PG150-C03

384b GDDR6 x16
TALL DP + DP + DP + HDMI/DP + USB

TABLE OF CONTENTS

Page	Description
1	Table of Contents
2	BLOCK DIAGRAM
3	PCI EXPRESS
4	PCIE TERM
5	MEMORY: GPU PARTITION A/B
6	MEMORY: FBA PARTITION[31:0]
7	MEMORY: FBA PARTITION[63:32]
8	MEMORY: FBB PARTITION[31:0]
9	MEMORY: FBB PARTITION[63:32]
10	MEMORY: GPU PARTITION C/D
11	MEMORY: FBC PARTITION[31:0]
12	MEMORY: FBC PARTITION[63:32]
13	MEMORY: FBD PARTITION[31:0]
14	MEMORY: FBD PARTITION[63:32]
15	MEMORY: GPU PARTITION E/F
16	MEMORY: FBE PARTITION[31:0]
17	MEMORY: FBE PARTITION[63:32]
18	MEMORY: FBF PARTITION[31:0]
19	MEMORY: FBF PARTITION[63:32]
20	GPU PWR AND GND
21	GPU PWR, GND and NCs
22	GPU DECOUPLING
23	GPU DECOUPLING 2
24	IFPA/B DP
25	IFPE DP
26	IFPF USB
27	IFPC HDMI/DP
28	IFPD DP
29	NVHS X16
30	MISC: THERMAL, JTAG, GPIO, STEREO
31	MISC: ROM, STRAPS
32	MISC: XTAL, PLL
33	MISC: USB PPC
34	PS: USB_C VR
35	PS: 5V
36	PS: PEXVDD 1V8 Rail
37	PS: FBVDD Controller
38	PS: FBVDD Controller OVR3
39	PS: FBVDD Phase 1, 2
40	PS: FBVDD Phase 3
41	PS: NVVDD Controller_OVR8
42	PS: NVVDD Phase 1
43	PS: NVVDD Phase 2
44	PS: NVVDD Phase 3, 4
45	PS: NVVDD Phase 5
46	PS: NVVDD Phase 7, 8
47	PS: NVVDD Phase 9, 10
48	PS: NVVDD Phase 11, 12
49	PS: NVVDD Phase 13, 14
50	PS: INPUT SWITCH_RTD3
51	PS: INPUT SWITCH_RTD3 USB
52	PS: INPUT SWITCH RAIL BALANCE
53	PS: DISCRETE STEERING
54	PS: Input, filtering, and Monitoring
55	PS: Current Sterring, Hot Unplug
56	PS: Prefilter
57	Sequence: 5V, 1V8, NV3V3 EN
58	Sequence: NV, PEX, FB EN
59	Sequence: PCIE Voltage Monitor
60	Sequence: Discharge
61	Sequence: MISC
62	MISC: FAN & LED1
63	MISCL: LED 2
64	MCU ZERO POWER IDLE
65	MECH
66	VR Thermal Protection

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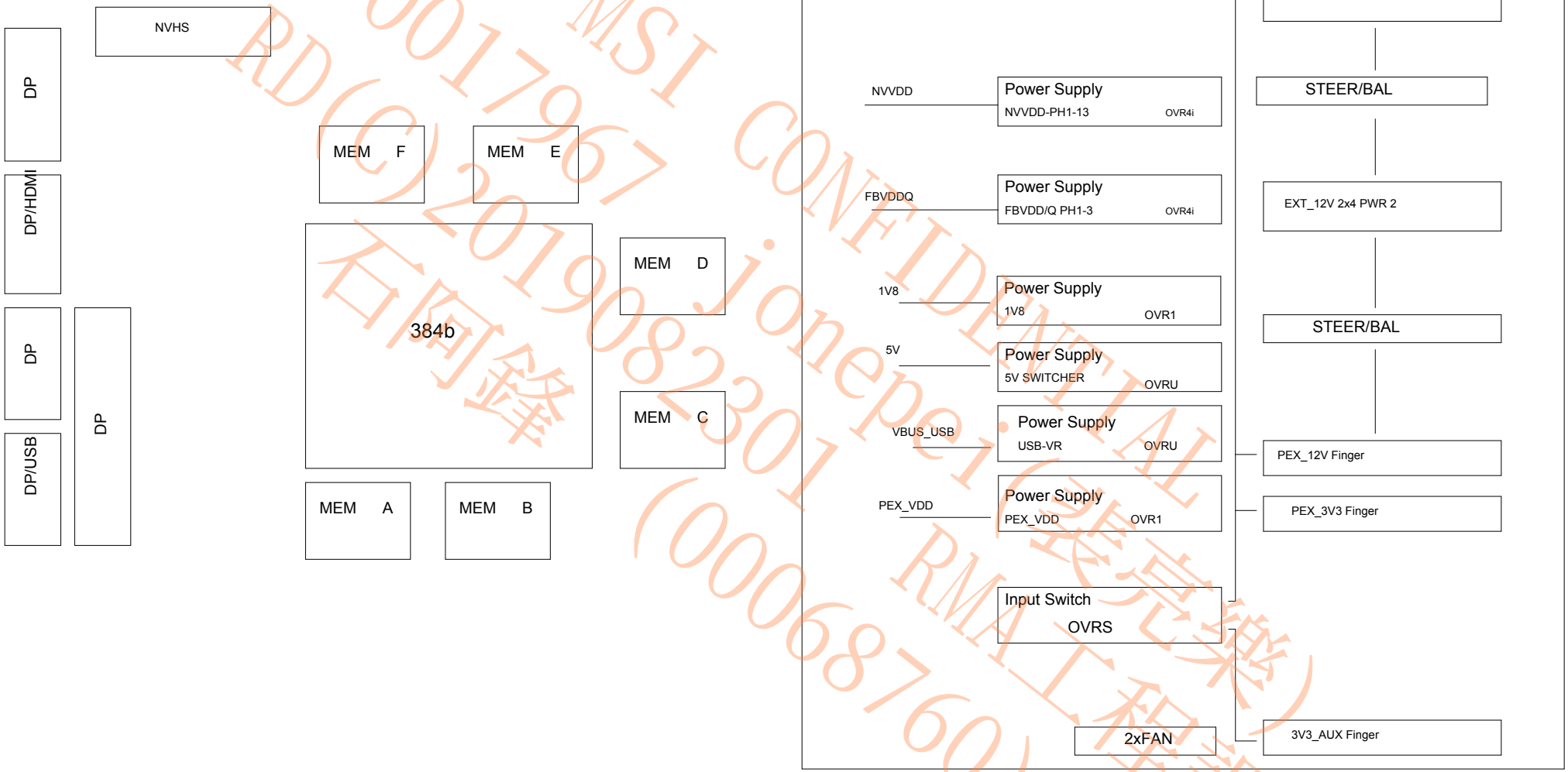
Size: Custom | Document Description: TABLE | Rev: 6.0
Date: Friday, August 31, 2018 | Sheet 1 of 66

Block Diagram



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Size: Custom | Document Description: Block Diagram | Rev: 6.0
Date: Friday, August 31, 2018 | Sheet 2 of 66

PCI Express

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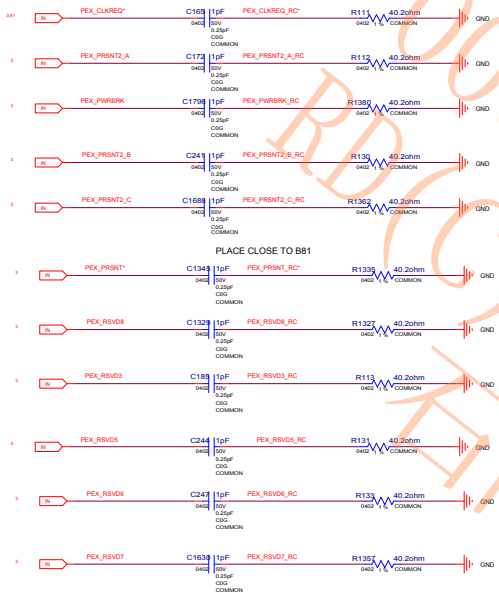
PCI TERM



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Date: Friday, August 31, 2018	Sheet 4 of 66	

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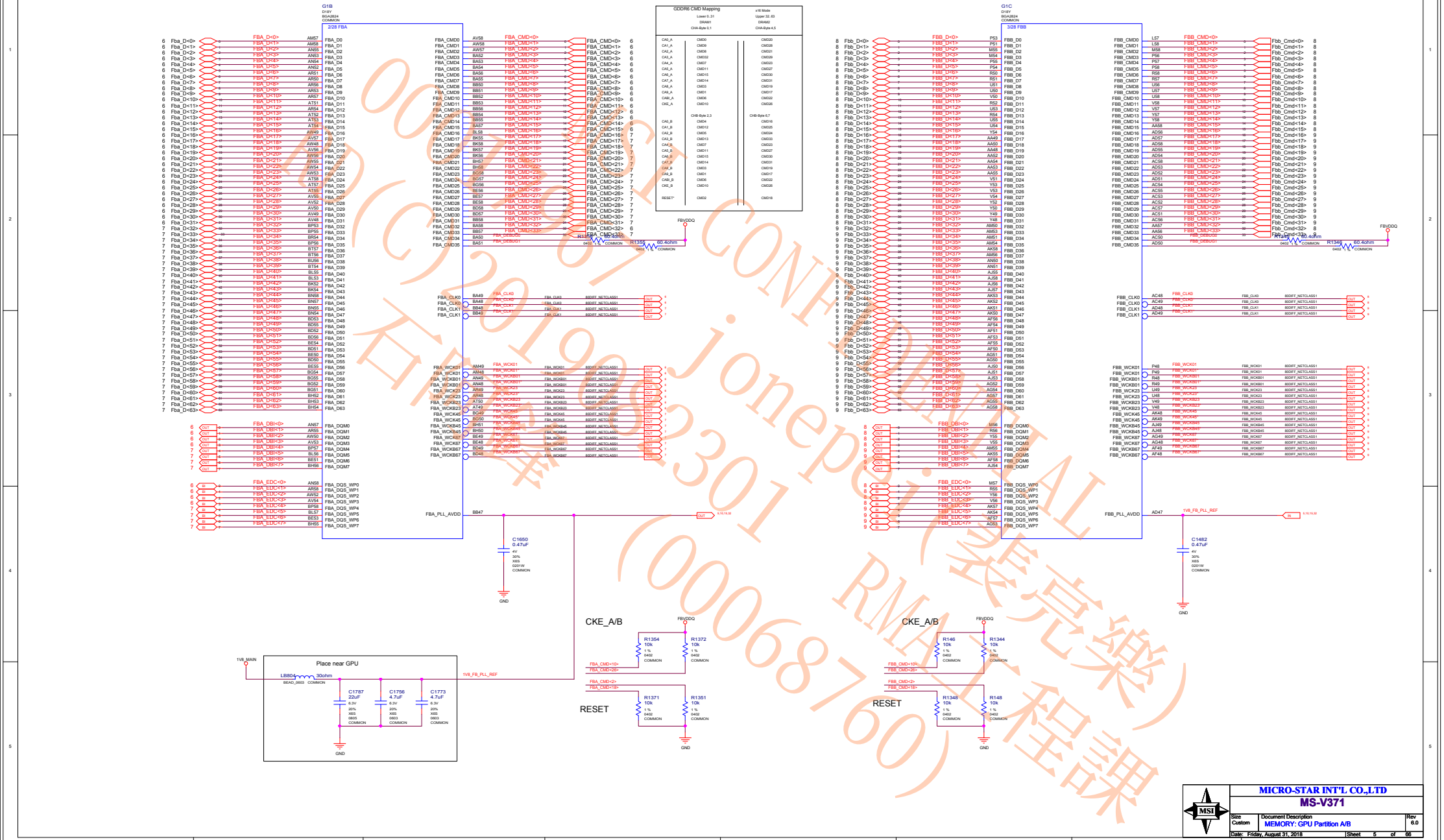

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MICRO-STAR INT'L CO.,LTD	
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Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 5 of 66

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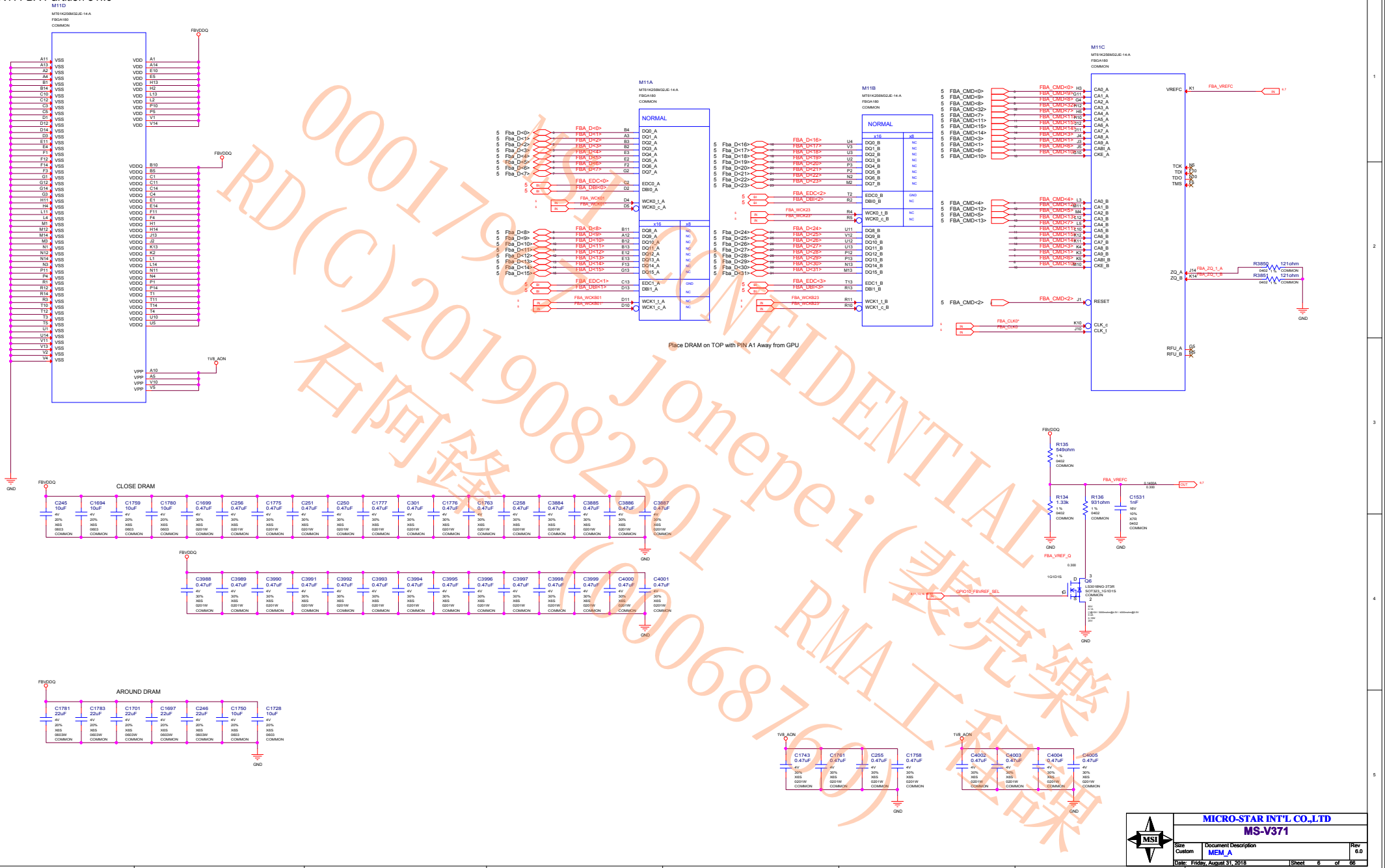

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Date: Friday, August 31, 2018		Sheet 6 of 66	

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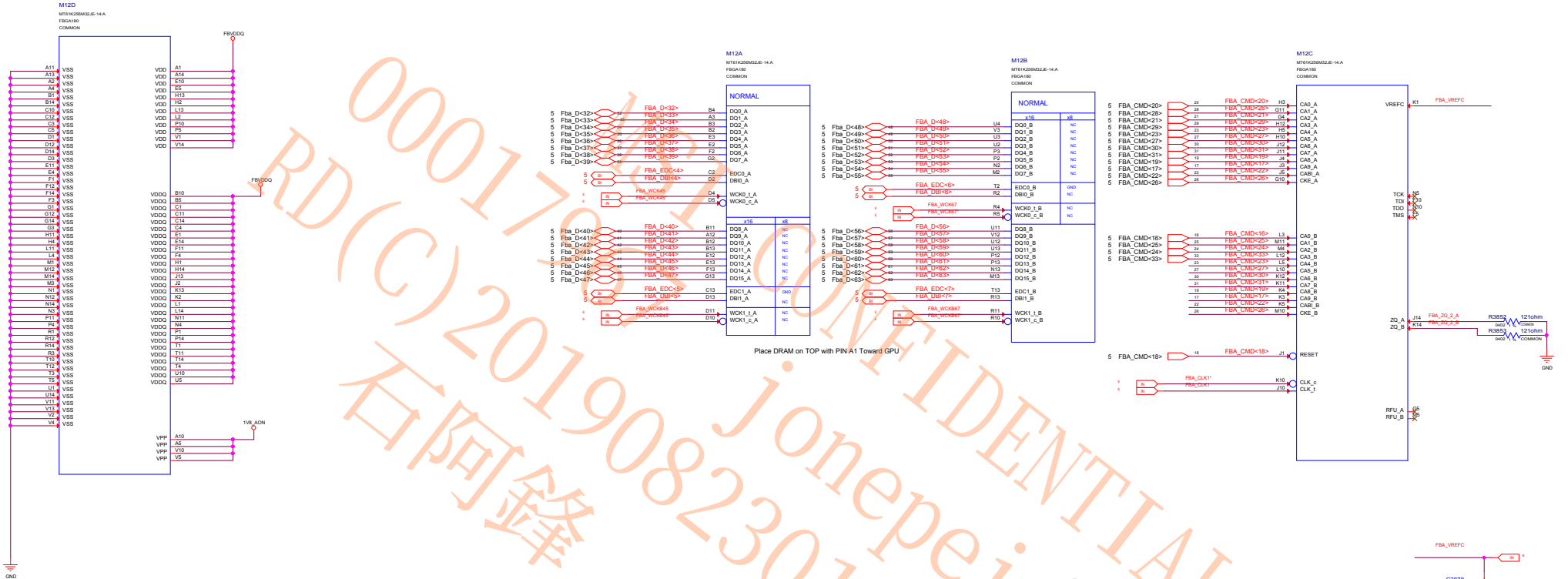

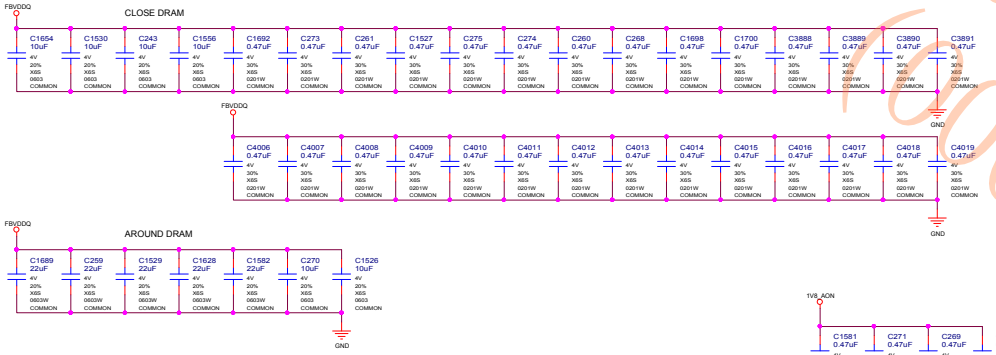

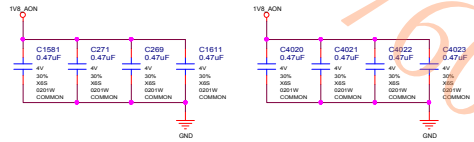

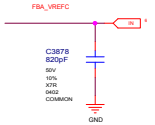

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Size: Custom	Document Description: MEMORY: GPU Partition A	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 7 of 66	

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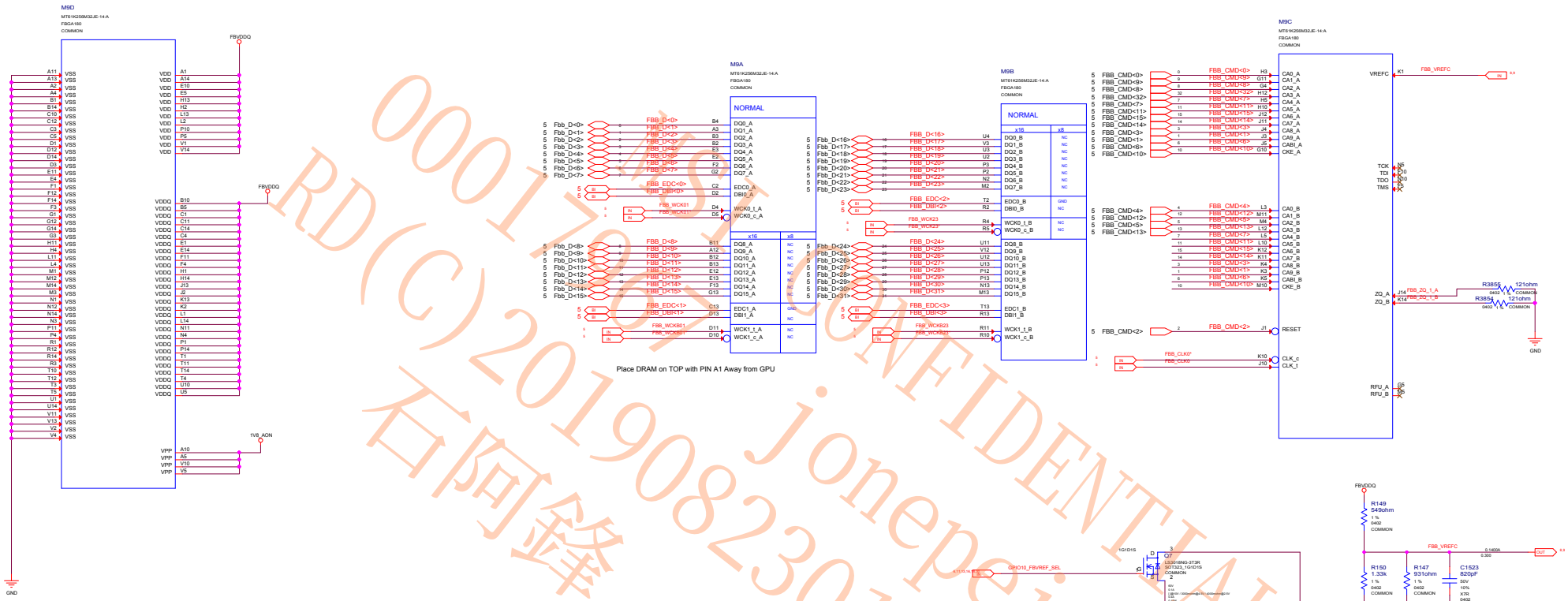
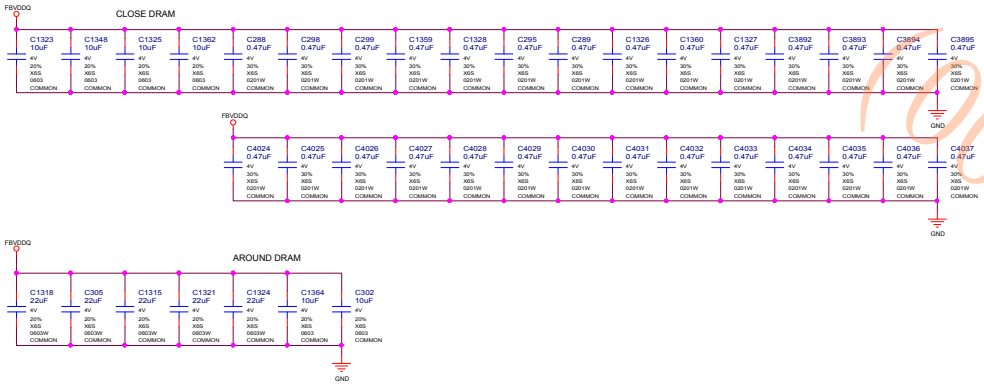
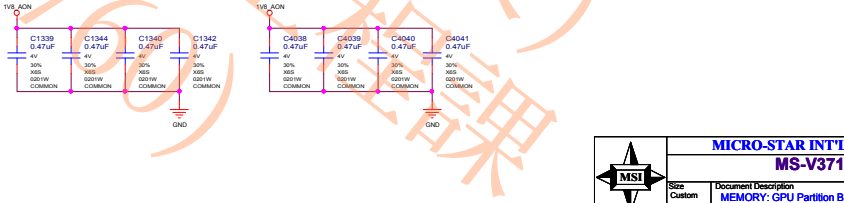
MEMORY: FBB Partition 31..0







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Date: Friday, August 31, 2018	Sheet 8 of 66	

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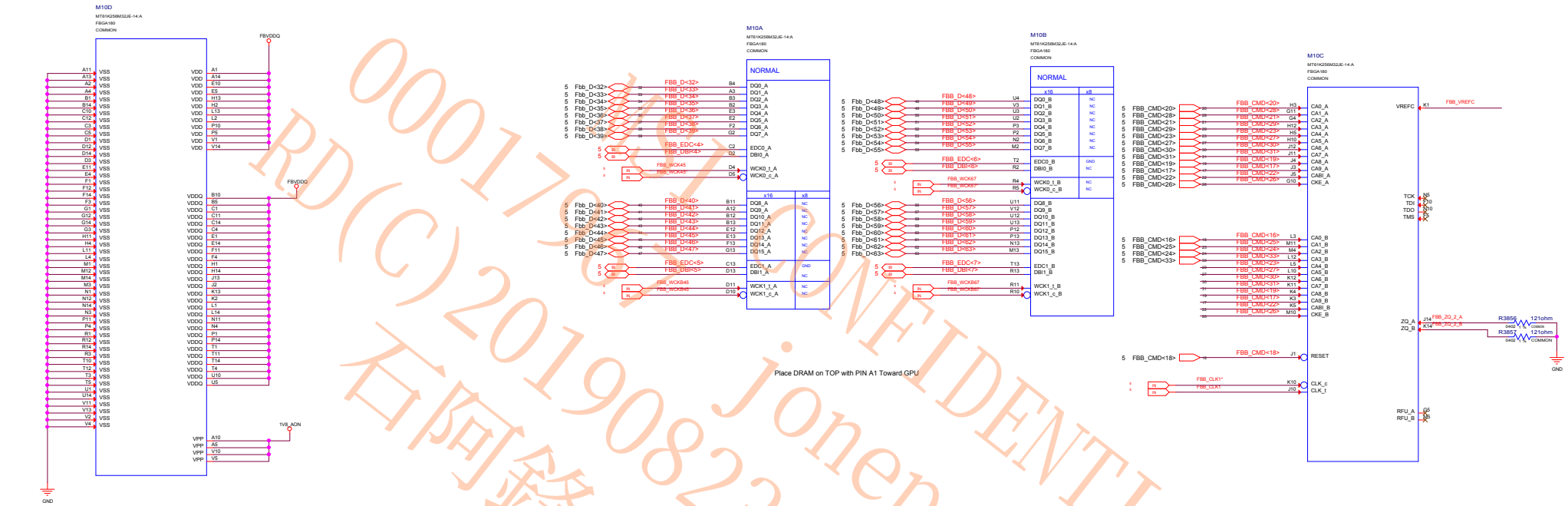

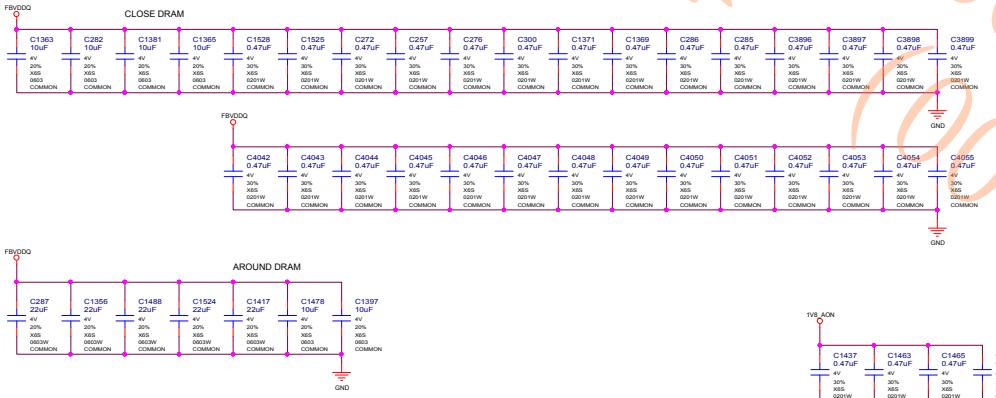

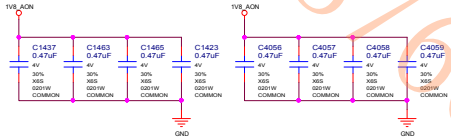

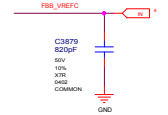

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Size: Custom	Document Description: MEMORY: GPU Partition B	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 9 of 66	

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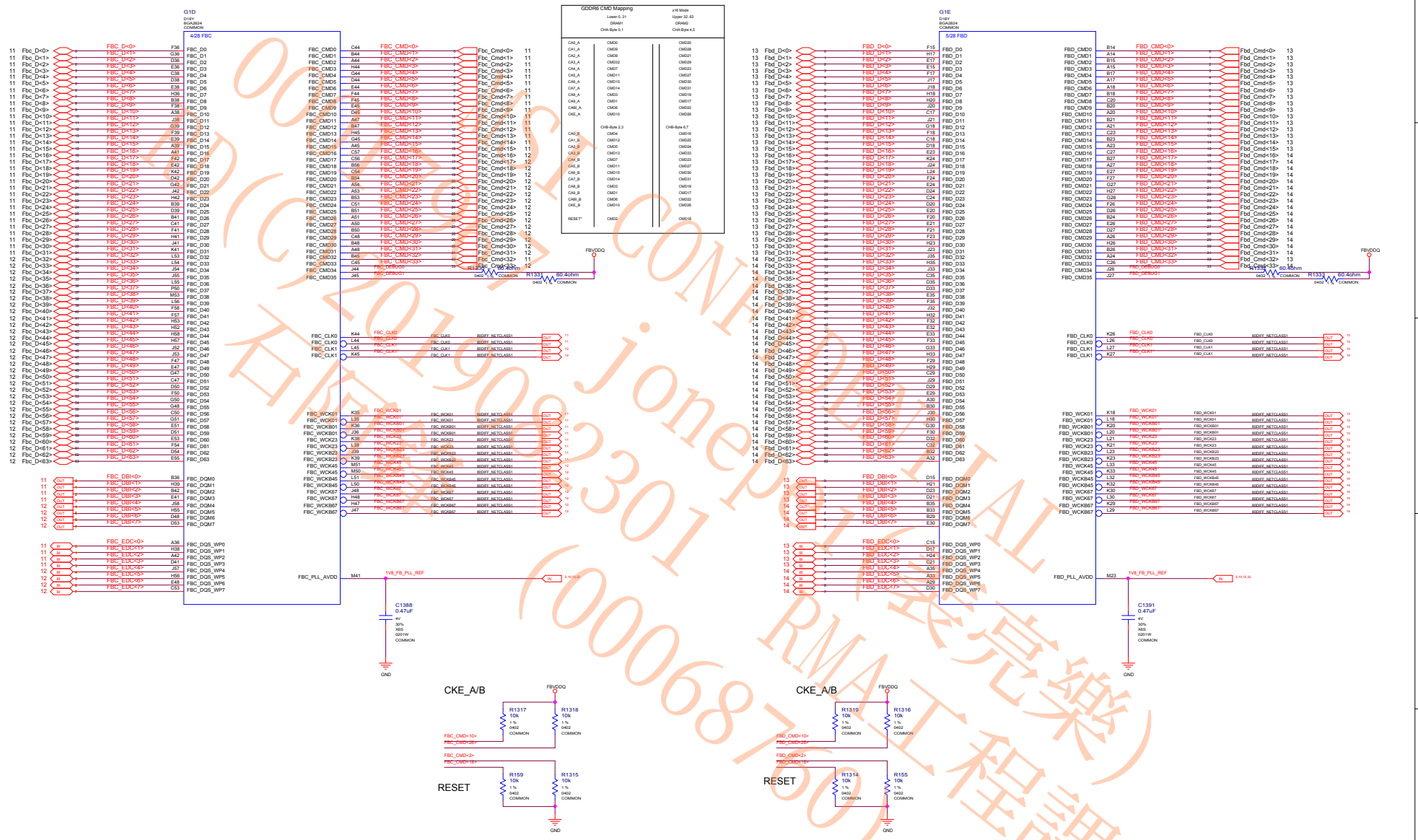
MEMORY: GPU Partition C/D



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Size: Custom	Document Description: MEMORY: GPU Partition C/D
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 10 of 66

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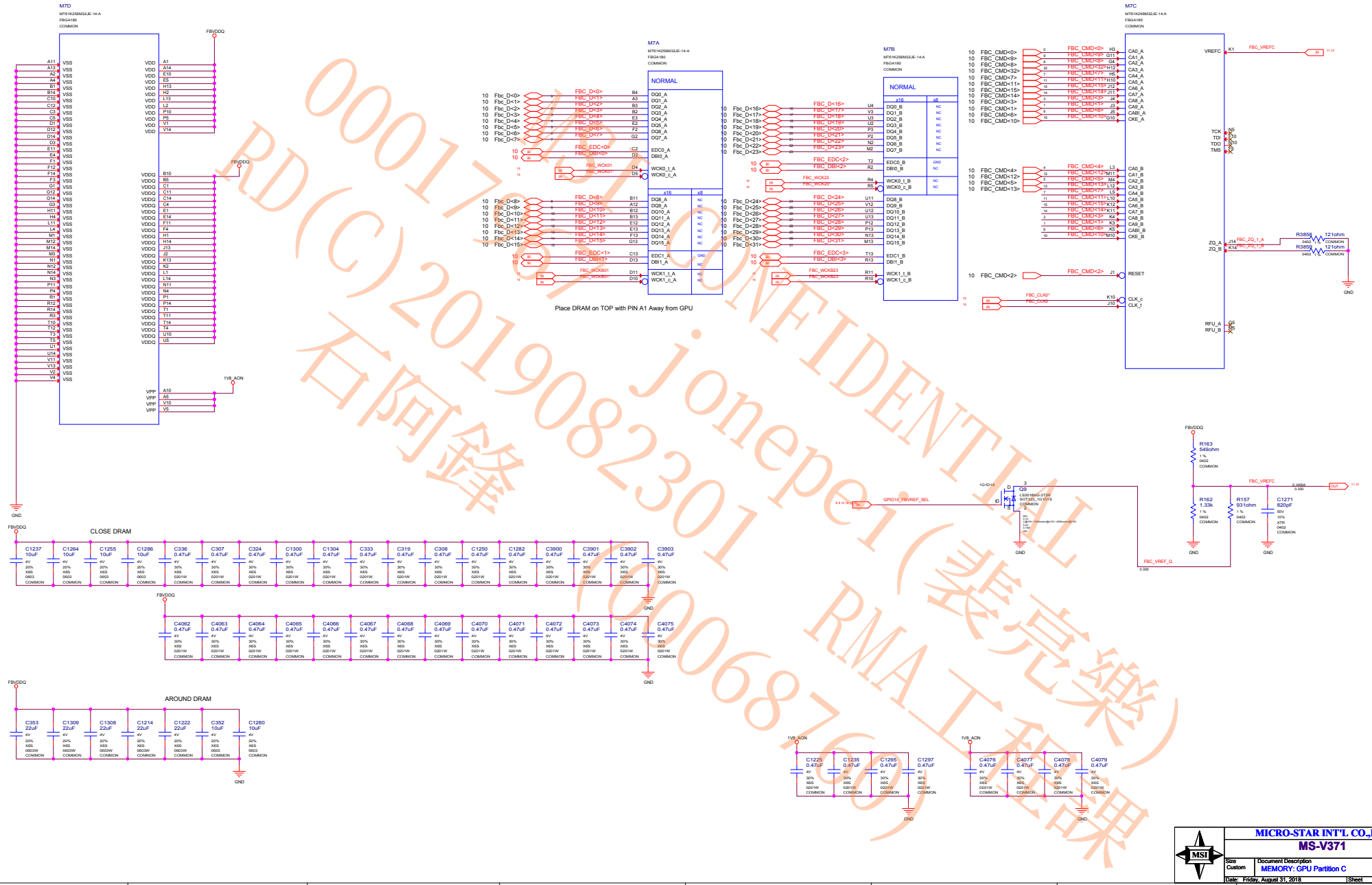

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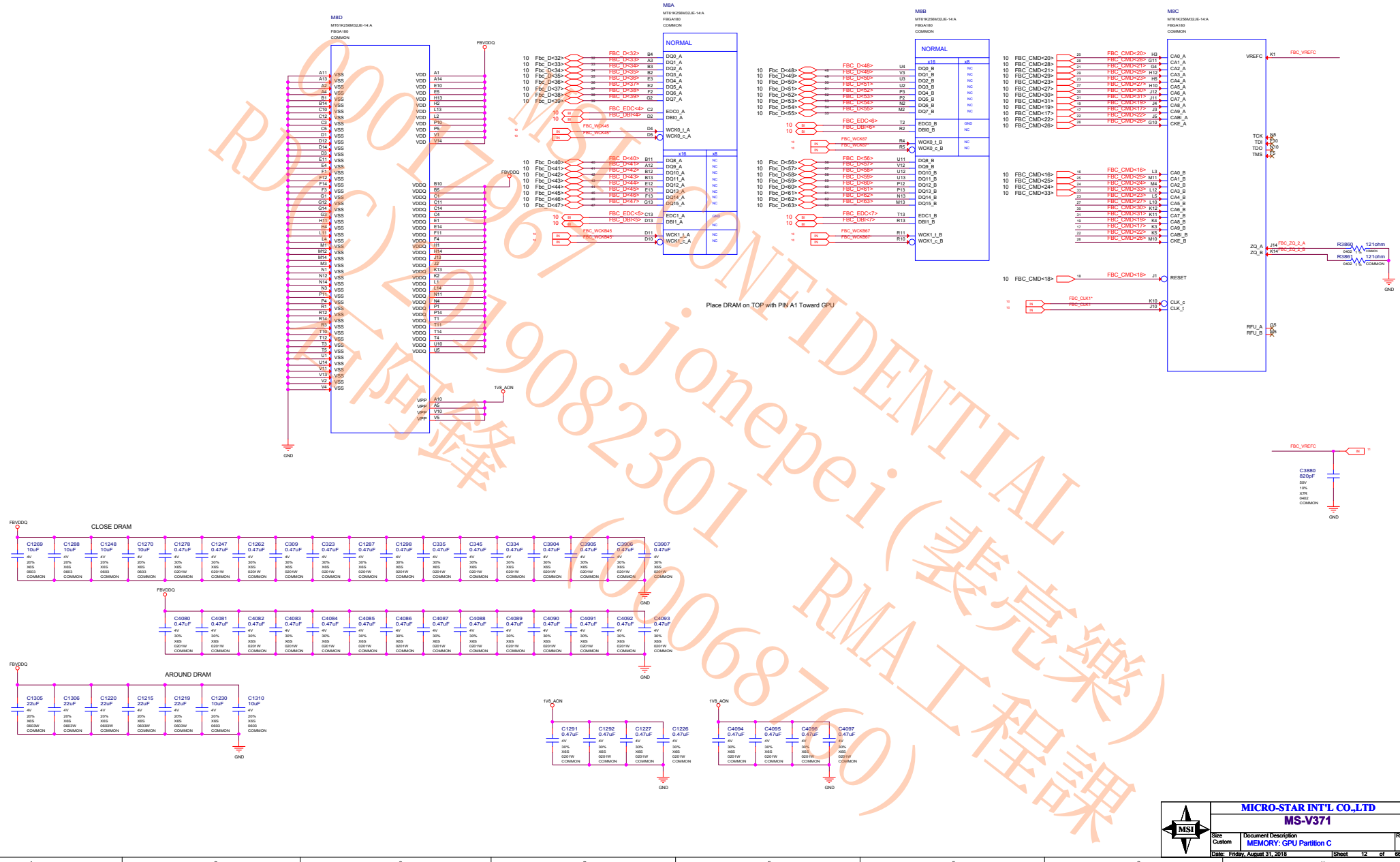
MEMORY: FBC Partition 63..32



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Rev: 6.0
Date: Friday, August 31, 2018
Sheet 12 of 66

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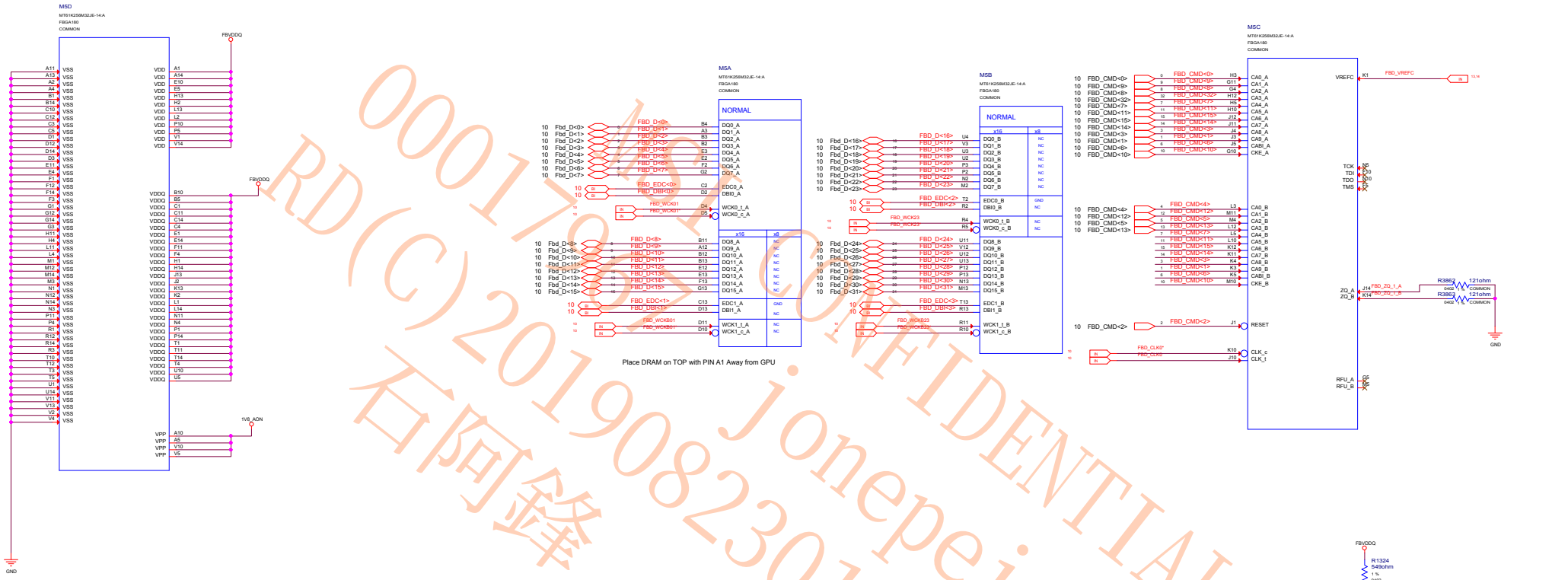
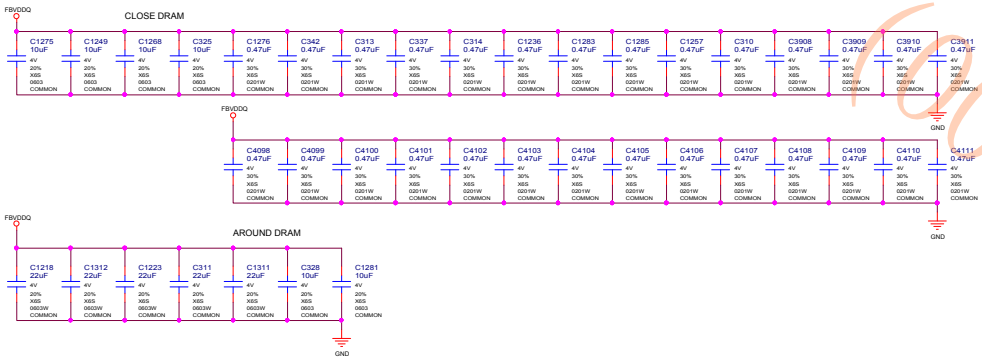
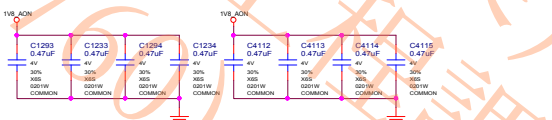
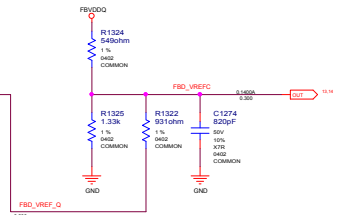
MEMORY: FBD Partition 31..0









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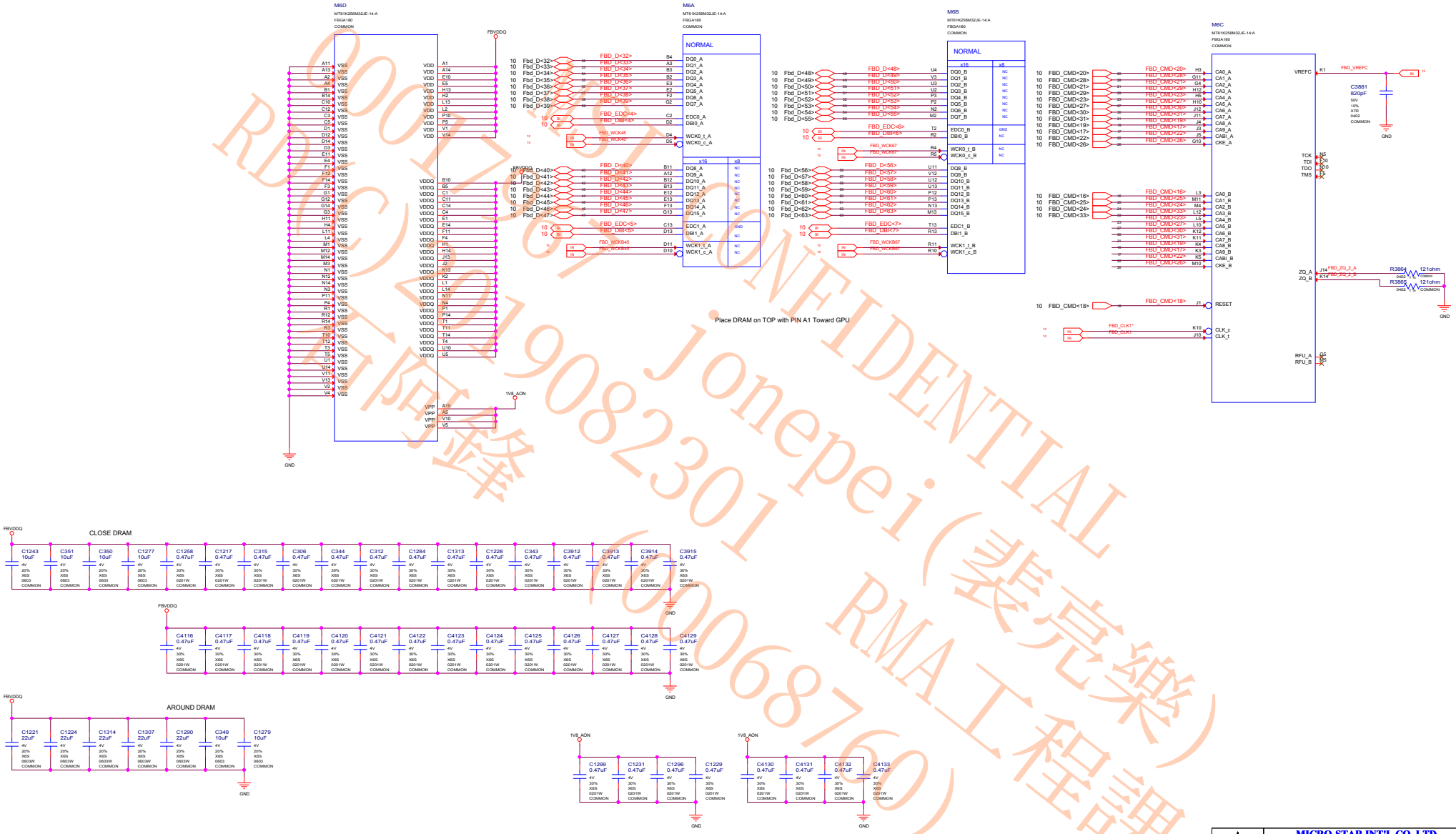

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Size: Custom	Document Description: MEMORY: GPU Partition D	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 14 of 66	

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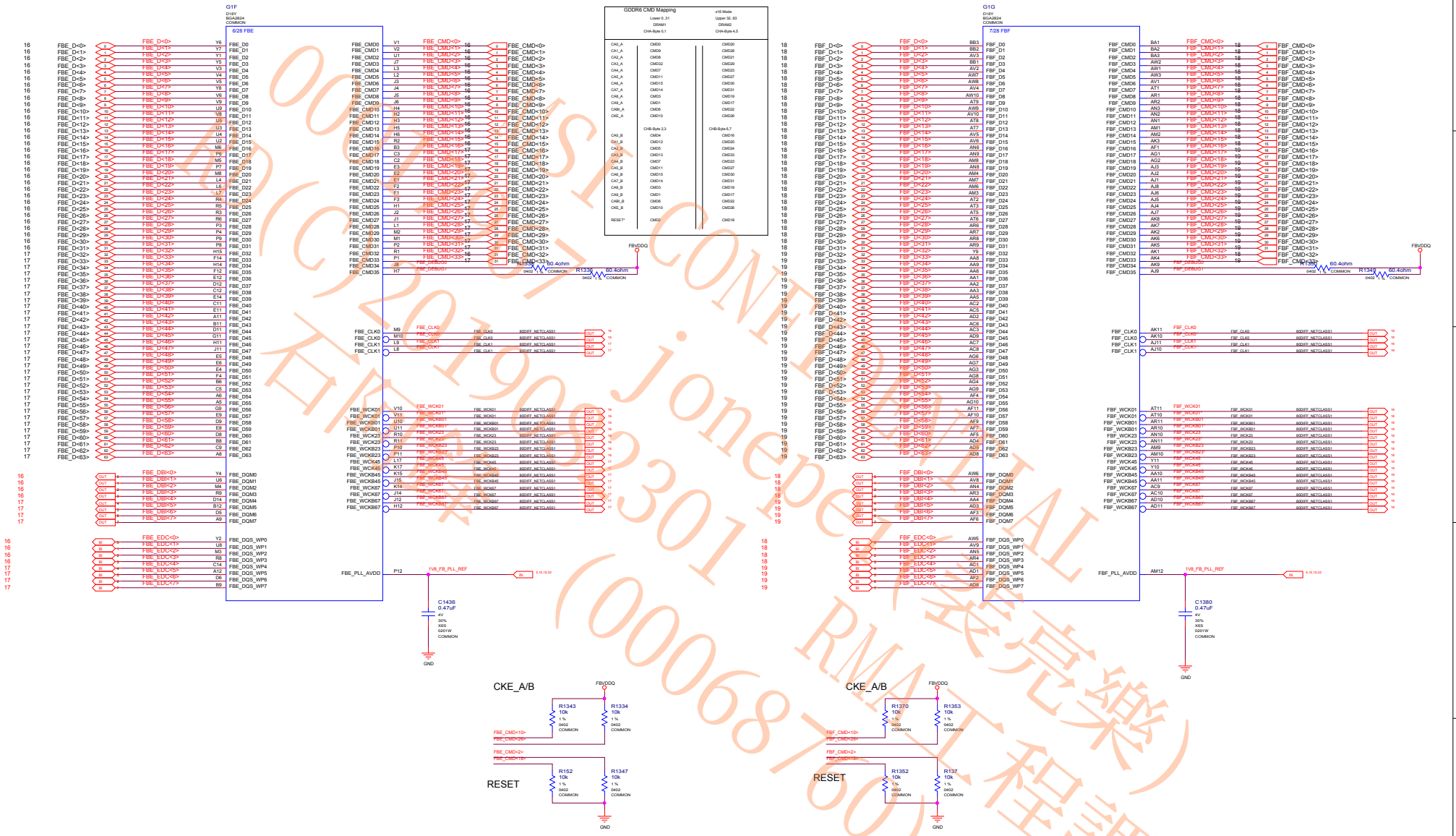

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Date: Friday, August 31, 2018	Sheet 15 of 66	

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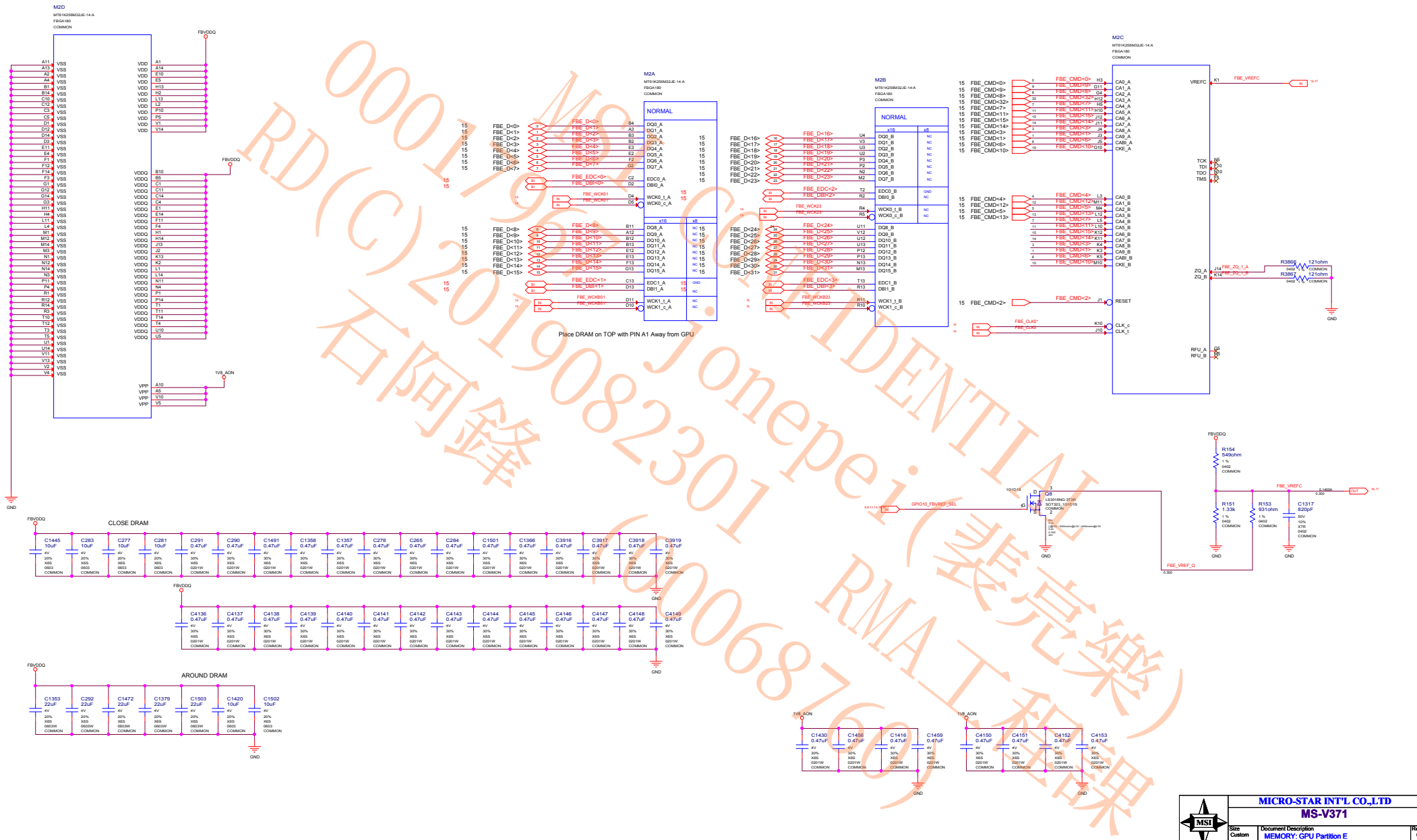

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石阿鋒

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Date: Friday, August 31, 2018	Sheet 16 of 66		

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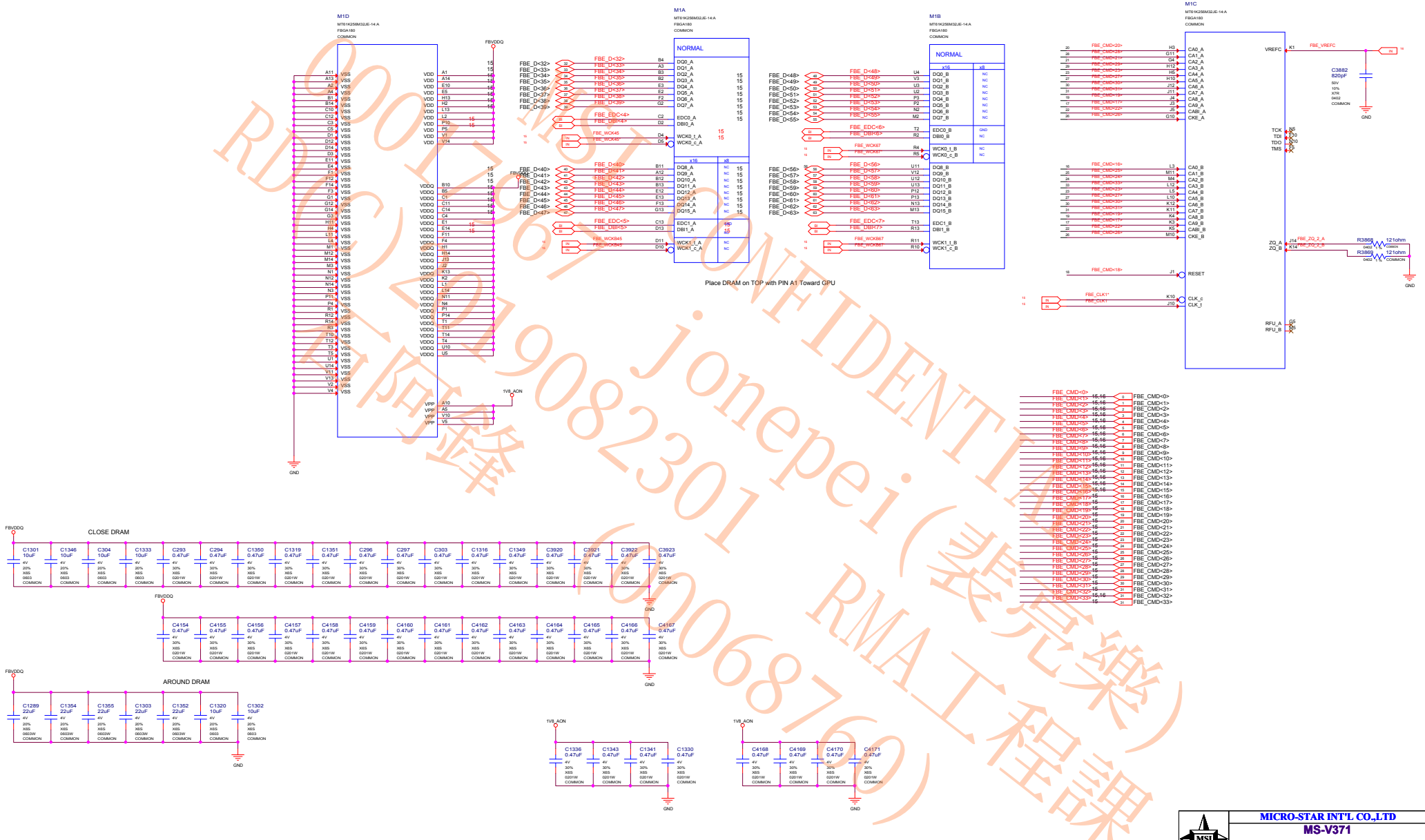

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Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 17 of 66

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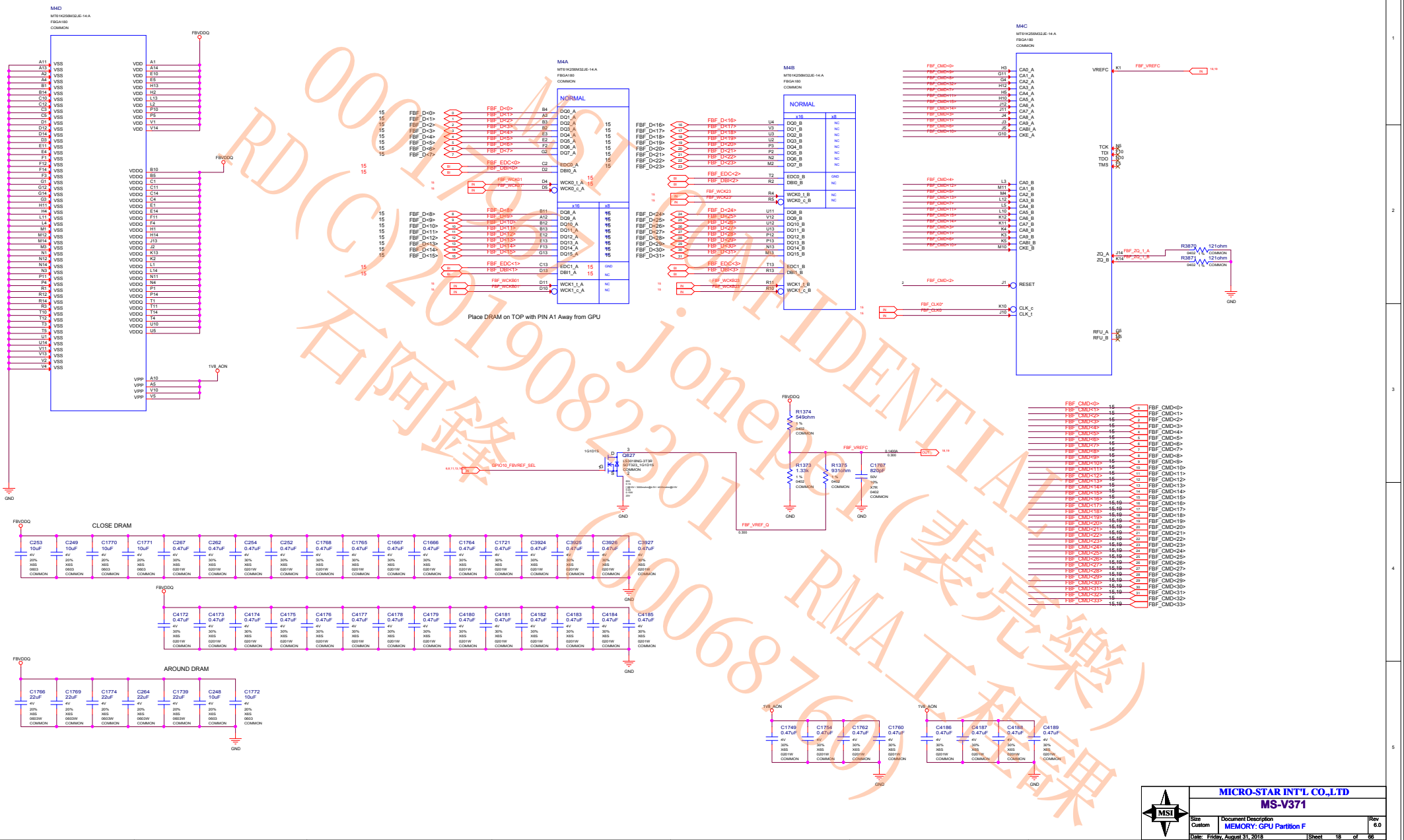

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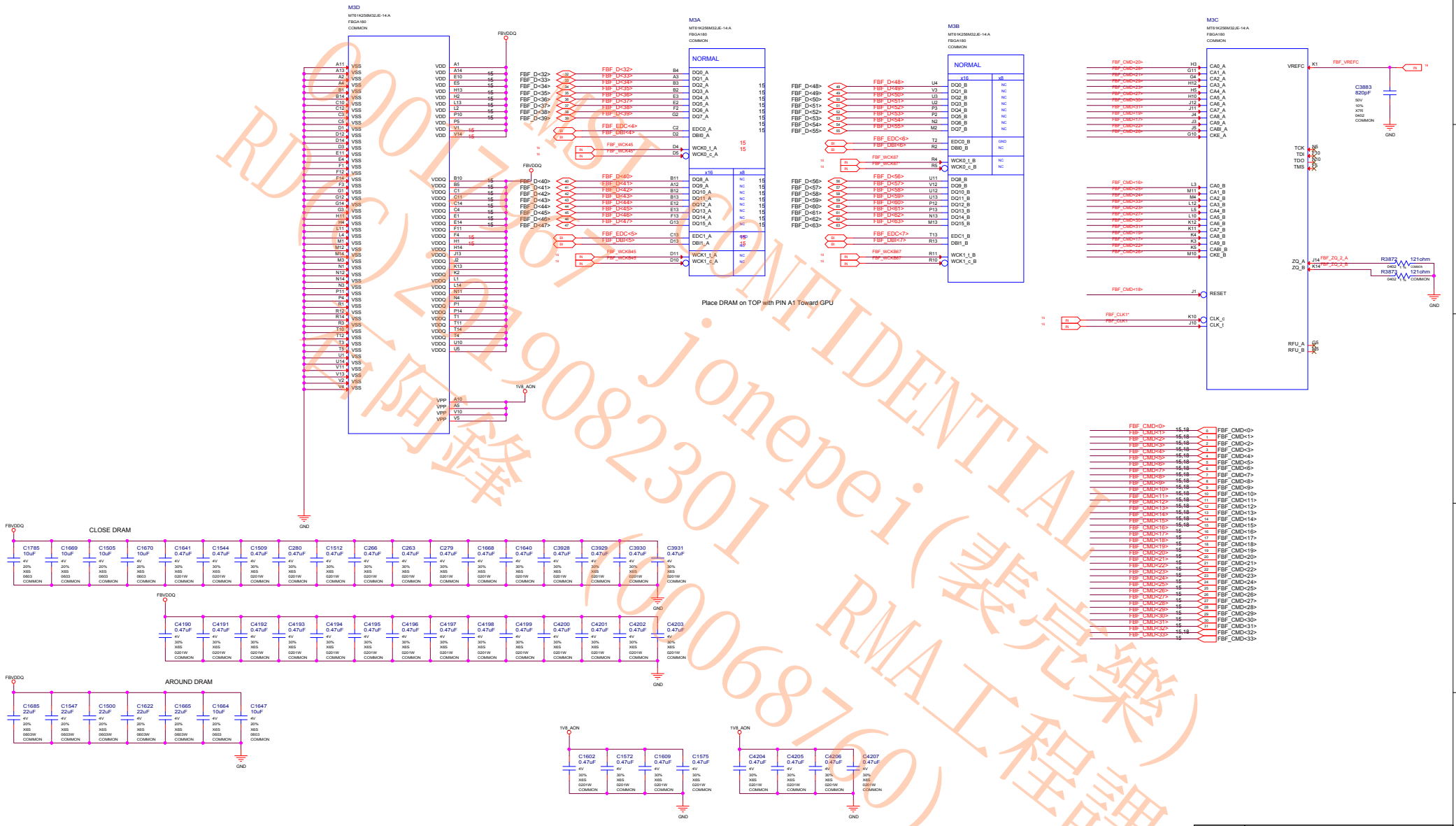

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Document Description: MEMORY: GPU Partition F
Rev: 6.0
Date: Friday, August 31, 2018
Sheet 19 of 66

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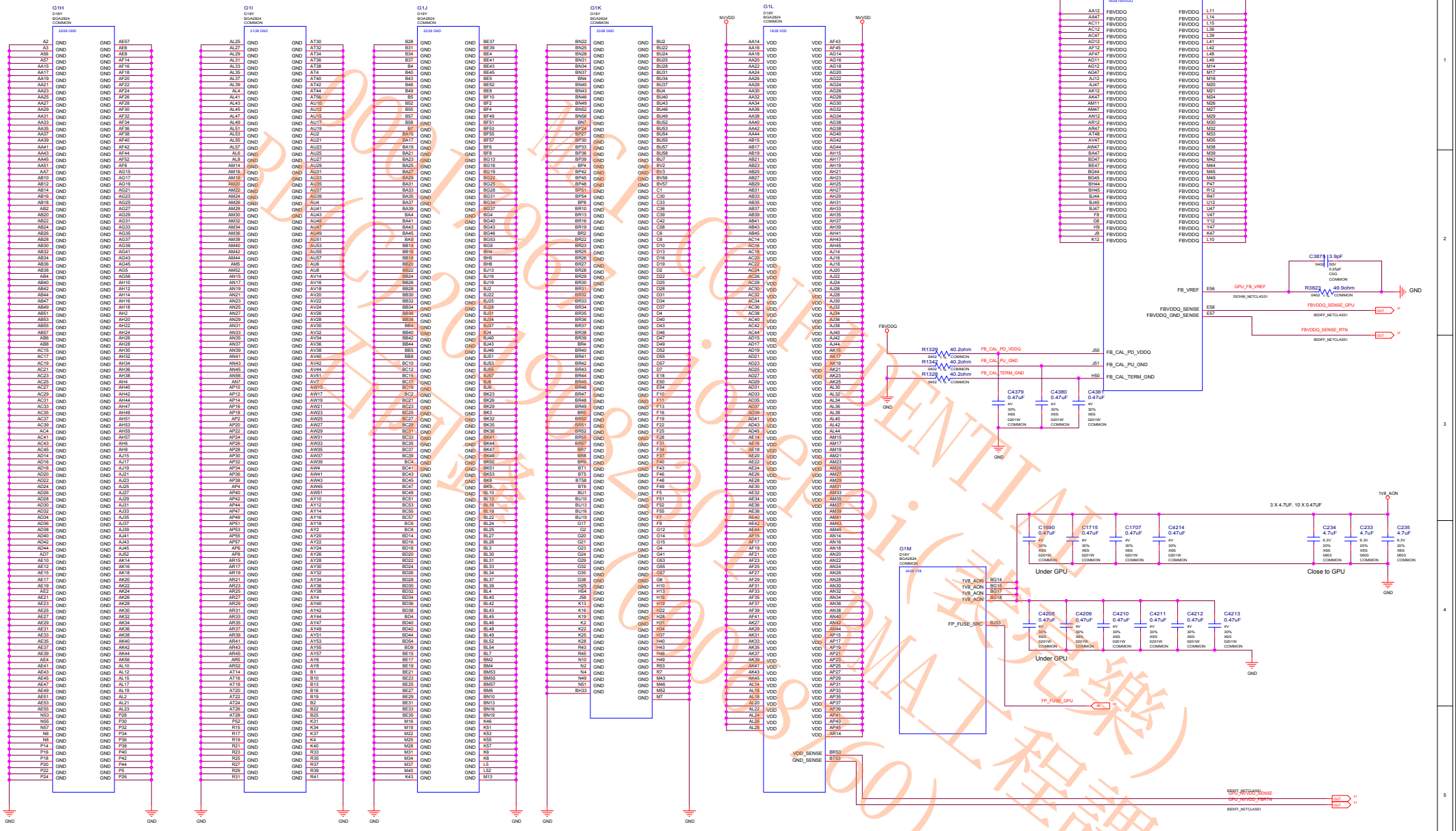
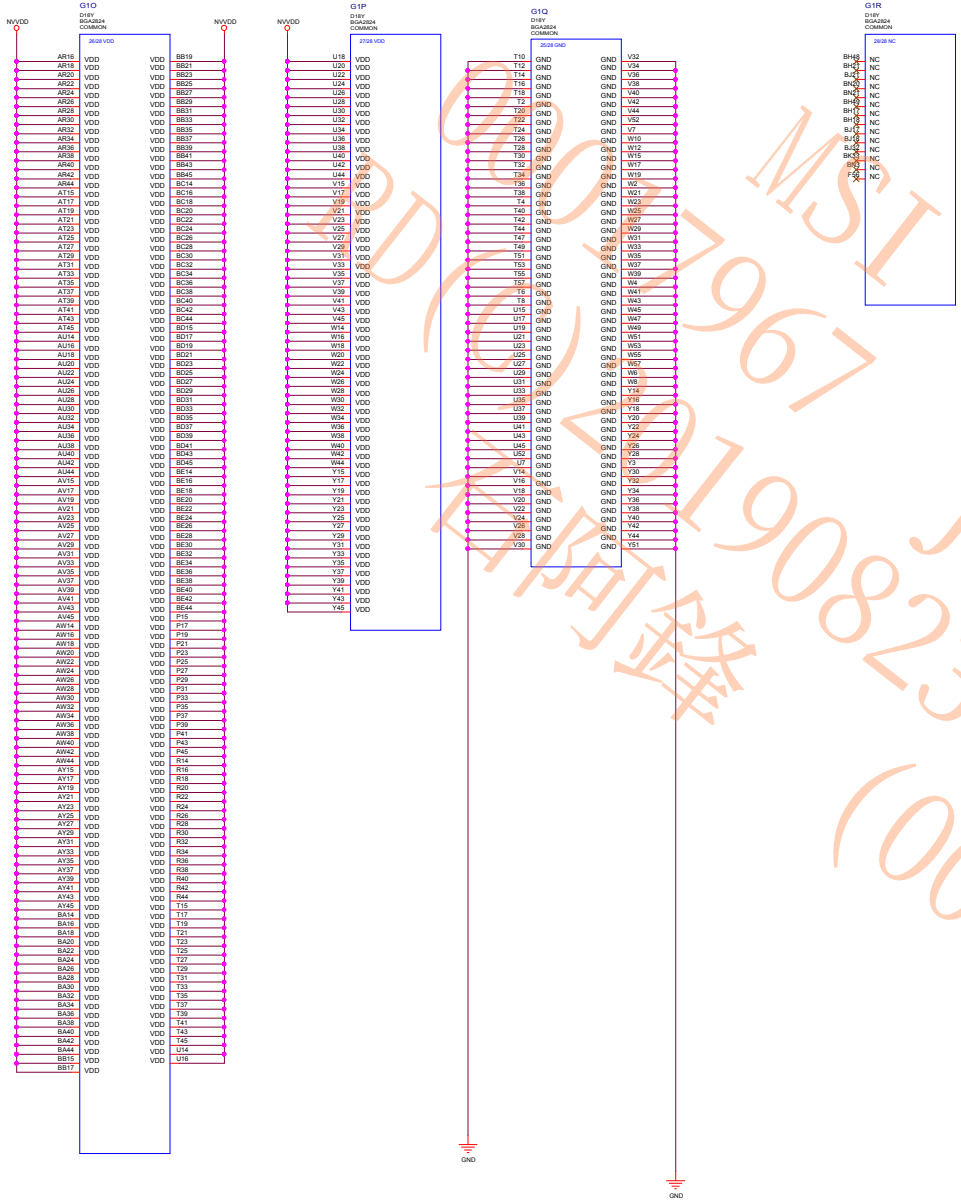
GPU PWR and GND



GPU PWR GND NCs



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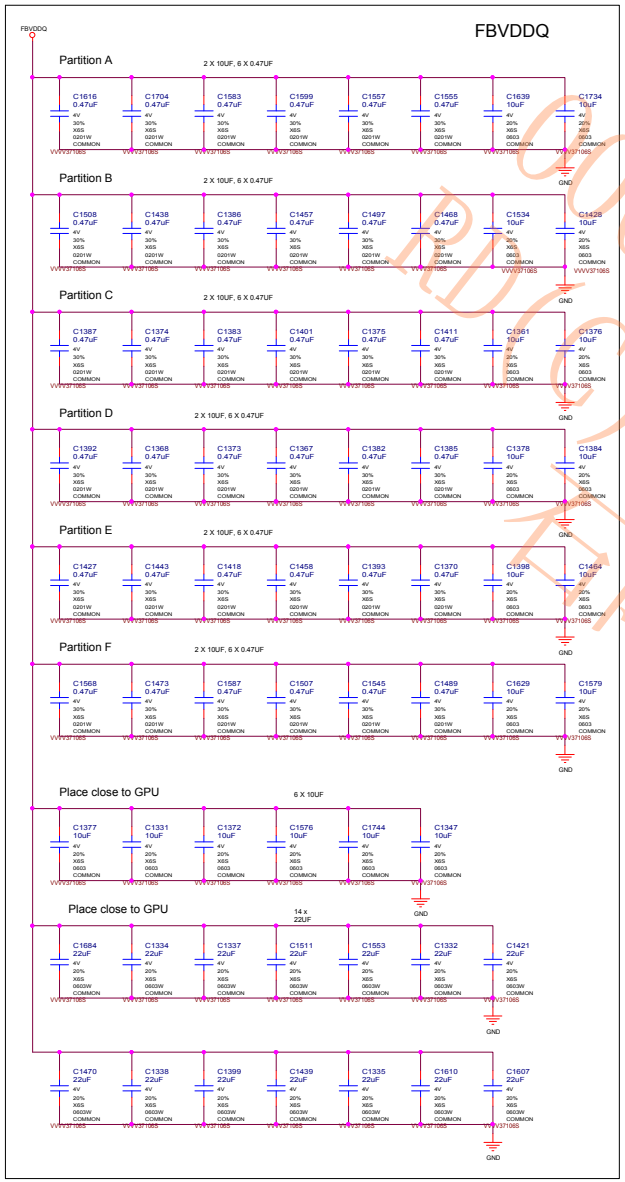
Size: Custom	Document Description: GPU PWR GND	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 21 of 66	

GPU Decoupling

FBVDDQ



NVVDD

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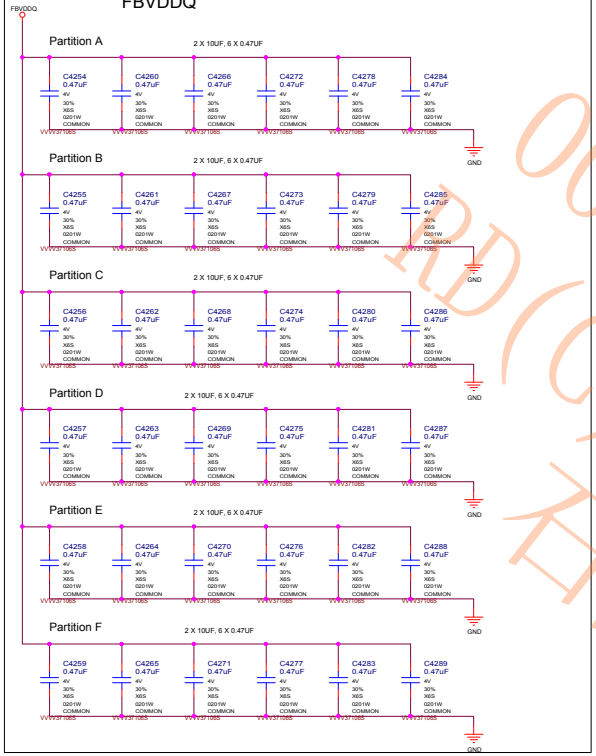
Size	Document Description	Rev
Custom	Decoupling	6.0

Date: Friday, August 31, 2018 Sheet 22 of 66

GPU Decoupling

FBVDDQ



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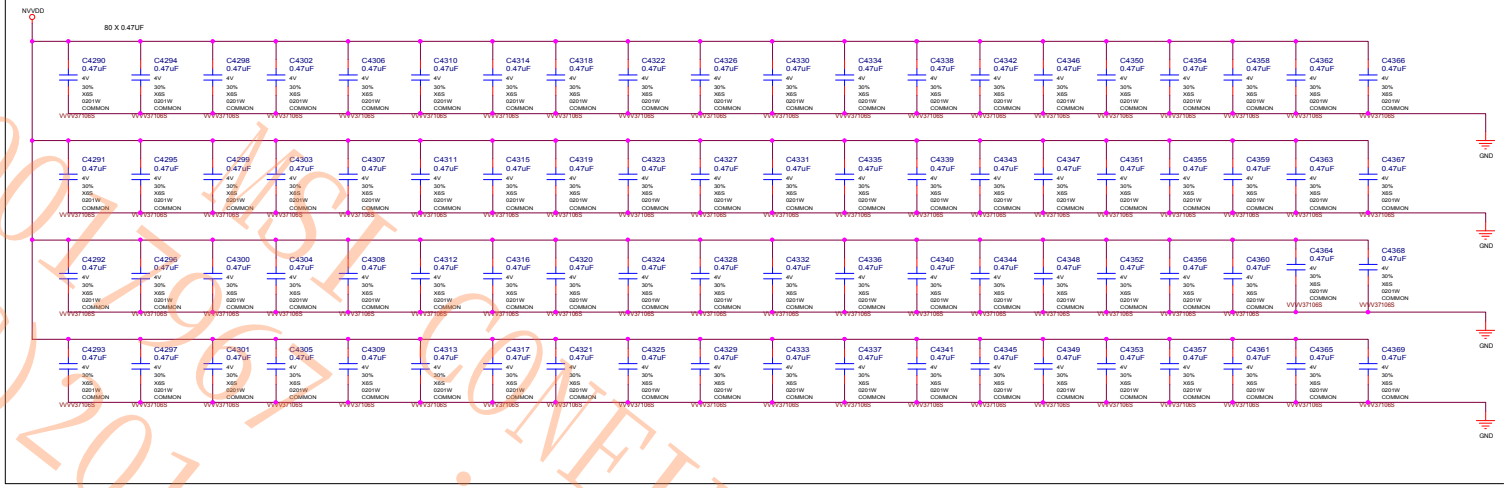

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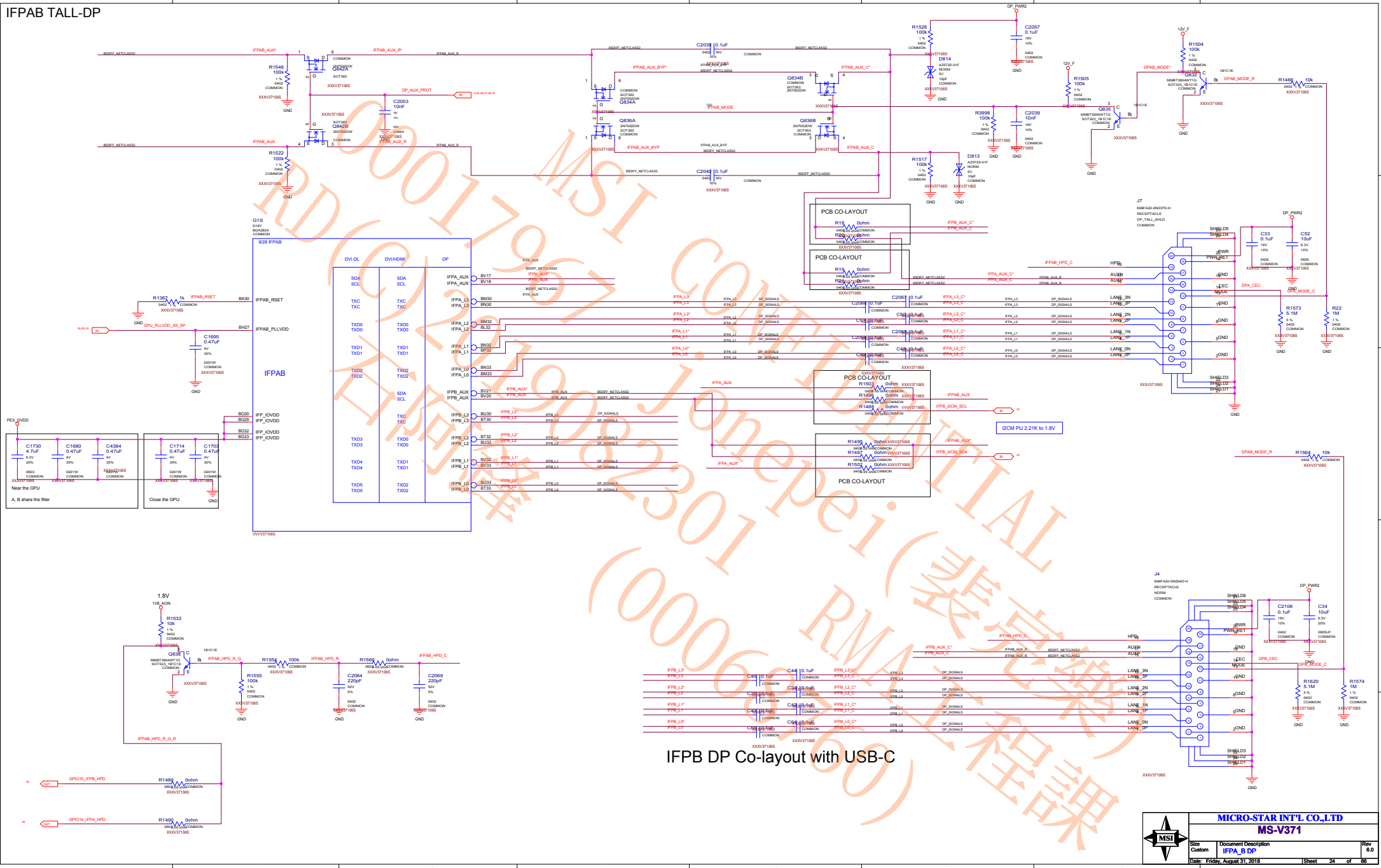
Size: Custom	Document Description: DECOUPLING 2	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 23 of 66	

IFPAB TALL-DP



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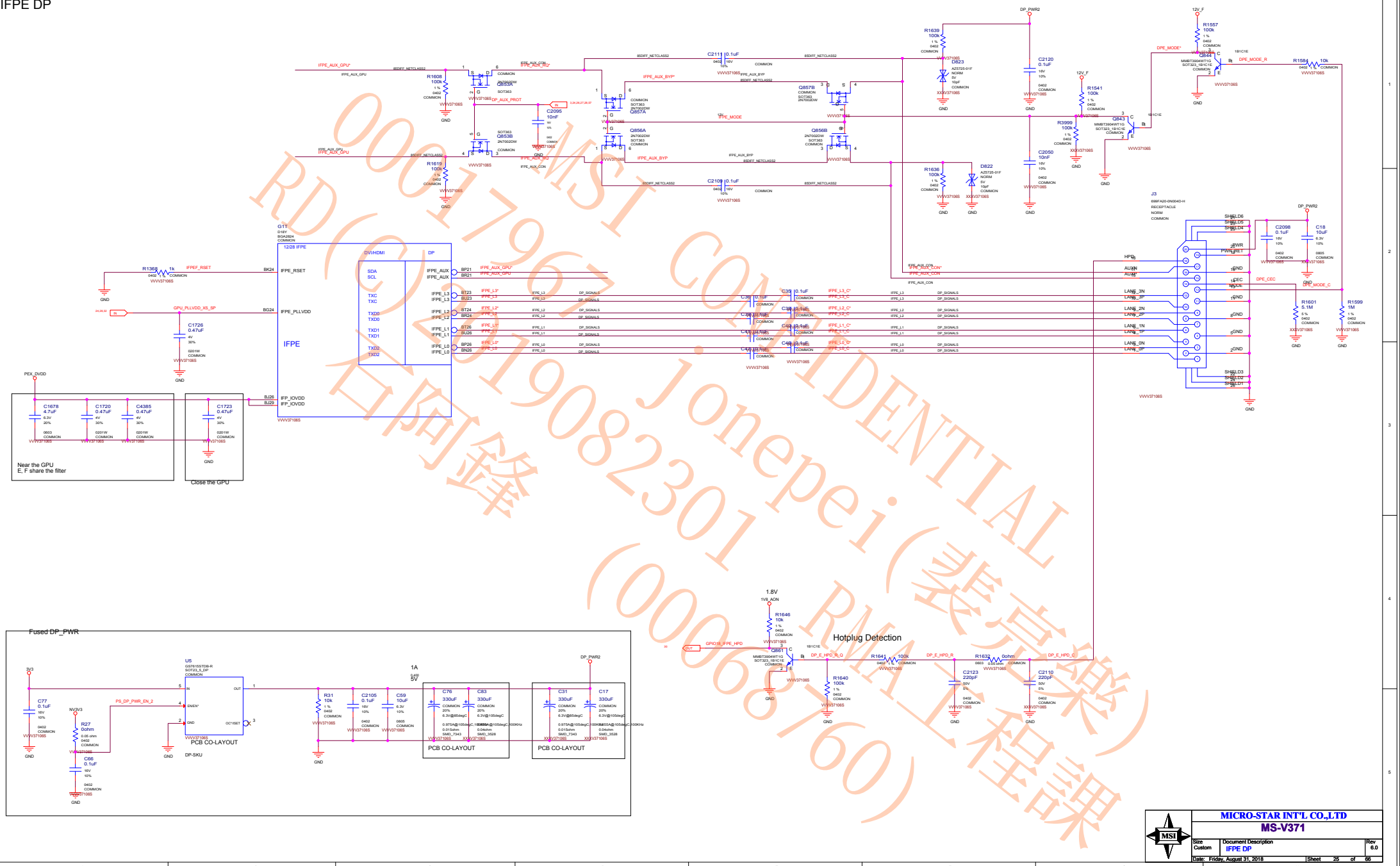
IFPE DP



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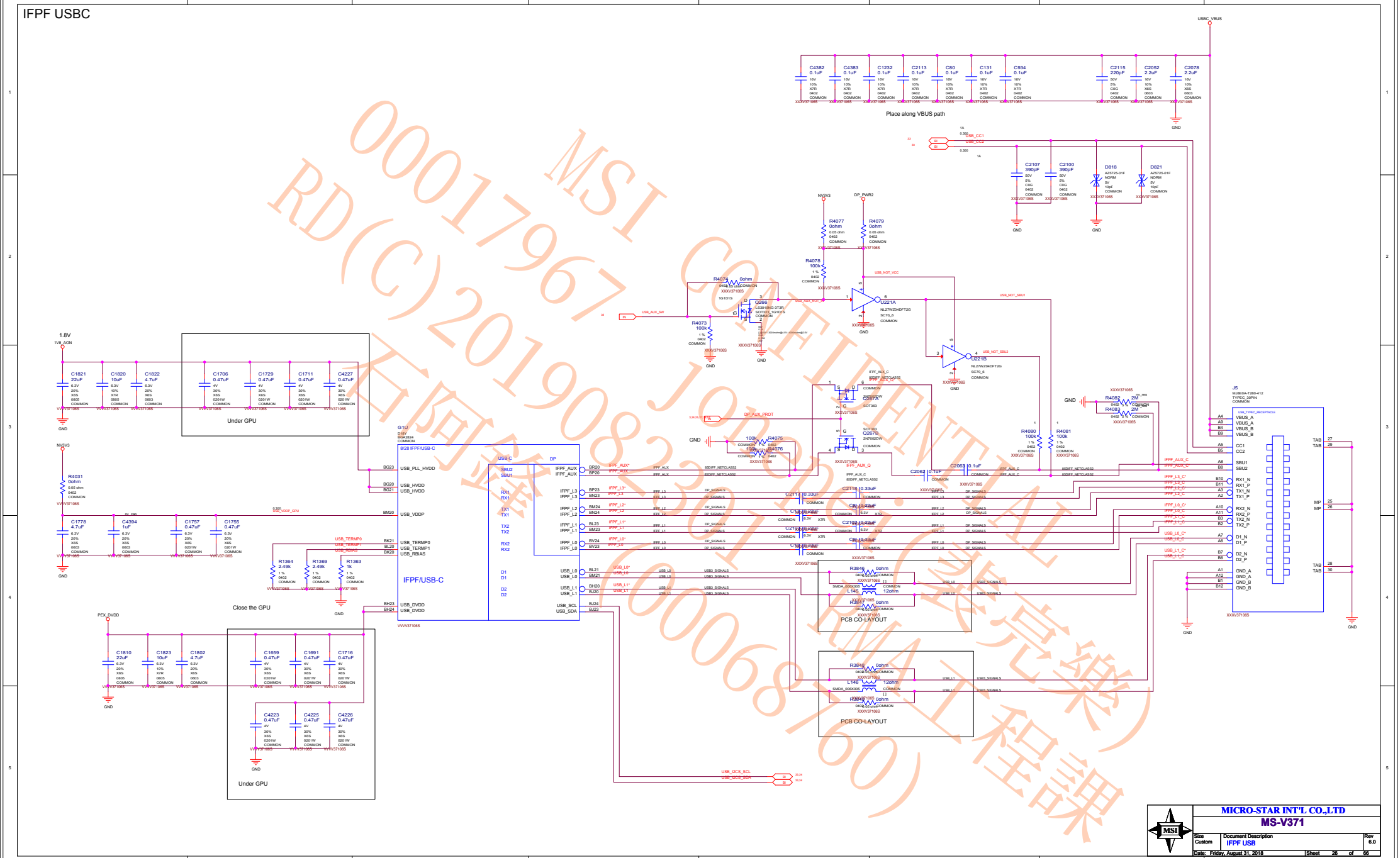

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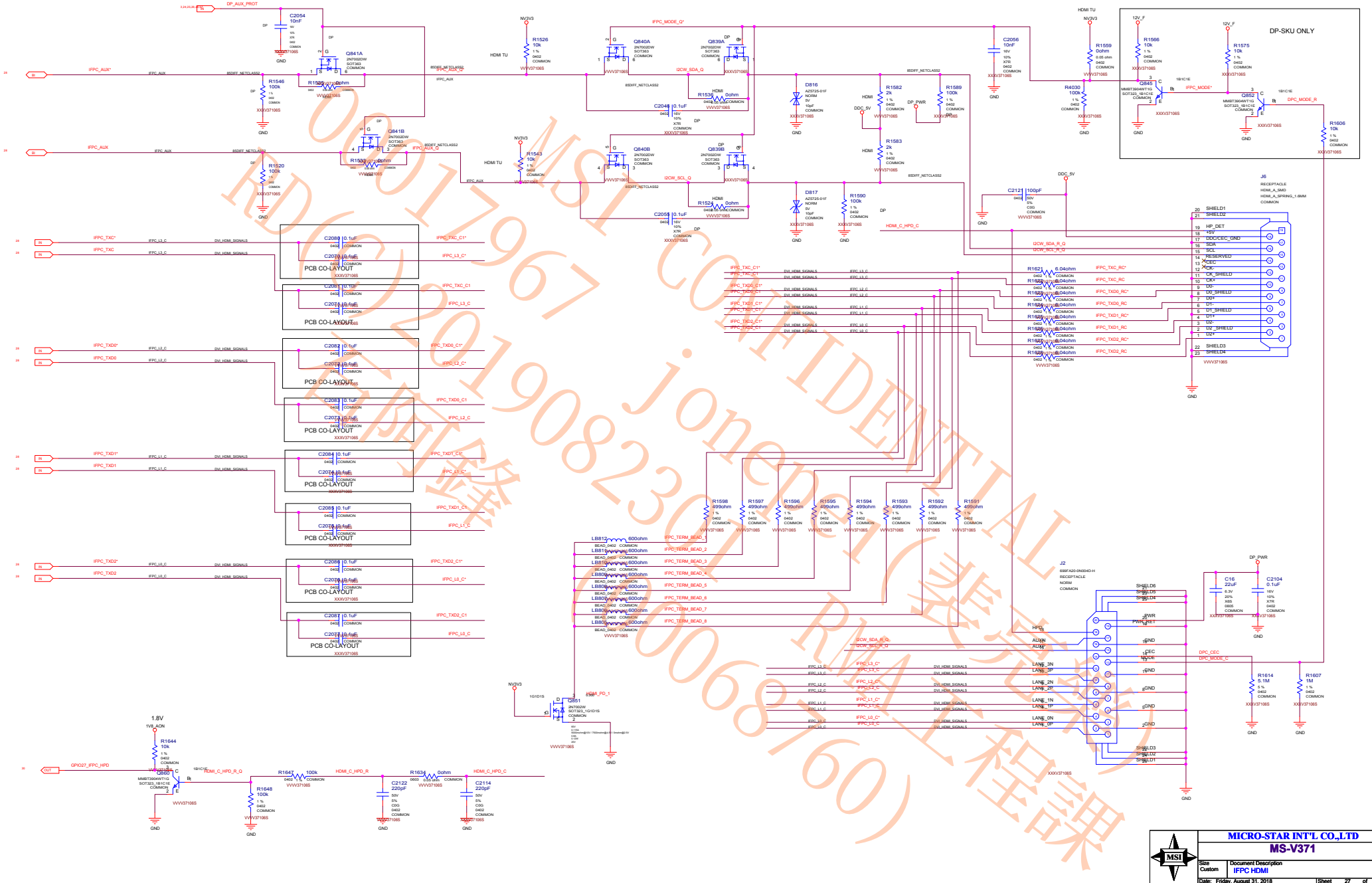
RD(C)20190823
(000681760)
石阿强(设计完毕)
JONDO(工程师)

IFPC HDMI 2.0/DP



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jonepei
RD(C)20190823001(00681760)
RWA工程課(緊急)

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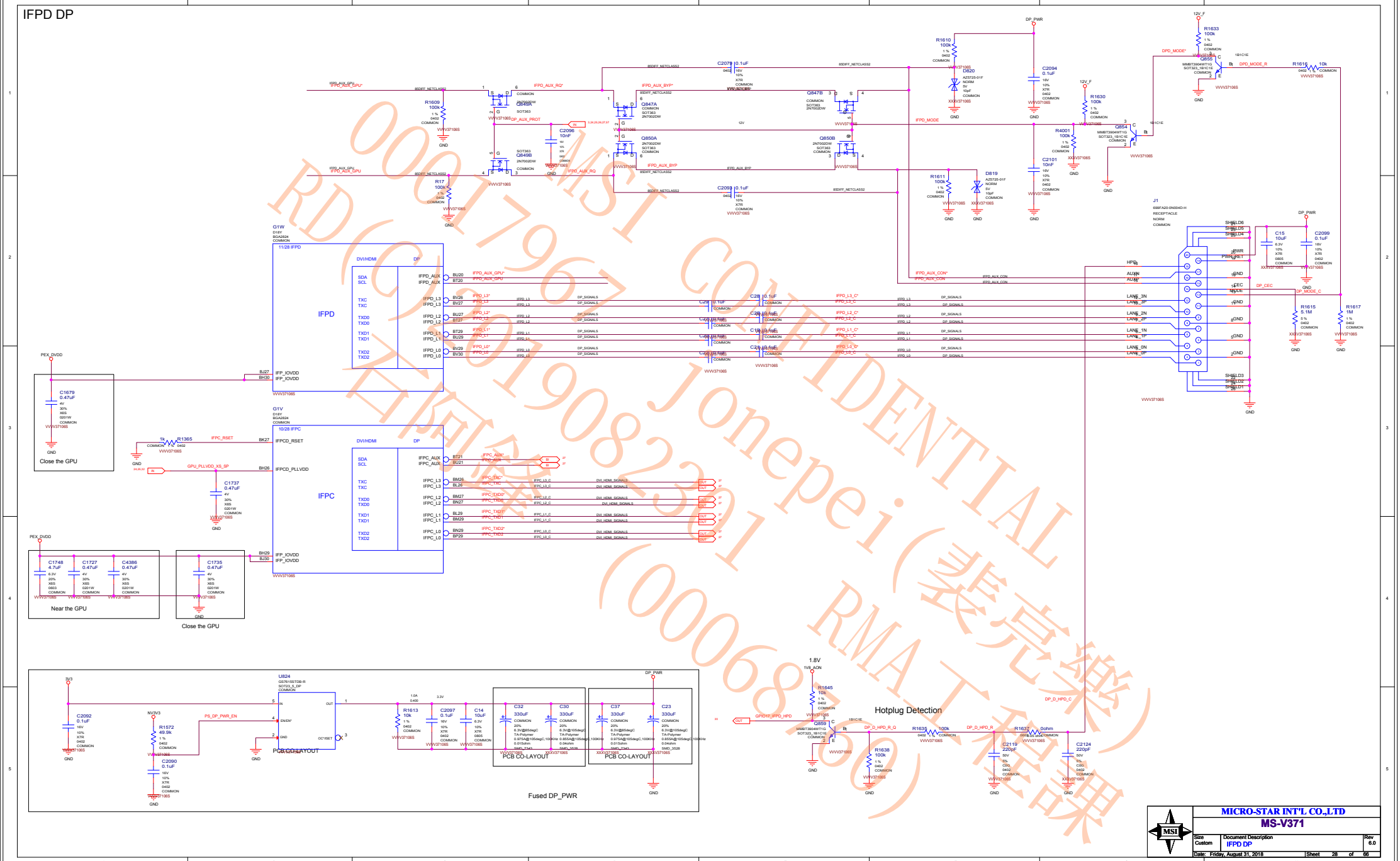
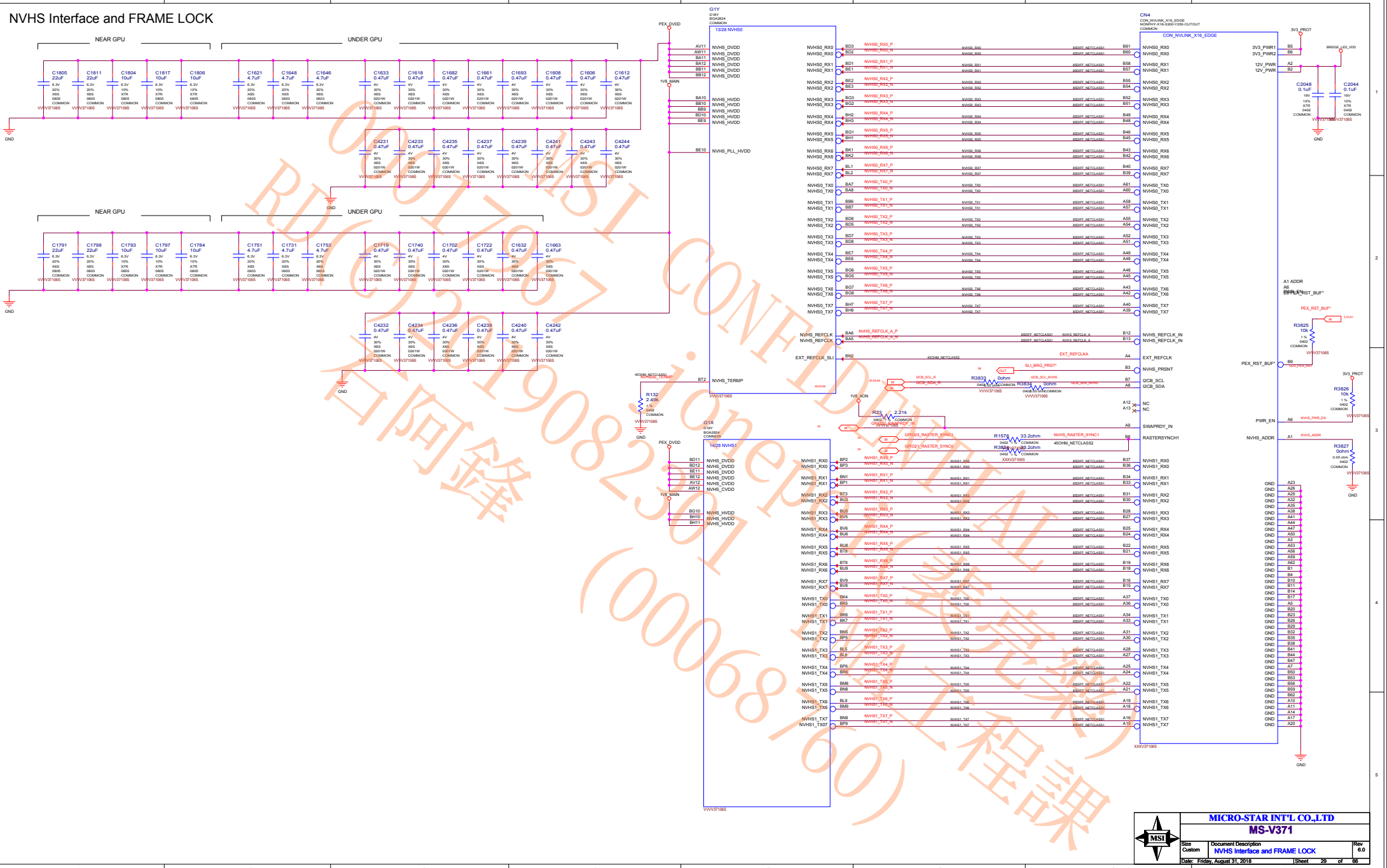
Size: Custom	Document Description: IFPC HDMI
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 27 of 66



0061796 MSI CONFIDENTIAL
RD(Cynthia)20190829 Jonepei(裴完樂)
(0006836) RMA下發保留

NVHS Interface and FRAME LOCK



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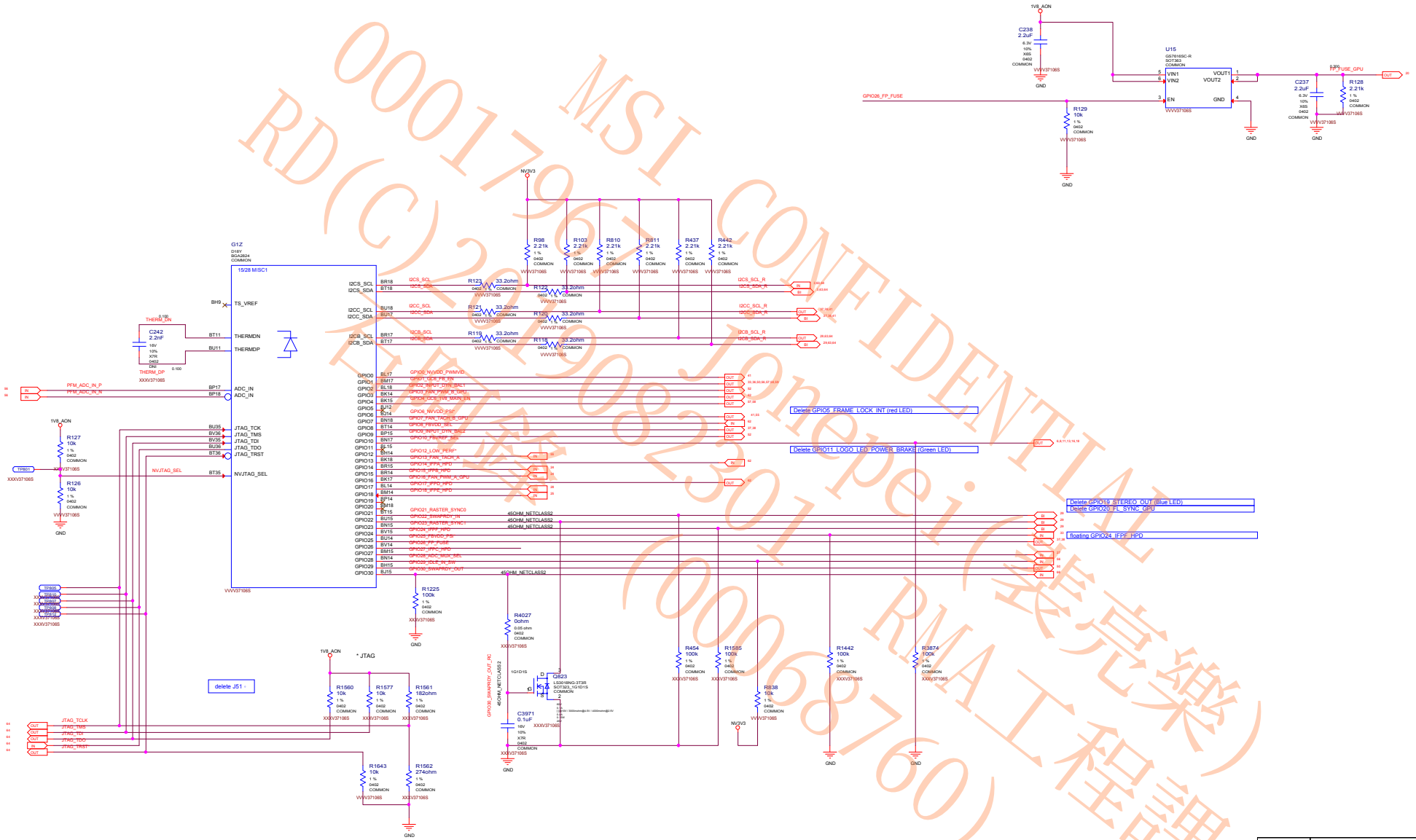
RD(02)1908256(00068160)
Pioneer 阿鋒

MISC1: Fan, Thermal, JTAG, GPIO, STEREO



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Jonepei(裝完樂)
RD(C)2990230
RMA工程課
(0006876)

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MS-V371		
Size: Custom	Document Description: MISC	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 30 of 66	

MISC2: ROM, Straps

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]	
L	L	L	00000	
L	L	H	00001	DEFAULT
L	H	L	00010	
L	H	H	00011	
H	L	L	00100	
H	L	H	00101	
H	H	L	00110	
H	H	H	00111	
L	L	M	01000	
L	M	L	01001	

H=High :Tied to 1.8V

M=Middle:Tied to 0.9V

L=Low :Tied to 0V

ROM_SO	ROM_SI	ROM_SCLK	DUMMY[2:0],FS_OVERT	1:ENABLE 0:DISABLE	
L	L	L	XX1	FS_OVERT ENABLE	DEFAULT
L	L	H	XXX0	FS_OVERT DISABLE	

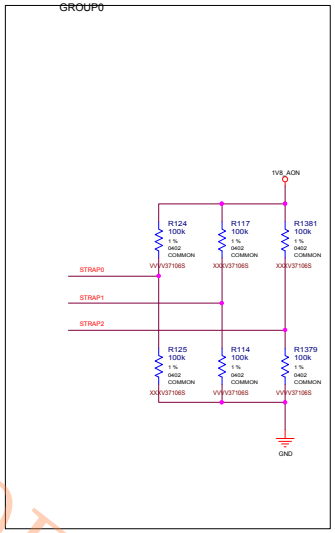
1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

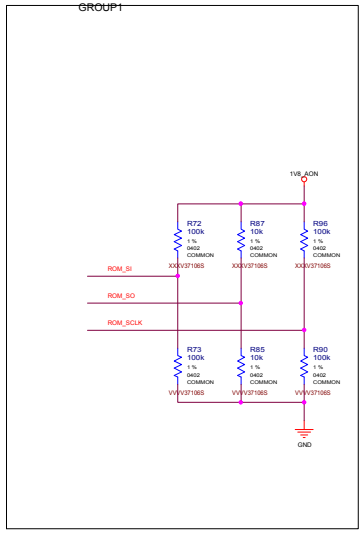
1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

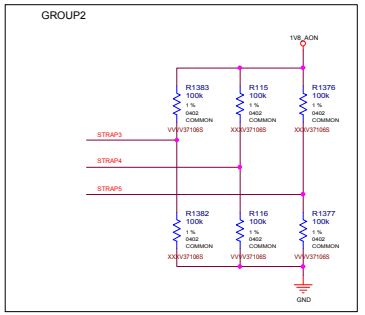
1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

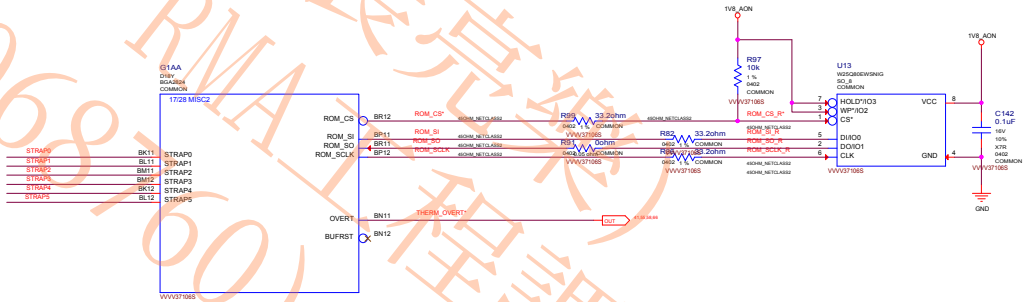
1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE

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	SKU 200









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Size: Custom	Document Description: ROM/STRAPS	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 31 of 66	

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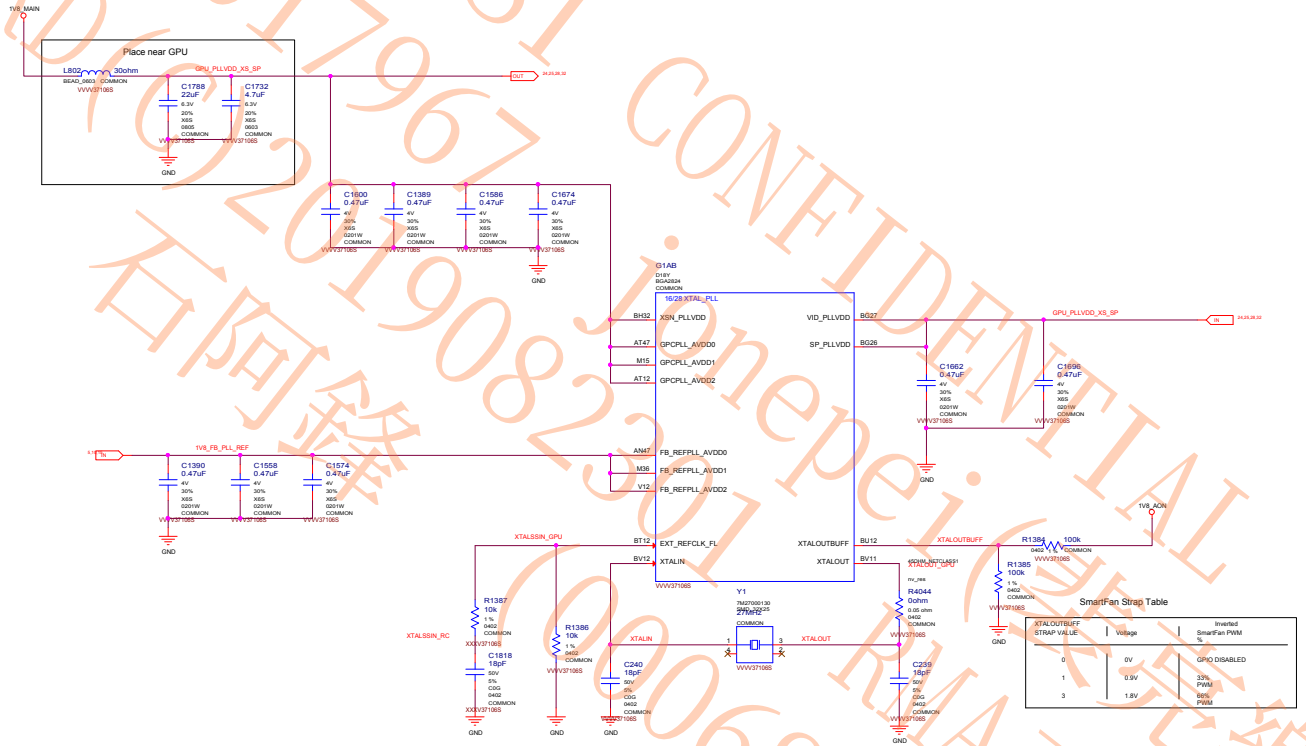
Jonepei(姜宪培)
0001796
RD(C)-20190823
RMA(000687)
石阿锋

MISC2: XTAL. PLL



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RD(6201908230)
Jonepei(張宏業)
石阿錄(00068760)
RMA工程課

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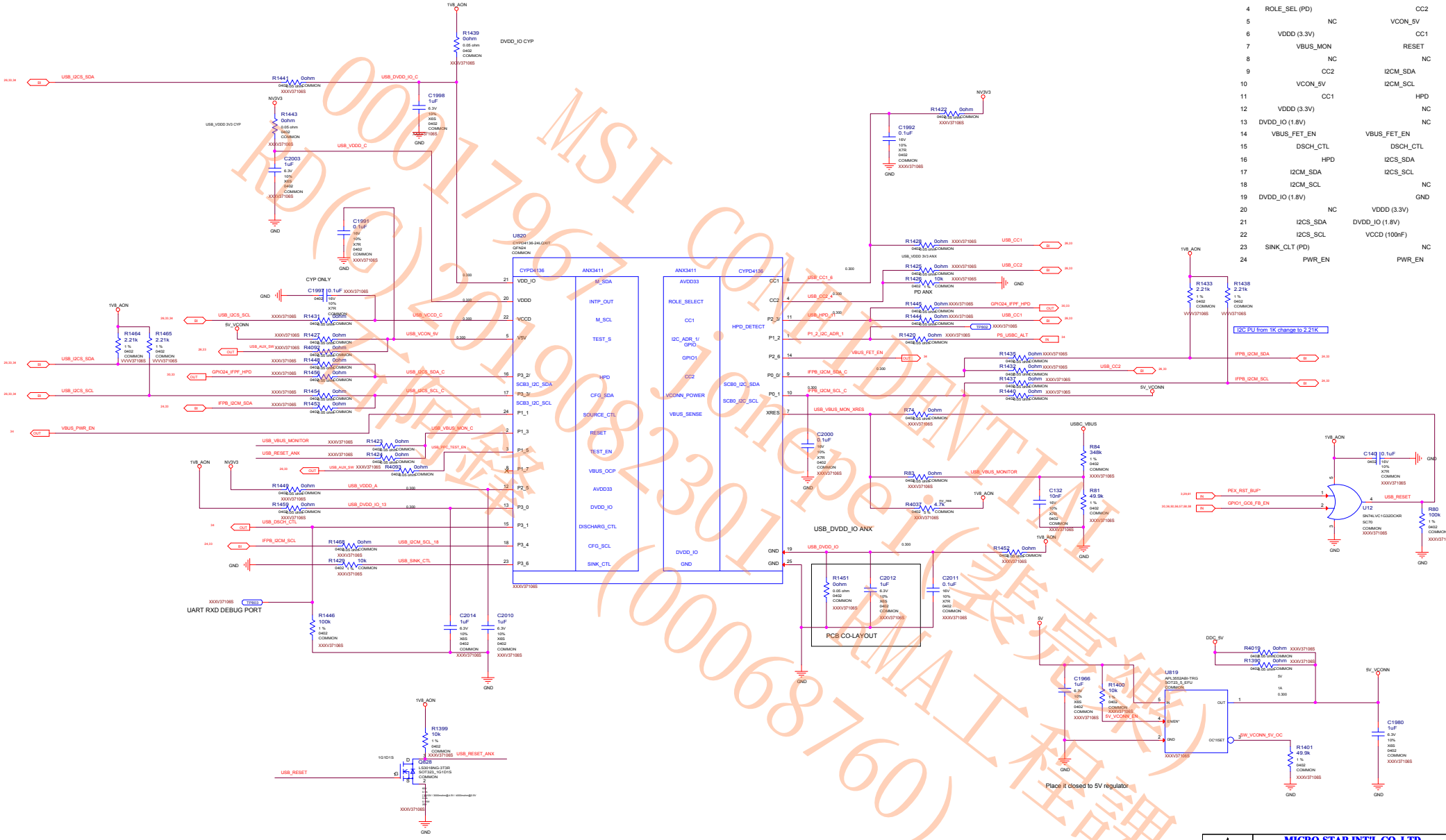
Size: Custom	Document Description: XTAL
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 32 of 66

MISC: USB PPC



PIN	ANX	CYP
1	TP	TP
2	RESET	VBUS_MON
3	NC	NC
4	ROLE_SEL (PD)	CC2
5	NC	VCON_5V
6	VDDD (3.3V)	CC1
7	VBUS_MON	RESET
8	NC	NC
9	CC2	I2CM_SDA
10	VCON_5V	I2CM_SCL
11	CC1	HPD
12	VDDD (3.3V)	NC
13	DVDD_IO (1.8V)	NC
14	VBUS_FET_EN	VBUS_FET_EN
15	DSCH_CTL	DSCH_CTL
16	HPD	I2CS_SDA
17	I2CM_SDA	I2CS_SCL
18	I2CM_SCL	NC
19	DVDD_IO (1.8V)	GND
20	NC	VDDD (3.3V)
21	I2CS_SDA	DVDD_IO (1.8V)
22	I2CS_SCL	VCCD (100nF)
23	SINK_CLT (PD)	NC
24	PWR_EN	PWR_EN

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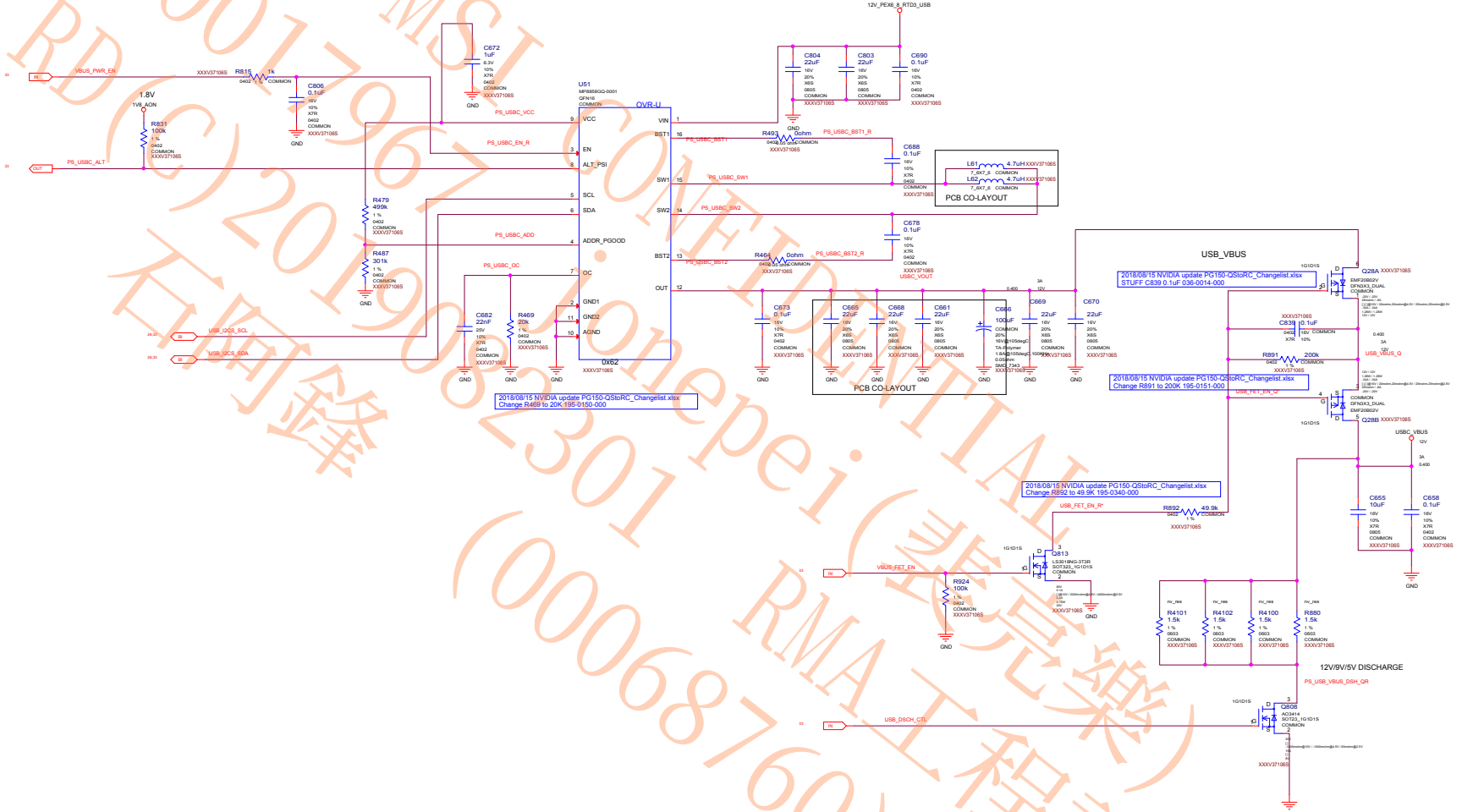
0001796701 Jabil Penang
RD(2)-20190823012
EMA工程課(0006876O)
(樣機專用)

PS: USB VR



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RD(C)2019
石阿鋒
(00068760)
onepei(非完樂)
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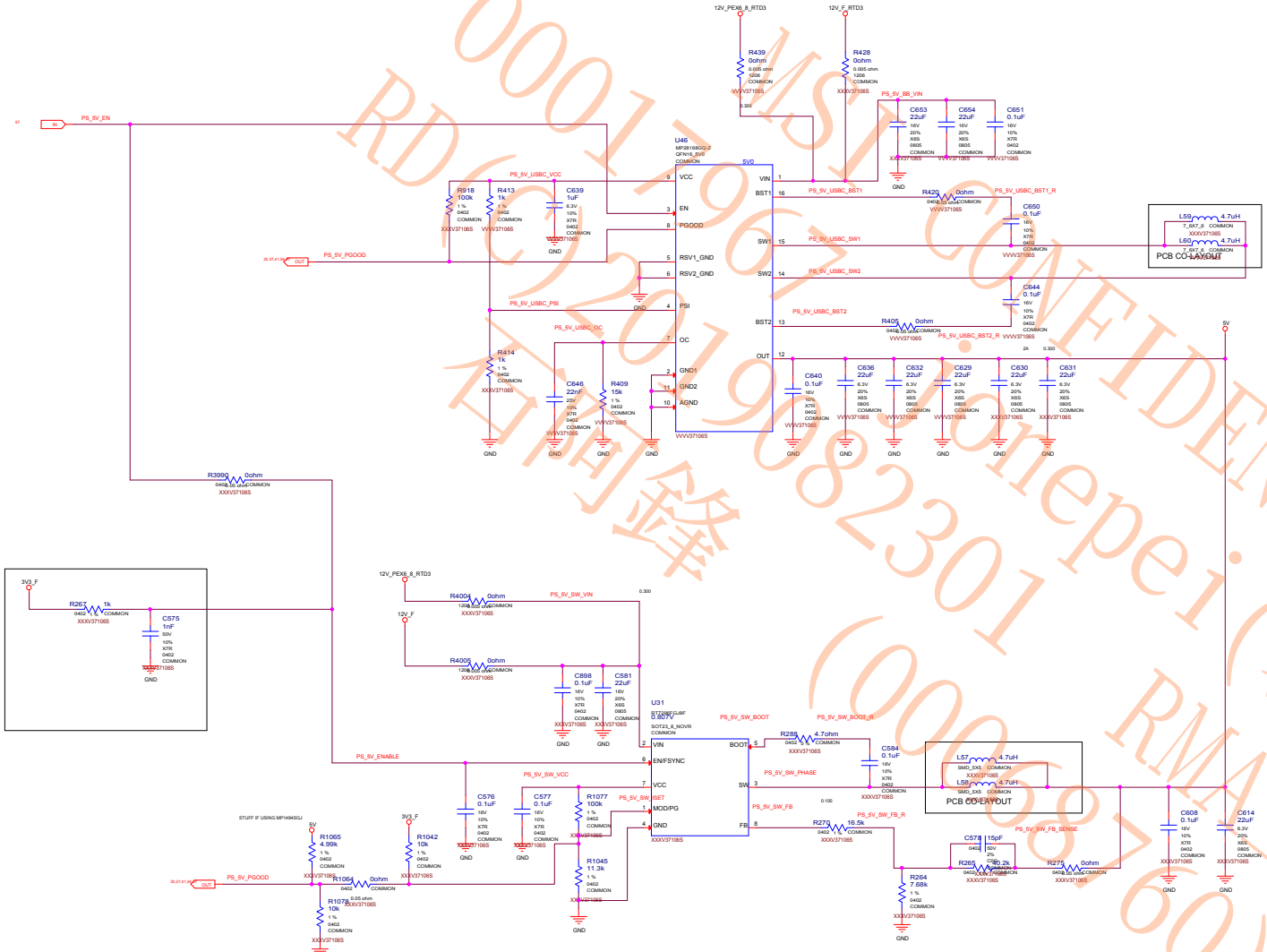
Size: Custom	Document Description: USB VR
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 34 of 66

PS: 5V, 5V_BACKUP



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RD6 20190823 01 Compal(裝完樂)
柏尚鋒 (00068760) RMA工程課

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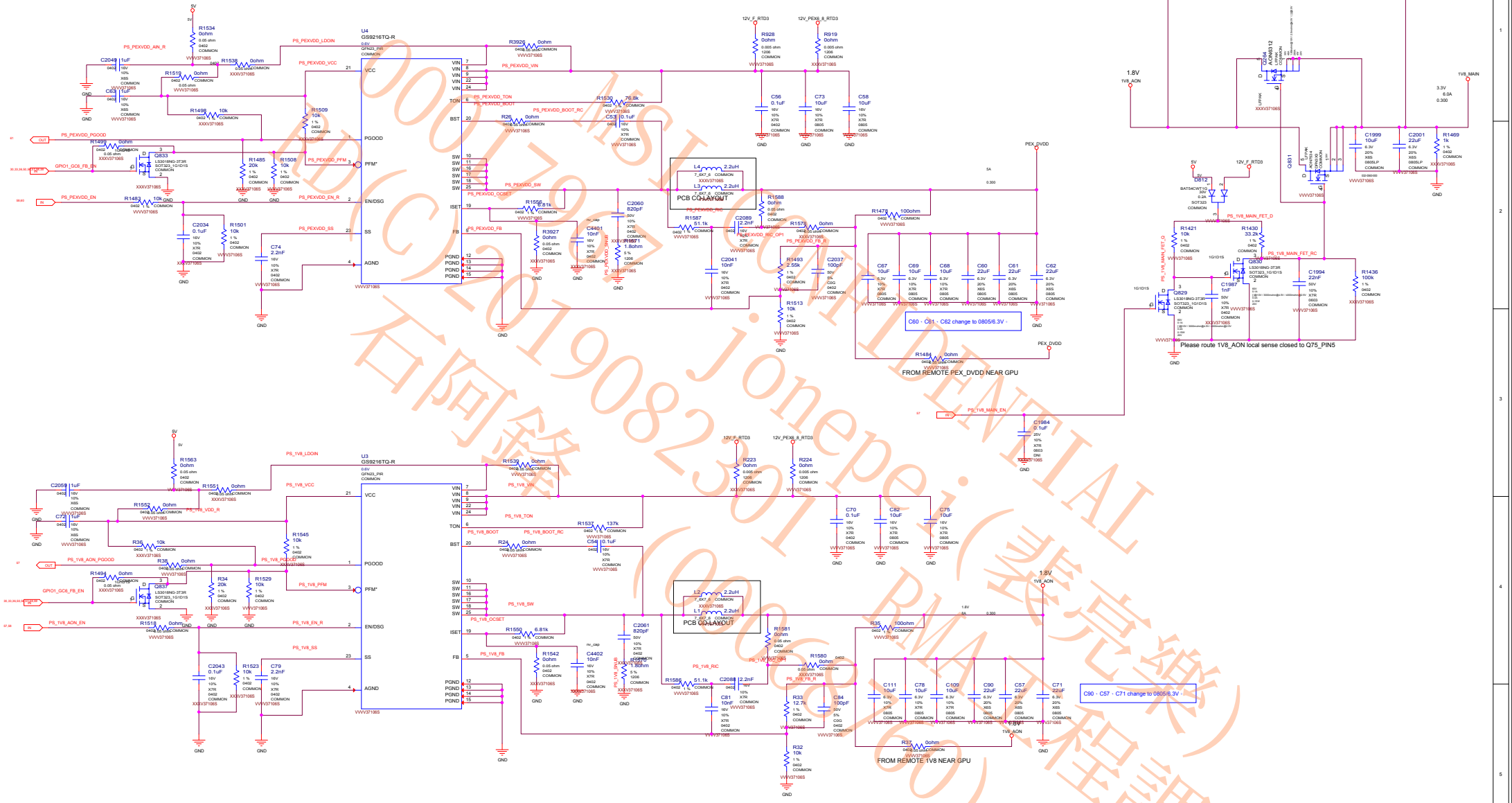
MS-V371	
Size: Custom	Document Description: 5V
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 35 of 66

PS: PEXVDD 1V8 Rail



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BIOS 2019082301 RMA(0868)
石阿铁 程课

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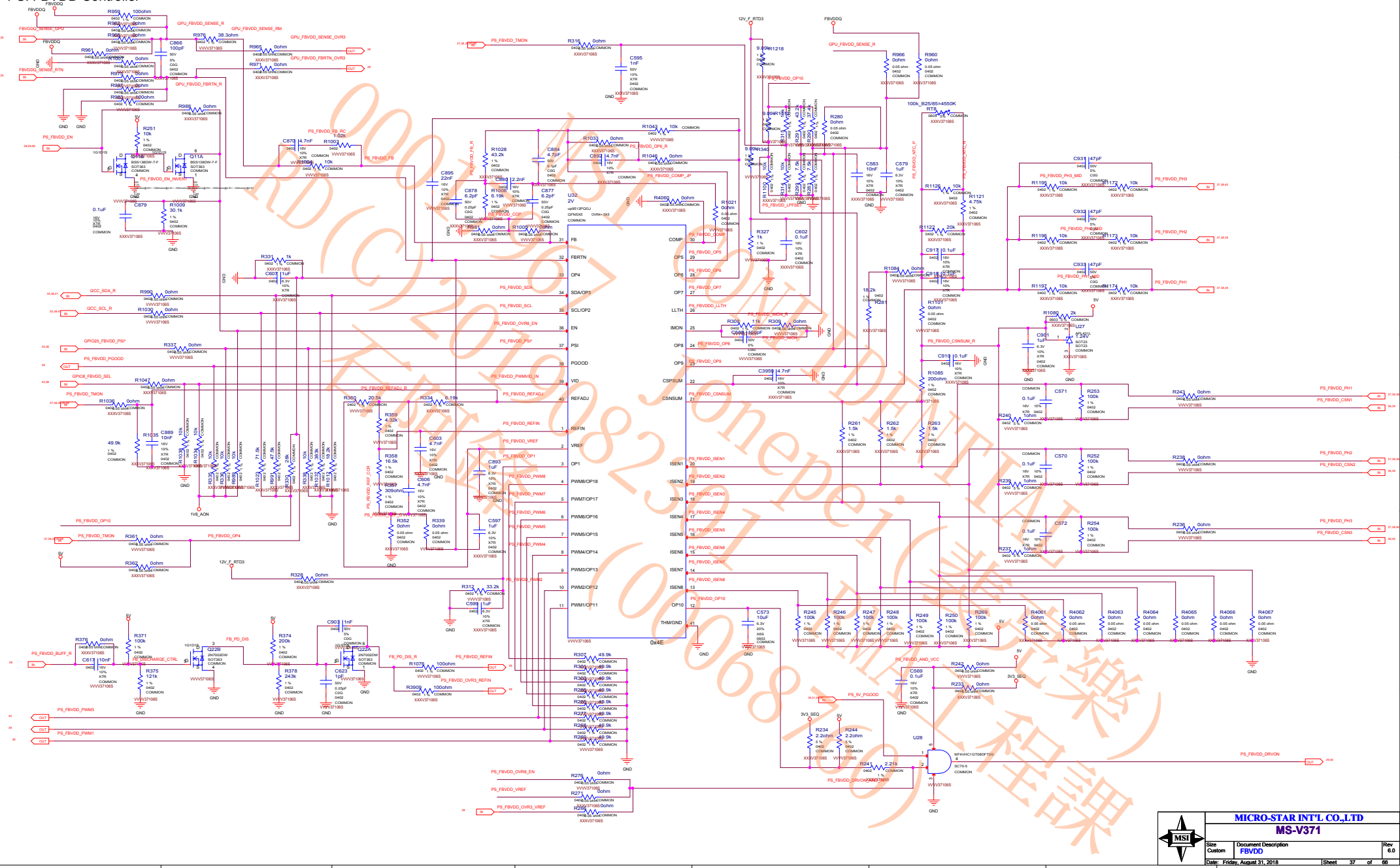
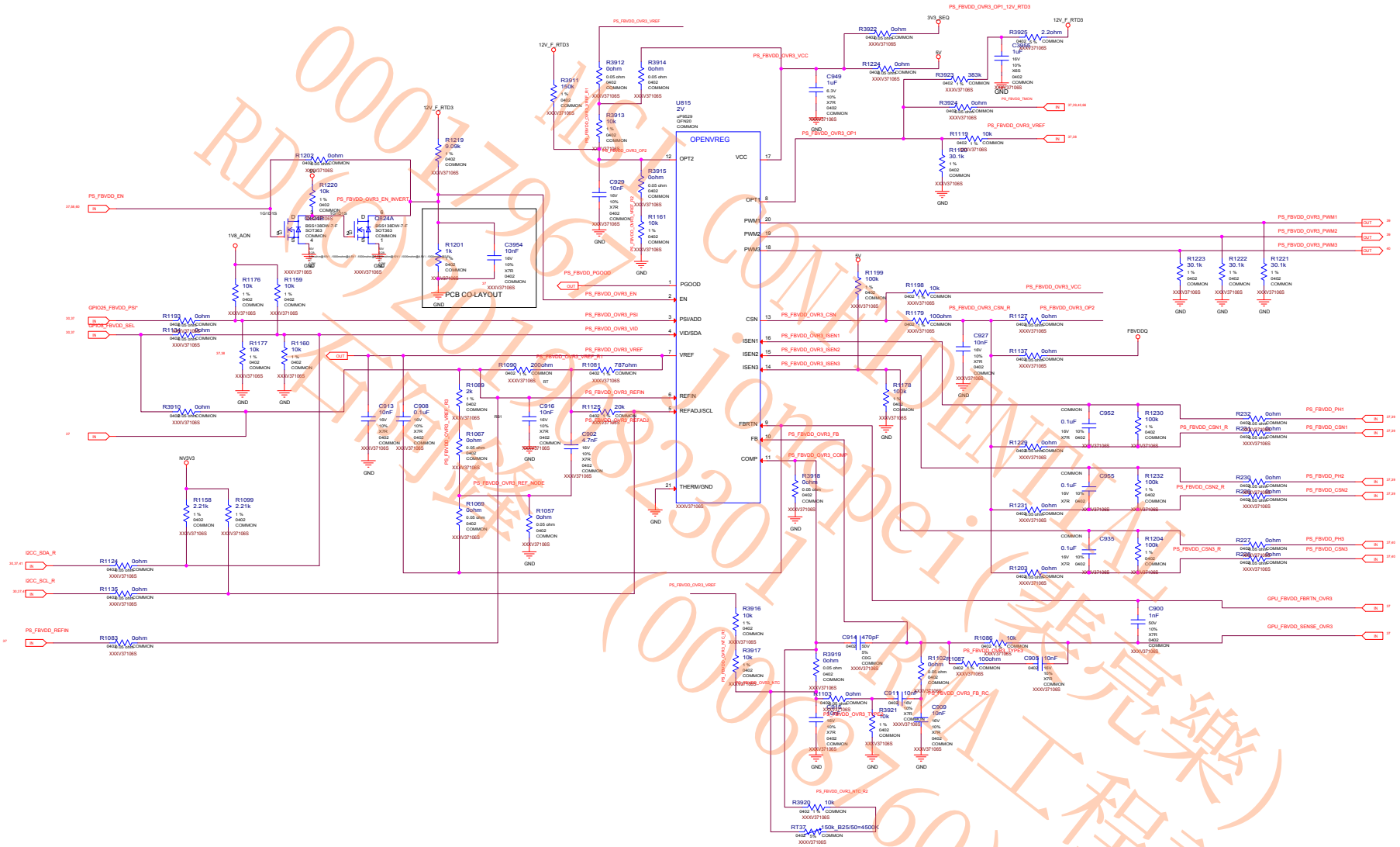
MS-V371		
Size: Custom	Document Description: 1V8	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 36 of 66	

PS: FBVDD Controller



PS: FBVDD Controller OVR3



0001796
RD6020180320
RD工程課
(0006760)
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longpei(龍培樂)

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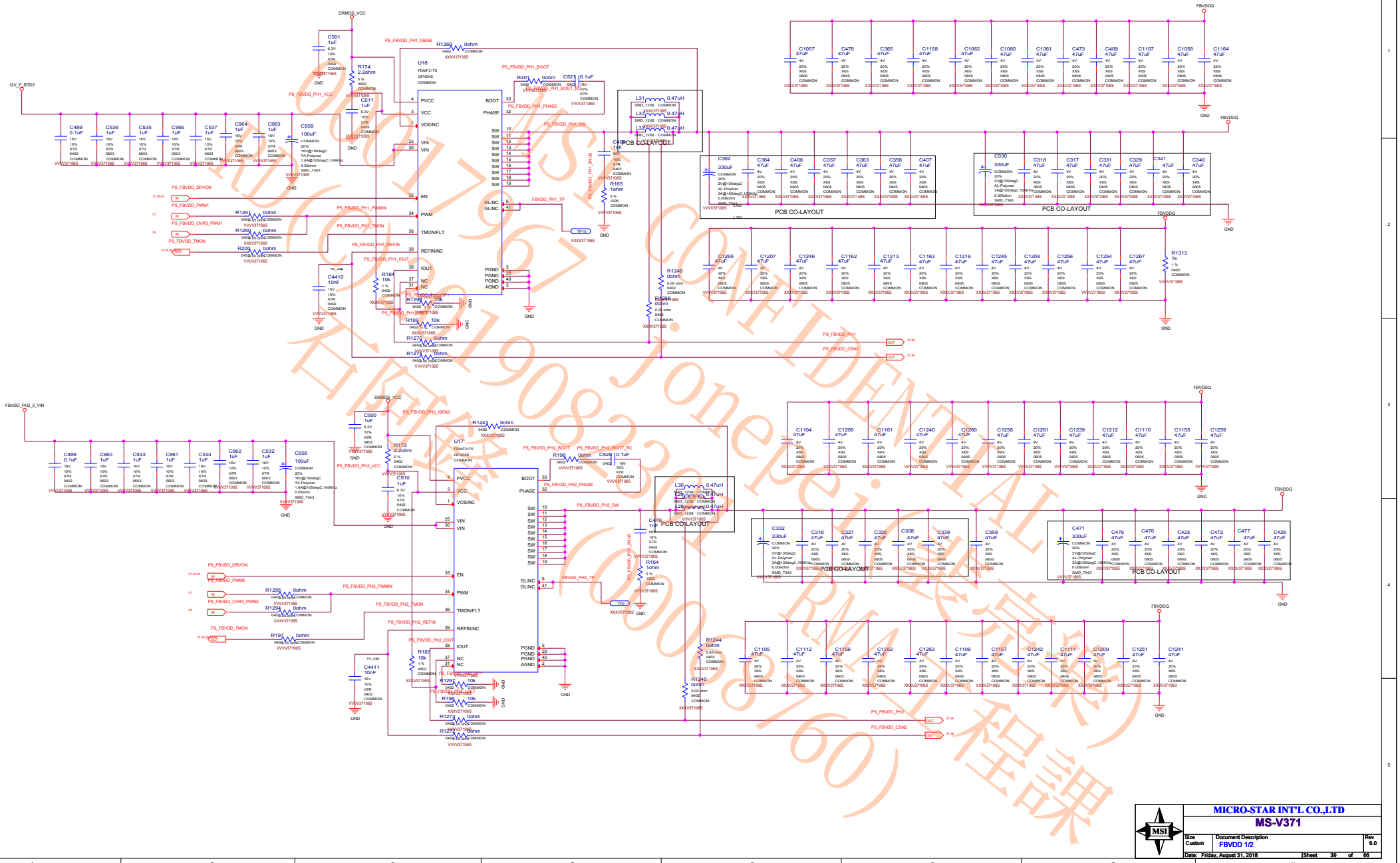
Size: Custom	Document Description: PS_ FBVDD Controller OVR3		Rev: 6.0
Date: Friday, August 31, 2018		Sheet 38 of 66	

PS: FBVDD PH1, 2



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RMA (06081960)
研发课程

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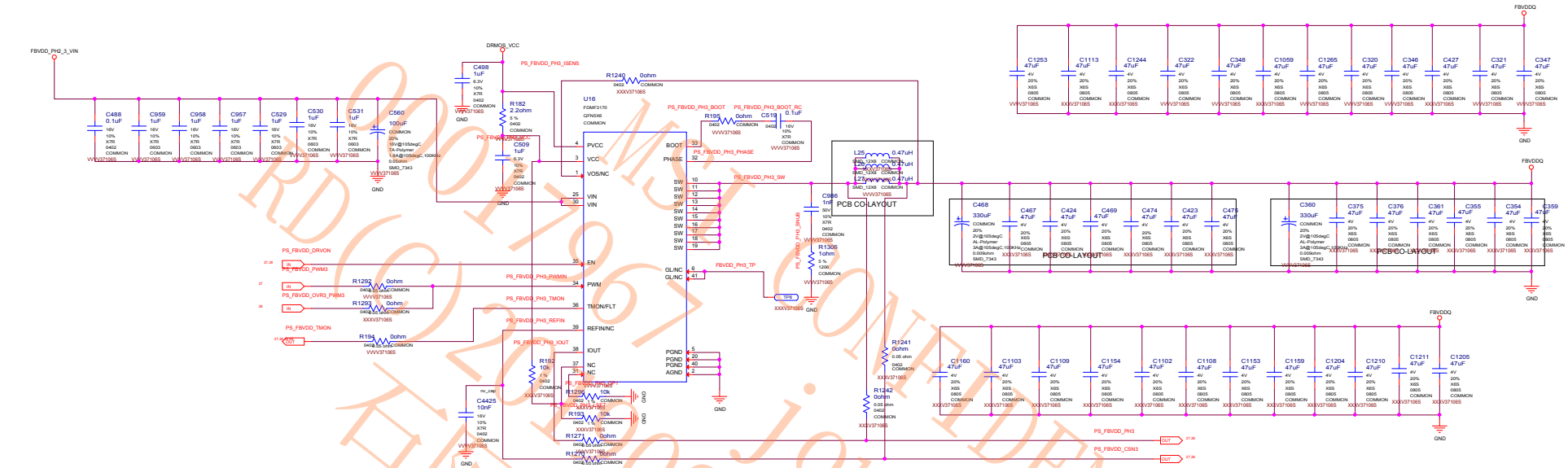
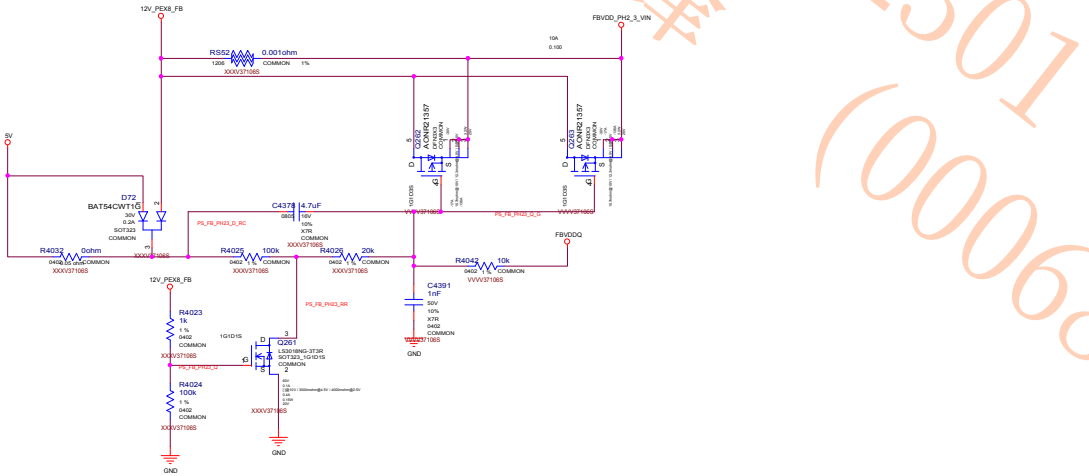
Size: Custom	Document Description: FBVDD 1/2
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 39 of 66

PS: FBVDD PH3





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RMA工程課
(00068760)
石阿鋒

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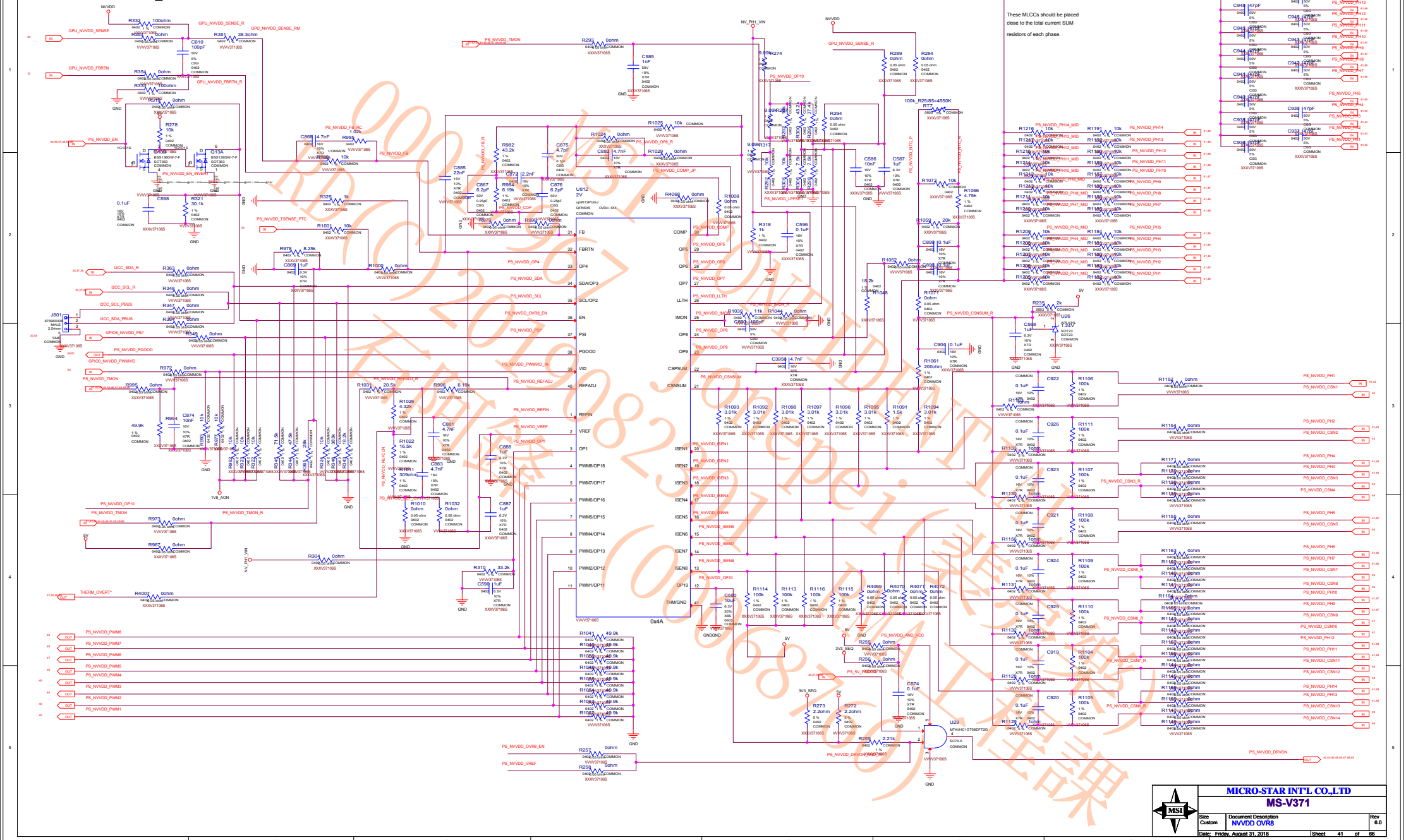
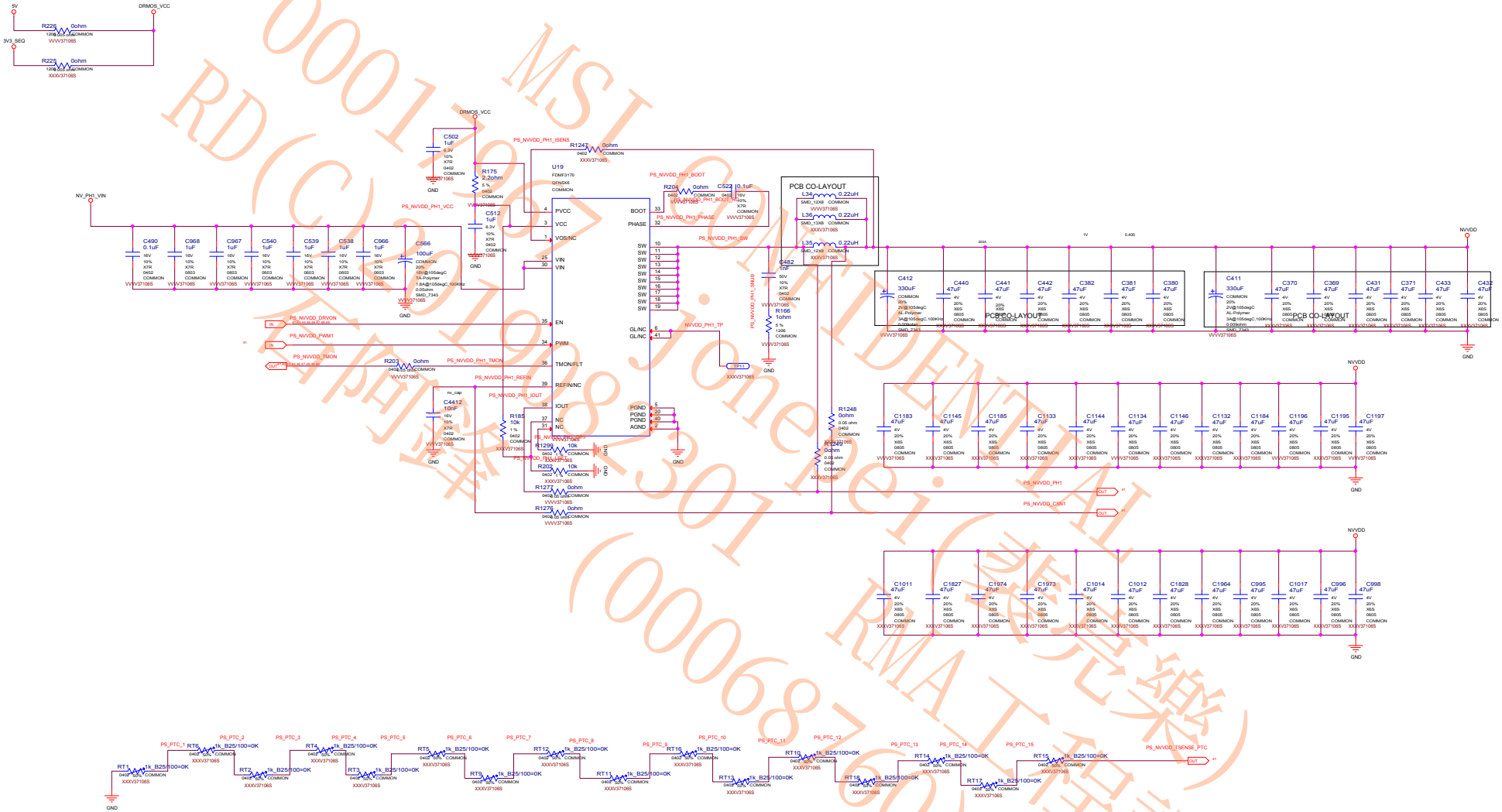
Size: Custom	Document Description: FBVDD 3
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 40 of 66

PS: NVVDD Controller_OVR8



PS: NVVDD Phase 1



0001 1907 2301 (00068760)
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RD(Cheng Jie Yi)
RMA下料

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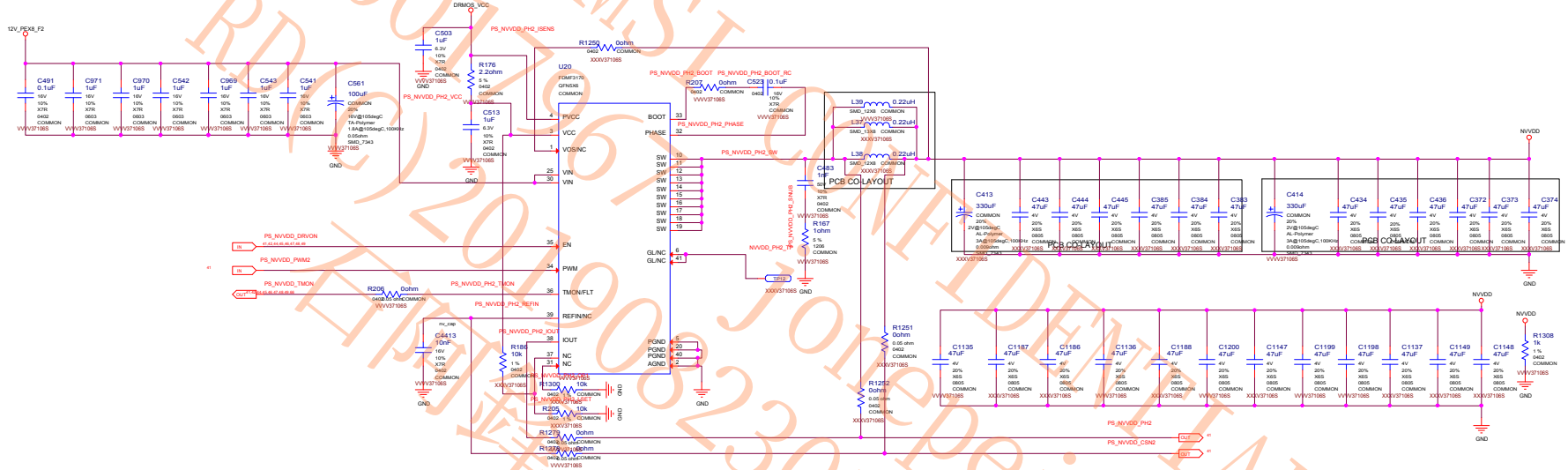
MS-V371		
Size: Custom	Document Description: NVVDD PH1	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 42 of 66	

PS: NVVDD Phase 2



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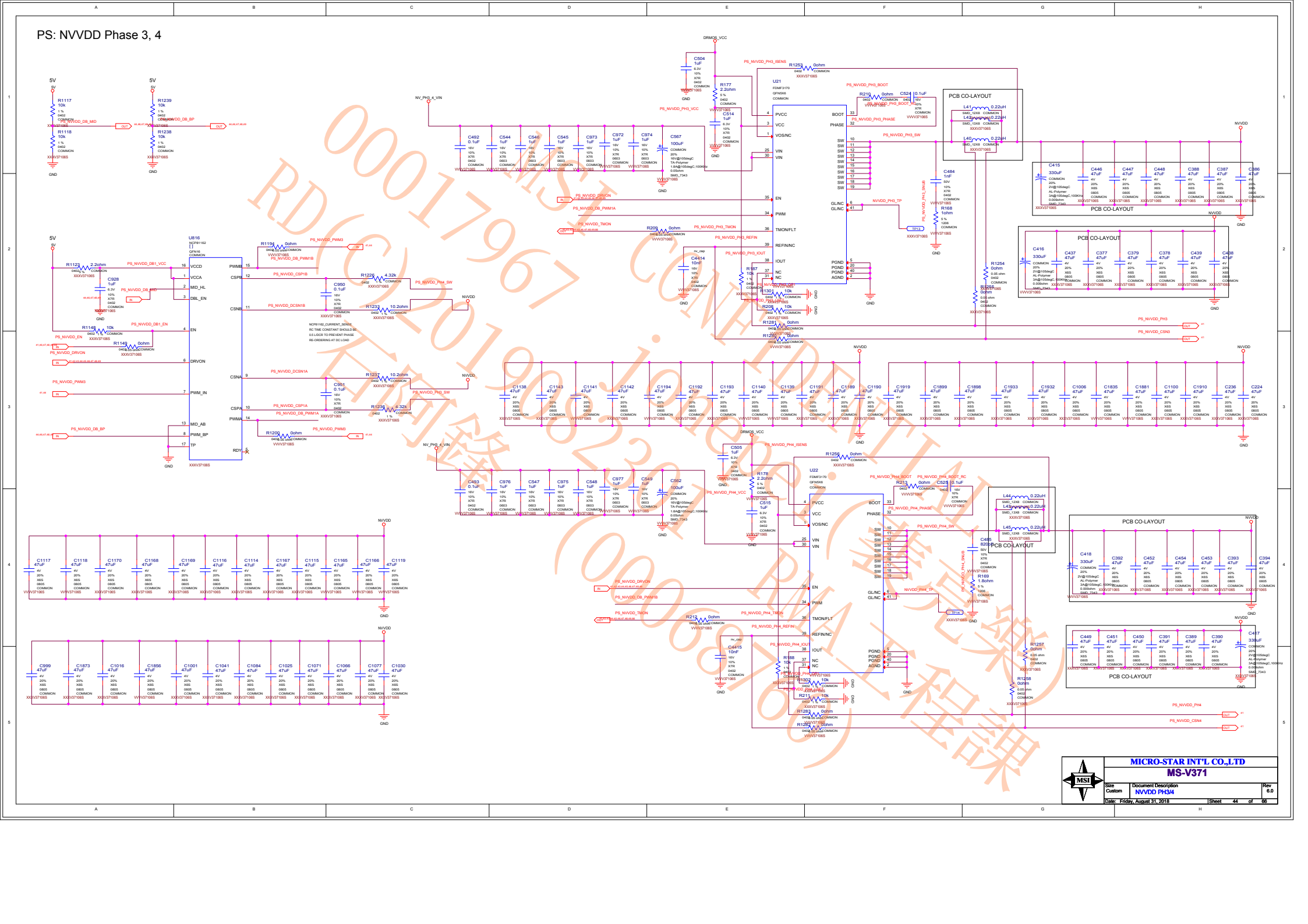
Size: Custom	Document Description: NVVDD PH2	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 43 of 66	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MICRO-STAR INT'L CO.,LTD
MS-V371
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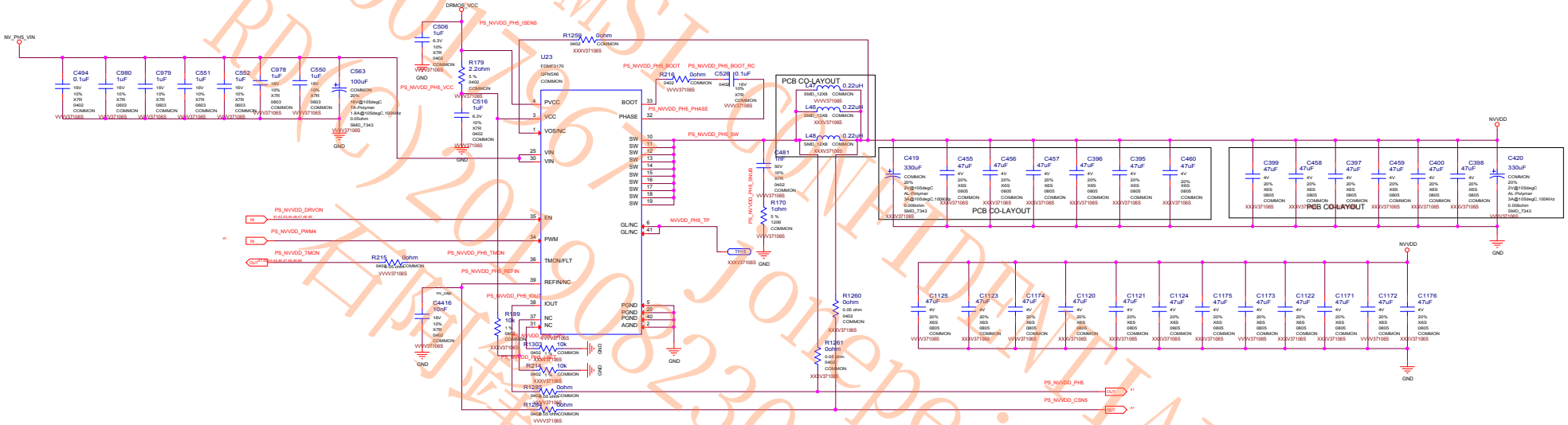
NVVDD PH3/4
Rev
6.0
Date: Friday, August 31, 2018
Sheet 44 of 66

PS: NVVDD Phase 5



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0001961 Jonepei(張兆樂)
RD(6)-20190823-01
(00068760)
RMA工程課

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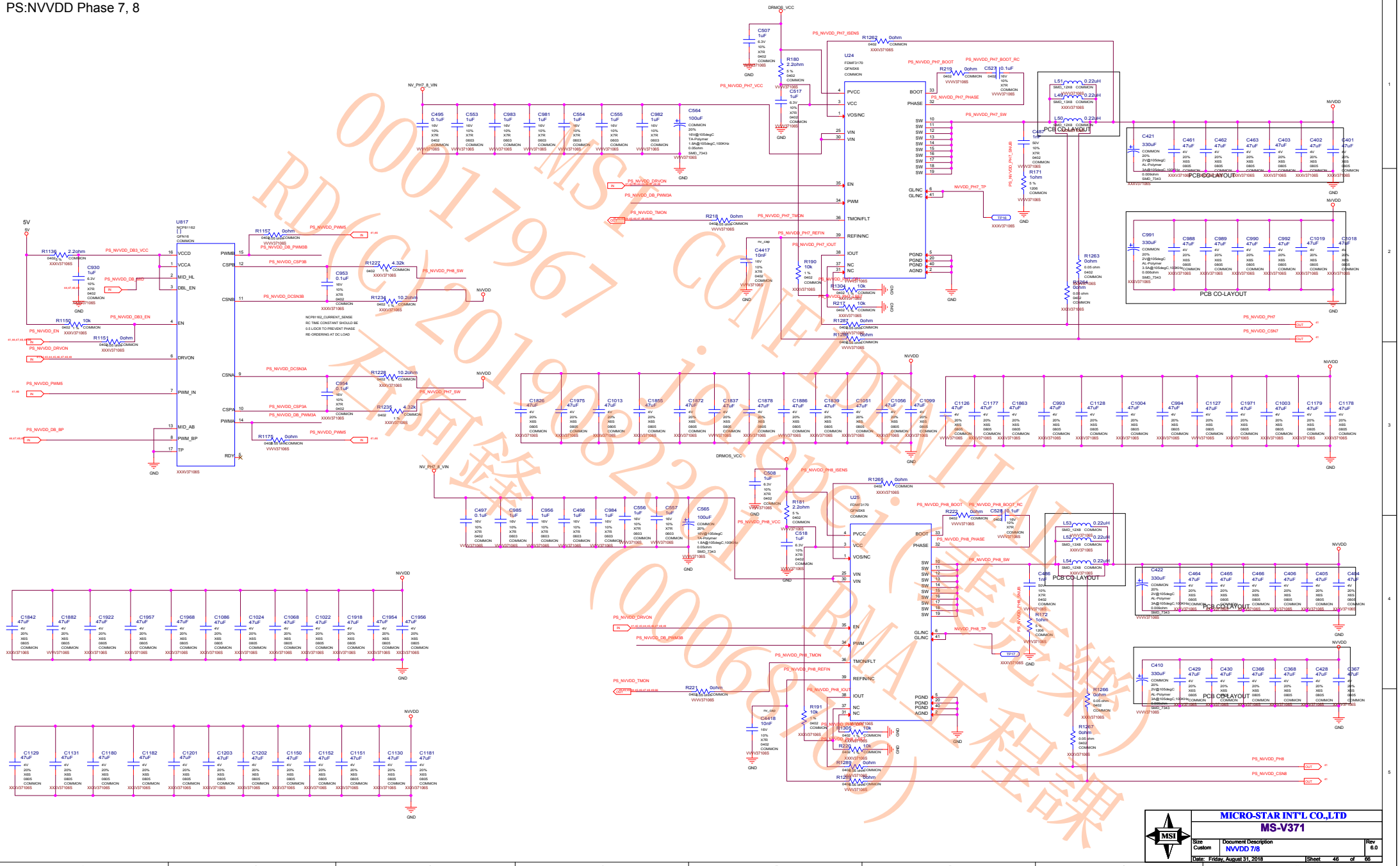
MS-V371	
Size: Custom	Document Description: NVVD 5/6
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 45 of 66

PS:NVVDD Phase 7, 8



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RD(CV)2019082301 (Rev.1.0)
RMA工程(000680)

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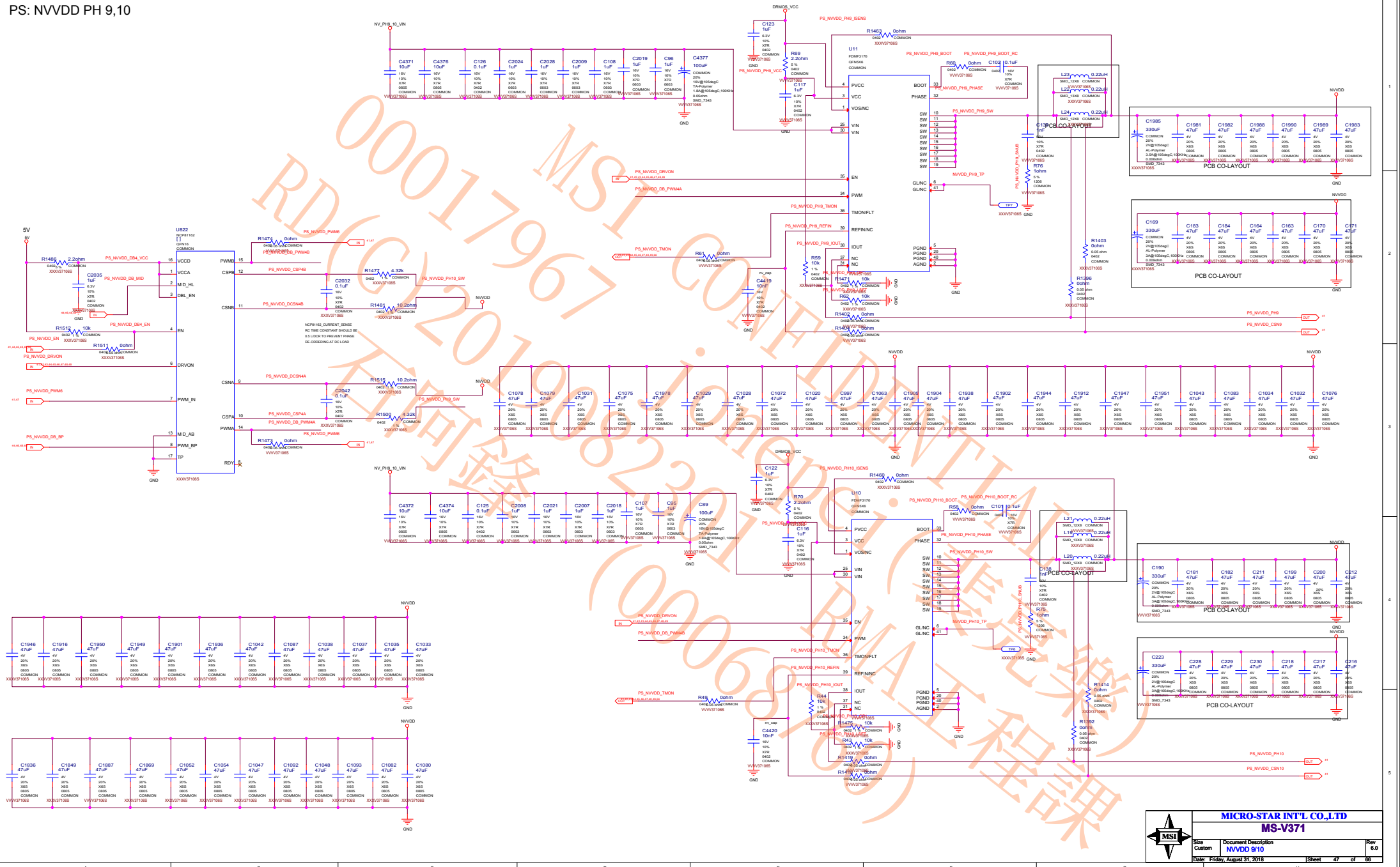
MS-V371	
Size: Custom	Document Description: NVVDD 7/8
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 46 of 66

PS: NVVDD PH 9,10



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(000680)
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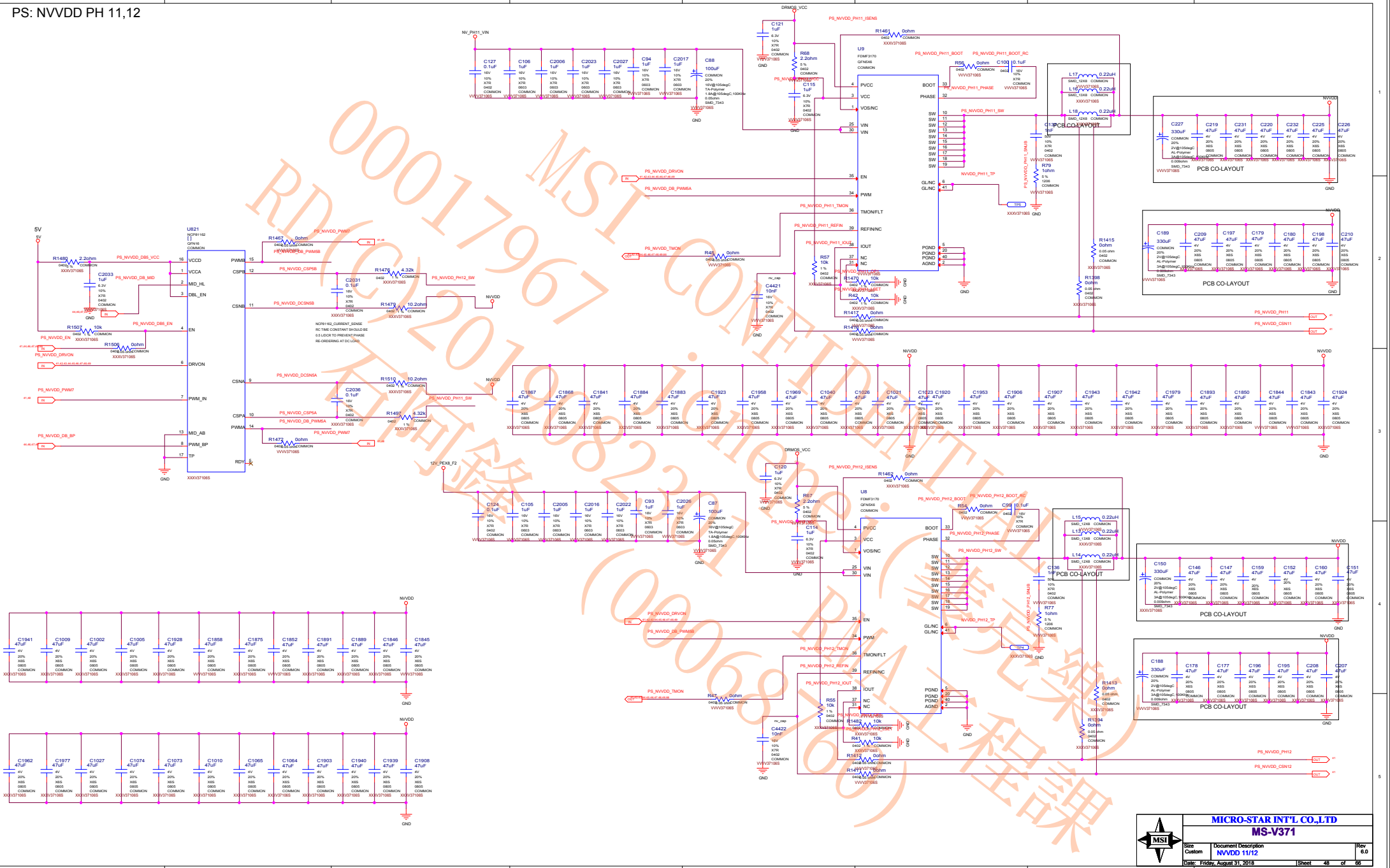
Size: Custom	Document Description: NVVDD 9/10
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 47 of 66

PS: NVVDD PH 11,12



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RD(C)2019.08.23 Liuenpei
RMA(00068168)
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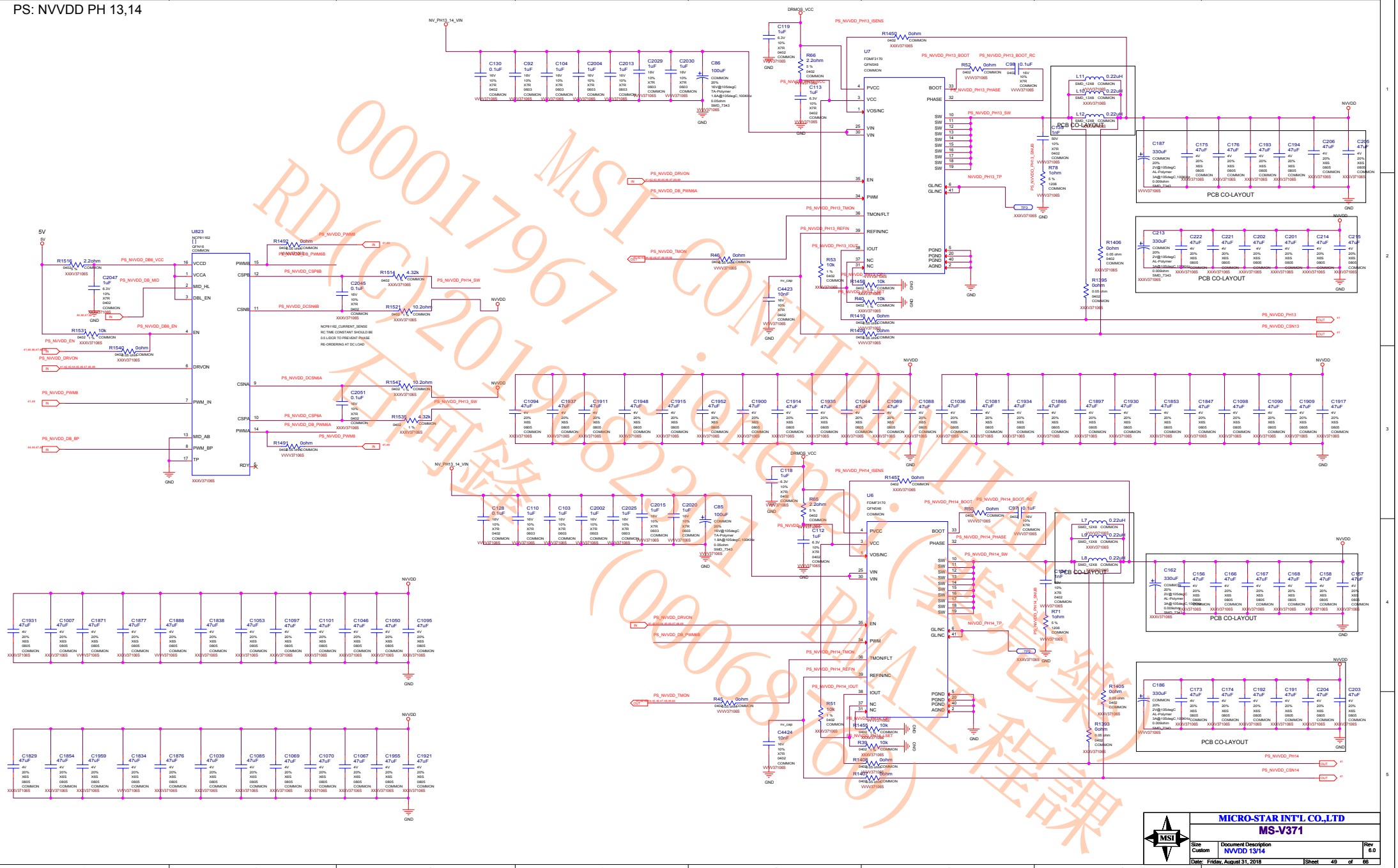
Size: Custom	Document Description: NVVDD 11/12
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 48 of 66

PS: NVVDD PH 13,14



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PS: INPUT SWITCH RTD3

AND GATE LOGIC FOR P-BOARD

GPIO1	GPIO29	SWITCH	VOUT
0	0	0	12V_F
0	1	0	12V_F
1	0	0	12V_F
1	1	1	3V3A

AND GATE LOGIC FOR P-BOARD

GPIO1	GPIO29	SWITCH	VOUT
0	0	0	3V3
0	1	0	3V3
1	0	0	3V3
1	1	1	3V3A

2018/08/15 NVIDIA update PG150-QStoRC_Changelist.xlsx
No stuff R4043/R4048
Stuff D77/D78 091-0022-000

PCB COATING

SWITCH

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0001Z8_1onepei(樂完美)
RD(02)2018093901
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(000687601)

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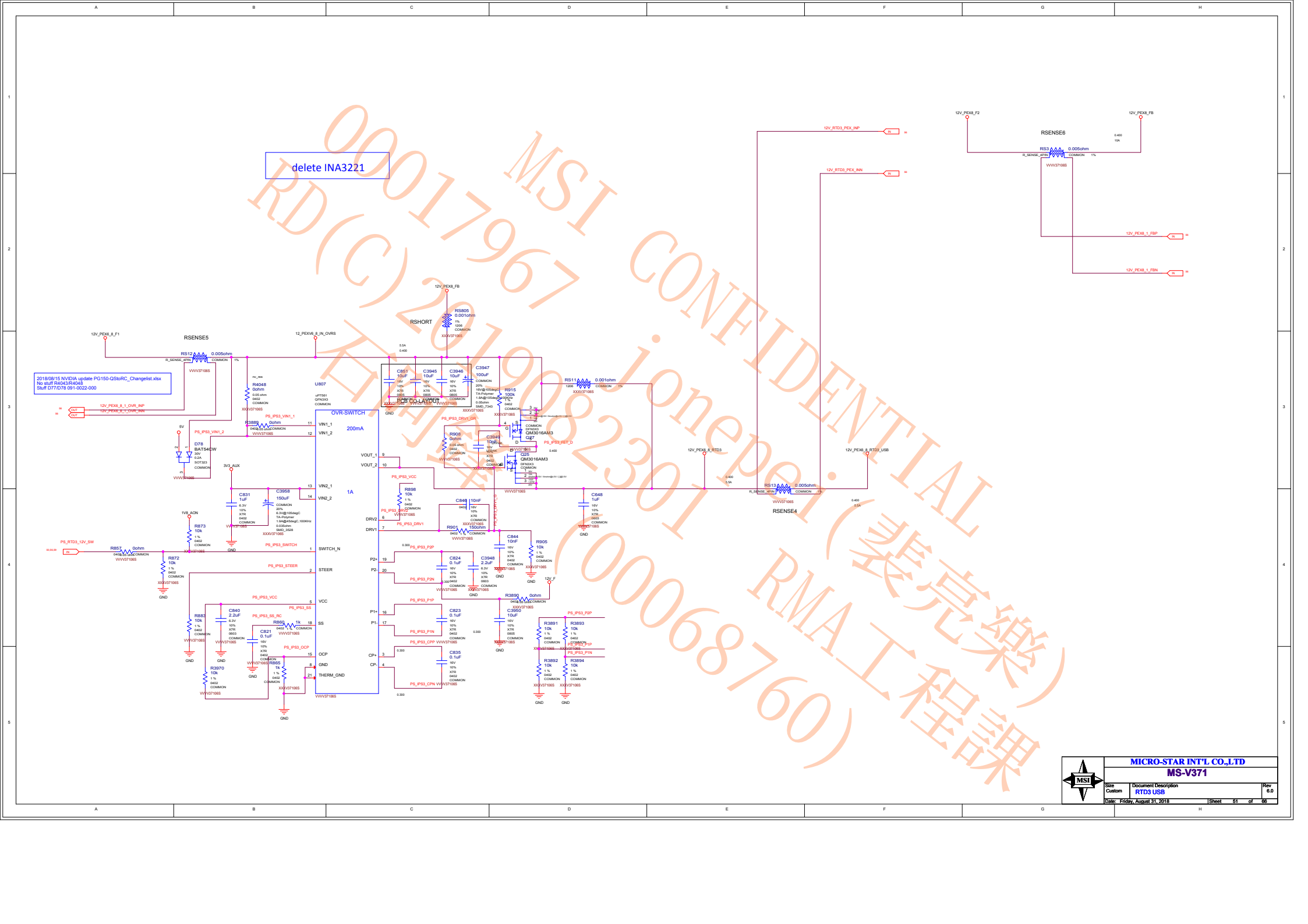
MS-V371	
Size: Custom	Document Description: RTD3
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 50 of 66



0001796 7
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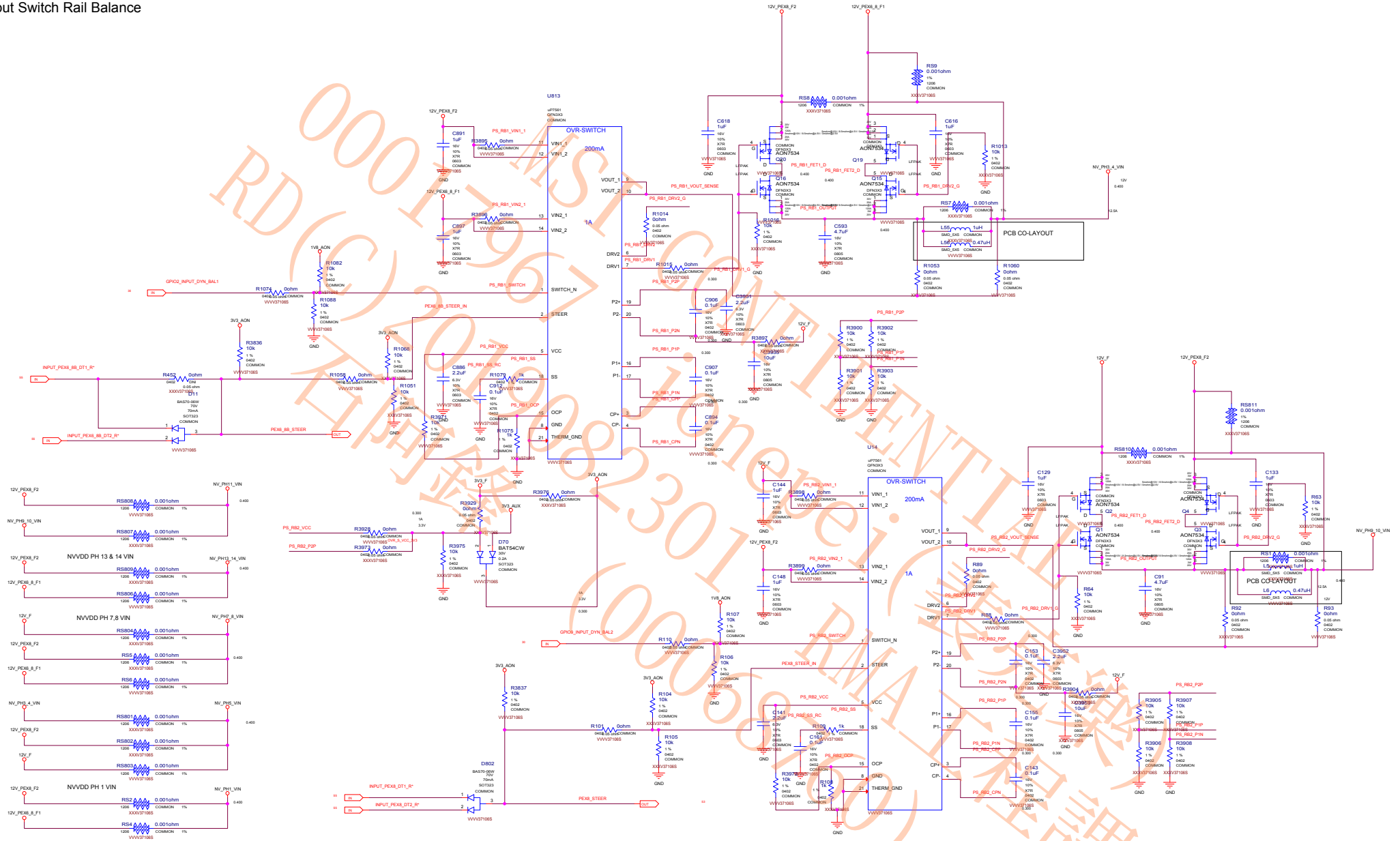
RD(C)20190823 01
oneperi(裝完樂)
石頭資訊(00068760)
RMA工程課

PS: Input Switch Rail Balance



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RD(C)2008230106(0008)
RMA工程課

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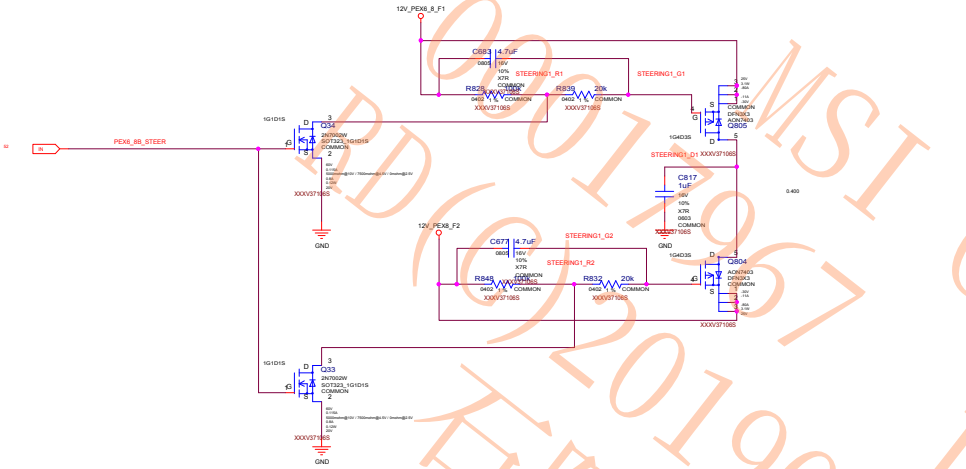
MS-V371		
Size: Custom	Document Description: PS: Input Switch Rail Balance	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 52 of 66	

12V CURRENT STEERING (UNDER POWER BOOT):

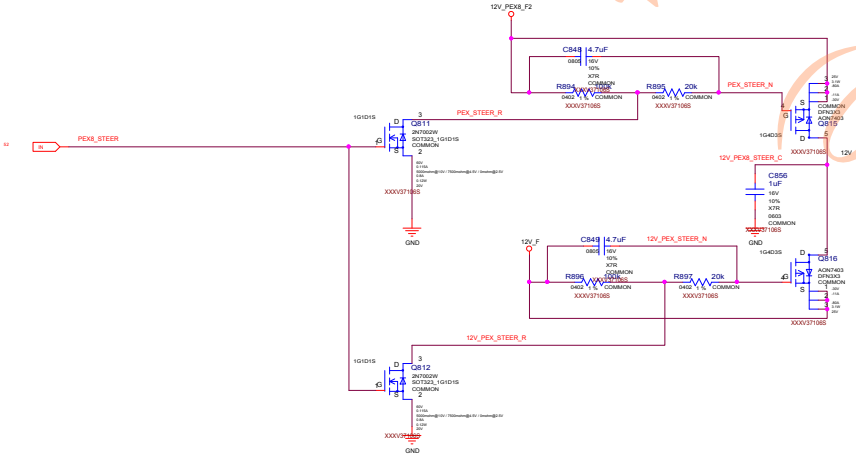
GUIDES CURRENT FROM PEX EDGE TO PEX 6/8 PIN INPUT AREA



12V CURRENT STEERING (UNDER POWER BOOT):

GUIDES CURRENT FROM PEX EDGE TO PEX 8 PIN INPUT AREA

For OpenVreg Type4 + Phase Doubler, 2 phase PSI mode



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Jonepei(裴完樂)
RMA工程課
(000068760)
RD(6)-20190823O1
石阿鋒

MSI	MICRO-STAR INT'L CO.,LTD	
	MS-V371	
Size: Custom	Document Description: steering	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 53 of 66	

PS: Inputs, Filtering, and Monitoring

delete INA3221

PEX 3V3 INPUT - 10W

PEX_12V INPUT - 66W

PEX6 INPUT 1 - 2x3 PCIE CON 75W

PLACE ALONG NORTH EDGE
CAN BE 6-PIN

2018/08/15 NVIDIA update PG150-QStoRC_Changelist.xlsx
Change R3989 to 6.81k. 195-0404-000

PEX8 INPUT 2 - 2x4 PCIE CON 150W

PLACE ALONG NORTH EDGE

STUFF FOR SINGLE CONNECTOR

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(00068760)

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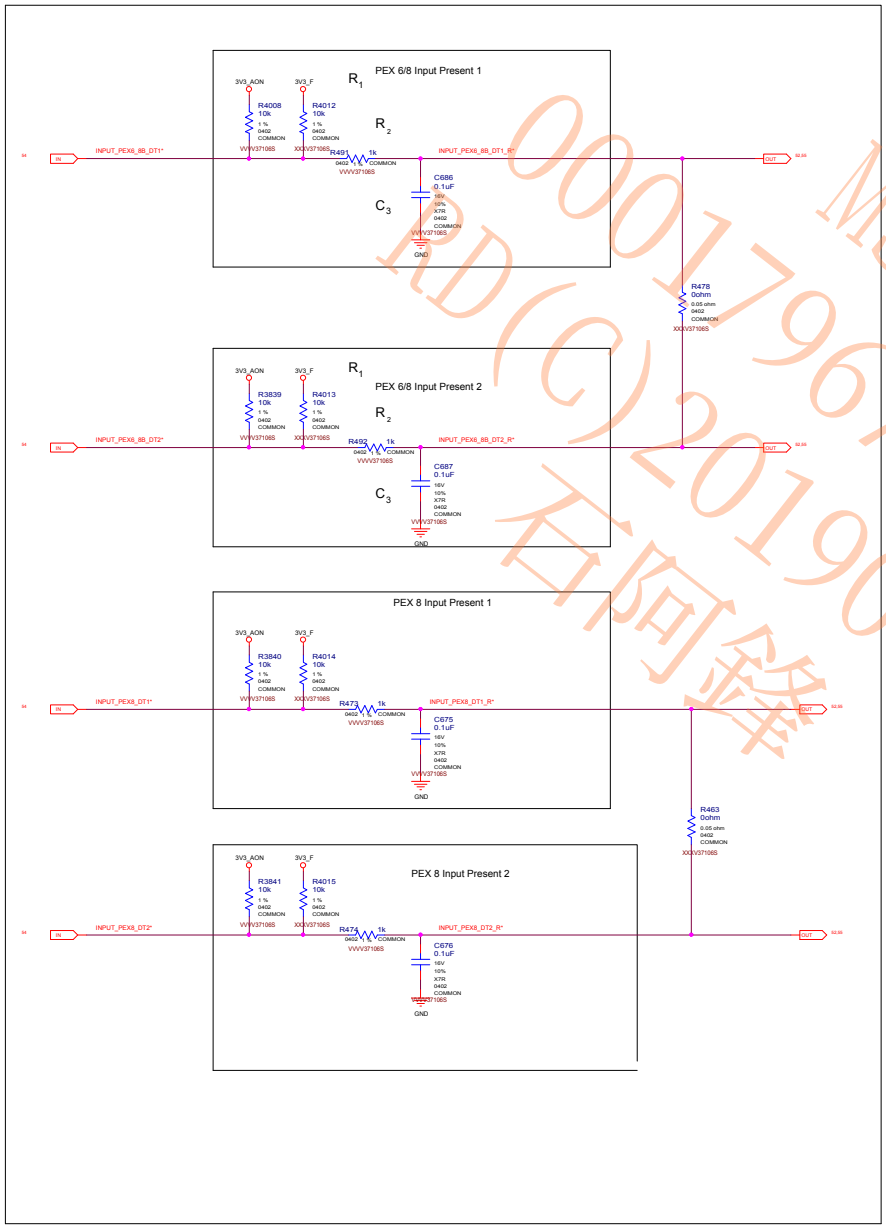
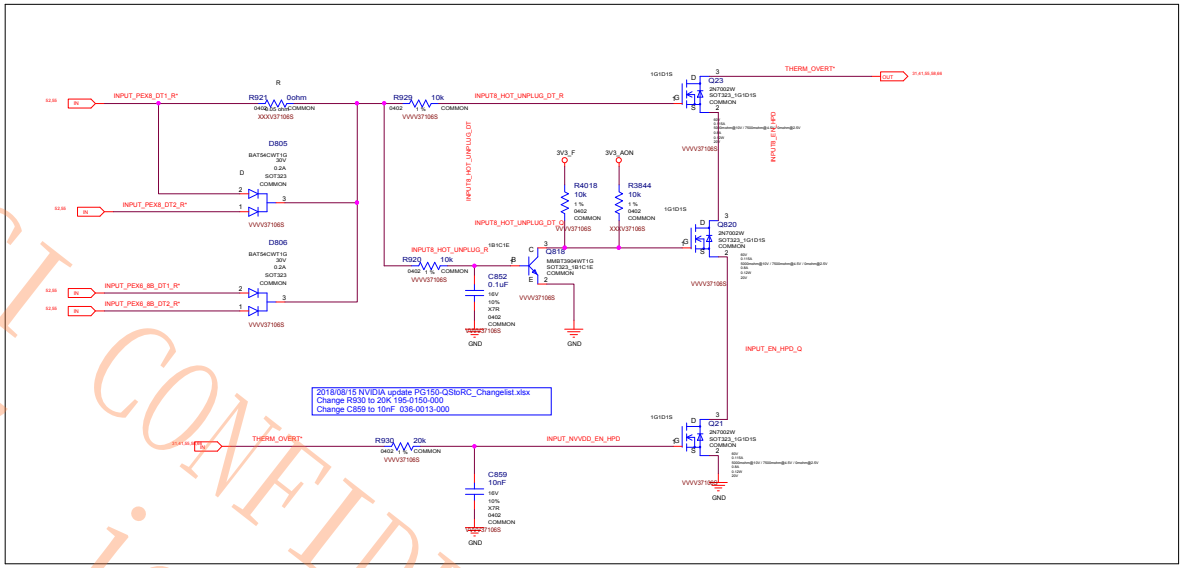
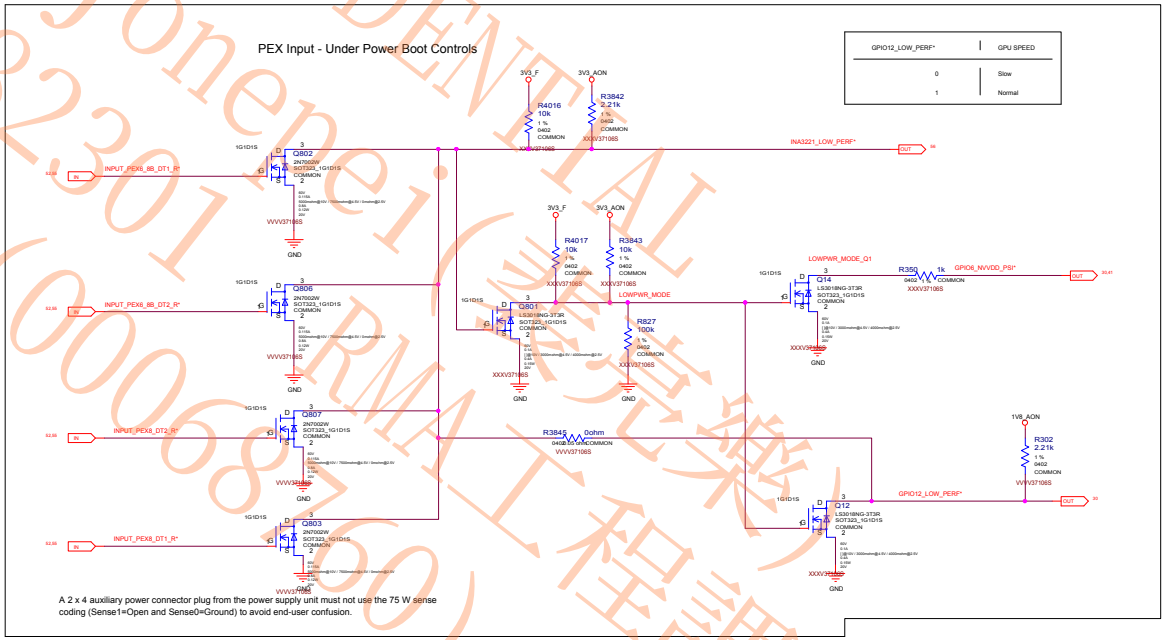
MS-V371			
Size: Custom	Document Description: Input filter		Rev: 6.0
Date: Friday, August 31, 2018	Sheet 54 of 66		

PS: 12V Current Steering & Hot Unplug Detect







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Size: Custom	Document Description: PS: 12V Current Steering & Hot Unplug Detect
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 55 of 66

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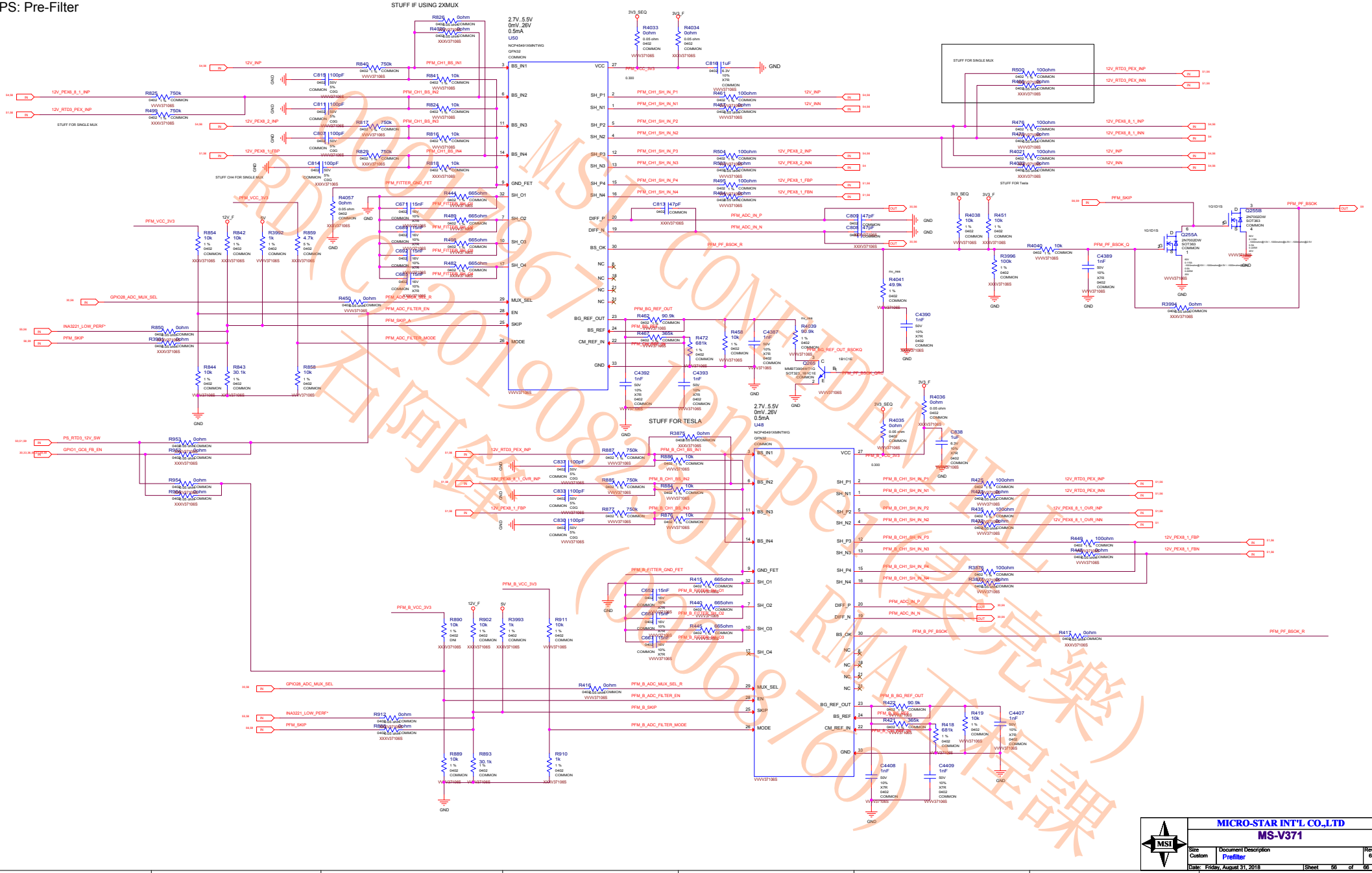
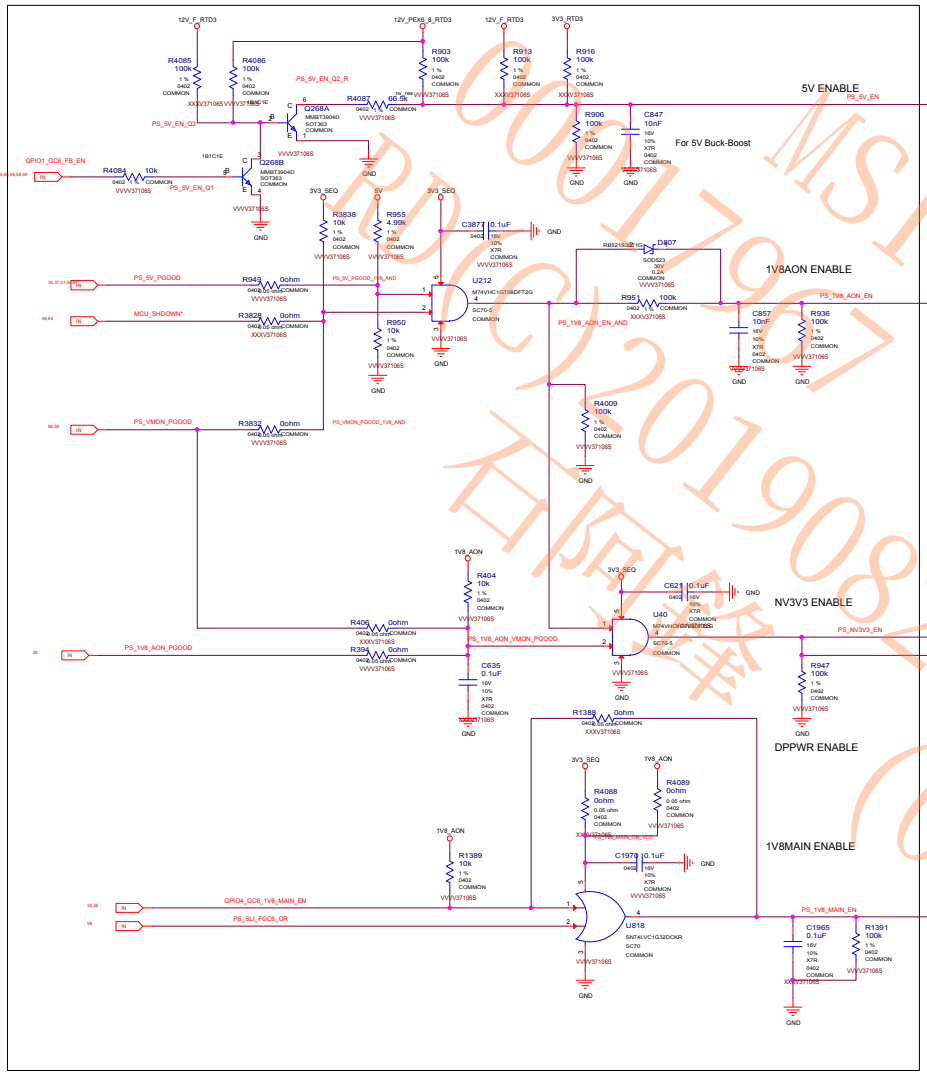
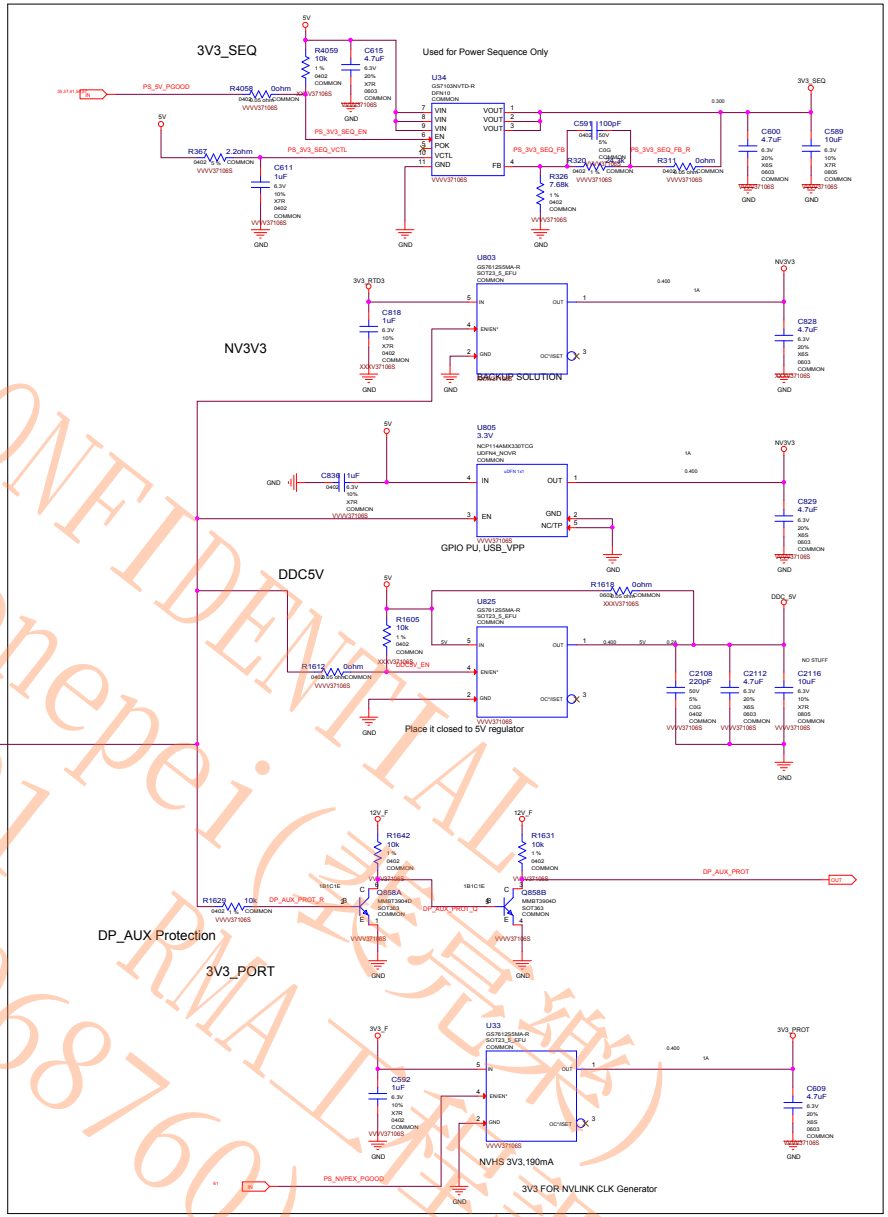
RMA工程课
0001796
RD(C)20190823
(000680)
石阿锋

PS: Pre-Filter



SEQUENCE:5V,1V8,NV3V3 ENABLE





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RMA下载
RDC(2019082301)
石阿培(00068760)

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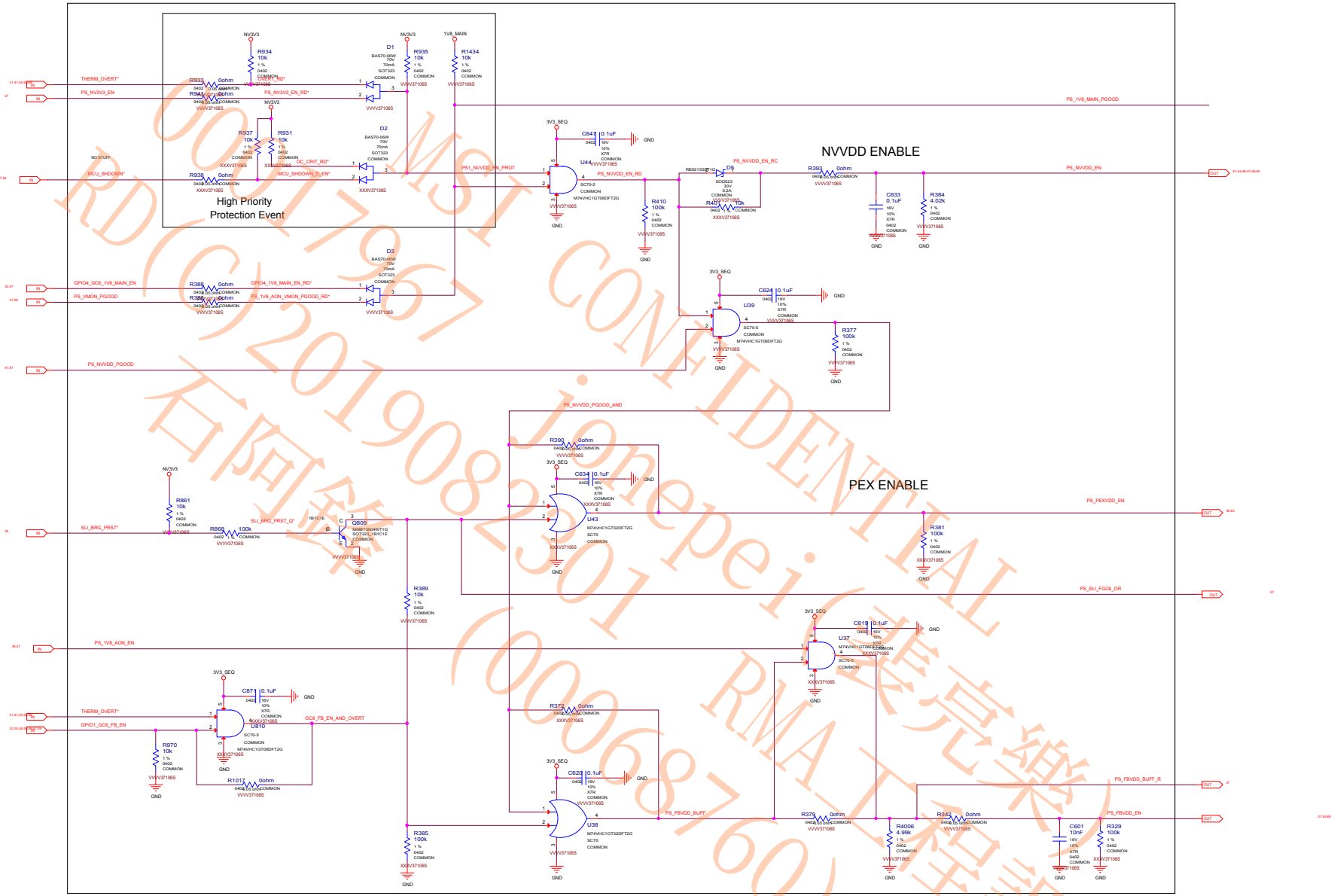
Size	Document Description	Rev
Custom	5V/1V8/NV 3V3	6.0

Date: Friday, August 31, 2018 Sheet 57 of 66

SEQUENCE:NV,PEX,FB ENABLE



0017967
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RD(C)20190822301
Jonepei(完成樂)
(00068760)
RMA下線

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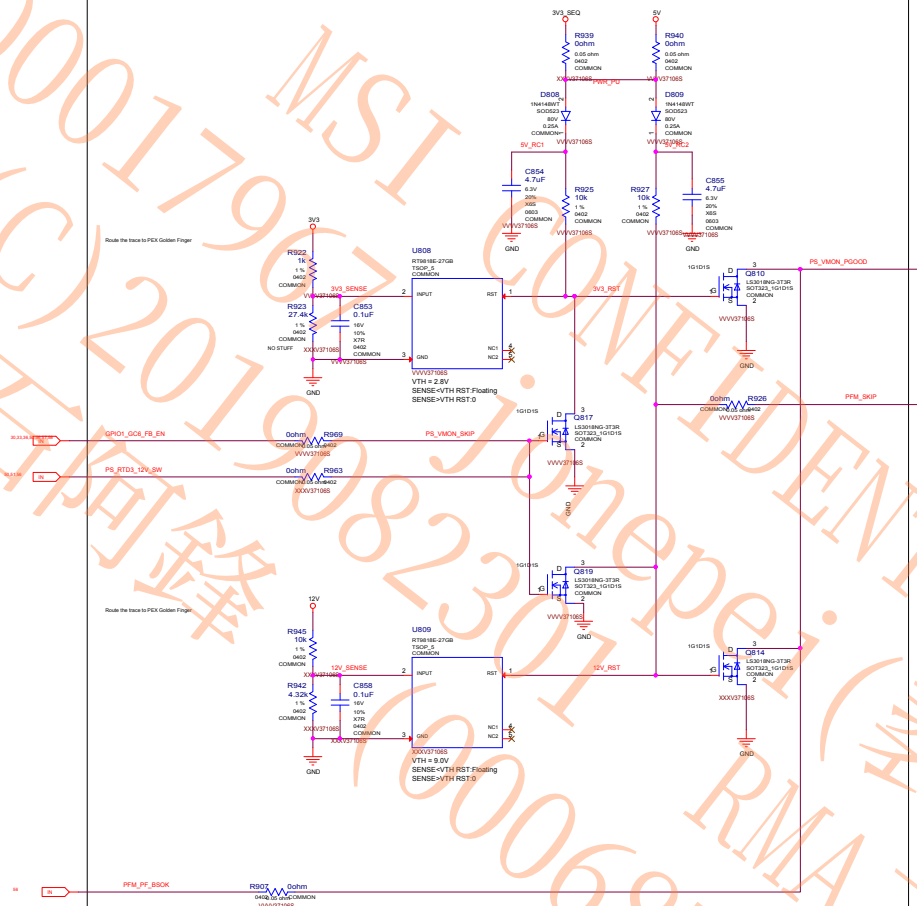
MS-V371		
Size: Custom	Document Description: SEQUENCE:NV,PEX,FB ENABLE	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 58 of 66	

SEQUENCE:PCIE Voltage Monitor

PCIE Voltage Monitor



Signal	Direction	Function
3V3	INPUT	Sense the 3V3 Voltage from PCIE golden finger
12V	INPUT	Sense the 12V Voltage from PCIE golden finger
PS_VMON_PGOOD	OPEN-DRAIN	Floating(H) once both 3V3 and 12V reach Vth
GC6_FB_EN	INPUT	Indicator for RTD3/GC6 residence,Use to Mask the VMON_PGOOD
PS_PF_SKIP	INPUT	From INA3221(VPU) or Pre-filter(SKIP)
PS_PF_BSOK	INPUT	From INA3221(PV) or Pre-filter(BS_OK)
PS_RTD3_12V_SW	INPUT	GC6_FB_EN && IDLE_IN_SW

BOM Configuration

OPTIONS	PEX3V3_SENSE	PEX12V_SENSE	OTHER_12V_SENSE
Use Pre-Filter	Pre-Filter NO STUFF U12 NO STUFF Q3,Q5 NO STUFF D15	Pre-Filter NO STUFF U13 NO STUFF Q4	Pre-Filter
Use INA3221	Voltage_Monitor	INA3221 NO STUFF U12 NO STUFF Q4	INA3221
NO INA3221 NO Pre-Filter	Voltage_Monitor	Voltage_Monitor	N/A

Power Supply

INA3221:3V3_SEQ

Pre_Filter(ADC_MUX):3V3(PEX)

Dual Pre-Filter case:

Only use the Primary Pre-Filter to sense 3V3PEX and All Input 12Vs

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MS-V371	
Size: Custom	Document Description: SEQUENCE:PCIE Voltage Monitor
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 59 of 66

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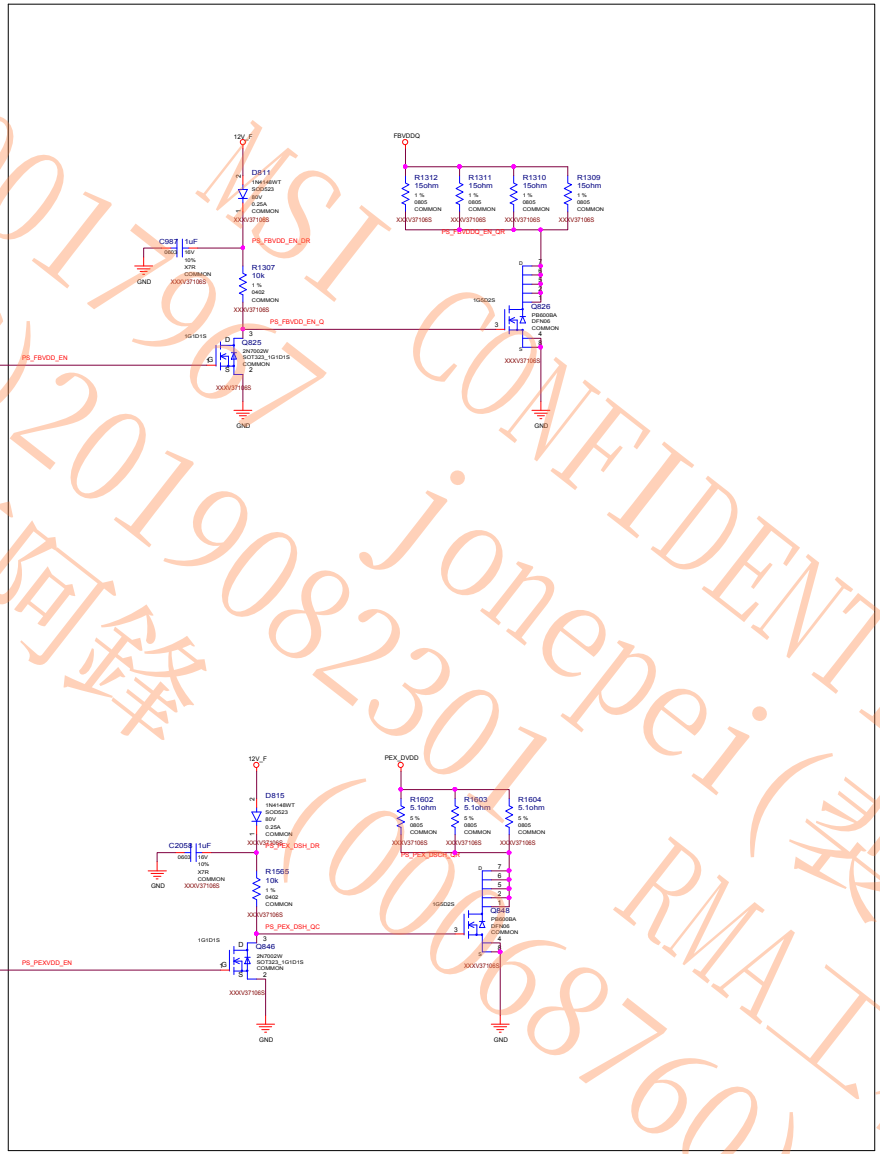
RD(C)2019082301
000179677
(600068760)

SEQUENCE:Discharge



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石阿鋒 (0006876O) RMA工程課

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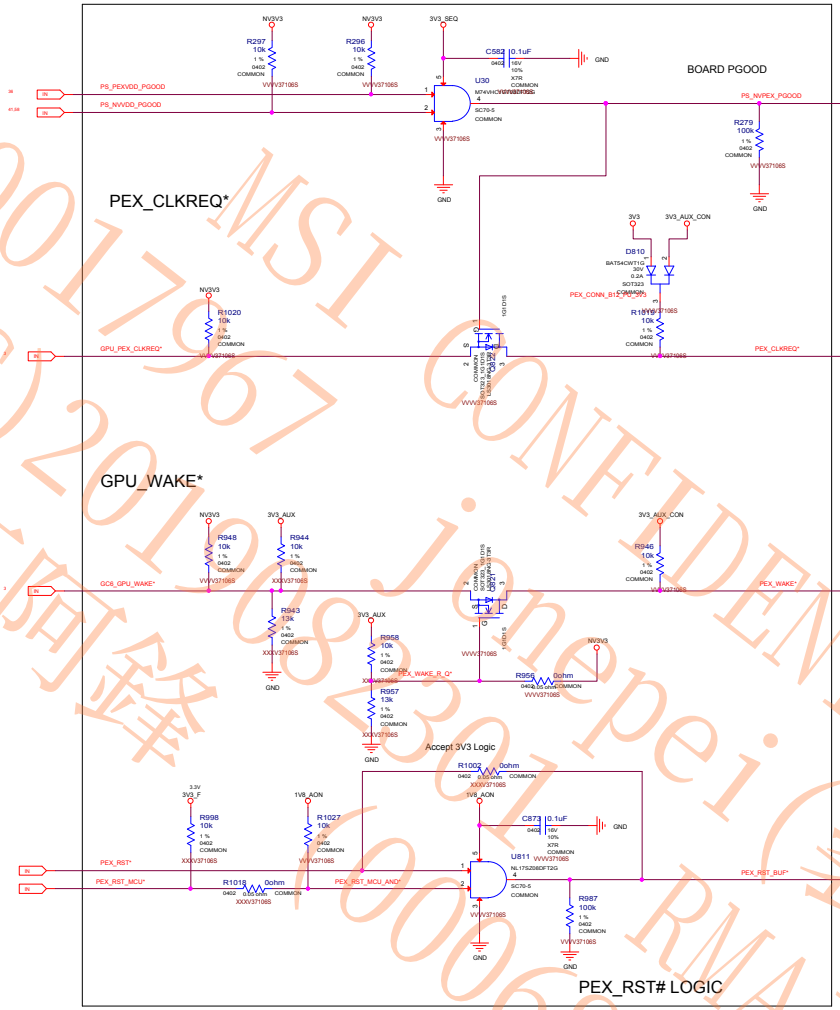
Size: Custom	Document Description: SEQUENCE:Discharge
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 60 of 66

SEQUENCE:MISC



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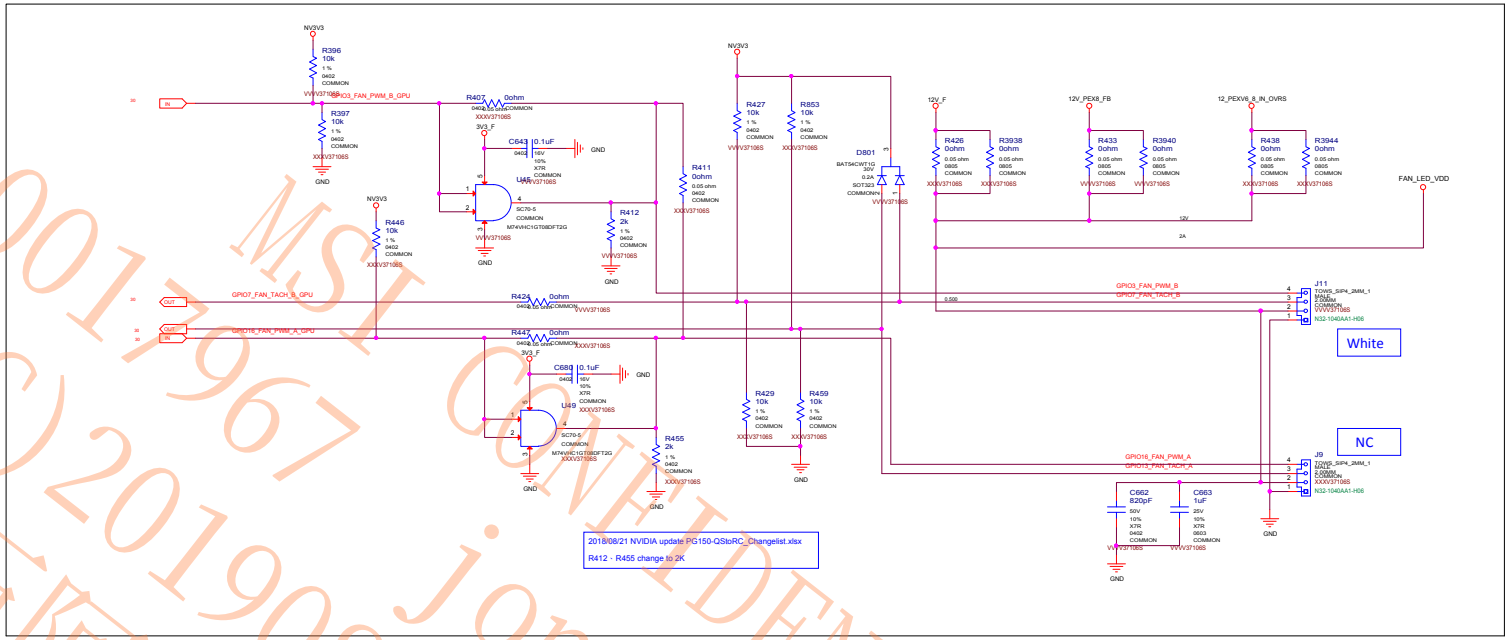
	MS-V371	
Size: Custom	Document Description: MISC	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 61 of 66	

MISC: FAN & LED1

delete RGB control signals



LED BOOST

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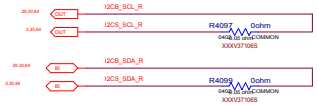
MS-V371	
Size: Custom	Document Description: MISC: FAN & LED1
Date: Friday, August 31, 2018	Sheet 82 of 66

MISC: LED2



delete RGB control signals

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石阿鋒 (00068760)

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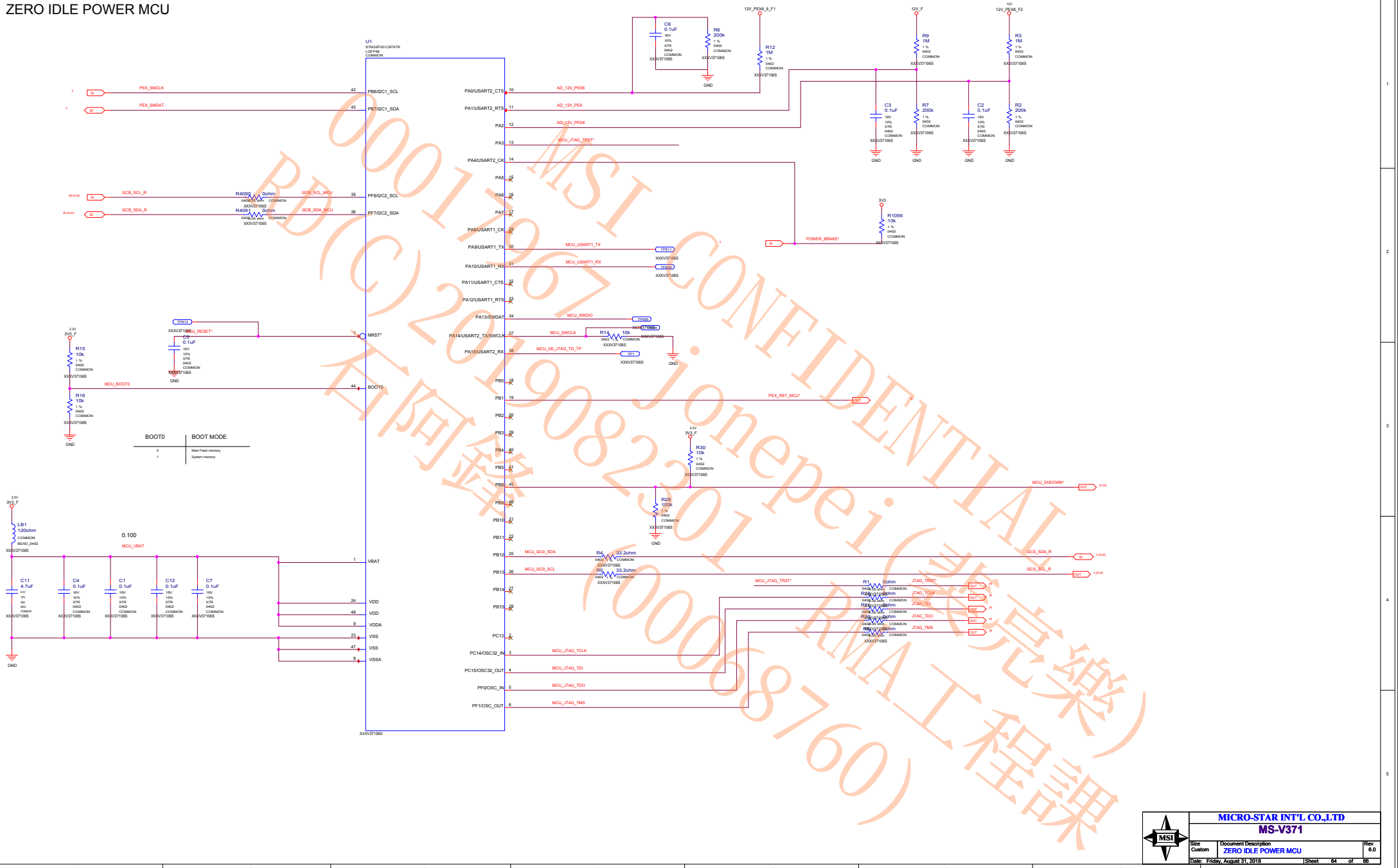
MS-V371
Size: Custom | Document Description: MISC: LED2 | Rev: 6.0
Date: Friday, August 31, 2018 | Sheet 63 of 66

ZERO IDLE POWER MCU



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PJ(C)20190823001 Jonepei(張竣棠)
R&A工程課 (0006876O)

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MS-V371		
Size: Custom	Document Description: ZERO IDLE POWER MCU	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 64 of 66	

Mechanical: Bracket/Thermal Solution

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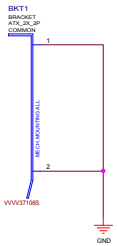
石阿鋒(00068760)

Brackets:

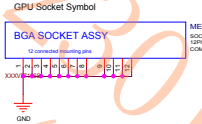


Bracket Screw

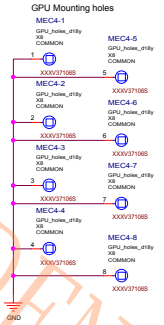
Back Cover

GPU Stiffner back side

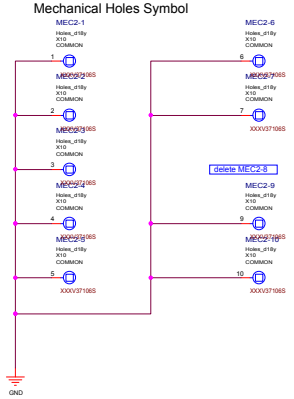
GPU Socket Symbol



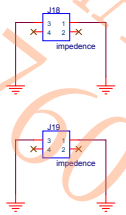
GPU Mounting holes

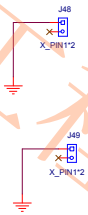


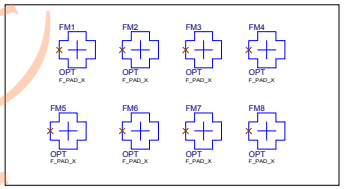
Mechanical Holes Symbol



Bracket Screw







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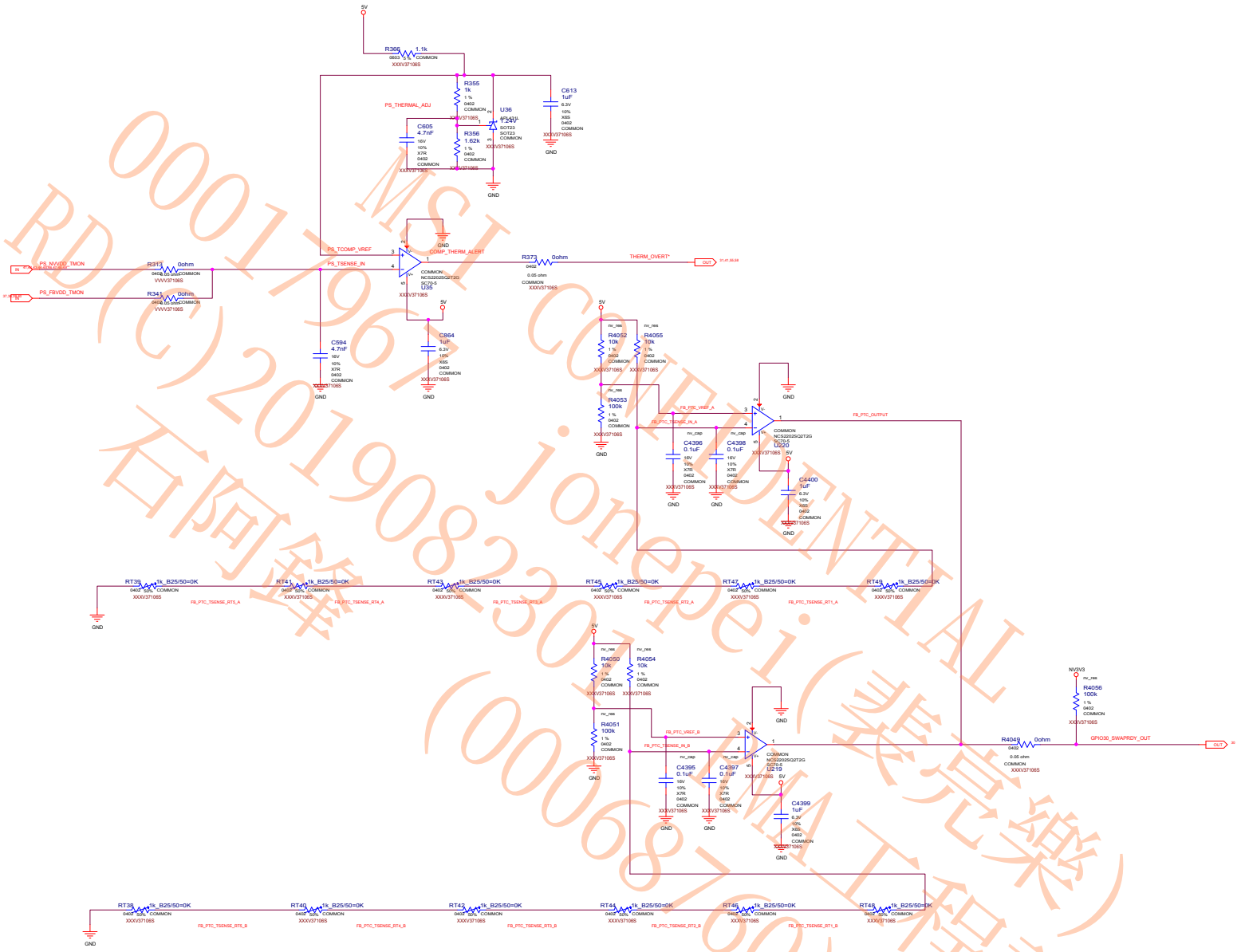
	MS-V371	
Size: Custom	Document Description: MECH	Rev: 6.0
Date: Friday, August 31, 2018	Sheet 65 of 66	

VR THERMAL PROTECTION



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石阿鑫

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Size: Custom	Document Description: VR THERMAL PROTECTION
Rev: 6.0	
Date: Friday, August 31, 2018	Sheet 66 of 66