

PG142-B00


DP + DP + DP + HDMI/DP

TABLE OF CONTENTS

Page	Description
1	Table of Contents
2	Block Diagram
3	PCI Express
4	PCIe GEN4 RC TERMINATIONS
5	MEMORY: GPU_FB_AB
6	MEMORY: FBA[31:0]
7	MEMORY: FBA[63:32]
8	MEMORY: FBB[31:0]
9	MEMORY: FBB[63:32]
10	MEMORY: GPU_FB_CD
11	MEMORY: FBC[31:0]
12	MEMORY: FBC[63:32]
13	MEMORY: FBD[31:0]
14	MEMORY: FBD[63:32]
15	GPU PWR & GND 1
16	GPU PWR & GND 2
17	GPU PWR & GND 3 (XVDD)
18	GPU DECOUPLING FBVDDQ
19	GPU DECOUPLING NVVDD
20	GPU DECOUPLING NVVDD
21	IO: IFPAB NC
22	IO: IFPF DP
23	IO: IFPE DP
24	IO: IFPD DP
25	IO: IFPC HDMI/DP

Page	Description
26	MISC1: ROM, XTAL, STRAPS
27	MISC2: JTAG, GPIO, ADC, I2C, FL, STEERO
28	MISC3: RGB
29	PS: 1V8
30	PS: 5V
31	PS: PEXVDD
32	PS: FBVDDQ
33	PS: FBVDDQ PH2
34	PS: NVVDD Controller
35	BLANK PAGE
36	PS: NVVDD PH4, PH6
37	PS: NVVDD PH1, PH3
38	PS: NVVDD PH2, PH5
39	PS: NVVDD PH9
40	PS: NVVDD PH7
41	PS: NVVDD PH10, PH8
42	PS: OVRS_INPUT POWER BALANCE
43	PS: RDT3_12V & 3V3_A Switcher
44	PS: INPUTS, FILTERING and MONITORING
45	PS: PEX_12V, PEX_3V3 AND A3V3_AUX
46	PS: STEERING, UPB, HOT UNPLUG
47	SEQ: 5V, 1V8, 3V3_SEQ
48	SEQ: NVVDD, PEX, FBVDDQ ENABLE
49	SEQ: MISC
50	SEQ: VOLTAGE MONITOR

Page	Description
51	FAN & LED
52	PS:OVRM_PWR_SENSE
53	MECH
54	PTC




MICRO-STAR INT'L CO.,LTD

MS-V390

Size: Custom | Document Description: 0001_Table of Contents | Rev: 2.0

Date: Friday, July 31, 2020 | Sheet: 1 of 54



NVIDIA CORPORATION

2701 SAN TOMAS
EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN: 600-1G142-BASE-100

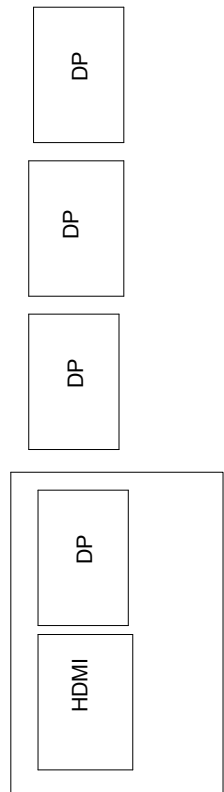
PCB REV: PG142-B00

BCM REV: A

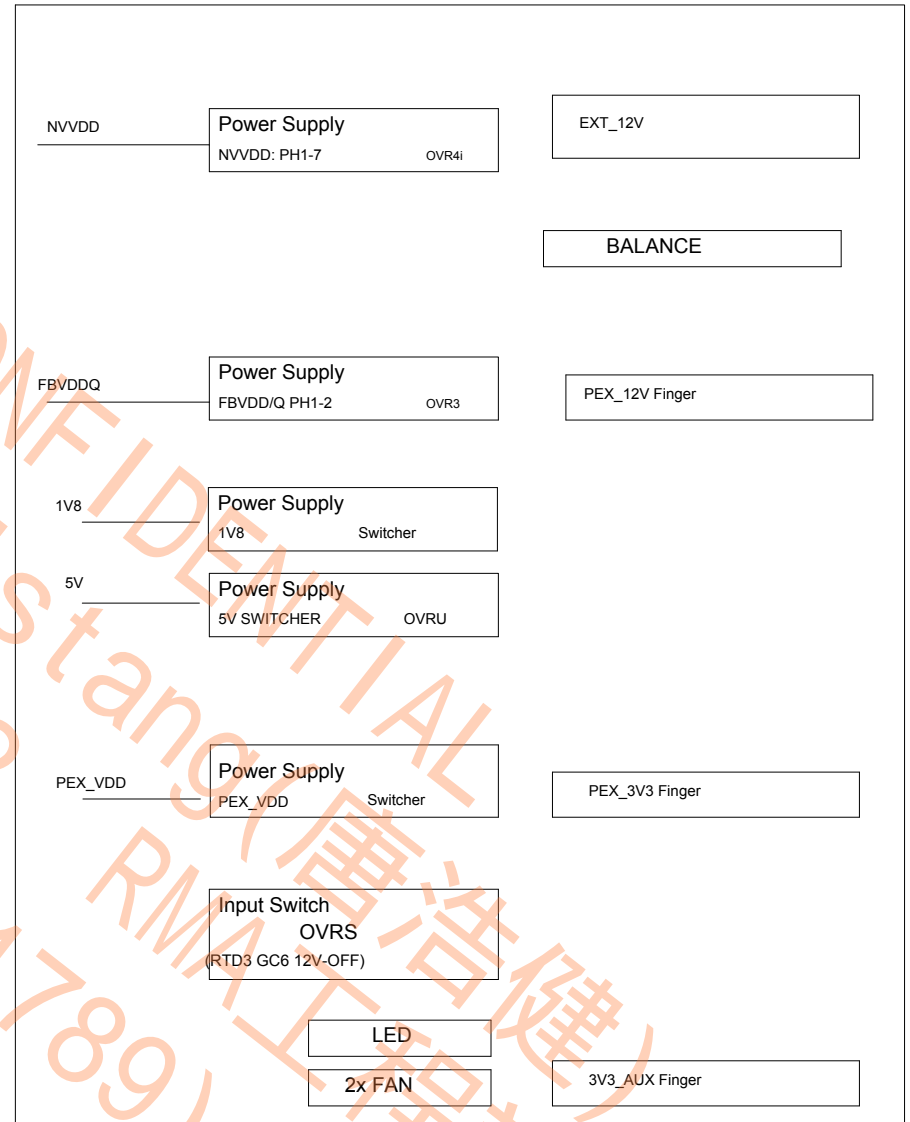
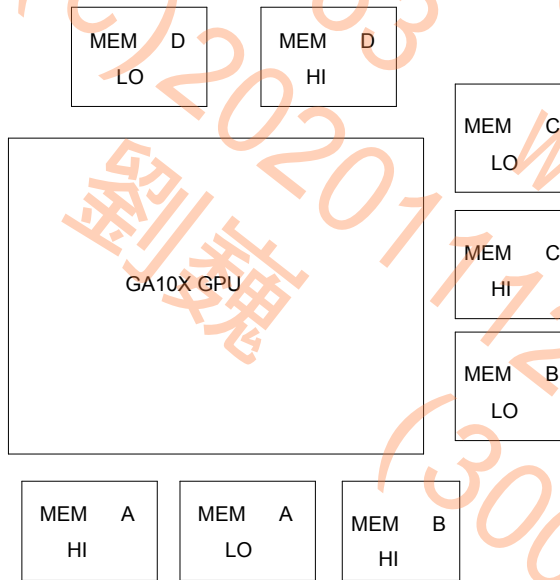
PAGE: 1 OF 54

DATE: 27-JUN-2020

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 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.



POWER SUPPLY



MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Document Description	Rev	
Custom	0002_Block Diagram	2.0	
Date: Friday, July 31, 2020	Sheet	2	of 55

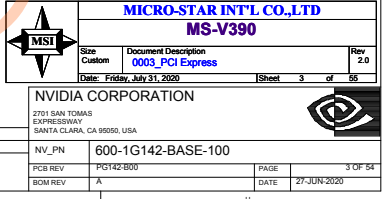
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS". THE MATERIALS CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS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

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	Block Diagram

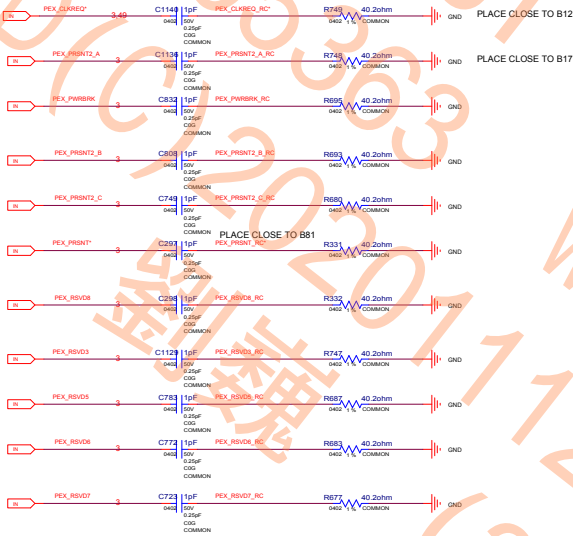
NVIDIA CORPORATION


2701 SAN TOMAS
EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN	600-1G142-BASE-100	PAGE	2 OF 54
PCB REV	PG142-B00	DATE	27-JUN-2020
BCM REV	A		



ASSEMBLY	<ASSEMBLY DESCRIPTION>
PAGE DETAIL	PCI






MICRO-STAR INT'L CO.,LTD

MS-V390

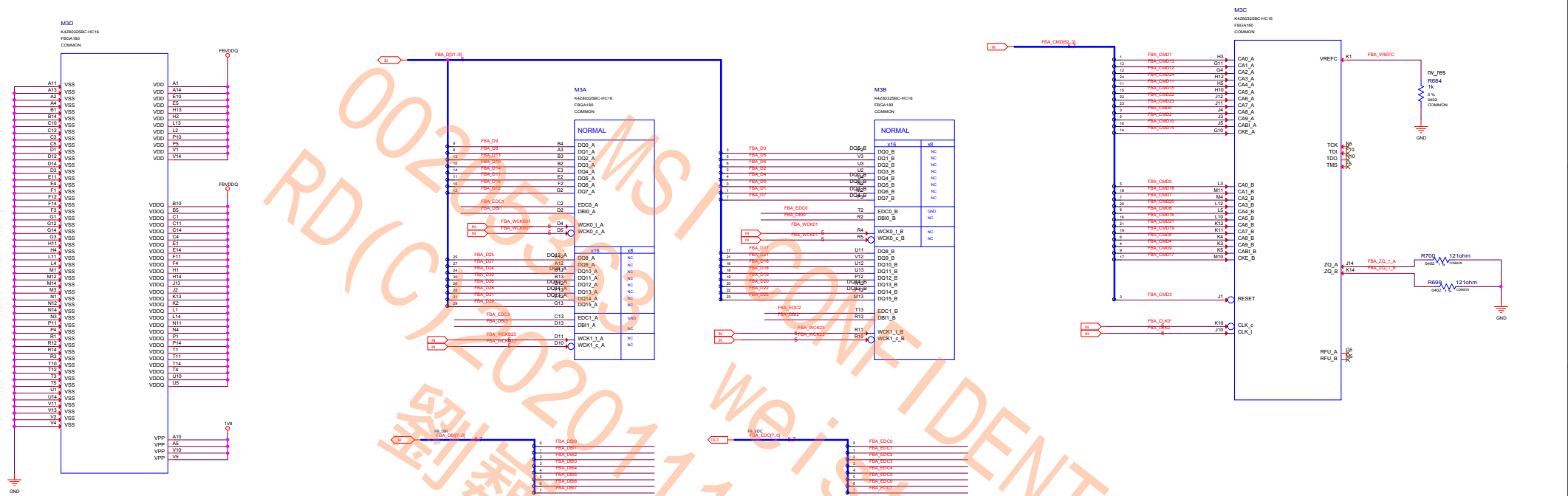
Size	Custom	Document Description	0004_PCIE GEN4 RC TERMINATIONS	Rev	2.0
Date:	Friday, July 31, 2020	Sheet		4	of 55

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

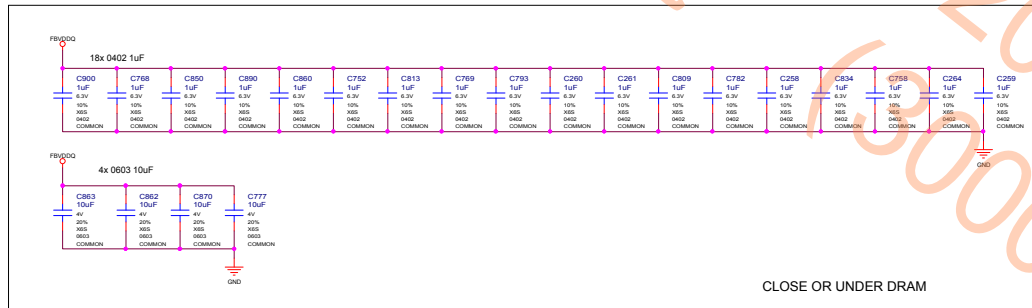


NV_PN	600-1G142-BASE-100		
PCB REV	PG142-B00	PAGE	4 OF 54
BOM REV	A	DATE	27-JUN-2020

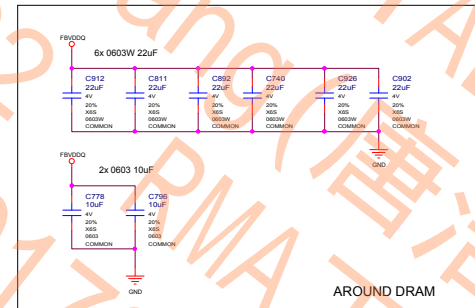
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS". THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS, 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.



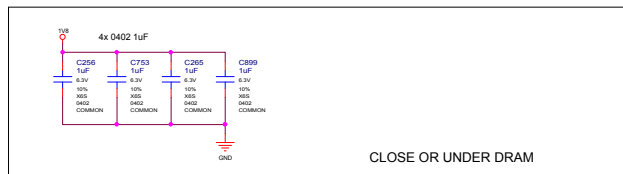
decap via : at least 2 gnd vias and 2 power vias for each cap



CLOSE OR UNDER DRAM




AROUND DRAM

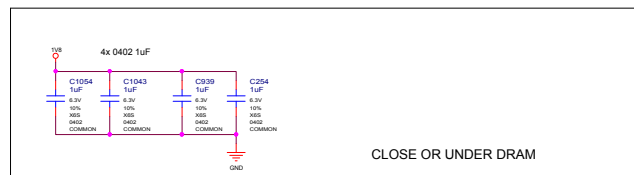
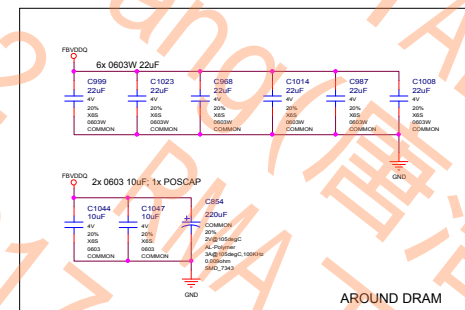
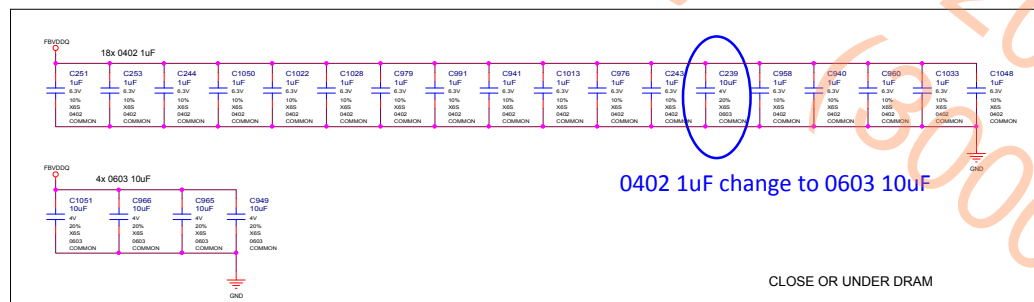
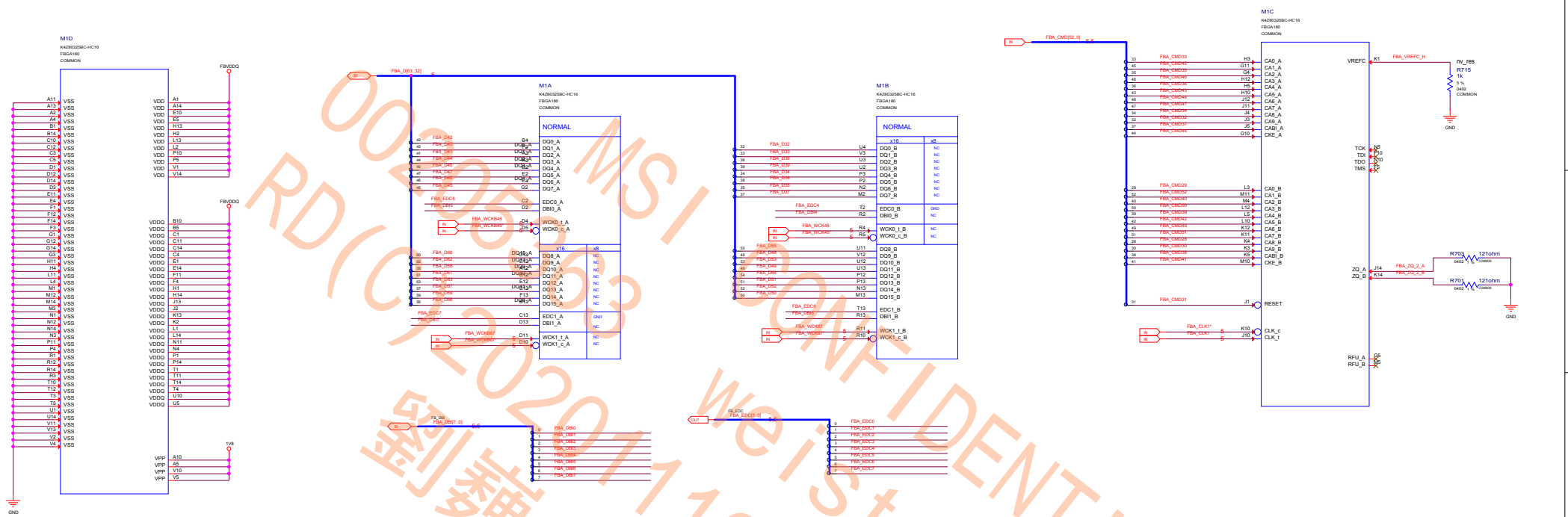


CLOSE OR UNDER DRAM

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



MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Custom	Document Description	Rev
		0006_MEMORY_FBA[31_0]	2.0
Date:	Friday, July 31, 2020		Sheet 6 of 55
NVIDIA CORPORATION			
2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA			
			
NV_PN	600-1G142-BASE-100		
PCB REV	PG142-B00	PAGE	6 OF 54
ICOM REV	A	DATE	27-JUN-2020

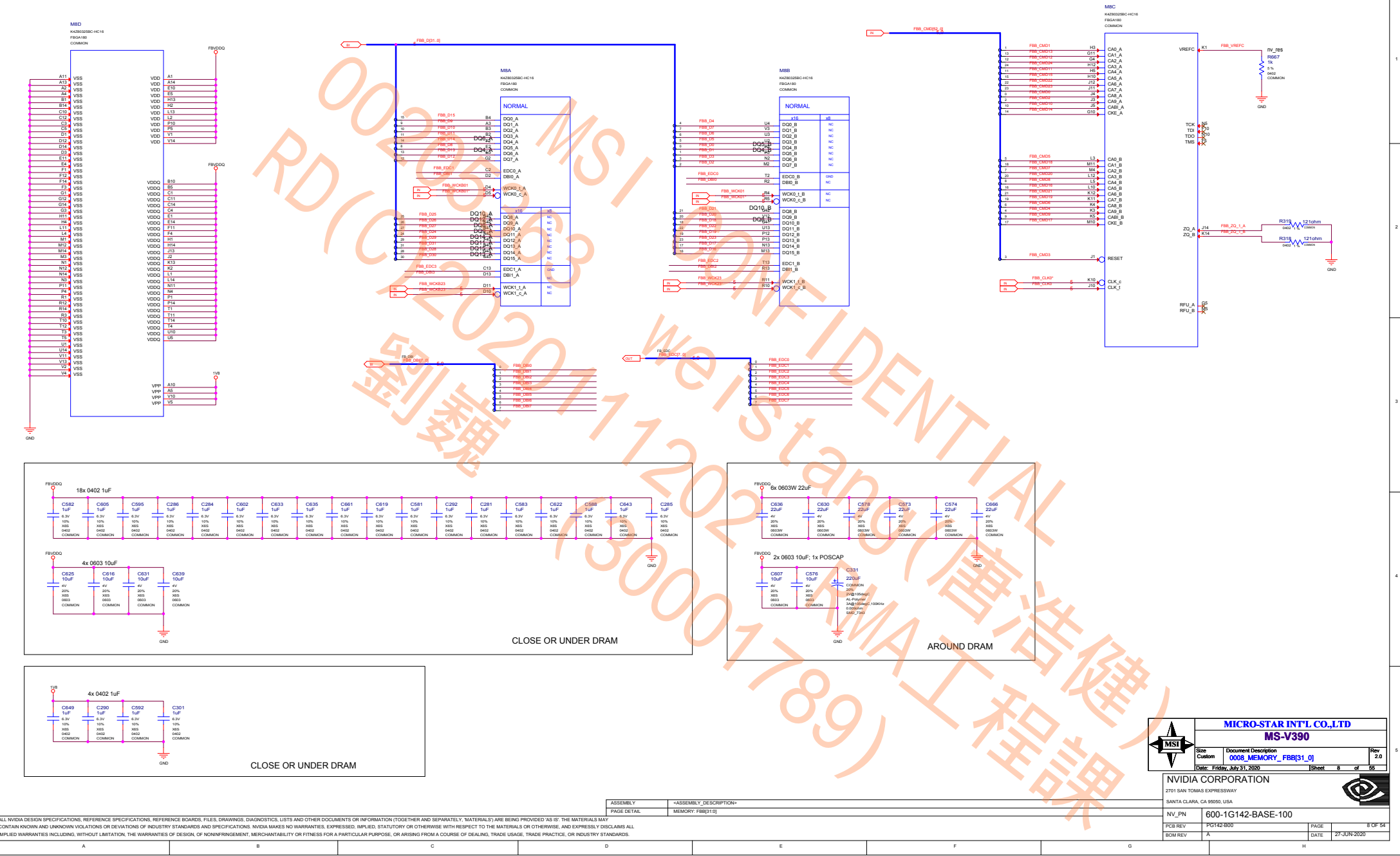
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS". THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. 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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.



ASSEMBLY	<ASSEMBLY_DESCRIPTION
PAGE DETAIL	MEMORY: FBA[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 KNOW OR 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.

	MICRO-STAR INT'L CO.,LTD MS-V390			
	Size	Description	Rev	
		0007_MEMORY_FBA(8_32)	2.0	
	Date: Friday, July 31, 2009	Sheet	7	of 55
NIVIDIA CORPORATION 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA				
				
NV_PN PGB REV ROM REV	600-1G142-BASE-100 PGT42-B00 A			
	DATE	PAGE		
		21/ JUN/2009 7 OF 54		



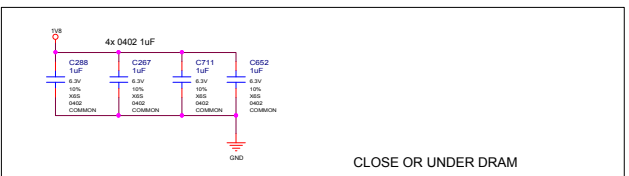
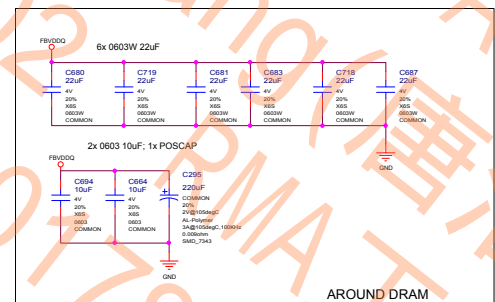
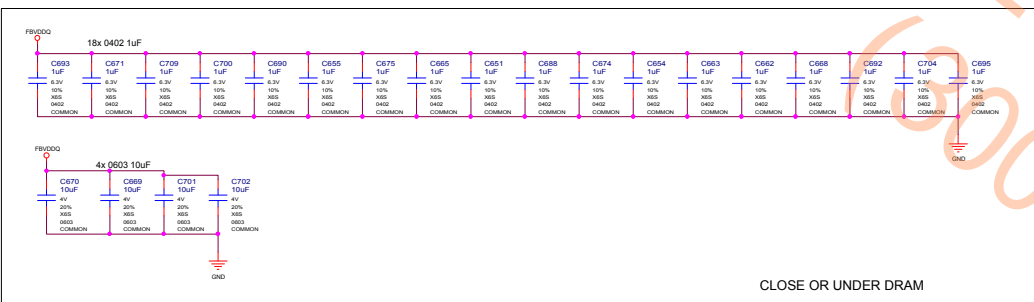
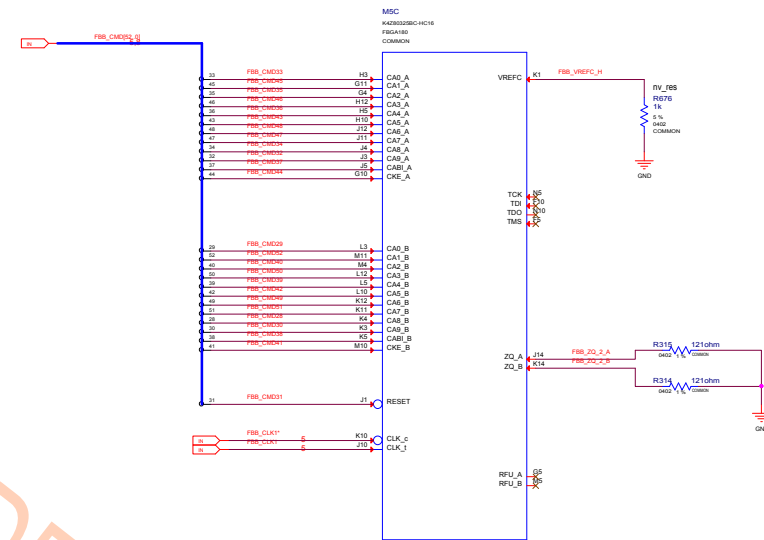
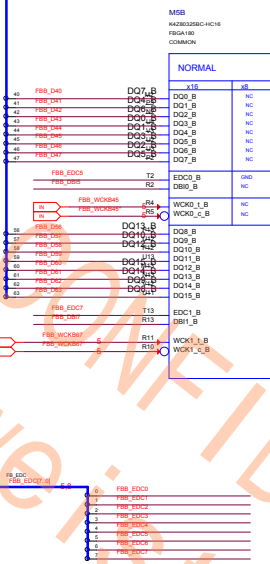
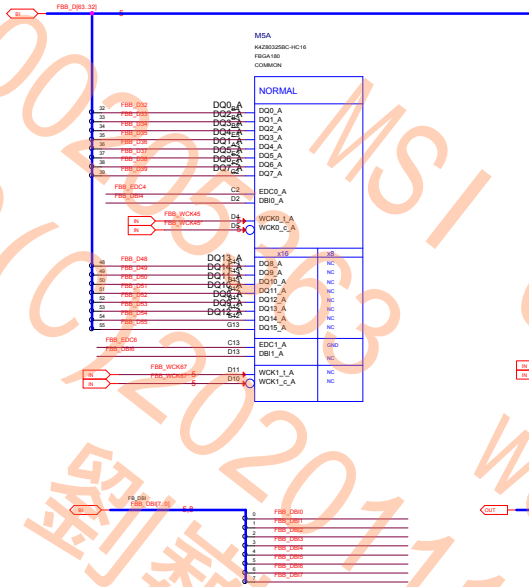
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS". THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. 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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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



MICRO-STAR INT'L CO., LTD			
MS-V390			
Size	Document Description	Rev	
Custom	0008_MEMORY_FBB[31_0]	2.0	
Date: Friday, July 31, 2020		Sheet	8 of 55

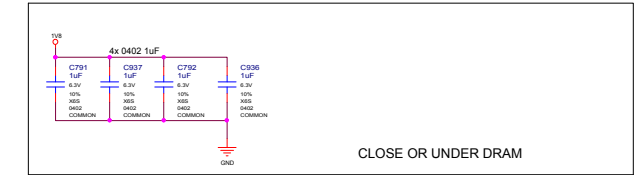
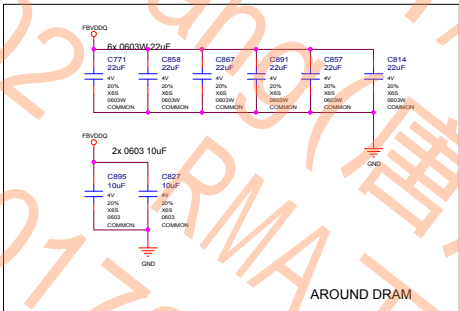
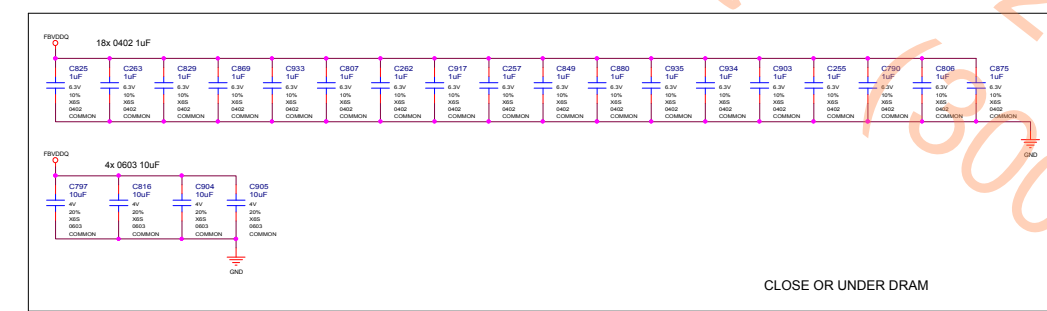
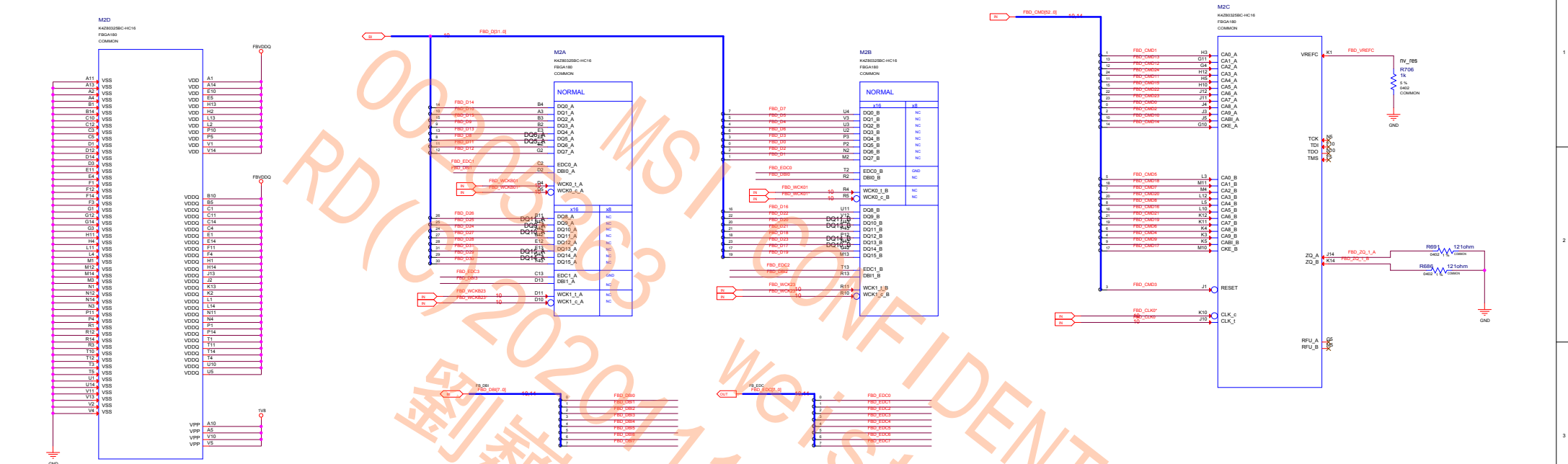
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

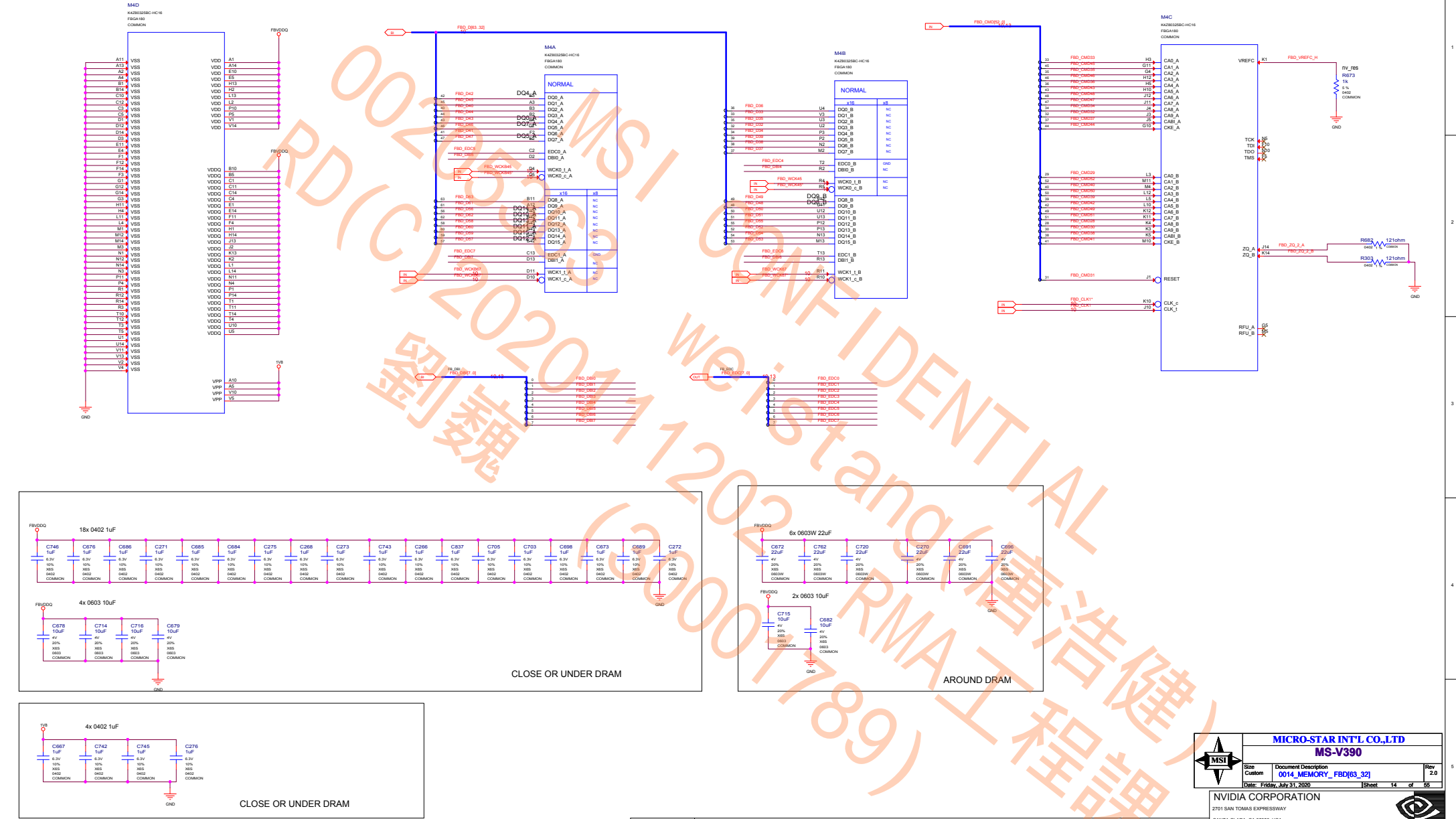
NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
ICOM REV	A
PAGE	8 OF 54
DATE	27-JUN-2020



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

	MICRO-STAR INT'L CO.,LTD MS-V390			
	Size Code	Document Description 0009_MEMORY_FBB[3_32]		Rev 2.0
	Date: Friday, July 31, 2020	[Sheet	9	of 20
NVIDIA CORPORATION 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA				
				
600-1G142-BASE-100				
NV_PN PCB REV	PG142-800		PAGE	9 OF 54





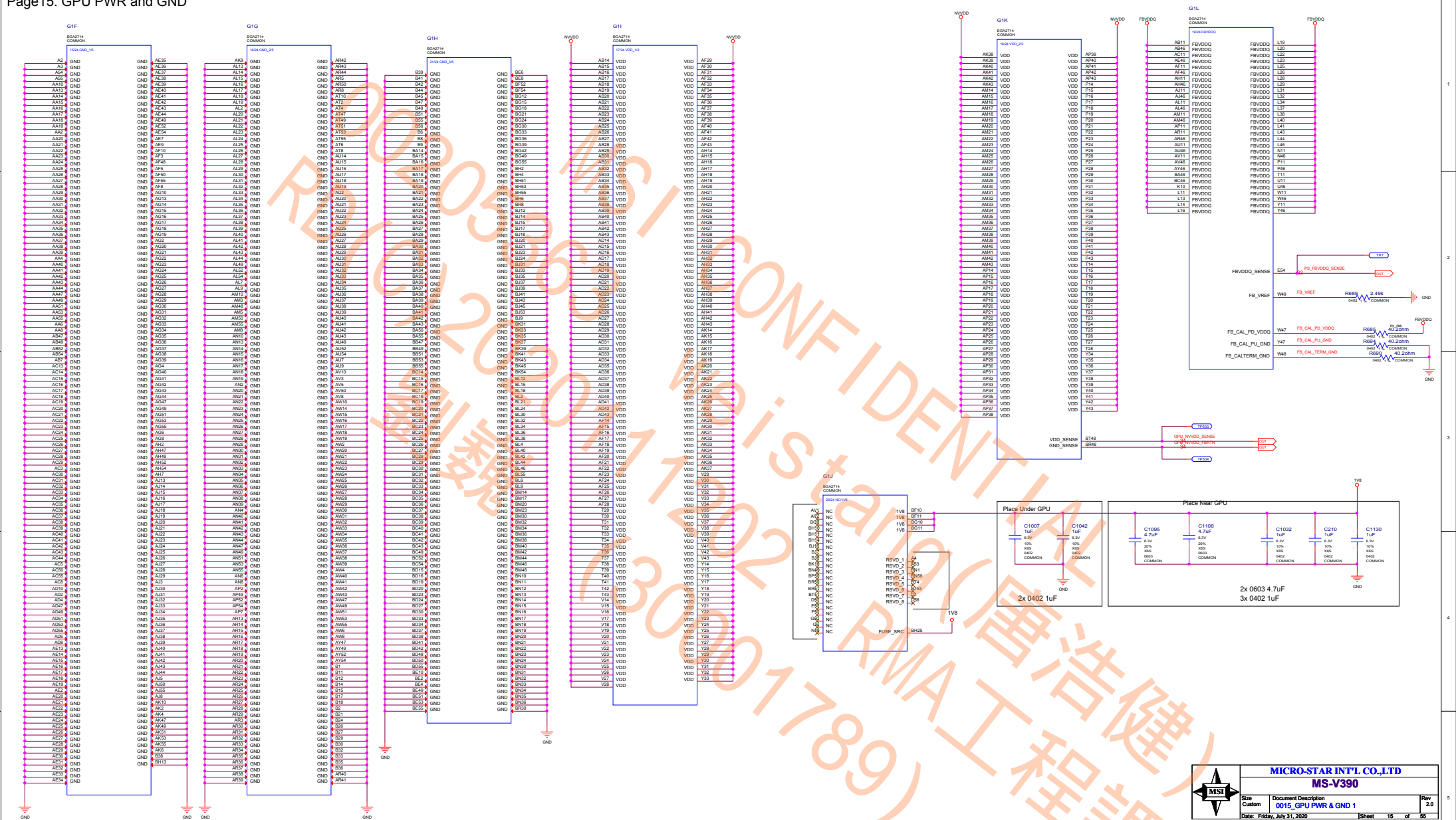
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS". THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. 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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	MEMORY: FBD(63..32)

MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Custom	Document Description	0014_MEMORY_FBD(63..32)
Date:	Friday, July 31, 2020	Sheet	14 of 55

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
DATE	27 JUN 2020



ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGRAMS, 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 WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
GPU PWR & GND

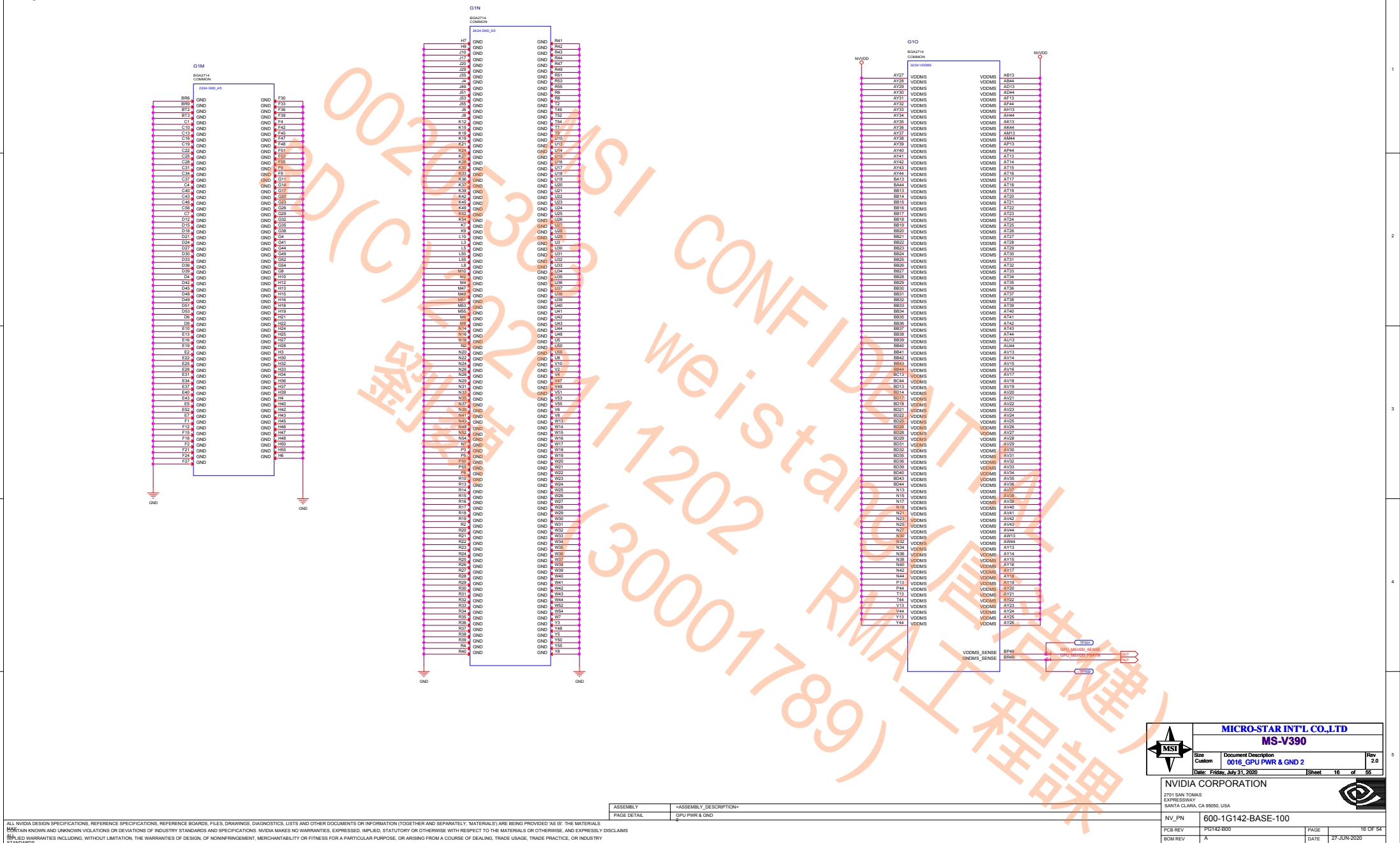
MICRO-STAR INT'L CO., LTD.
MS-V390


Size: Custom
Document Description: 0015: GPU PWR & GND 1
Date: Friday, July 31, 2020
Sheet: 15 of 55

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

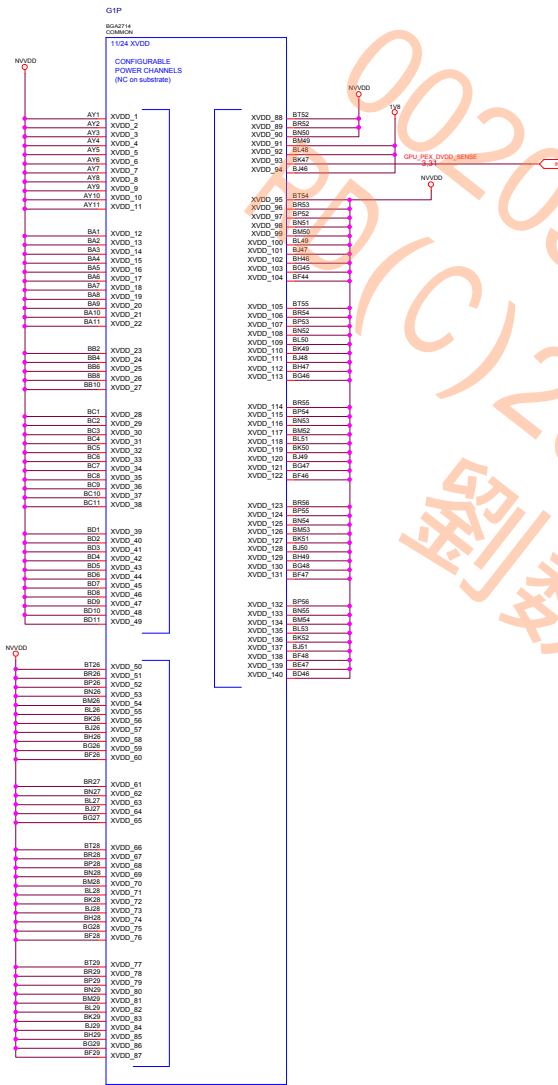
PCB_PN: 600-1G142-BASE-100
NVR REV: PG142-800
ICOM REV: A

DATE: 27-JUN-2020




MICRO-STAR INT'L CO.,LTD	
MS-V390	
Size	Document Description
Custom	0016_GPU_PWR & GND 2
Date: Friday, July 31, 2020	Rev 2.0
Sheet 18 of 55	
NVIDIA CORPORATION	
2701 SAN TOMAS EXPRESSWAY	
SANTA CLARA, CA 95050, USA	
	
NV_PN	600-1G142-BASE-100
PCB REV	PG142-800
ICOM REV	A
PAGE	18 OF 54
DATE	27-JUN-2020

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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 WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.



MSI CONFIDENTIAL
weistang (唐浩健)
RMA 工程課
(30001789)



MICRO-STAR INT'L CO.,LTD
MS-V390


Size: Custom

Document Description: 0017_GPU PWR & GND 3 (XVDD)

Rev: 2.0

Date: Friday, July 31, 2020

Sheet 17 of 55



NVIDIA CORPORATION
2705 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN: 600-1G142-BASE-100

PCB REV: A

PG142-B00

DATE: 27-JUN-2020

PAGE: 17 OF 54

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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.

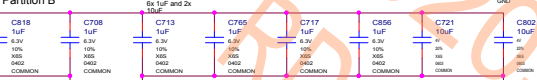
FBVDDQ

UNDER GPU: 24x 0402 1uF; 8x 0603 10uF

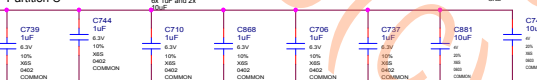
Partition A



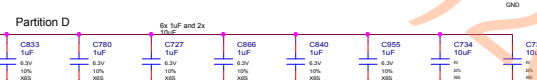
Partition B



Partition C



Partition D



UNDER GPU

FBVDDQ

5x 0603 10uF; 9X 0603 22uF




9x 22uF



CLOSE TO GPU

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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 AND EXPRESSLY DISCLAIMS ALL 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.



MICRO-STAR INT'L CO.,LTD

MS-V390


Size: Custom

Document Description: 0018_GPU DECOUPLING FBVDDQ

Rev: 2.0

Date: Friday, July 31, 2020

Sheet: 18 of 55



NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN 600-1G142-BASE-100

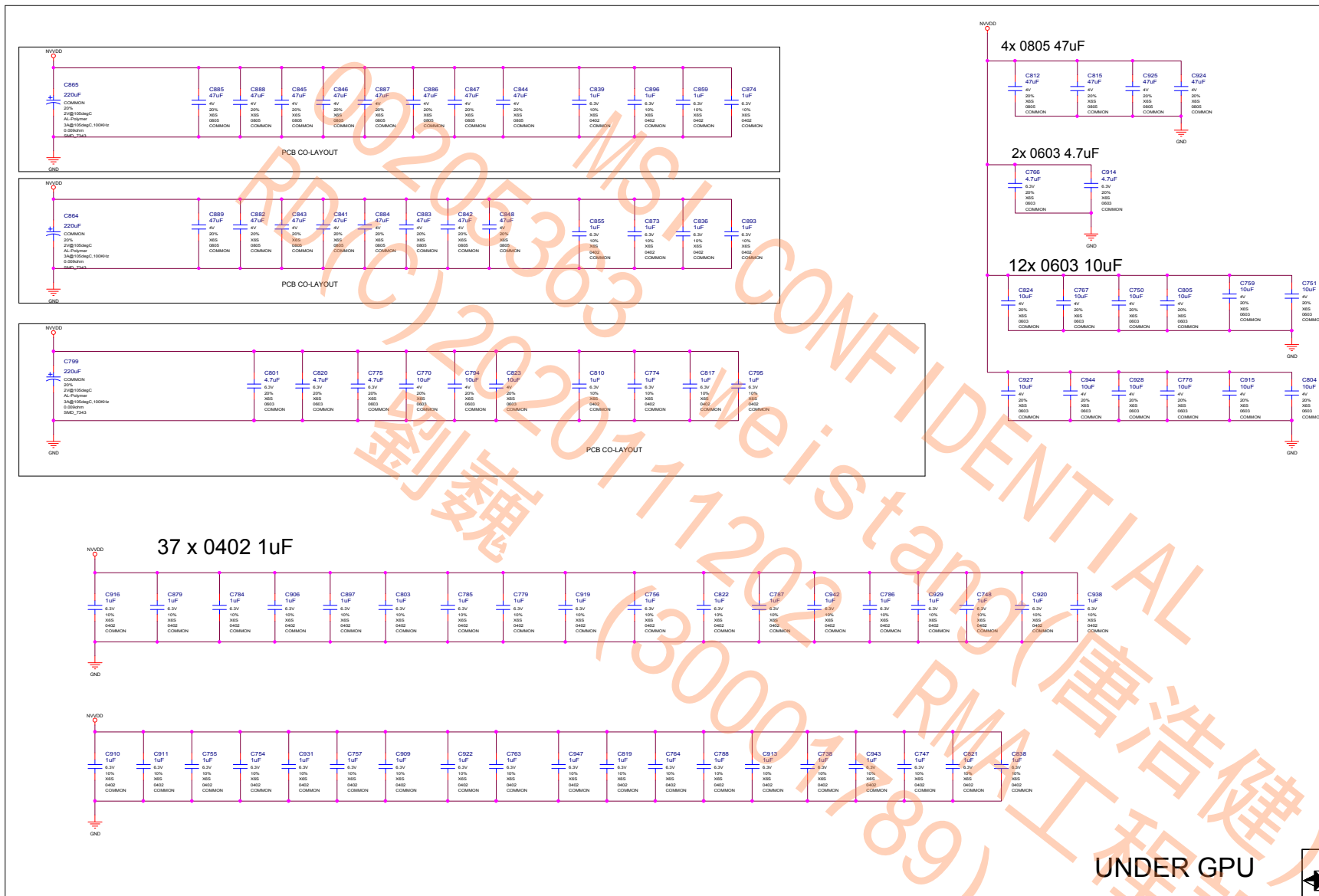
PCB REV PG142-B00

ICOM REV A

PAGE 18 OF 54

DATE 27-JUN-2020


ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	GPU DECOUPLING FBVDDQ

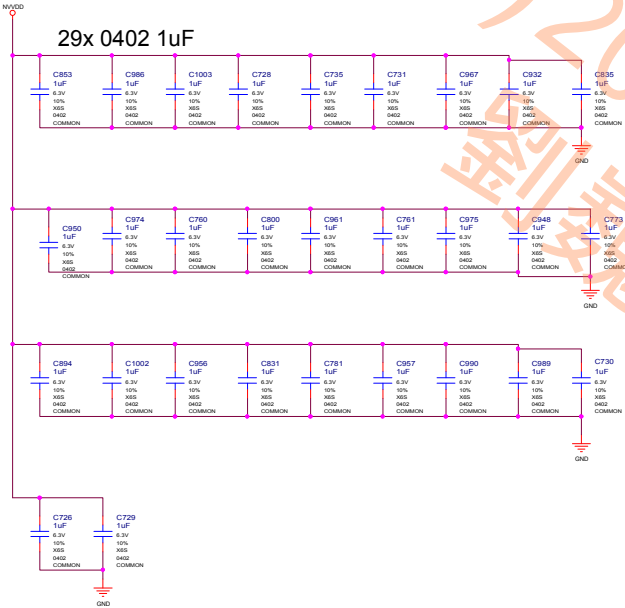
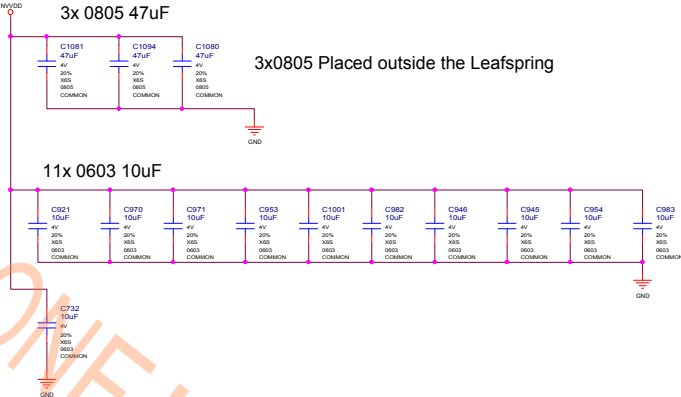
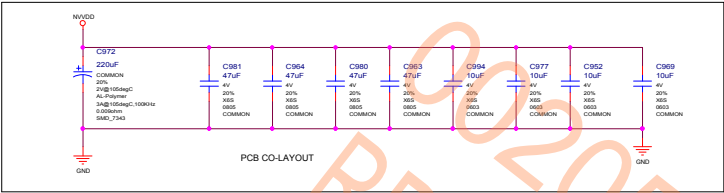


ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS". THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. 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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.


ASSEMBLY
PAGE DETAIL

<ASSEMBLY_DESCRIPTION>
GPU DECOUPLING NVVDD

	MICRO-STAR INT'L CO.,LTD		
	MS-V390		
	Size	Document Description	Rev
	Custom	0019_GPU DECOUPLING NVVDD	2.0
	Date: Friday, July 31, 2020		Sheet 19 of 55
NVIDIA CORPORATION			
2701 SAN TOMAS EXPRESSWAY			
SANTA CLARA, CA 95050, USA			
NV_PN		600-1G142-BASE-100	
PCB REV	PG142-B00	PAGE	19 OF 54
ICOM REV	A	DATE	27-JUN-2020



UNDER GPU




MICRO-STAR INT'L CO.,LTD

MS-V390

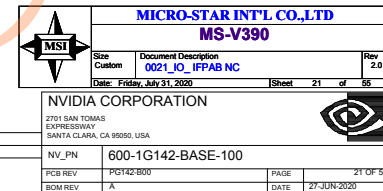
Size	Custom	Document Description	0020_GPU DECOUPLING NVVDD	Rev	2.0
Date:	Friday, July 31, 2020	Sheet	20	of	55

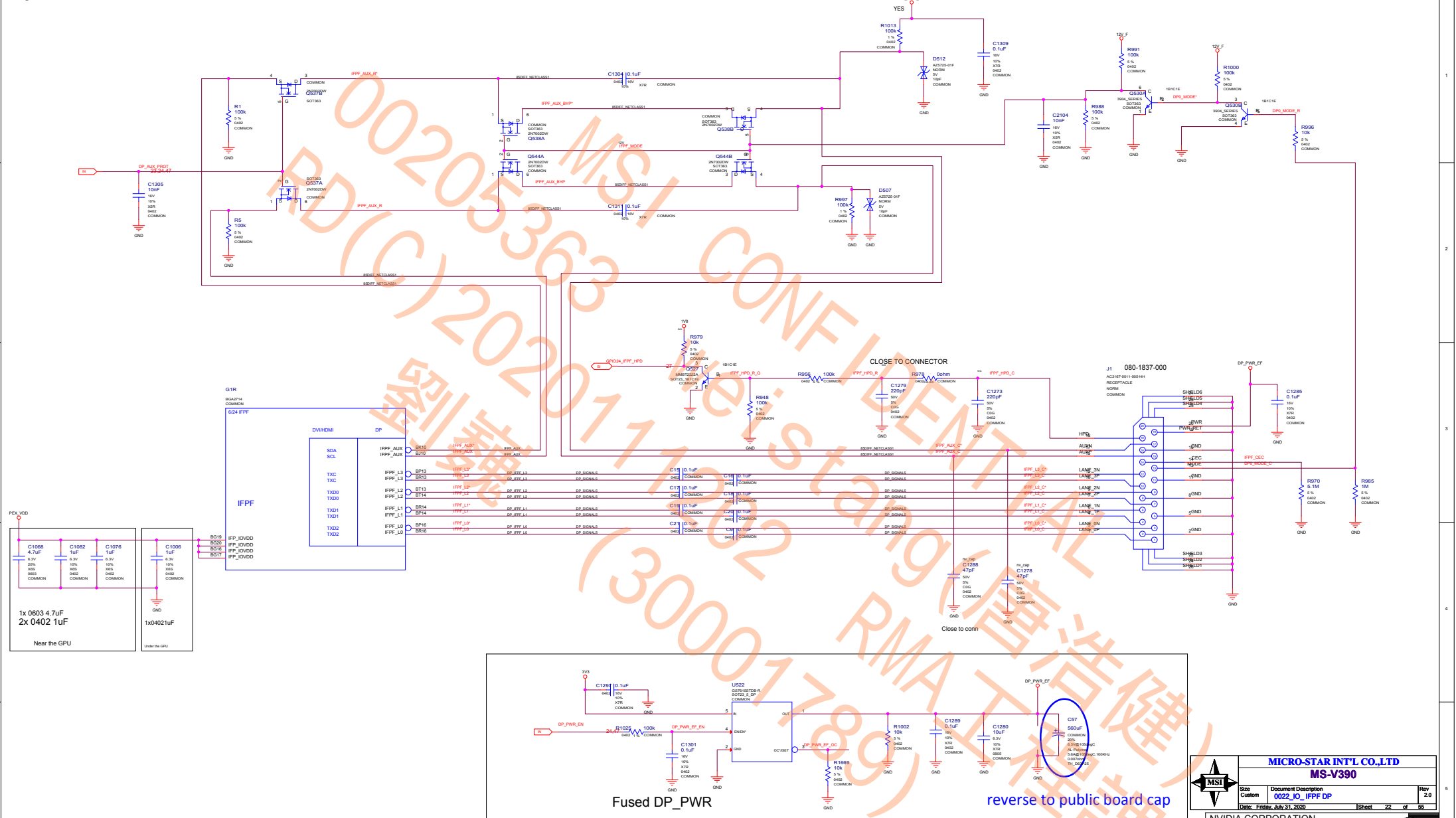
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA



NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
ICOM REV	A
PAGE	20 OF 54
DATE	27-JUN-2020

ALL NVIDIA DESIGN 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.





STRAP2	STRAP1	STRAP0	RAMCFG[4:0]	
L	L	L	00000	RAMCFG SAMSUNG 8Gb 7GHz
L	L	H	00001	RAMCFG MICRON 8Gb 7GHz
L	H	L	00010	RAMCFG HYNIX 8Gb 7GHz
H	H	L	00110	RAMCFG SAMSUNG 16Gb 8GHz
TBD				

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

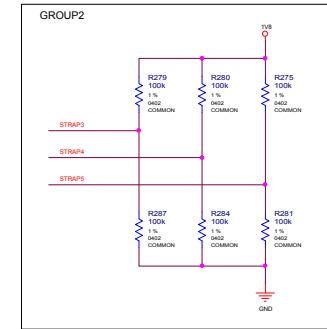
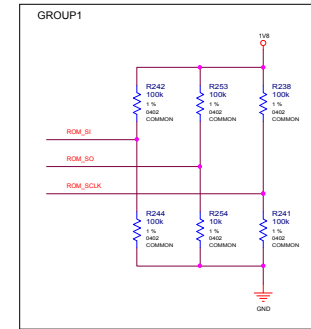
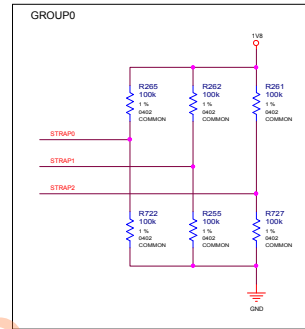
ROM_SO	ROM_SI	ROM_SCLK	SMARTFAN[2:0]FS_OVERT	1:ENABLE 0:DISABLE
H	H	H	0111	FS_OVERT ENABLE
H	H	M	0000	FS_OVERT DISABLE

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	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
L	L	L	0	0	0	0

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

1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE
1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGINAL

1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER
1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE

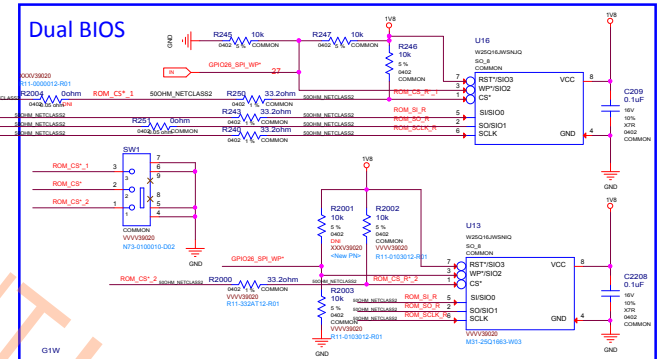


DEFAULT

Near the GPU

Under the GPU

MICRO-STAR INT'L CO.,LTD		
MS-V390		
Size	Document Description	Rev
Custom	0026_MISC1_ROMx2_XTAL_STRAPS	2.0
Date: Friday, July 31, 2020		Sheet 26 of 55
ASSEMBLY	ASSEMBLY DESCRIPTION	
PAGE DETAIL	MISC1: ROM, XTAL, STRAPS	



change to D04-1107300-T16

XTALOUTBUFF		
1.8V	0.9V	0V
80% PWM	20% PWM	DISABLED (100%)

NVIDIA CORPORATION

2701 SAN TOMAS
EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN 600-1G142-BASE-100

PCB REV PG142-800
BIOM REV A



PAGE 26 OF 54
DATE 27-JUN-2020


ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS". THE MATERIALS
DO NOT 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 WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY
STANDARDS.

[remove LED](#)

MSI CONFIDENTIAL
00205363
RD(C)202011202
weistang (唐浩健)
劉巍
(30001789)
RMA工程課

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
MAINTAIN 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 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.

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	MISC3: RGB



MICRO-STAR INT'L CO.,LTD


MS-V390

Size	Document Description	Rev
Custom	0028_MISC3_RGB	2.0
Date: Friday, July 31, 2020		Sheet 28 of 55

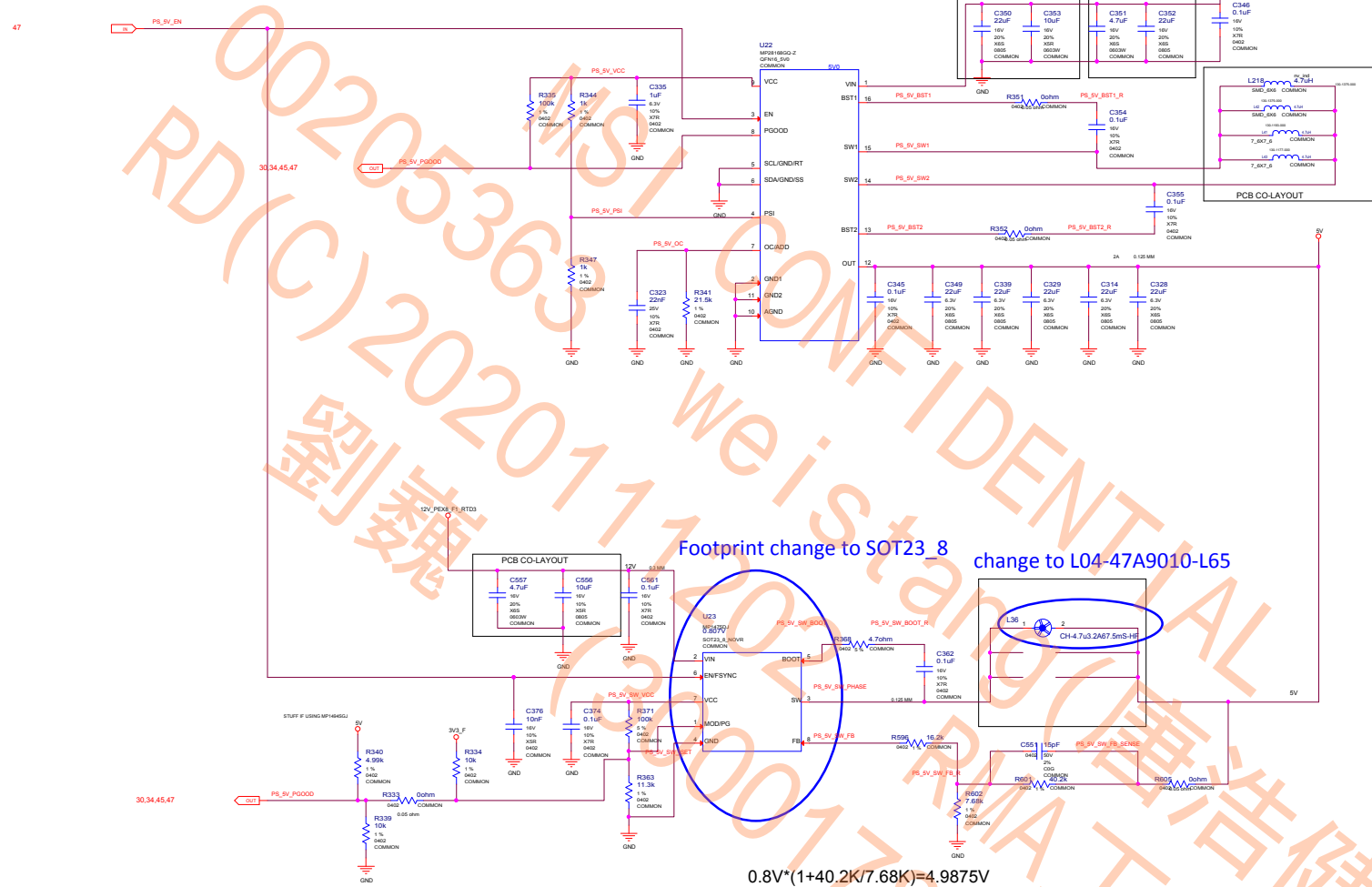
NVIDIA CORPORATION


2701 SAN TOMAS EXPRESSWAY


SANTA CLARA, CA 95050, USA



NV_PN	600-1G142-BASE-100		
PCB REV	PG142-B00	PAGE	28 OF 54
BOM REV	A	DATE	27-JUN-2020

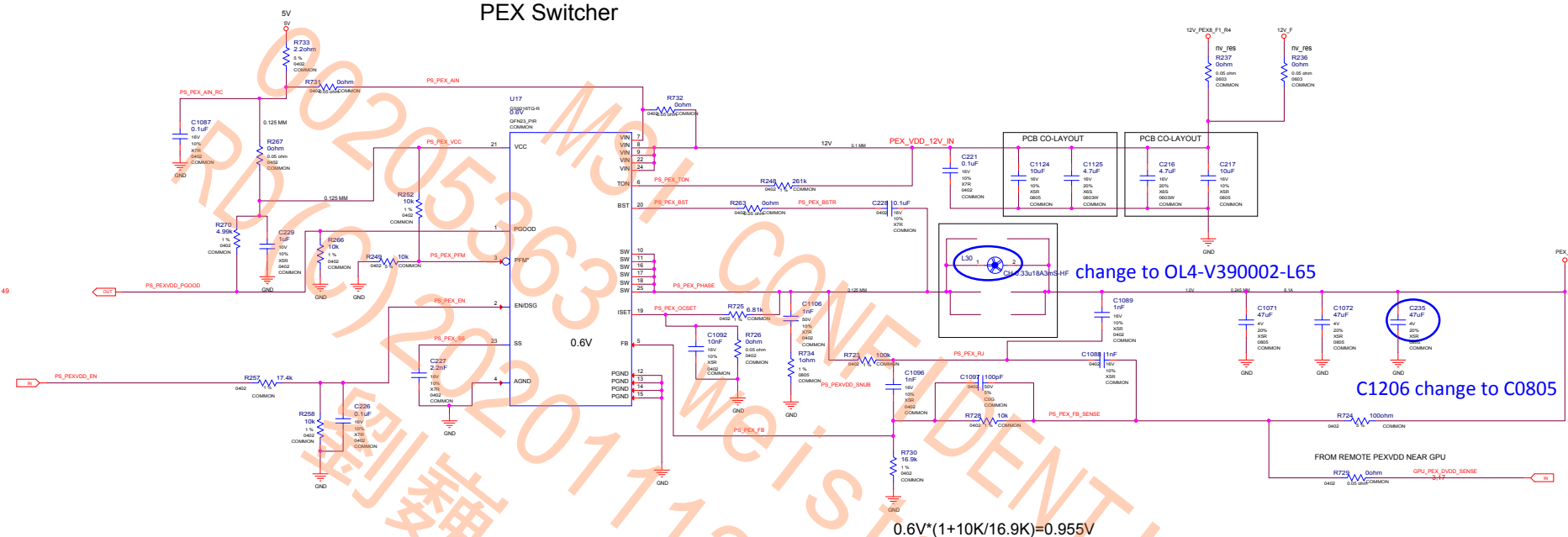



	MICRO-STAR INT'L CO.,LTD MS-V390		
	Size	Document Description	Rev
		0030_PSW_5V	2.0
	Date:	Friday, July 31, 2020	Sheet 30 of 55

NVIDIA CORPORATION 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA		
nv_PV PCB REV BOM REV	600-1G142-BASE-100 P0142-800 DATE	
	30 OF 54 21-JUN-2020	

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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

PEX Switcher






MICRO-STAR INT'L CO.,LTD

MS-V390

Size	Custom	Document Description	0031_PS_PEXVDD	Rev	2.0
Date:	Friday, July 31, 2020	Sheet	31	of	55

NVIDIA CORPORATION

2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA



NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
ICOM REV	A
PAGE	31 OF 54
DATE	27-JUN-2020

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.

change to I32-S72220C-N03
footprint : WQFN20_TSMDQ63

change to L04-15B9070-L65

stuff a resistor.

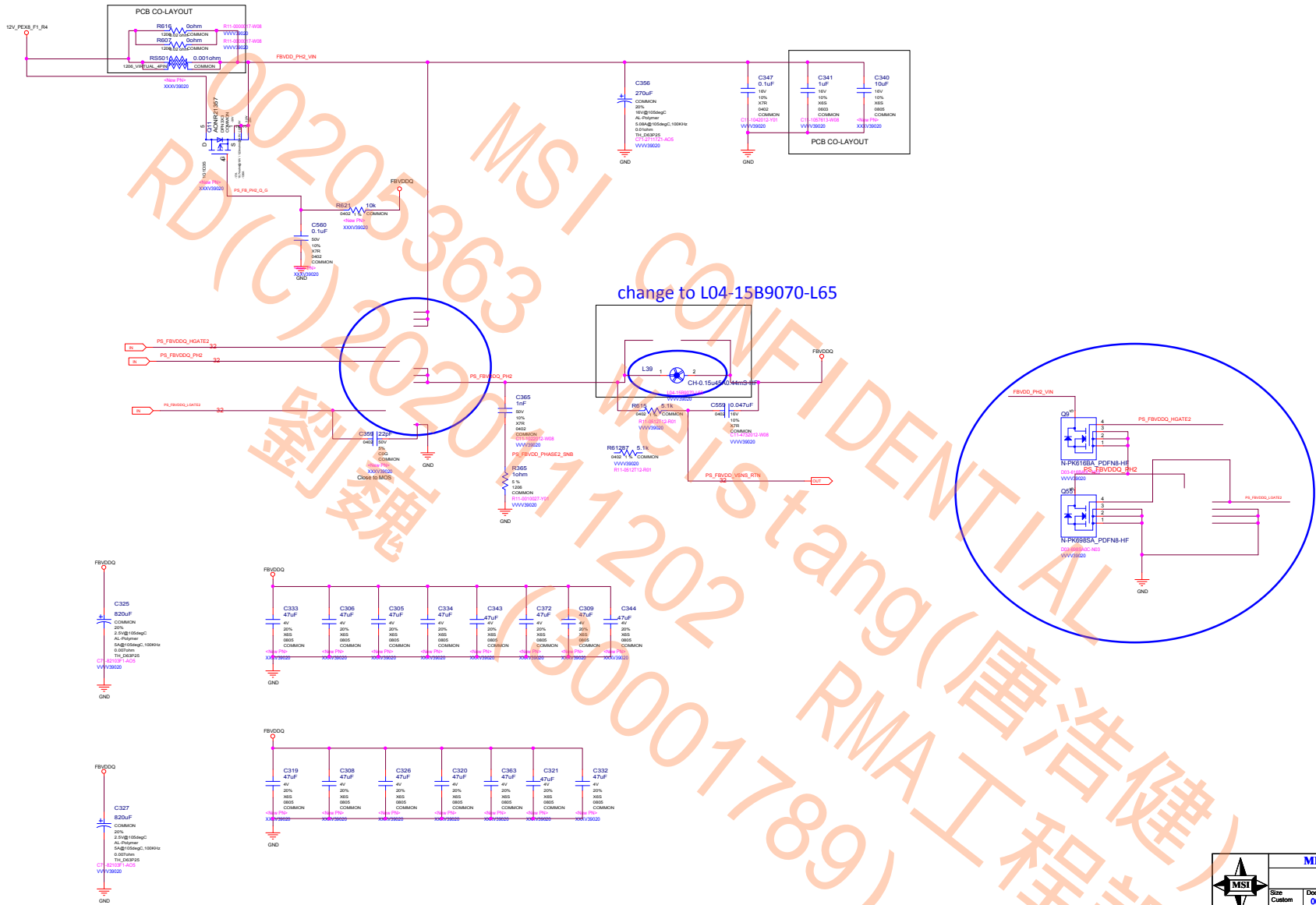
MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Custom	Document Description	0032_PS_FBVDDQ
Date:	Fri May 31, 2020	Rev	2.0
Sheet		32	of 55

2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
ICOM REV	A
PAGE	32 OF 54
DATE	27-JUN-2020

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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 AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

FBVDD PH2 INPUT ANTI-BACKDRIVE



ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

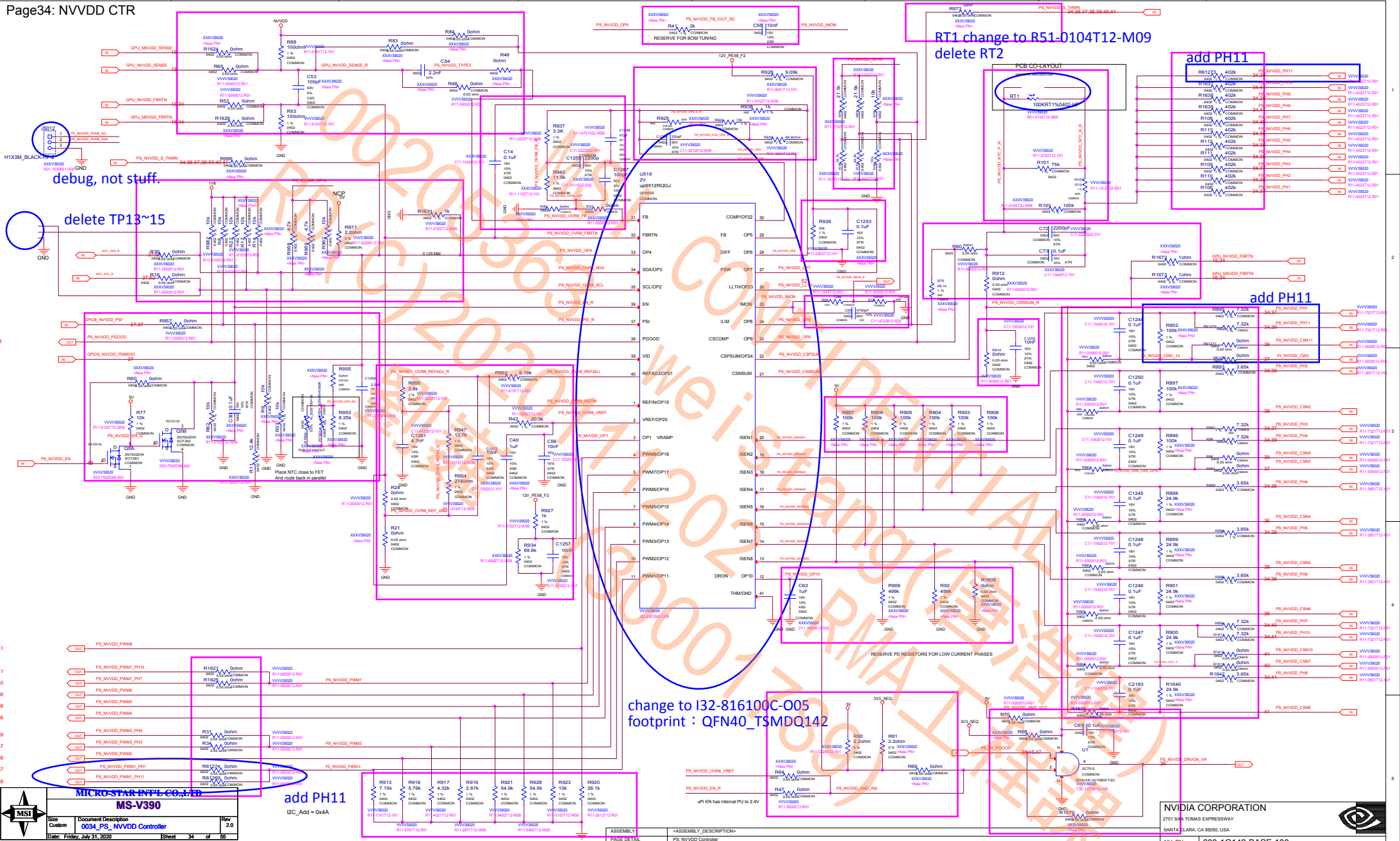
ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: FBVDDQ PH2

MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Document Description	Rev	
Custom	0033_PS_FBVDDQ PH2	2.0	
Date:	Friday, July 31, 2020	Sheet	33 of 55

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA



NV_PN	600-1G142-BASE-100		
PCB REV	PG142-B00	PAGE	33 OF 54
ICOM REV	A	DATE	27-JUN-2020




BLANK PAGE

MSI CONFIDENTIAL
RD(C) 00205363
2020111202
唐浩健 (30001789)
RMA工程課

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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

ASSEMBLY	<ASSEMBLY DESCRIPTION>
PAGE DETAIL	BLANK PAGE

	MICRO-STAR INT'L CO.,LTD		
	MS-V390		
	Size Custom	Document Description 0035_BLANK PAGE	Rev 2.0
	Date: Friday, July 31, 2020		Sheet 35 of 54
NVIDIA CORPORATION			
2701 SAN TOMAS EXPRESSWAY			
SANTA CLARA, CA 95050, USA			
NV_PN		600-1G142-BASE-100	
PCB REV	PG142-B00	PAGE	35 OF 54
BCM REV	A	DATE	27-JUN-2020

NVVDD PH4(PWM4)

reverse to public board cap

change to OL4-V390003-L65
footprint:public board.

delete co-layout MLCC

reverse to public board cap

NVVDD PH6(PWM6)

reverse to public board cap

U3,U4,U5,U6,U7,U8,U9,U10,U15,U18
change to I33-302041C-O05
footprint : PQFN31change to OL4-V390003-L65
footprint:public board

delete co-layout MLCC

reverse to public board cap

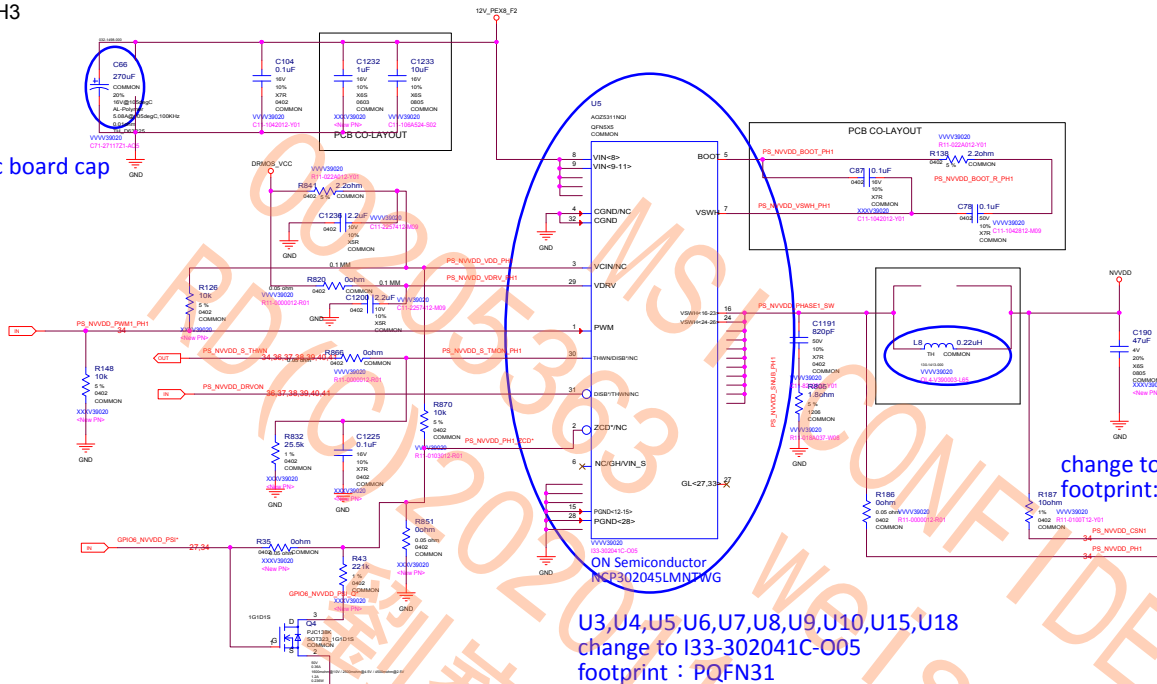
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS". THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VARIATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS.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

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS_NVVDD PH4, PH6

MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Document Description	Rev	
Custom	0036_PS_NVVDD PH4, PH6	2.0	
Date:	Friday, July 31, 2020	Sheet	38 of 55
NVIDIA CORPORATION			
2701 SAN TOMAS EXPRESSWAY			
SANTA CLARA, CA 95050, USA			
NV_PN		600-I-G142-BASE-100	
PCB REV	PG142-B00	PAGE	38 OF 54
ICOM REV	A	DATE	27-JUN-2020

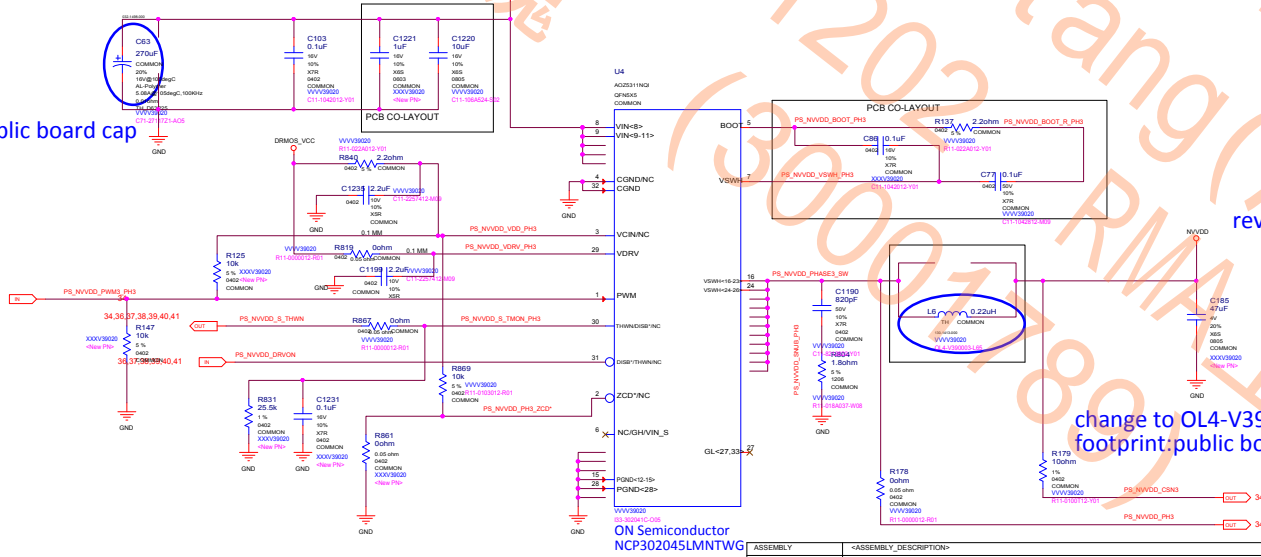
NVVDD PH1(PWM1)

reverse to public board cap



NVVDD PH3(PWM3)

reverse to public board cap



MICRO-STAR INT'L CO., LTD			
MS-V390			
Size	Document Description	Rev	
Custom	0037_PS_NVDD PH1, PH3	2.0	
Date:	Friday, July 31, 2020	Sheet	37 of 55

NVIDIA CORPORATION
 2701 SAN TOMAS EXPRESSWAY
 SANTA CLARA, CA 95050, USA



NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
ICOM REV	A
PAGE	37 OF 54
DATE	27 JUN 2020

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

NVVDD PH2(PWM2)

reverse to public board cap

reverse to public board cap

delete co-layout MLCC

NVVDD PH5(PWM5)

reverse to public board cap

reverse to public board cap

delete co-layout MLCC

U3,U4,U5,U6,U7,U8,U9,U10,U15,U18
change to I33-302041C-005
footprint : PQFN31

change to OL4-V390003-L65
footprint:public board

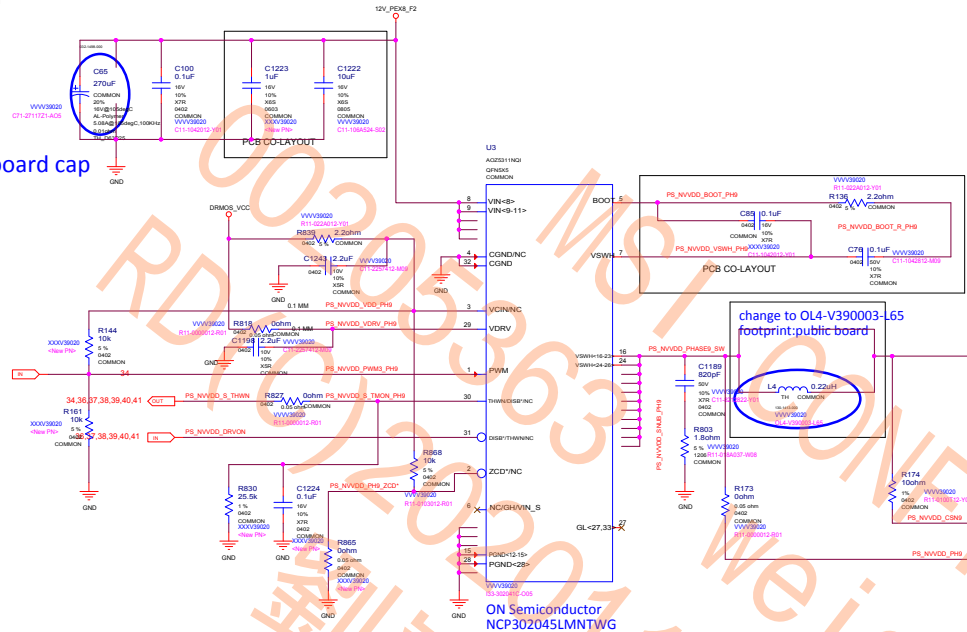
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTIC LISTS AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS." THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS.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

ASSEMBLY: <ASSEMBLY_DESCRIPTION>
PAGE DETAIL: PS_NVVDD PH2, PH5

MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Document Description	Rev	
Custom	0038_PS_NVVDD PH2, PH5	2.0	
Date: Friday, July 31, 2020		Sheet	38 of 55
NVIDIA CORPORATION			
2701 SAN TOMAS EXPRESSWAY			
SANTA CLARA, CA 95050, USA			
NV_PN 600-1G142-BASE-100			
PCB REV	PG142-800	PAGE	38 OF 54
ICOM REV	A	DATE	27-JUN-2020

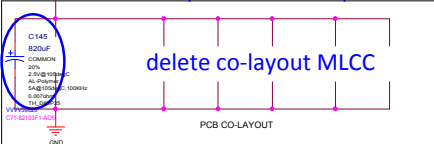
NVVDD PH9(PWM3)

reverse to public board cap



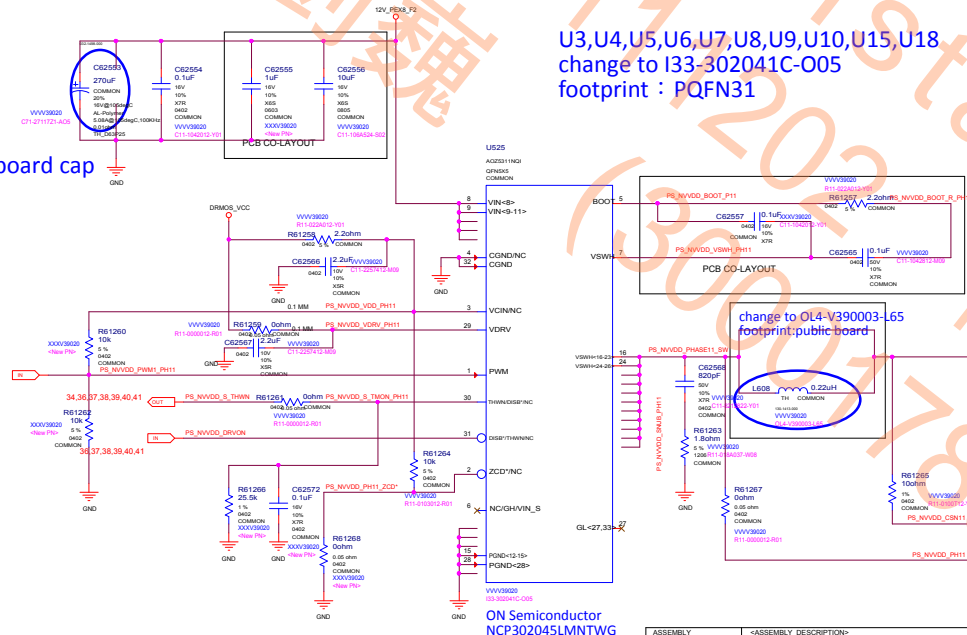
reverse to public board cap

delete co-layout MLCC



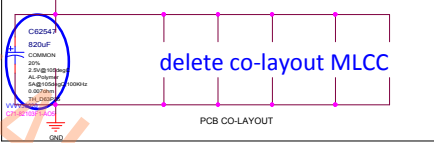
NVVDD PH11(PWM1)

reverse to public board cap



reverse to public board cap

delete co-layout MLCC



MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Custom	Document Description	Rev
0039	PS_NVVDD PH9, PH11		2.0
Date:	Fri May 31, 2020		Sheet 39 of 55

VIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
ICM REV	A
PAGE	39 OF 54
DATE	27-JUN-2020

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTIC 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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

NVVDD PH7(PWM7)

reverse to public board cap

reverse to public board cap

delete co-layout MLCC

change to OL4-V390003-L65
footprint:public board

ON Semiconductor
NCP302045LMNTWG

U3,U4,U5,U6,U7,U8,U9,U10,U15,U18
change to I33-302041C-005
footprint : PQFN31

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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.

MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Document Description	Rev	
Custom	0040_PS_NVVDD PH7	2.0	
Date: Friday, July 31, 2020		Sheet	40 of 55

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA



NV_PN	600-1G142-BASE-100		
PCB REV	PG142-B00	PAGE	40 OF 54
ROM REV	A	DATE	27-JUN-2020

reverse to public board cap

reverse to public board cap

delete co-layout MLCC

change to OL4-V390003-L65
footprint:public board

NVVDD PH8(PWM8)

reverse to public board cap


delete co-layout MLCC

reverse to public board cap

change to OL4-V390003-L65
footprint:public board

ON Semiconductor
NCP302045LMNTWG
U3,U4,U5,U6,U7,U8,U9,U10,U15,U18
change to I33-302041C-O05
footprint : PQFN31

ON Semiconductor
NCP302045LMNTWG



MICRO-STAR INT'L CO.,LTD

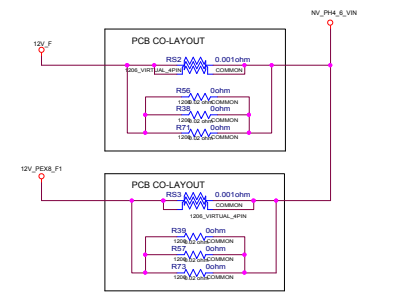
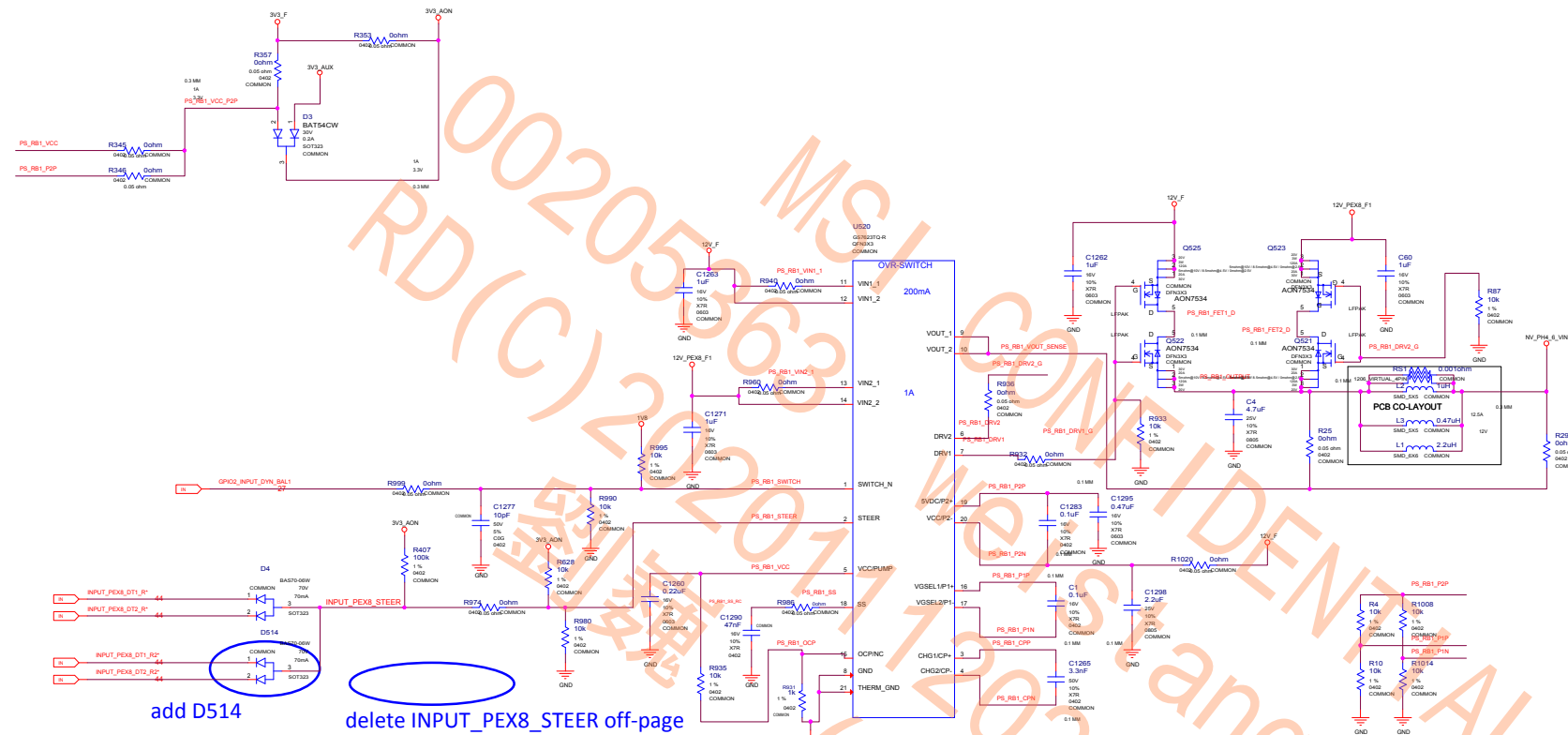
MS-V390

Size	Custom	Document Description	0041_PS_NVDD PH10, PH8	Rev	2.0
Date:	Friday, July 31, 2020			Sheet	41 of 55

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
ICOM REV	A
PAGE	41 OF 54
DATE	27-JUN-2020

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTIC LISTS AND OTHER DOCUMENTS (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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.



MICRO-STAR INT'L CO., LTD			
MS-V390			
Size	Custom	Document Description	Rev
0042_PS_OVRS_INPUT POWER BALAN			2.0
Date:	Friday, July 31, 2020	Sheet	42 of 56

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA



NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
DATE	27-JUN-2020

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, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS_OVRS_INPUT POWER BALANCE

POWER CONNECTOR HOT-UNPLUG DETECT

delete POWER CONNECTOR HOT-UNPLUG DETECT


12V CURRENT STEERING (UNDER POWER BOOT):

GUIDES CURRENT FROM PEX EDGE TO PEX 8 PIN INPUT AREA

delete 12V CURRENT STEERING

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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.

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: STEERING, UPB, HOT UNPLUG



MICRO-STAR INT'L CO.,LTD


MS-V390

Size	Document Description	Rev
Custom	0046_PS_STEERING, UPB, HOT UNP	2.0
Date: Friday, July 31, 2020		Sheet 48 of 55

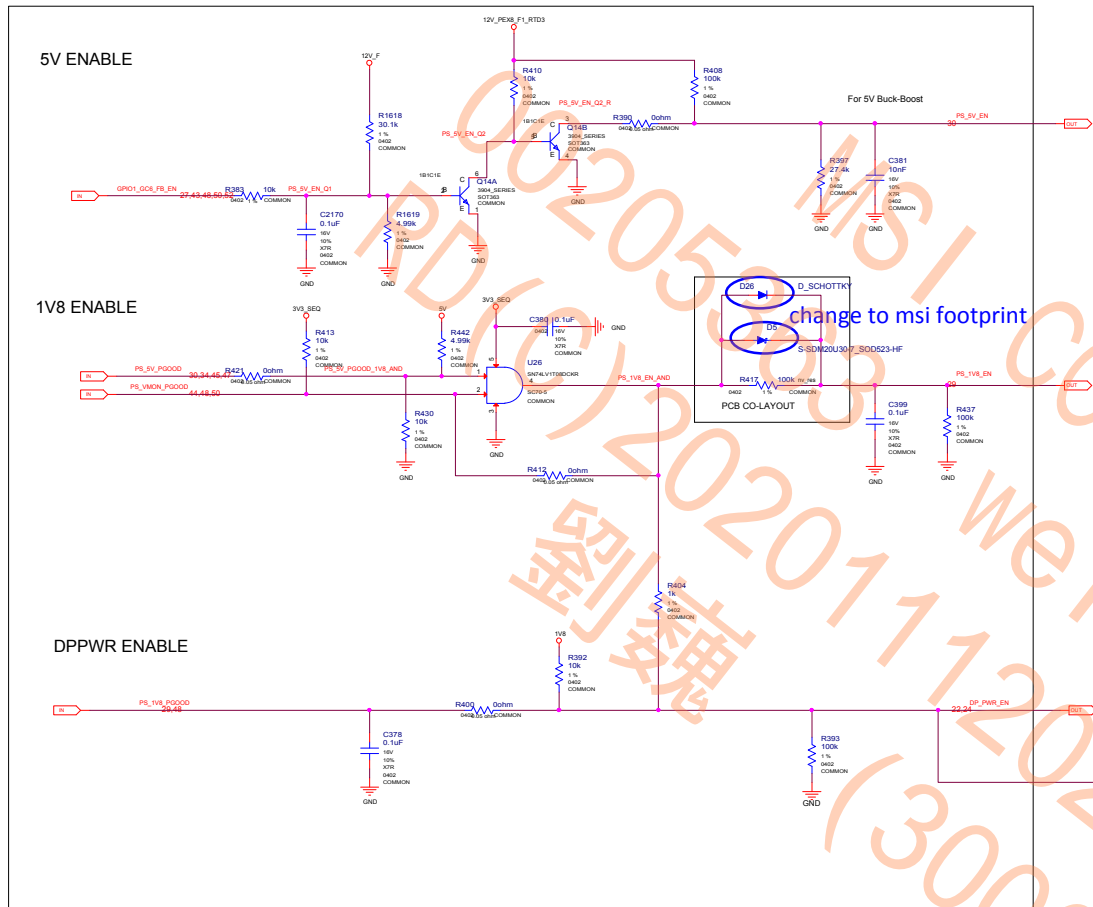
NVIDIA CORPORATION

2701 SAN TOMAS EXPRESSWAY

SANTA CLARA, CA 95050, USA

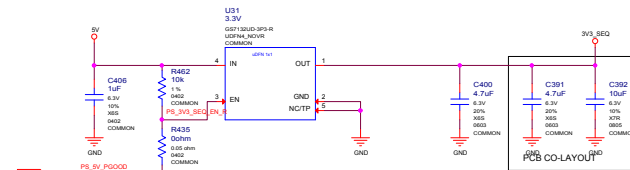


NV_PN	600-1G142-BASE-100		
PCB REV	PG142-B00	PAGE	48 OF 54
BOM REV	A	DATE	27-JUN-2020



3V3_SEQ

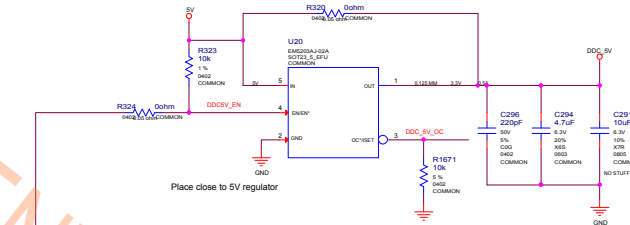
Used for Power Sequence Only



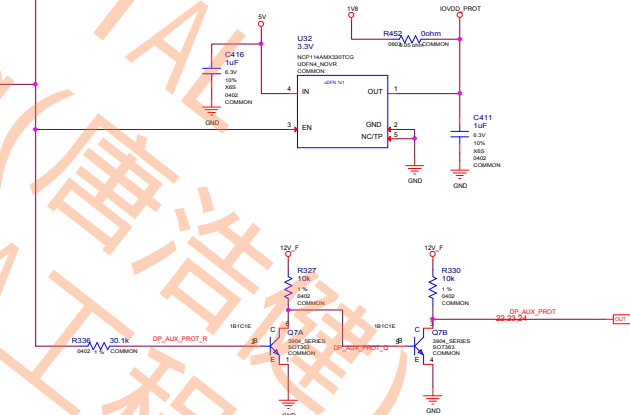
DDC_5V

IOVDD_PROT

DP_AUX PROTECTION



IOVDD_PROT LDO (NV3V3 OR 1V8 JUMPER)

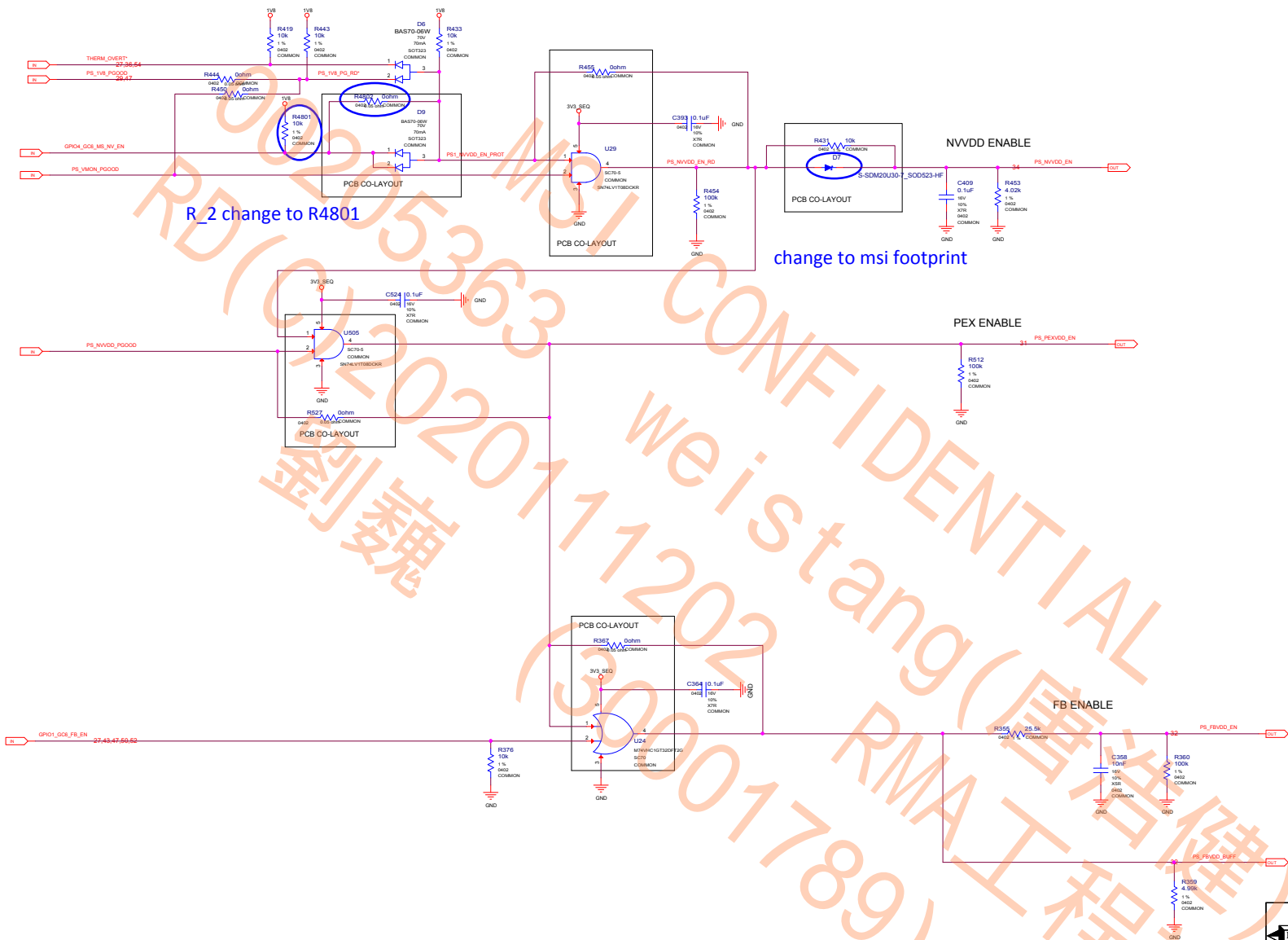



		MICRO-STAR INT'L CO., LTD MS-V390	
		Size Custom Document Description 0047_SEQ_5V, 1V8, 3V3_SEQ Date: Friday, July 31, 2020 Sheet 47 of 55	Rev 2.0
NVIDIA CORPORATION 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA			
NV_PN 600-1G142-BASE-100		PCB REV PG142-800	
BOM REV A		PAGE 47 OF 54 DATE 27 JUN 2020	

R_4 change to R4802

R_2 change to R4801

change to msi footprint





MICRO-STAR INT'L CO.,LTD
MS-V390

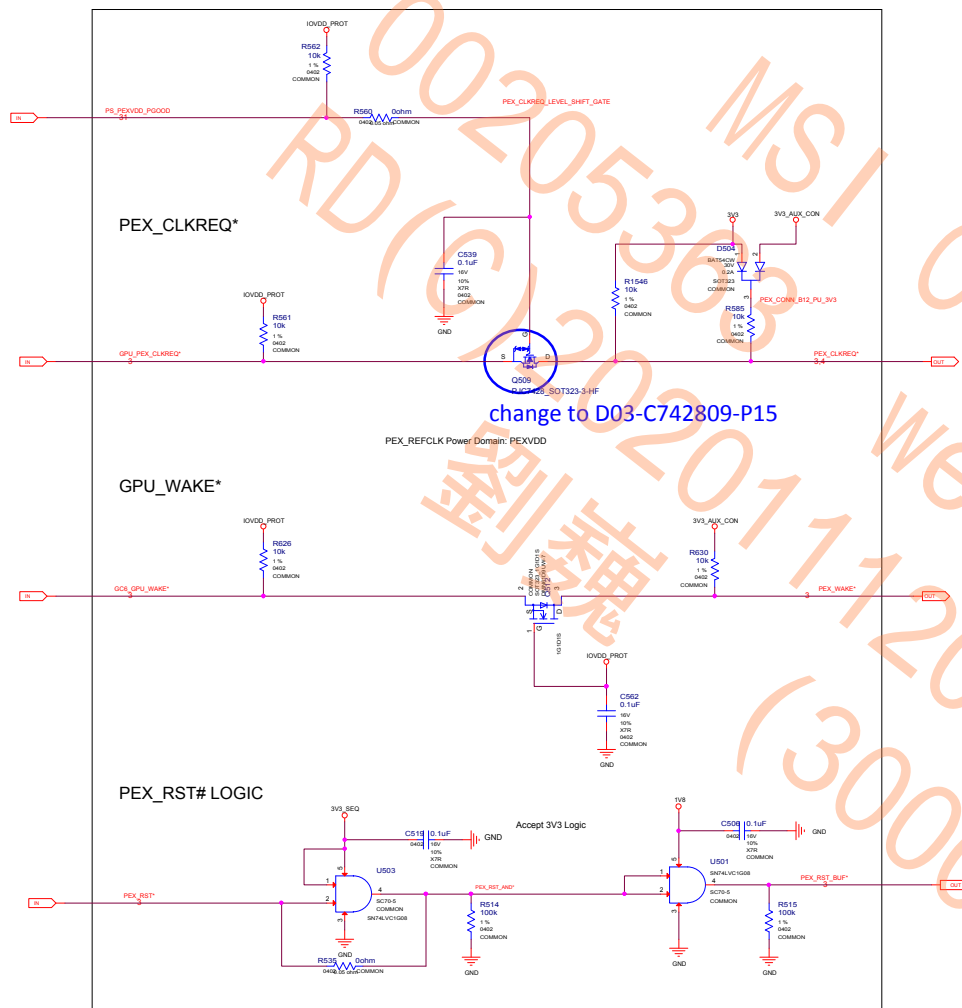
Size	Custom	Document Description	0048_SEQ_NVVDD, PEX, FBVDDQ EN	Rev	2.0
Date:	Friday, July 31, 2020			Sheet	48 of 55

NVIDIA CORPORATION
2701 SAN TOMAS
EXPRESSWAY
SANTA CLARA, CA 95050, USA



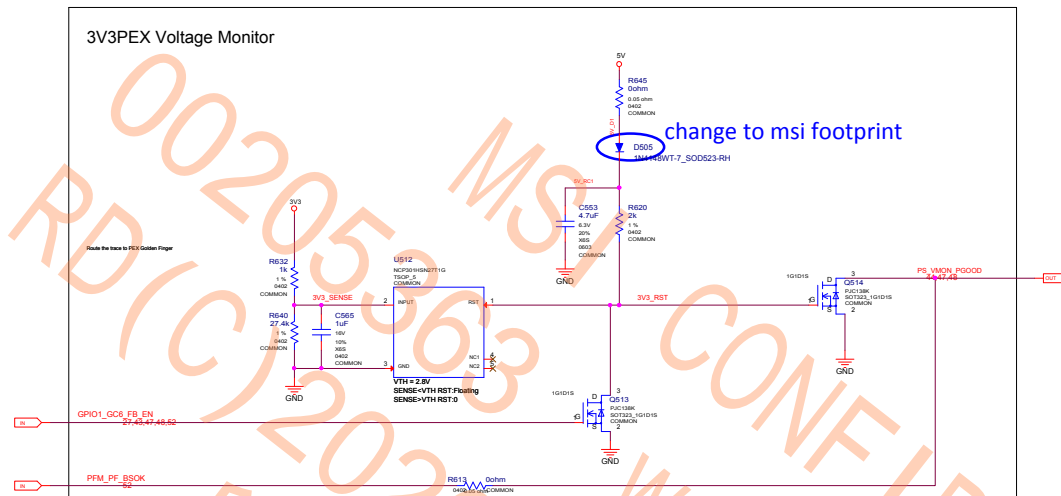
NV_PN	600-1G142-BASE-100				
PCB REV	A	PGI42:800	PAGE	48 OF 54	
BCM REV	A		DATE	27-JUN-2020	

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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, AND EXPRESSLY DISCLAIMS ALL 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.



MICRO-STAR INT'L CO., LTD			
MS-V390			
Size	Document Description	Rev	
Custom	0049_SEQ_MISC	2.0	
Date: Friday, July 31, 2020	Sheet 48 of 56		
NVIDIA CORPORATION			
2701 SAN TOMAS EXPRESSWAY			
SANTA CLARA, CA 95050, USA			
NV_PN	600-1G142-BASE-100		
PCB REV	PG142-B00	PAGE	49 OF 54
ROM REV	A	DATE	27-JUN-2020

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 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.




BOM Configuration


OPTIONS	PEX3V3_SENSE	PEX12V_SENSE	OTHER_12V_SENSE
Use Pre-Filter	Pre-Filter	Pre-Filter	Pre-Filter
NO Pre-Filter	Voltage_Monitor	Voltage_Monitor	N/A

Signal	Direction	Function
3V3	INPUT	Sense the 3V3 Voltage from PCIe golden finger
12V	INPUT	Sense the 12V Voltage from PCIe golden finger
VMON_PG0OD	OPEN-DRAIN	Floting(H) once both 3V3 and 12V reach Vth
GC6_FB_EN		Enable for RTD3/GC6 resistance.Use to Mask the VMON_PG0OD
PS_PF_SKIP	INPUT	From INA3221(VPU) or Pre-filter(SKIP)
PS_PF_BSK0	INPUT	From INA3221(PV) or Pre-filter(BS_OK)

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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

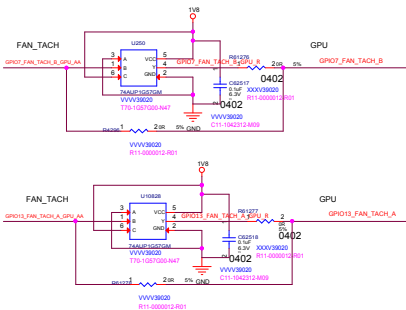
ASSEMBLY	<ASSEMBLY_DESCRIPTION
PAGE DETAIL	SEQ: VOLTAGE MONITOR

	MICRO-STAR INT'L CO.,LTD MS-V390		
	Size	Document Description	Rev
	Custom	0050_SEQ_VOLTAGE MONITOR	2.0
	Date: Friday, July 31, 2009	Sheet	50 of 55

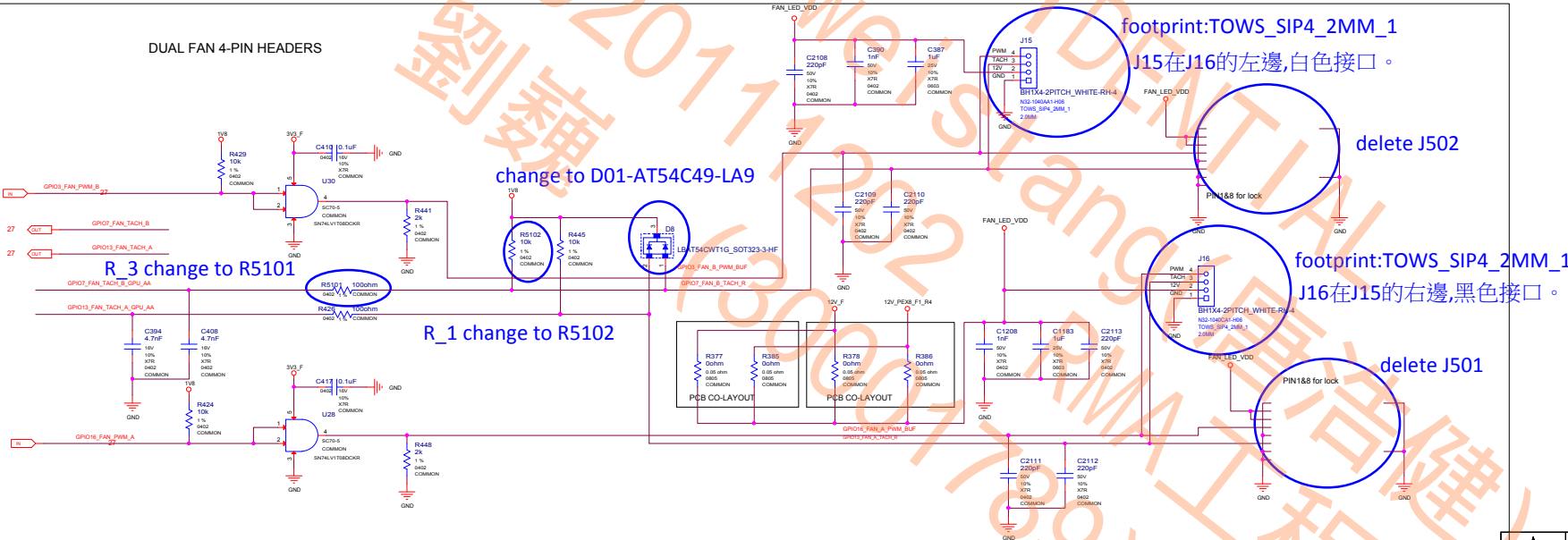
NVIDIA CORPORATION 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA		
NV_PN	600-1G142-BASE-100	
TCB REV	PG142-800	
BOM REV	A	
		PAGE 50 OF 54 DATE 27-JUN-2009

2-PIN LED HEADER
remove 2-PIN LED HEADER

copy from V388-2.0



DUAL FAN 4-PIN HEADERS



MICRO-STAR INT'L CO.,LTD
MS-V390

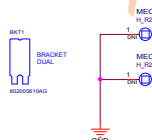
Size	Custom	Document Description	Rev
		0051_FAN & LED	2.0
Date:	Friday, July 31, 2020		
Sheet	51	of	55

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

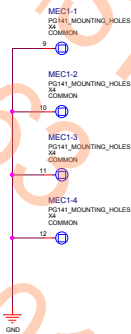
NV_PN	600-1G142-BASE-100
PCB REV	PG142-B00
DATE	27-JUN-2020
PAGE	51 OF 54

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS (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 NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

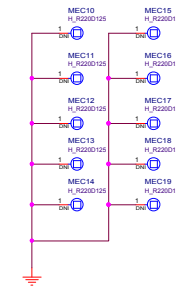
Bracket & Bracket hole: 2pcs
footprint:H_R220D125



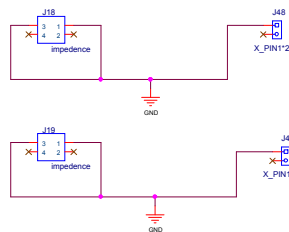
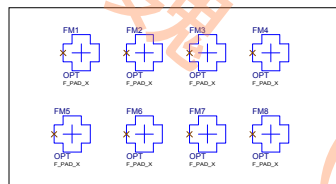
Fan module hole: 4 pcs
footprint : same as public board



Fan module hole: 10 pcs
footprint:H_R220D125



删除CLP1~CLP3



COMMON
WV93620
P00-0139020-00A



COMMON
WV93620
V01-RH0003-000

WV93620
V01-RH0003-000

Bracket Screw



COMMON
WV93620
E41-1394020-HT5



COMMON
WV93620
E41-1394020-HT5



COMMON
WV93620
E43-130012-015



COMMON
WV93620
E43-130012-015



WV93620
CE3-V30001-A87



WV93620
CE3-V30002



WV93620
CE3-V30001



WV93620
E24-V30000-P09

ASSEMBLY	ASSEMBLY_DESCRIPTION
MECH	MECH

MICRO-STAR INT'L CO.,LTD			
MS-V390			
Size	Document Description	Rev	2.0
Custom	0053_MECH		
Date: Friday, July 31, 2020	Sheet	53	of 55
NVIDIA CORPORATION			
2701 SAN TOMAS EXPRESSWAY			
SANTA CLARA, CA 95050, USA			
NV_PN	600-1G142-BASE-100		
PCB REV	PG142-B00	PAGE	53 OF 54
ICOM REV	A	DATE	27-JUN-2020



ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, DESIGN GUIDELINES, BOARD 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 VULNERABILITIES OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS, 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.

