
10%
X7R
0402
COMMON
GND
1V8
R475
1K/4
3V3_F
C403
0.1u/4/X7R/16V/K
U40
SC70-5
COMMON
M74VHC1G708DFT2G
GPIO16_FAN_PWM_A_GPU
26
R480
2K/4/1
FAN_LED_VDD
63
12V
GPIO16_FAN_A_PWM_BUF
GPIO13_FAN_TACH_A
63
GPIO13_FAN_TACH_A
IN
C729
1n/4/X7R/50V/K
C204
1u/6/X7R/16V/K
4-pin GPU fansink
J13
5753104-T0006D-H
MALE
2.0MM
VERTICAL
GPU
COMMON
PCB CO-LAYOUT
Default
12V_F
12V_EXT8_F2
66
12V_EXT8_F1
EXT8_1_12V
OUT
66
EXT8_2_12V
OUT
nv_res
R477
0/8
R61557
0/8
R471
0/8/X
R61556
0/8/X
R468
0/8/X
R61555
0/8/X
R61558
0ohm/X
R61559
0ohm/X
R61560
0ohm/X
R61561
0ohm/X
0.05 ohm
0805
COMMON
<<OCC_ONLY>>
For MKT Demo, add DC Jack.
SMD DC Jack
V+ 1
GND 2
GND 3
V+ 4
J5012
MALE
GND

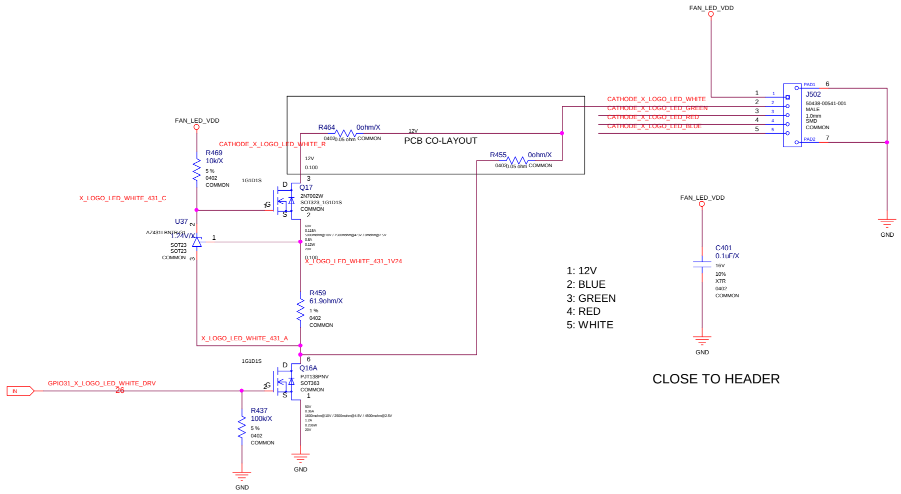
ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
MISC: LED & FAN

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
MISC: LED & FAN
Size Custom
Document Number
GV-N3080AORUSX W-10GD
Rev
1.0
Date: Wednesday, September 30, 2020
Sheet 75 of 79

MISC: RGBW LED REF

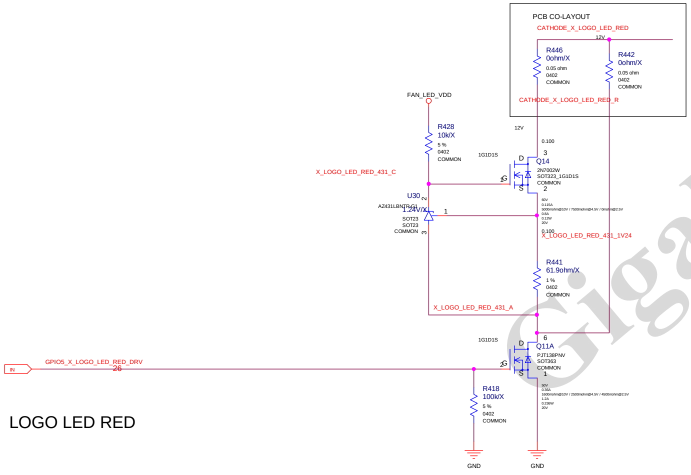

FAN_LED_VDD
CATHODE_X_LOGO_LED_WHITE
CATHODE_X_LOGO_LED_GREEN
CATHODE_X_LOGO_LED_RED
CATHODE_X_LOGO_LED_BLUE
J502
50438-00541-001
MALE
1.0mm
SMD
COMMON
PAD1
PAD2
GND
R464 0ohm/X
R455 0ohm/X
12V
PCB CO-LAYOUT
CATHODE_X_LOGO_LED_WHITE_R
R469 10k/X
X_LOGO_LED_WHITE_431_C
Q17
2N7002W
SOT323_1G1D1S
U37
AZ431LBNTR-G1
1.24V/X
X_LOGO_LED_WHITE_431_1V24
R459 61.9ohm/X
X_LOGO_LED_WHITE_431_A
Q16A
PJT138PNV
SOT363
GPIO31_X_LOGO_LED_WHITE_DRV
IN
26
R437 100k/X
C401 0.1uF/X
16V
10%
X7R
0402
COMMON

WHITE DRIVE

CLOSE TO HEADER

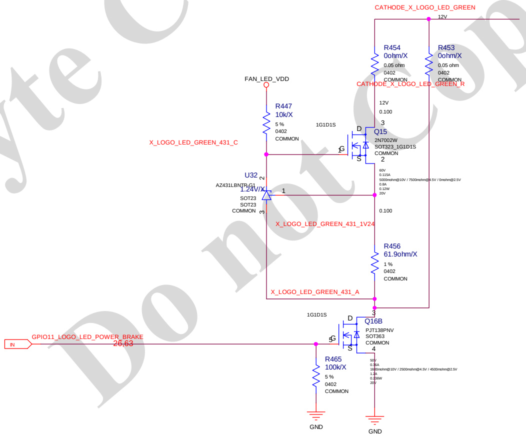
1: 12V
2: BLUE
3: GREEN
4: RED
5: WHITE

CONNECTOR SIZE TO FIT LAYOUT
ALL CIRCUIT NO STUFF BY DEFAULT
ALINGN WITH PASH
IF ADDTIONAL POWER CONSUPTION R
NEEDED, IT SHOULD BE ON LED MOD.

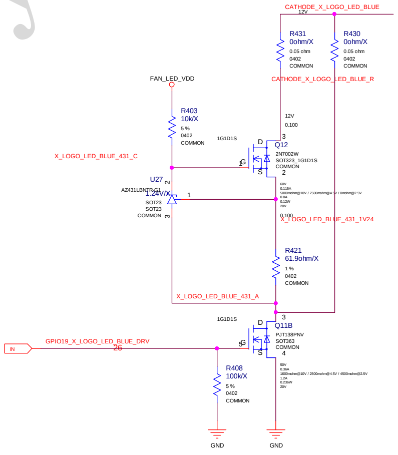

PCB CO-LAYOUT
CATHODE_X_LOGO_LED_RED
12V
R446 0ohm/X
R442 0ohm/X
CATHODE_X_LOGO_LED_RED_R
FAN_LED_VDD
R428 10k/X
X_LOGO_LED_RED_431_C
Q14
2N7002W
SOT323_1G1D1S
U30
AZ431LBNTR-G1
1.24V/X
X_LOGO_LED_RED_431_1V24
R441 61.9ohm/X
X_LOGO_LED_RED_431_A
Q11A
PJT138PNV
SOT363
GPIO5_X_LOGO_LED_RED_DRV
IN
26
R418 100k/X
GND

LOGO LED RED

RED DRIVE


CATHODE_X_LOGO_LED_GREEN
12V
R454 0ohm/X
R453 0ohm/X
CATHODE_X_LOGO_LED_GREEN_R
FAN_LED_VDD
R447 10k/X
X_LOGO_LED_GREEN_431_C
Q15
2N7002W
SOT323_1G1D1S
U32
AZ431LBNTR-G1
1.24V/X
X_LOGO_LED_GREEN_431_1V24
R456 61.9ohm/X
X_LOGO_LED_GREEN_431_A
Q16B
PJT138PNV
SOT363
GPIO11_LOGO_LED_POWER_BRAKE
IN
26,63
R465 100k/X
GND

GREEN DRIVE


CATHODE_X_LOGO_LED_BLUE
12V
R431 0ohm/X
R430 0ohm/X
CATHODE_X_LOGO_LED_BLUE_R
FAN_LED_VDD
R403 10k/X
X_LOGO_LED_BLUE_431_C
Q12
2N7002W
SOT323_1G1D1S
U27
AZ431LBNTR-G1
1.24V/X
X_LOGO_LED_BLUE_431_1V24
R421 61.9ohm/X
X_LOGO_LED_BLUE_431_A
Q11B
PJT138PNV
SOT363
GPIO19_X_LOGO_LED_BLUE_DRV
IN
26
R408 100k/X
GND

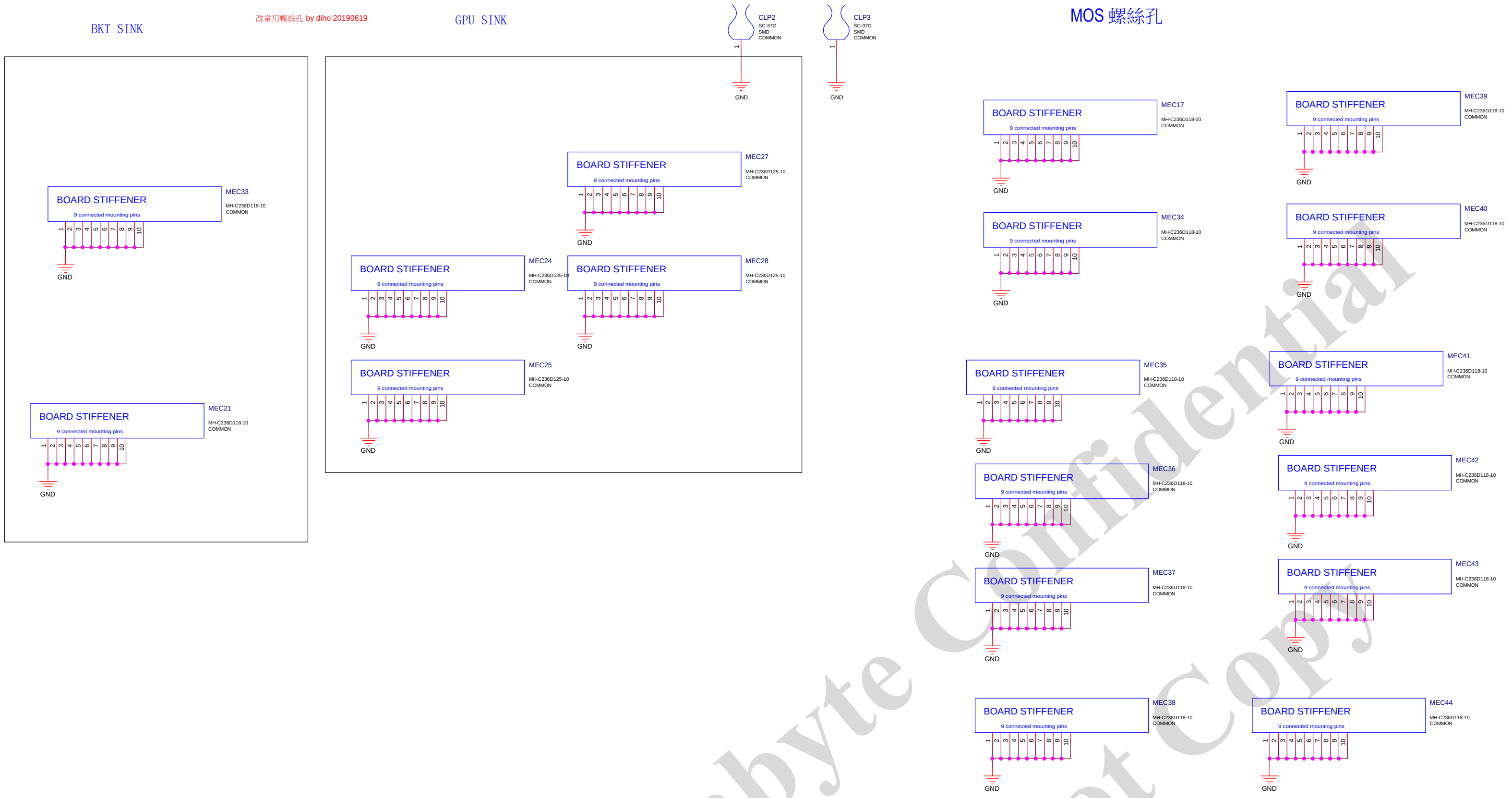
BLUE DRIVE

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL RGBW LED REF

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
MISC: RGBW LED REF
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

Mechanical: Mounting holes


BKT SINK
改常用螺絲孔 by diho 20190619
GPU SINK
CLP2
SC-37G
SMD
COMMON
CLP3
SC-37G
SMD
COMMON
MOS 螺絲孔
BOARD STIFFENER
9 connected mounting pins
1 2 3 4 5 6 7 8 9 10
GND
MEC33
MH-C236D118-10
COMMON
MEC21
MH-C236D118-10
COMMON
MEC27
MH-C236D125-10
COMMON
MEC24
MH-C236D125-10
COMMON
MEC28
MH-C236D125-10
COMMON
MEC25
MH-C236D125-10
COMMON
MEC17
MH-C236D118-10
COMMON
MEC34
MH-C236D118-10
COMMON
MEC35
MH-C236D118-10
COMMON
MEC36
MH-C236D118-10
COMMON
MEC37
MH-C236D118-10
COMMON
MEC38
MH-C236D118-10
COMMON
MEC39
MH-C236D118-10
COMMON
MEC40
MH-C236D118-10
COMMON
MEC41
MH-C236D118-10
COMMON
MEC42
MH-C236D118-10
COMMON
MEC43
MH-C236D118-10
COMMON
MEC44
MH-C236D118-10
COMMON

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR ENSURING STANDARDS.

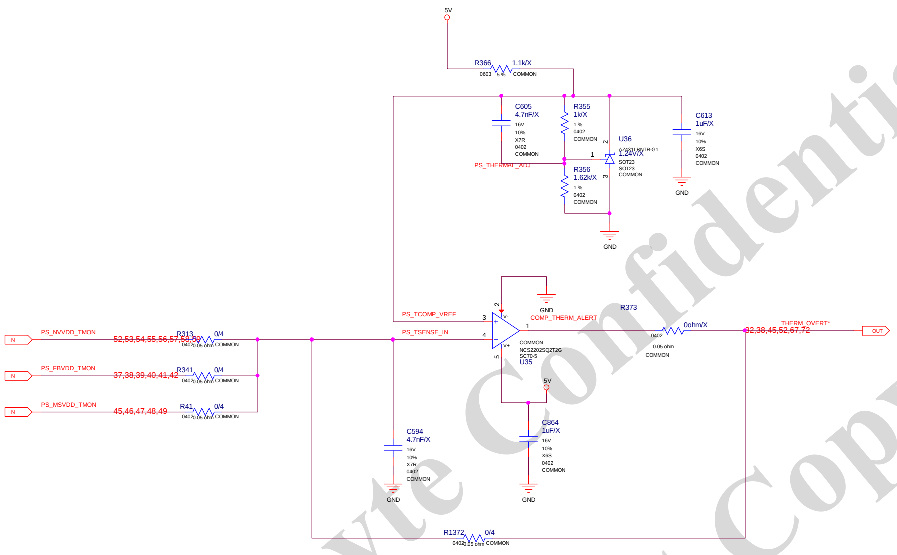
GIGABYTE

Title
Mechanical: Mounting holes

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020
Sheet 77 of 79

VR THERMAL PROTECTION

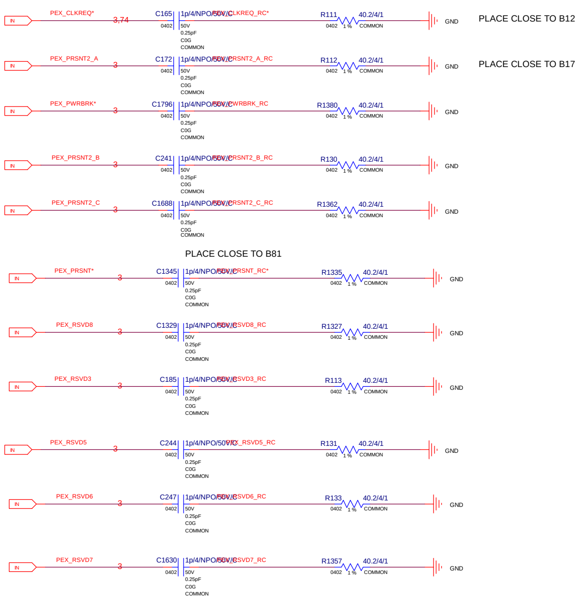

5V
R366
1.1k/X
0603
5 %
COMMON
C605
4.7nF/X
16V
10%
X7R
0402
COMMON
R355
1k/X
1 %
0402
COMMON
U36
AZ431LBNTR-G1
1.24V/X
SOT23
SOT23
COMMON
R356
1.62k/X
1 %
0402
COMMON
C613
1uF/X
16V
10%
X6S
0402
COMMON
GND
PS_THERMAL_ADJ
PS_TCOMP_VREF
PS_TSENSE_IN
COMP_THERM_ALERT
V-
V+
U35
NCS2202SQ2T2G
SC70-5
COMMON
R373
0ohm/X
0402
0.05 ohm
COMMON
THERM_OVERT*
32,38,45,52,67,72
OUT
IN
PS_NVVDD_TMON
52,53,54,55,56,57,58,59
R313
0/4
0402
0.05 ohm
COMMON
IN
PS_FBVDD_TMON
37,38,39,40,41,42
R341
0/4
0402
0.05 ohm
COMMON
IN
PS_MSVDD_TMON
45,46,47,48,49
R41
0/4
0402
0.05 ohm
COMMON
C594
4.7nF/X
16V
10%
X7R
0402
COMMON
C864
1uF/X
16V
10%
X6S
0402
COMMON
R1372
0/4
0402
0.05 ohm
COMMON

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL VR Thermal Protection

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE
Title
VR THERMAL PROTECTION
Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0
Date: Wednesday, September 30, 2020

PCI TERM


IN
PEX_CLKREQ*
3,74
C165
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_CLKREQ_RC*
R111
0402
1 %
40.2/4/1
COMMON
GND
PLACE CLOSE TO B12
IN
PEX_PRSNT2_A
3
C172
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_PRSNT2_A_RC
R112
0402
1 %
40.2/4/1
COMMON
GND
PLACE CLOSE TO B17
IN
PEX_PWRBRK*
3
C1796
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_PWRBRK_RC
R1380
0402
1 %
40.2/4/1
COMMON
GND
IN
PEX_PRSNT2_B
3
C241
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_PRSNT2_B_RC
R130
0402
1 %
40.2/4/1
COMMON
GND
IN
PEX_PRSNT2_C
3
C1688
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_PRSNT2_C_RC
R1362
0402
1 %
40.2/4/1
COMMON
GND
PLACE CLOSE TO B81
IN
PEX_PRSNT*
3
C1345
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_PRSNT_RC*
R1335
0402
1 %
40.2/4/1
COMMON
GND
IN
PEX_RSVD8
3
C1329
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_RSVD8_RC
R1327
0402
1 %
40.2/4/1
COMMON
GND
IN
PEX_RSVD3
3
C185
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_RSVD3_RC
R113
0402
1 %
40.2/4/1
COMMON
GND
IN
PEX_RSVD5
3
C244
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_RSVD5_RC
R131
0402
1 %
40.2/4/1
COMMON
GND
IN
PEX_RSVD6
3
C247
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_RSVD6_RC
R133
0402
1 %
40.2/4/1
COMMON
GND
IN
PEX_RSVD7
3
C1630
0402
1p/4/NPO/50V/C
50V
0.25pF
C0G
COMMON
PEX_RSVD7_RC
R1357
0402
1 %
40.2/4/1
COMMON
GND

ASSEMBLY <ASSEMBLY_DESCRIPTION>
PAGE DETAIL PCIE TERM

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

GIGABYTE

Title
PCI TERM

Size Custom
Document Number GV-N3080AORUSX W-10GD
Rev 1.0

Date: Wednesday, September 30, 2020
Sheet 79 of 79