TABLE OF CONTENTS

Page Description

V228-0A bason P1025 modify

1.page 4:add framebuffer A circuit
2.page 31:add framebuffer A memory circuit
3.page 16 ,17 single DVI componet modify Dual DVI
4.page 16:remove DP circuit
5.page 18 add DP circuit
6.page 18 modify HDMI component
7.page 21:modify ADT7473 circuit add switch 開關做爲使用LN2關閉偵測之用
8.page 22:add dual VBIOS circuit ,remove HDCP rom
9.page 23:add 一組PEX conn
10.page 24:remove 2v5 u6 circuit, PEX_VDD liner modify switch power .
11.page 25: modify FBVVDD .
12.page 26,27,28,29,30: modify NVVDDD circuit .

V228-10 bason 0A modify

1.modify EC145,EC146,EC150,EC151,EC162,EC164,EC207,EC208 FOOTPEINT
2.page21,23 modify LN2 shdn circuit

V256-10 BASON V228-10 modify

1.從P1261 suk 580公板貼memory circuit
2.nvvdd modify power circuit

V256-11 BASON V256-10 modify

1.page 25 modify FBVDDQ EN pin pull up 電阻
2.page 23 modify buzzer circuit
3.page27/29 add EC152,EC153 cap
4.page 21/23 modify Q212,Q507,Q510 FOOTPRINT
5.page 24 U3 and U6 change ROM_CS*1/2 net 位置

Page Description

SKU	VARIANT	NVPN	ASSEMBLY
B	BASE	600-11025-BASE-SCH	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	SKU0000	602-11025-0000-300	DT, GF100-050, 659/2000, 1024MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
2	SKU0001	602-11025-0001-300	DT, GF100-050, 659/2000, 1024MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
3	SKU0002	602-11025-0002-300	DT, GF100-300, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DP + mHDMI
4	SKU0003	602-11025-0003-300	DT, GF100-030, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DP + mHDMI
5	SKU0004	602-11025-0004-300	DT, GF100-300, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
6	SKU0005	602-11025-0005-300	DT, GF100-050, 659/2000, 1024MB - 32Mx32 GDDR5, DVI-I + DVI-I + VENT
7	SKU0006	602-11025-0006-300	DT, GF100-030, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
8	SKU0007	602-11025-0007-300	DT, GF100-030, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
9	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
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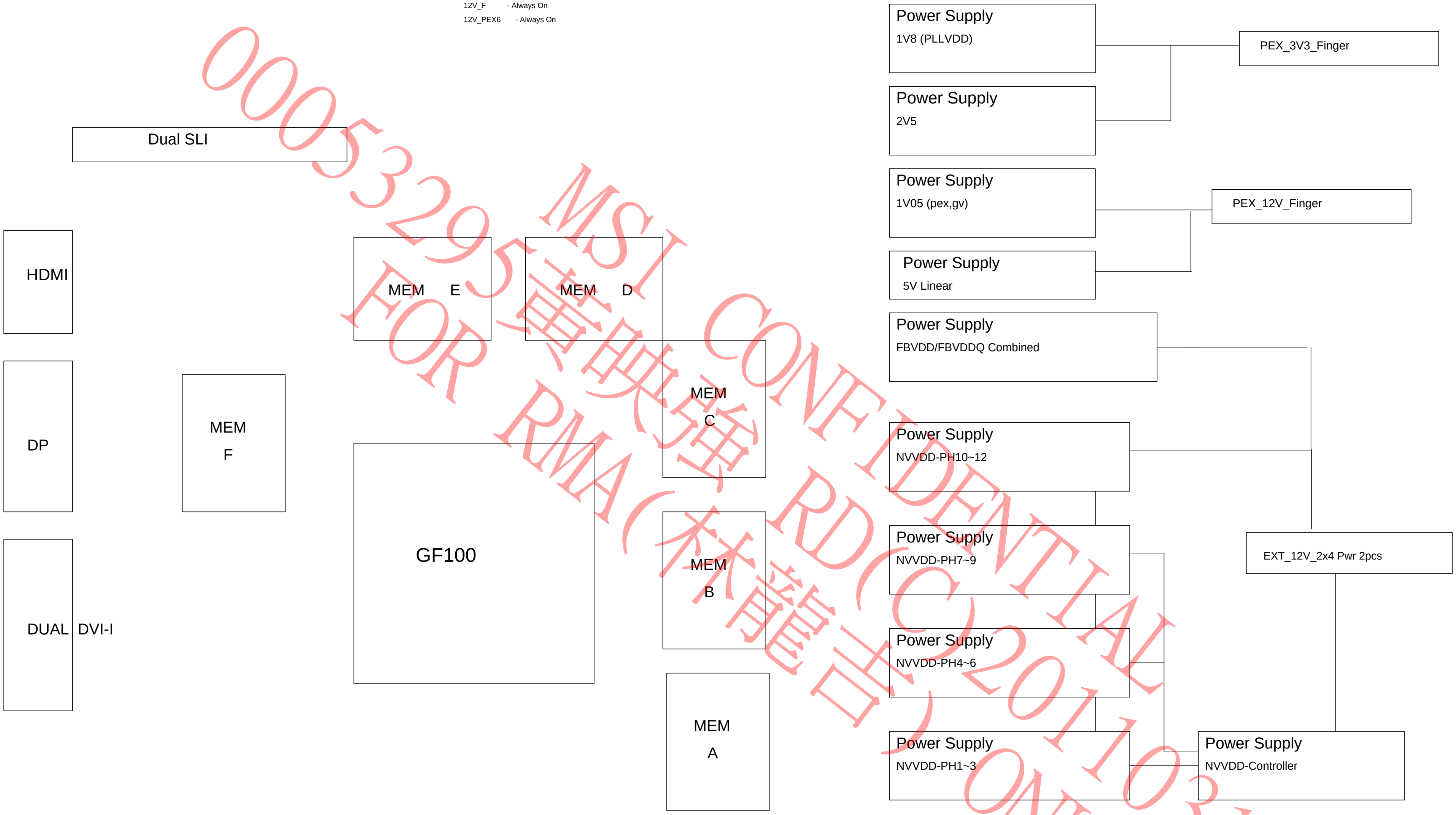
PAGE DETAIL	Table of Contents

Micro-Star International Co., LTD.			
<Title> 600-11022-BASE-SCH			
Size: Custom	Document Number: <Doc>		Rev: <RevCode>
Date: Friday, December 31, 2010	Sheet 1 of 32		

Block Diagram

Power Sequence

5V	- Always On
3V3	- Always On
12V_F	- Always On
12V_PEX6	- Always On



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Size	Document Number	Rev
Custom	<Doc>	<RevCode>

Date: Friday, December 31, 2010

PCI Express

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PCI Express

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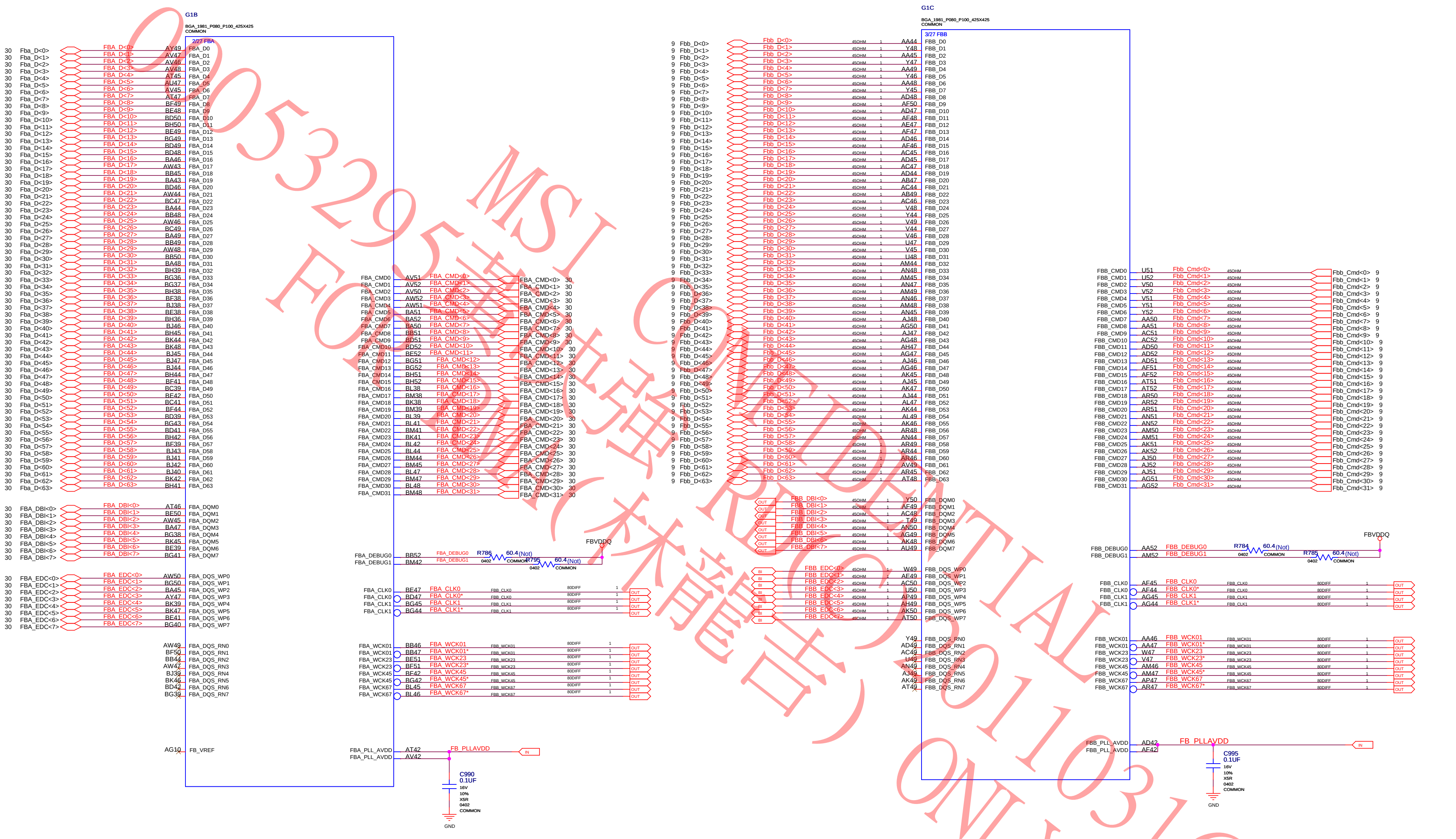
Title: <Title>		
Size: Custom	Document Number: <Doc>	Rev: <RevCode>
Date: Tuesday, December 14, 2010	Sheet 3 of 32	

Framebuffer A,B: GPU Section



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PAGE DETAIL	Framebuffer A,B: GPU Section

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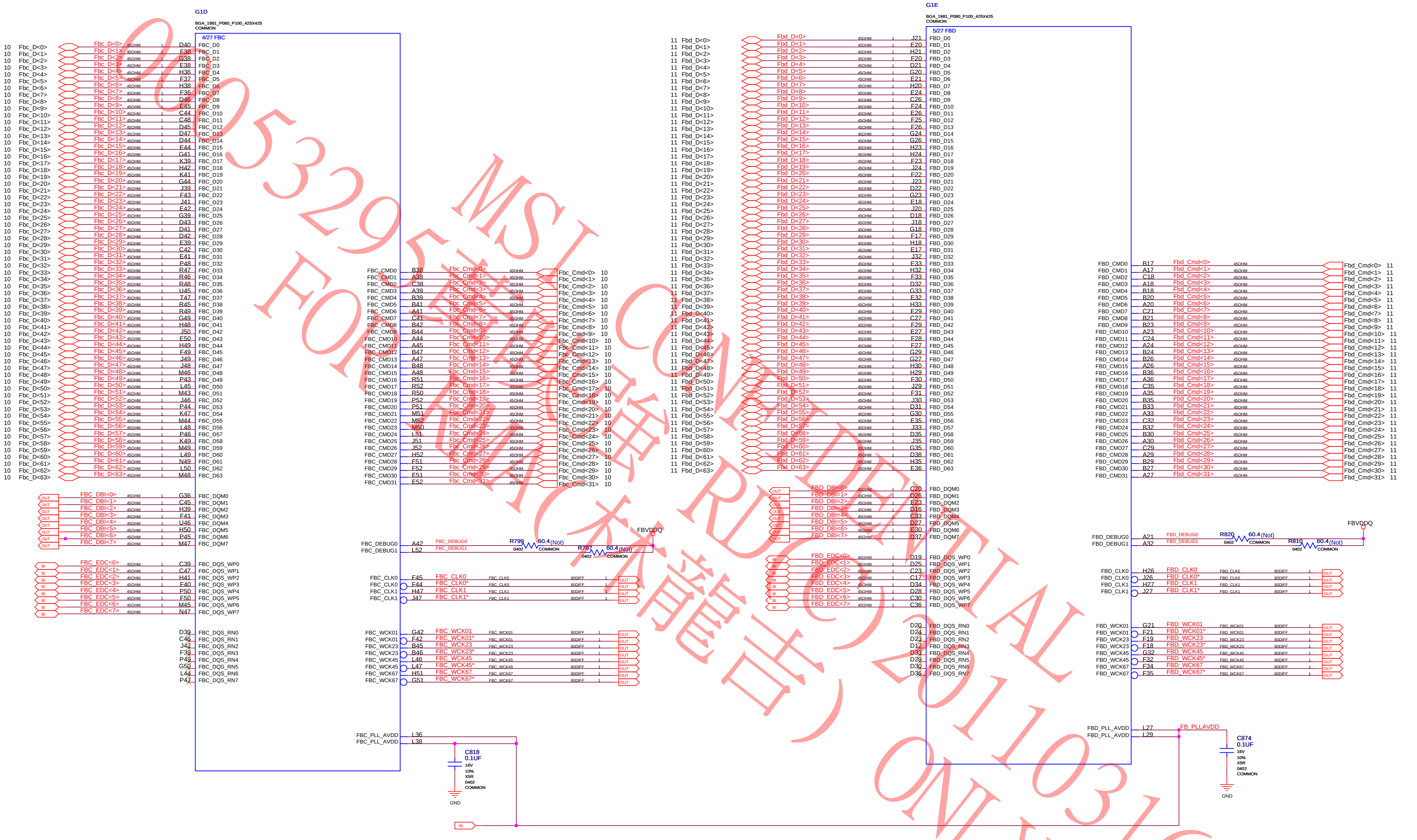
Size	Document Number	Rev
Custom	<Doc>	<RevCode>

Framebuffer C,D: GPU Section



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PAGE DETAIL	Framebuffer C,D: GPU Section

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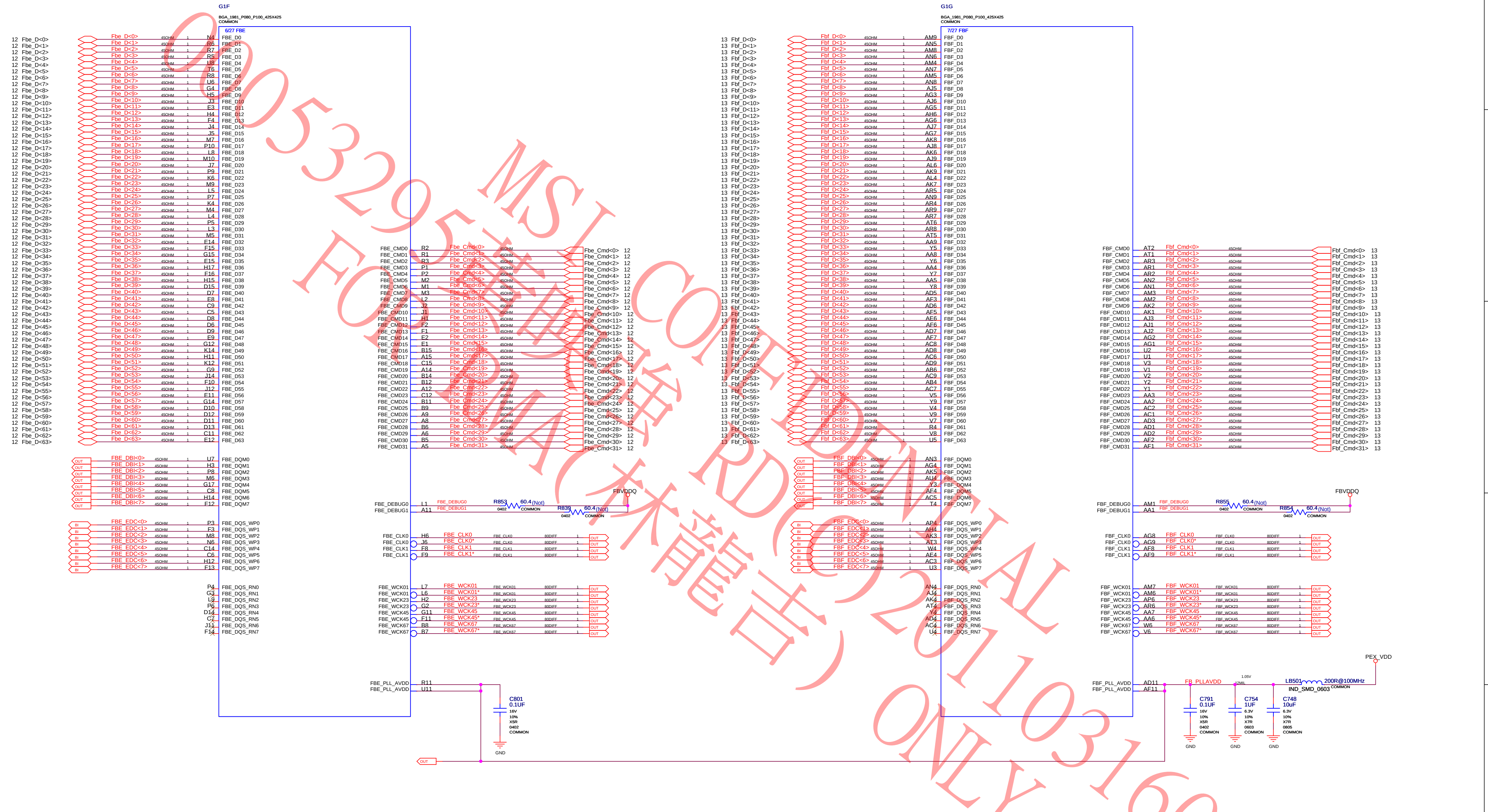
Size	Document Number	Rev
Custom	<Doc>	<RevCode>

Date: Tuesday, December 14, 2010 Sheet 5 of 32

Framebuffer E,F: GPU Section



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PAGE DETAIL	Framebuffer E,F: GPU Section

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<Title>

Size	Document Number	Rev
Custom	<Doc>	<RevCode>

Date: Tuesday, December 14, 2010 Sheet 6 of 32

GPU Power and GND

5/12 FOR 480 GPU:BB38/BC38/BD38 接FBVDDQ

5/12:AY43/AY45/AY48/AY51/BC40/BC45/BC48 接GND

5/12:BC51/BE43/BF48/BF52/BH40/BH46/BJ51/BL40/BL43/BL49 接GND

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	GPU Power and GND

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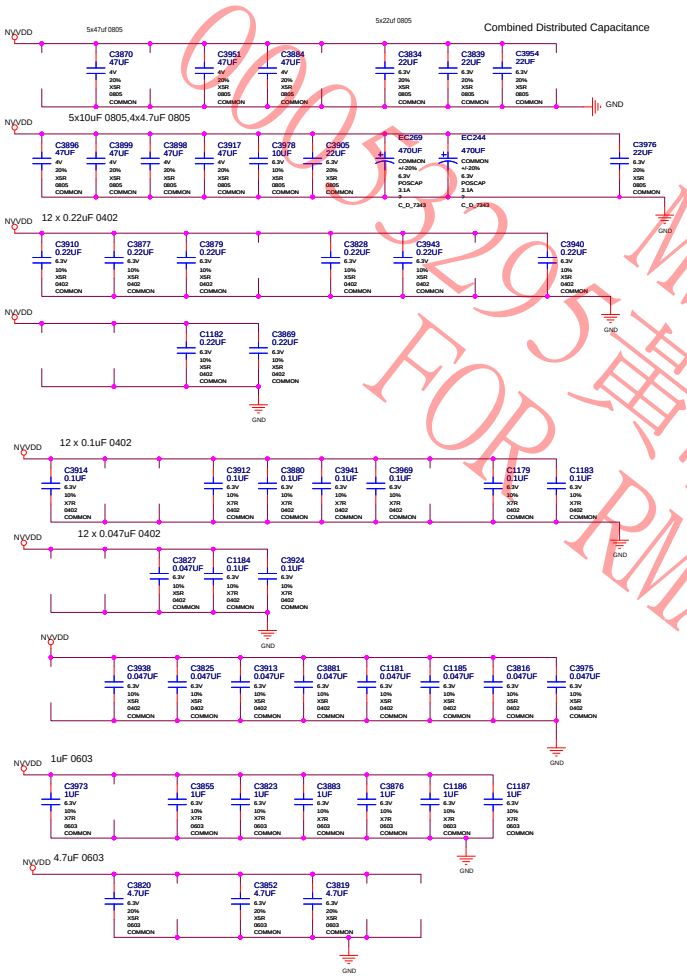
<Title>

Size: Custom | Document Number: <Doc> | Rev: <RevCode>

Date: Tuesday, December 14, 2010 | Sheet 7 of 32

Decoupling: GPU (NVVDD, FBVDDQ)

Decoupling for NVVDD (under GPU)



Decoupling for FBVDDQ (under GPU)

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Decoupling: GPU (NVVDD, FBVDDQ)

Micro-Star International Co., LTD.		
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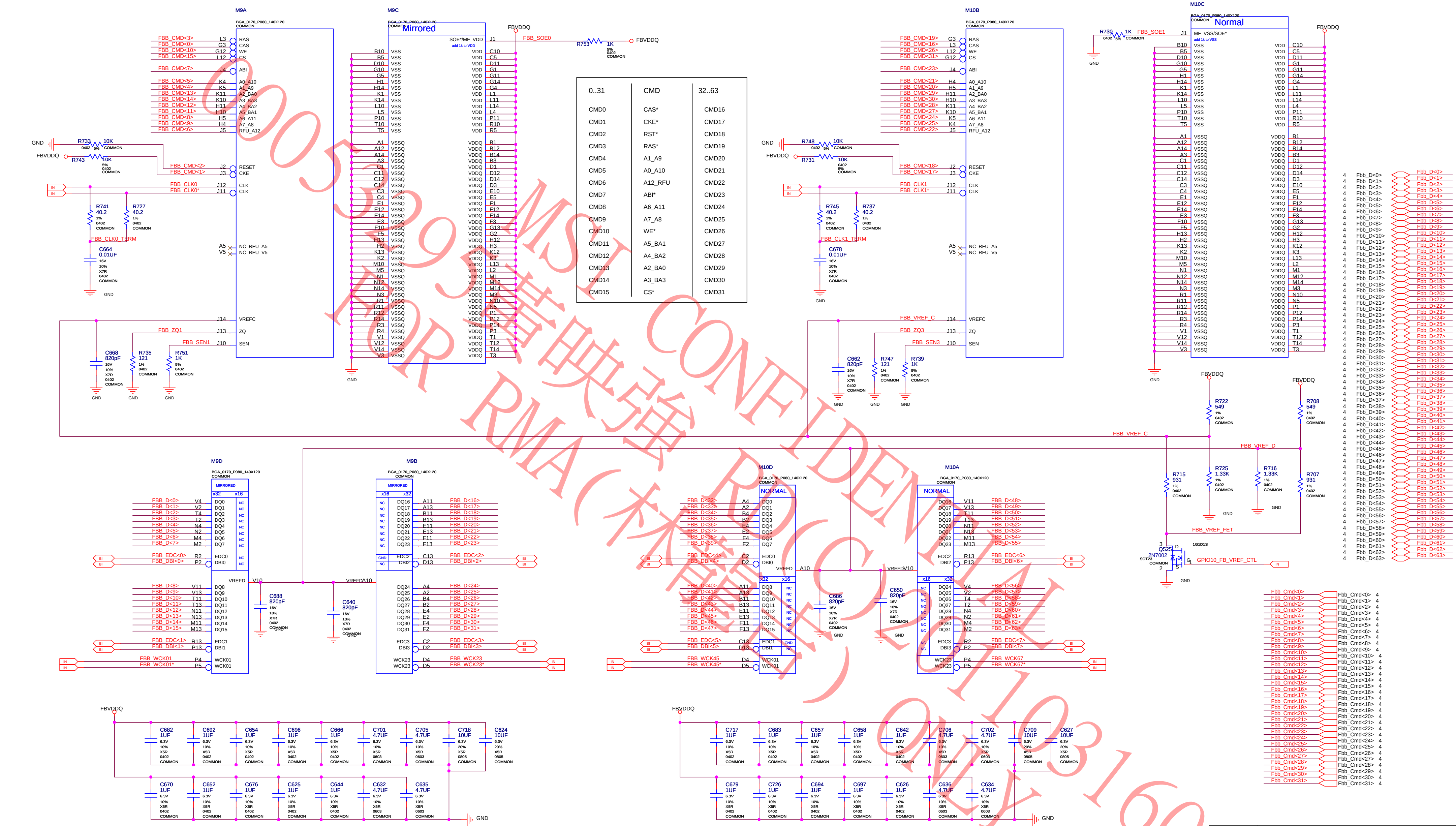
Size: Custom	Document Number: <Doc>	Rev: <RevCode>
Date: Friday, December 31, 2010	Sheet 8 of 32	

Framebuffer B: Memory Section

Hynix 32MX32 2000MHZ: 161-0063-100

SAMSUNG 32MX32 2000MHZ: 161-0051-600



0..31	CMD	32..63
CMD0	CAS*	CMD16
CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	ABI*	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BA0	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Framebuffer B: Memory Section

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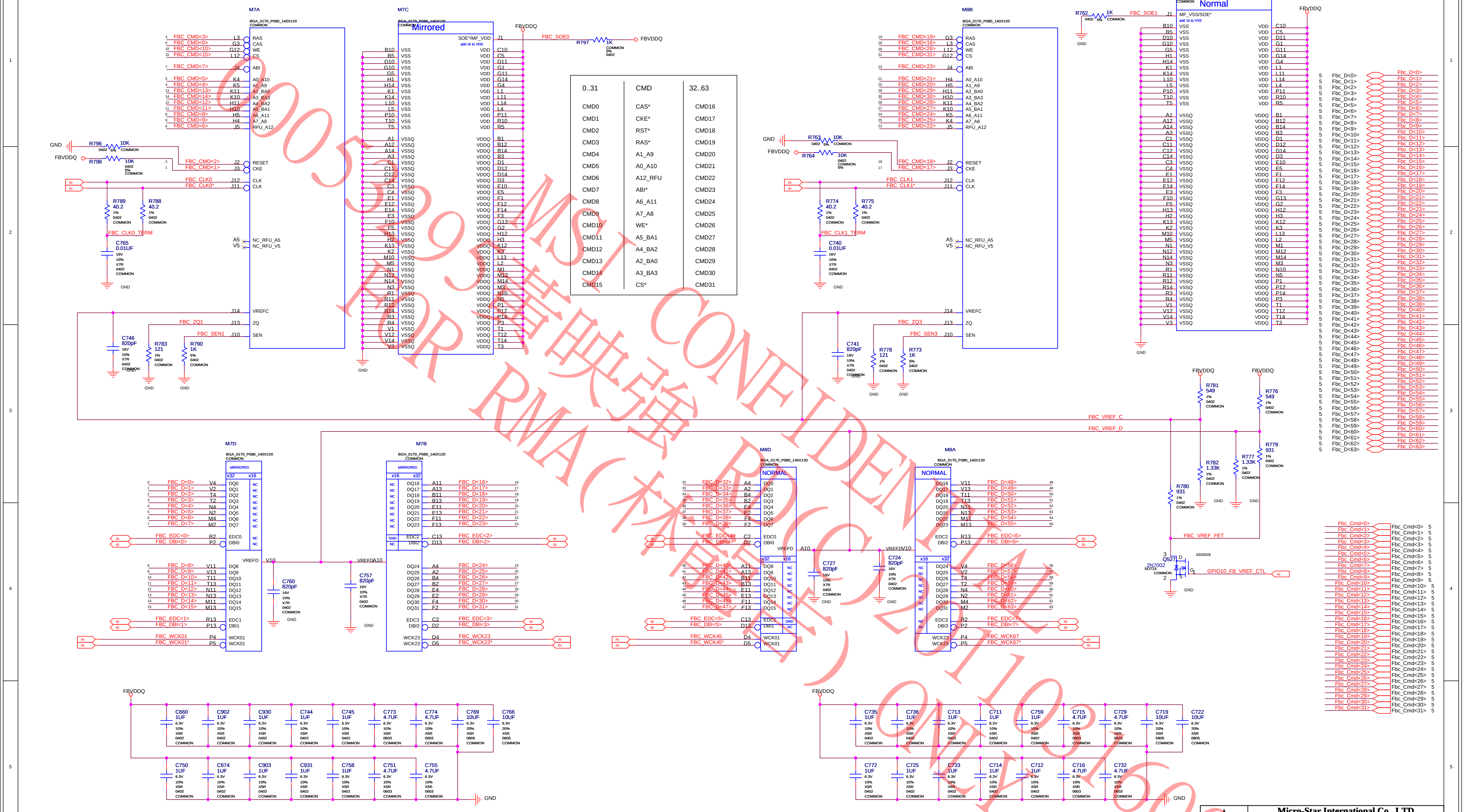
Title: <Title>

Size: Custom | Document Number: <Doc> | Rev: <RevCode>

Framebuffer C: Memory Section

Hynix 32MX32 2000MHZ: 161-0063-100
SAMSUNG 32MX32 2000MHZ: 161-0051-600



0..31	CMD	32..63
CMD0	CAS*	CMD16
CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	ABI*	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BA0	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31

ASSEMBLY — BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL — Framebuffer C: Memory Section

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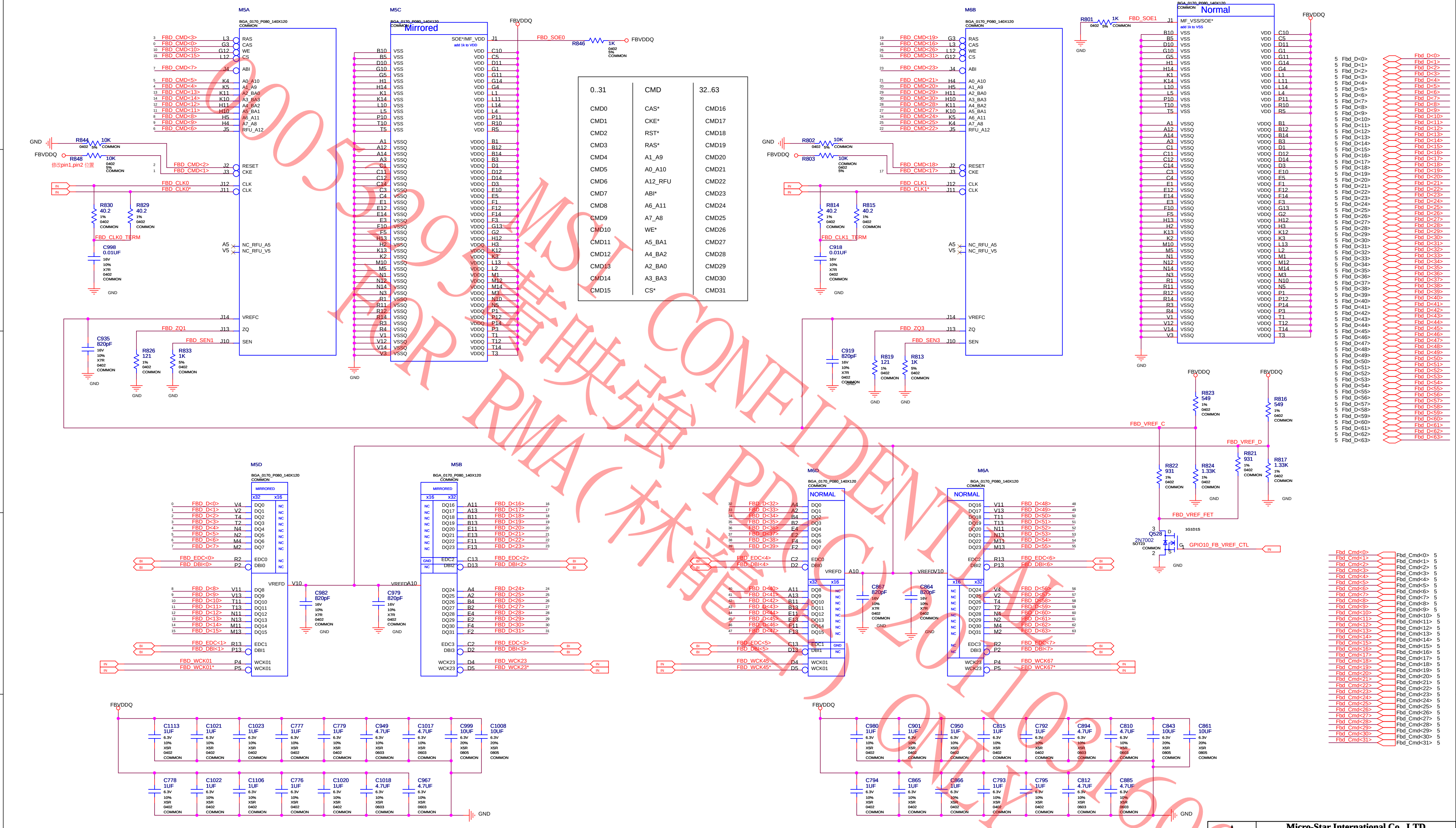
Title	<Title>	
Size: Custom	Document Number: <Doc>	Rev: <RevCode>
Date: Tuesday, December 14, 2010	Sheet 10 of 32	

Framebuffer D: Memory Section

Hynix 32MX32 2000MHZ: 161-0063-100
SAMSUNG 32MX32 2000MHZ: 161-0051-600



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CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	ABI*	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BA0	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31

ASSEMBLY: BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
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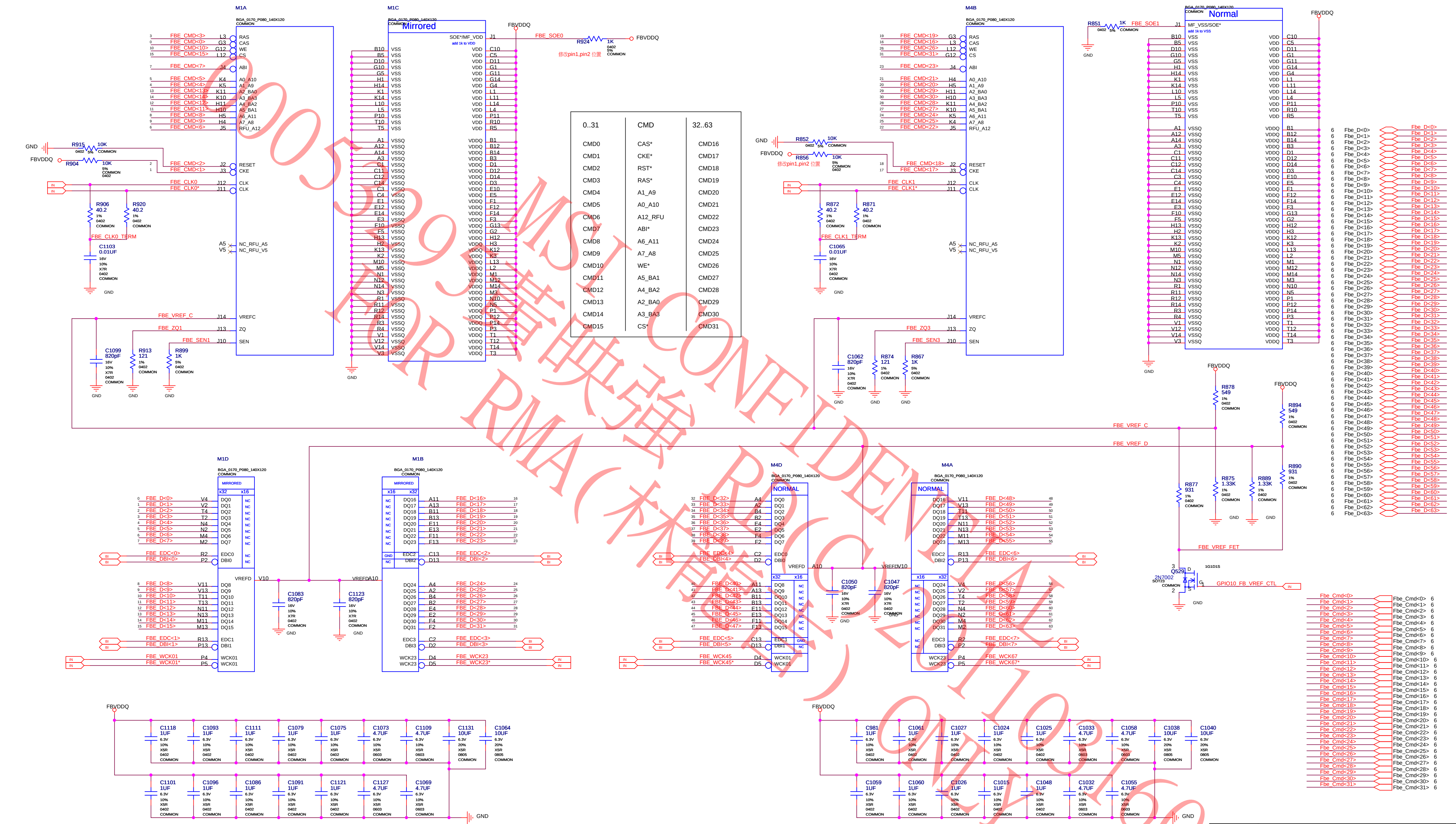
Size: Custom | Document Number: <Doc> | Rev: <RevCode>

Date: Tuesday, December 14, 2010 | Sheet 11 of 32

Framebuffer E: Memory Section

Hynix 32MX32 2000MHZ: 161-0063-100
SAMSUNG 32MX32 2000MHZ: 161-0051-600



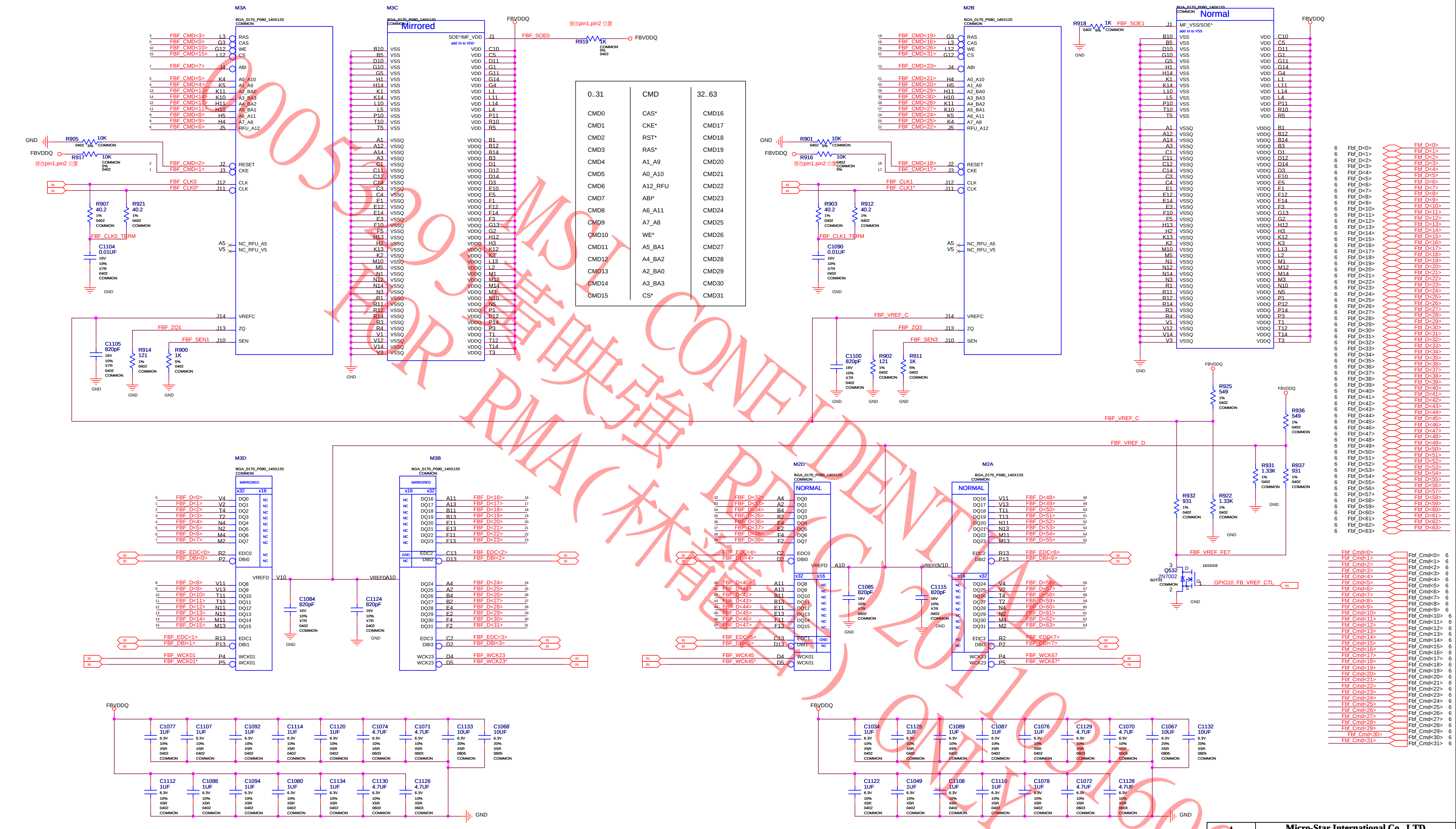
0..31	CMD	32..63
CMD0	CAS*	CMD16
CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	ABI*	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BA0	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31

ASSEMBLY: BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL: Framebuffer E: Memory Section

Framebuffer F: Memory Section

Hynix 32MX32 2000MHZ: 161-0063-100

SAMSUNG 32MX32 2000MHZ: 161-0051-600



0..31	CMD	32..63
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CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	ABI*	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BA0	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31

ASSEMBLY: BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL

PAGE DETAIL: Framebuffer F: Memory Section

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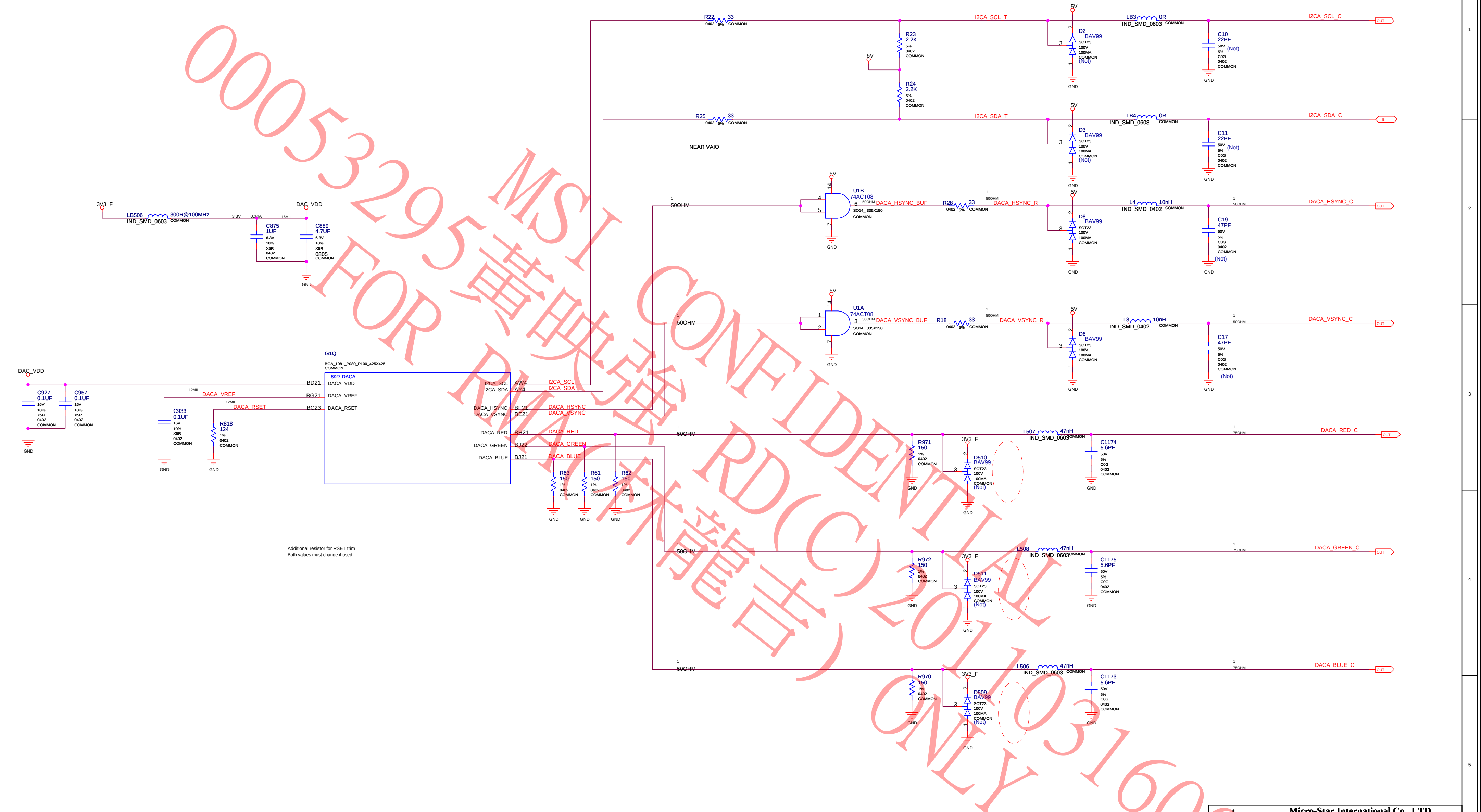
Size: Custom	Document Number: <Doc>		Rev: <RevCode>
Date: Tuesday, December 14, 2010	Sheet 13 of 32		

Display: DACA (South DVI-I)



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PAGE DETAIL	Display: DACA (South DVI-I)

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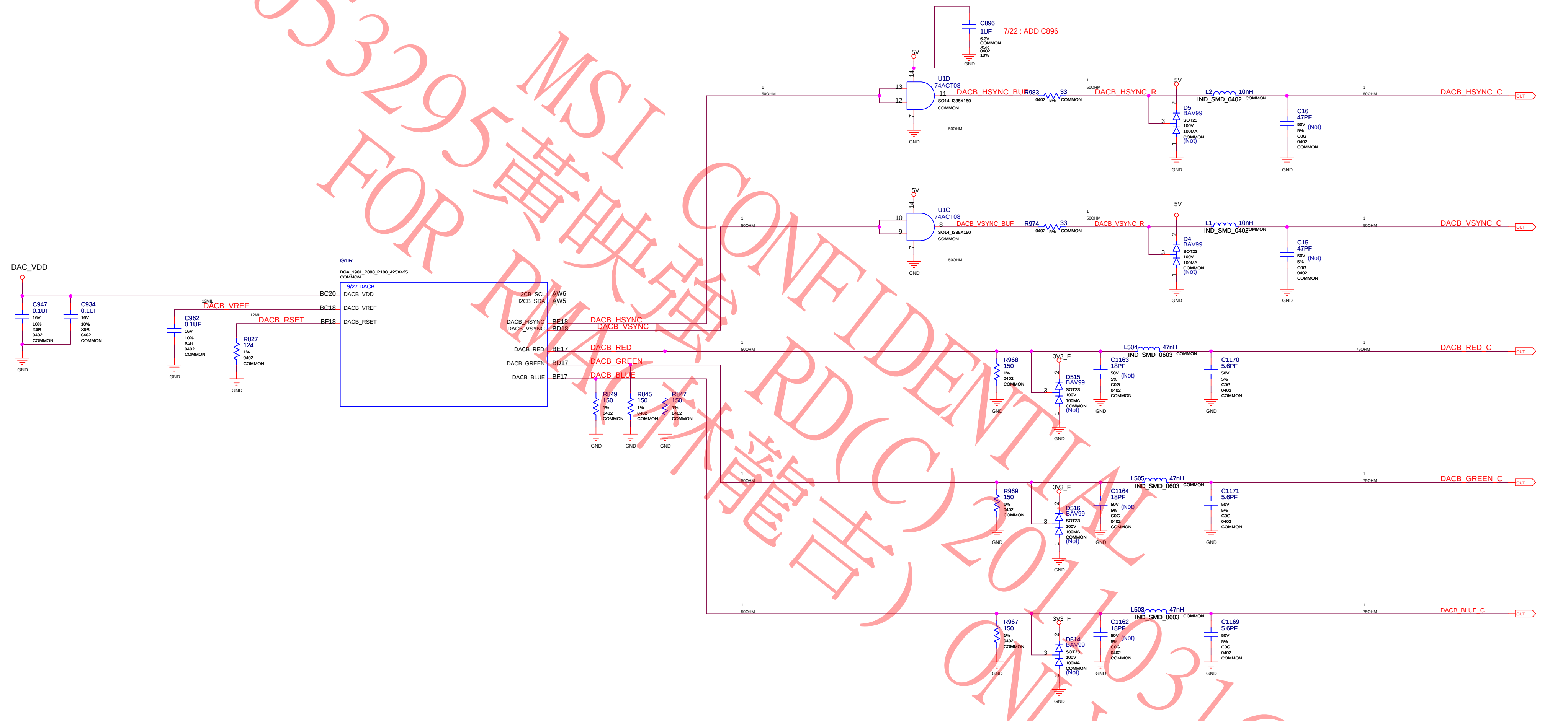
Size	Document Number	Rev
Custom	<Doc>	<RevCode>

Display: DACB (Middle DVI-I)



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PAGE DETAIL: Display: DACB (Middle DVI-I)

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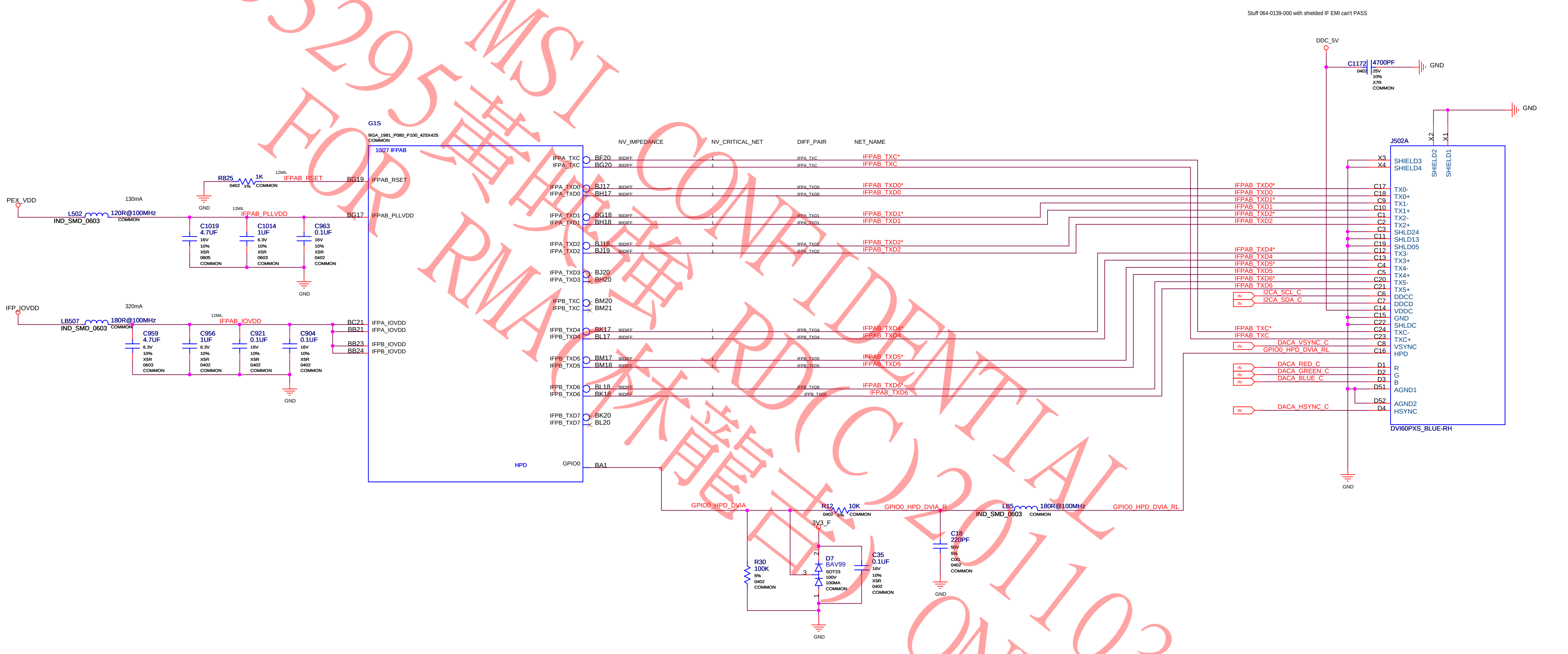
Date: Tuesday, December 14, 2010

IFPAB for South DVI-I (with DACA)



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PAGE DETAIL	IFPAB for South DVI-I (with DACA)

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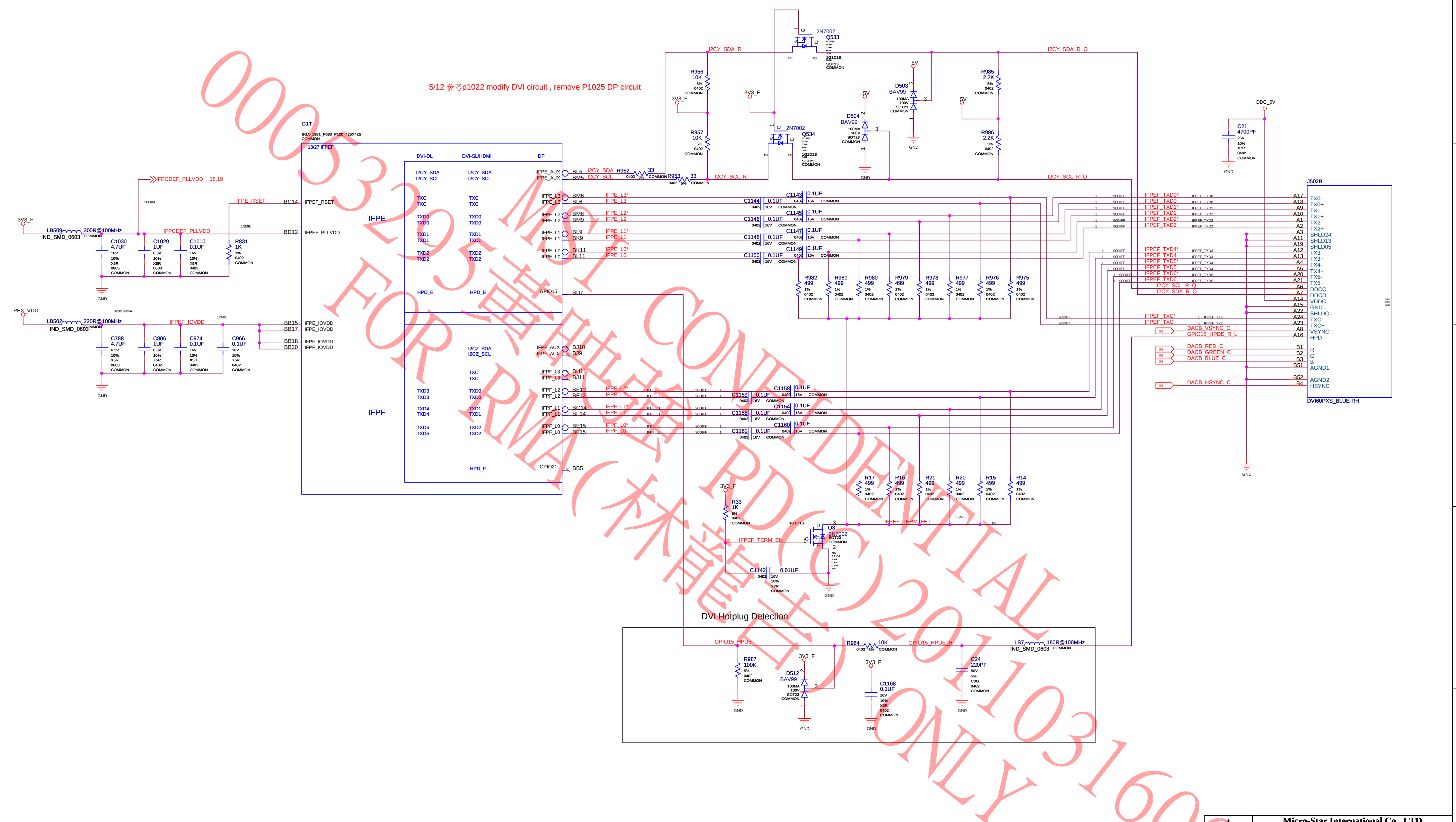
IFPEF for Middle DVI-I or DP



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PAGE DETAIL	IFPEF for Middle DVI-I or DP

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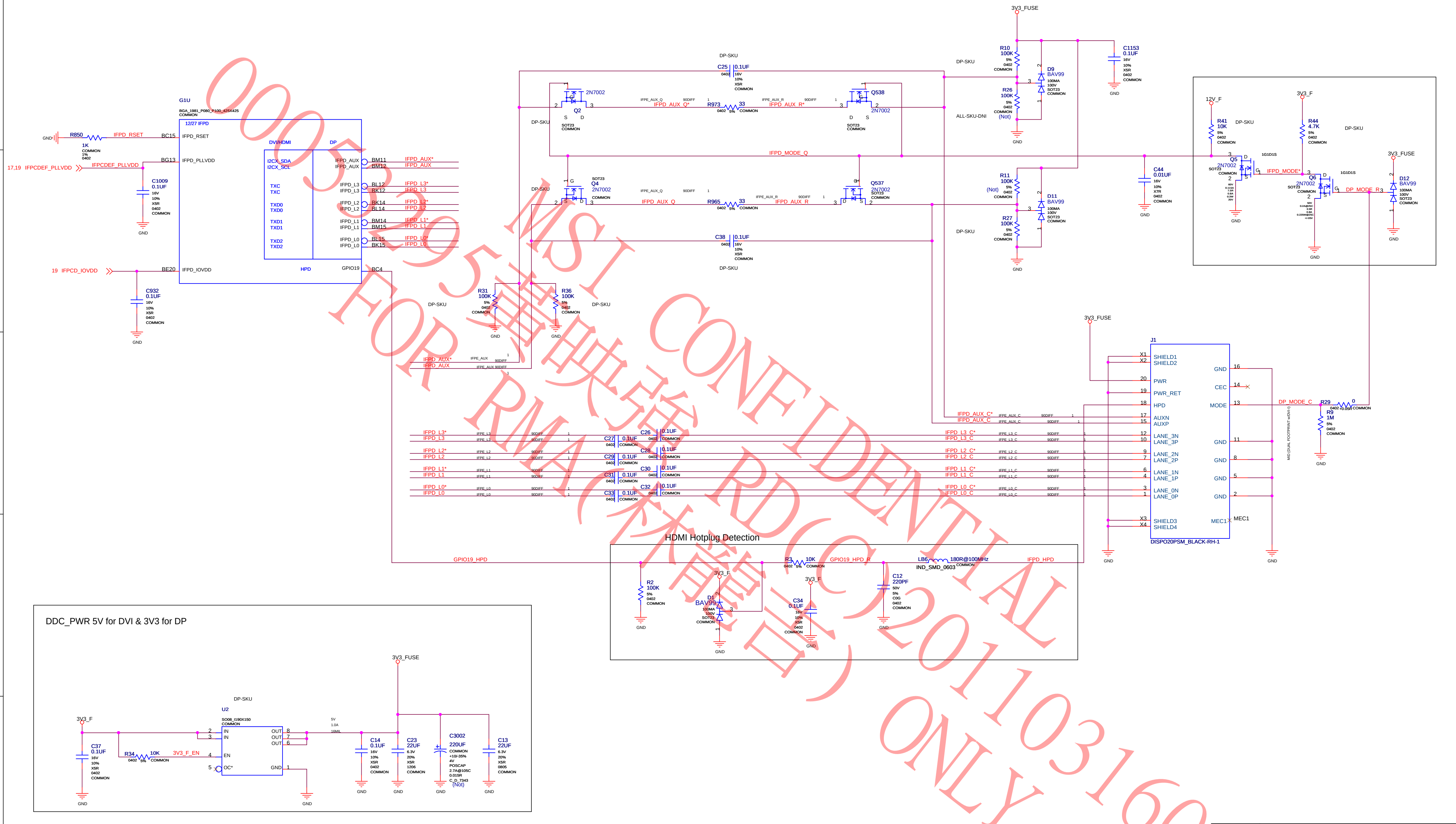
Size	Document Number	Rev
Custom	<Doc>	<RevCode>

Date: Tuesday, December 14, 2010 | Sheet 17 of 32

IFP_D: UNUSED, (MID DP)



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	IFP_D: UNUSED, (MID DP)

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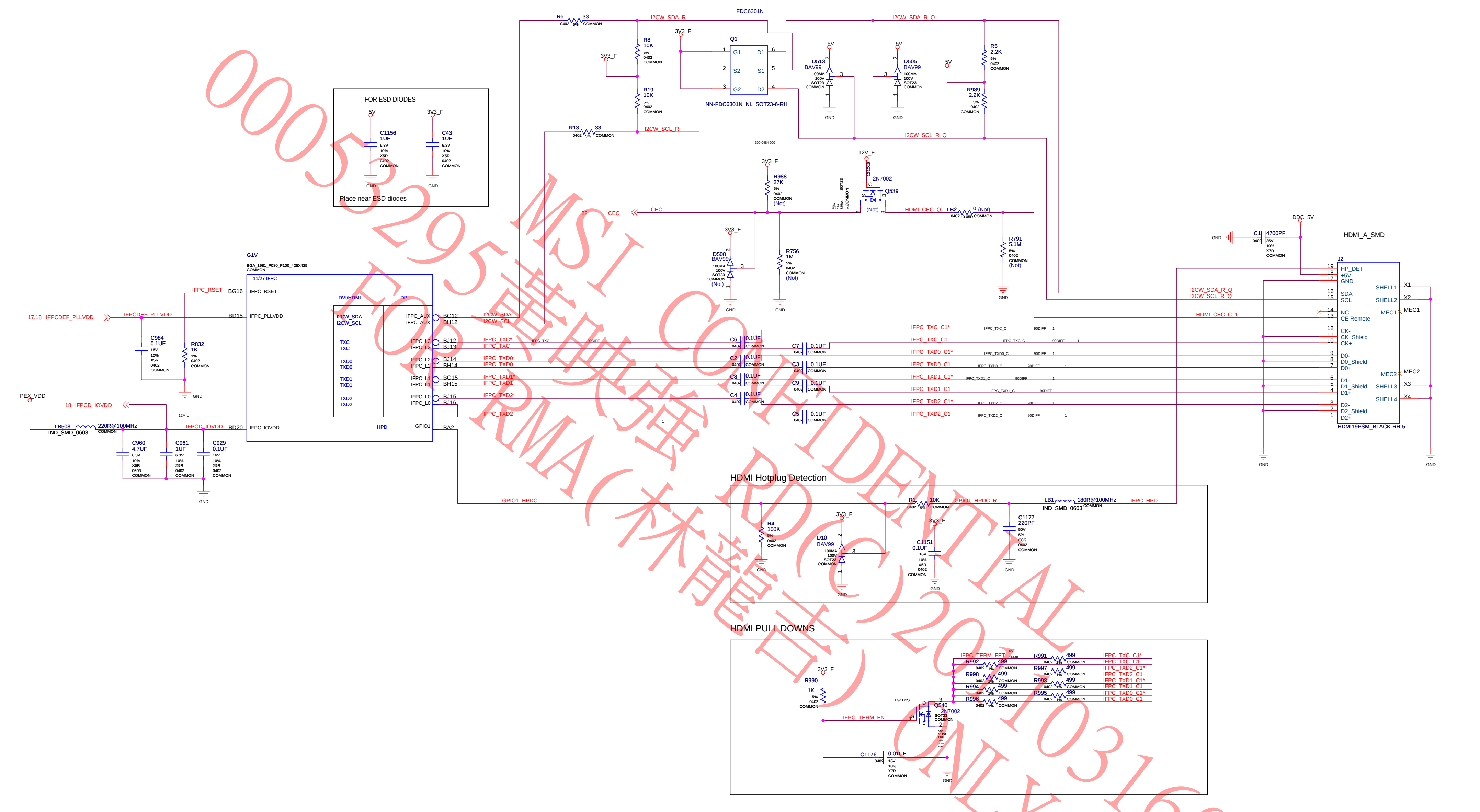
Size: Custom | Document Number: <Doc> | Rev: <RevCode>

Date: Tuesday, December 14, 2010 | Sheet 18 of 32

IFP_C: miniHDMI (NORTH)



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PAGE DETAIL	IFP_C: miniHDMI (NORTH)

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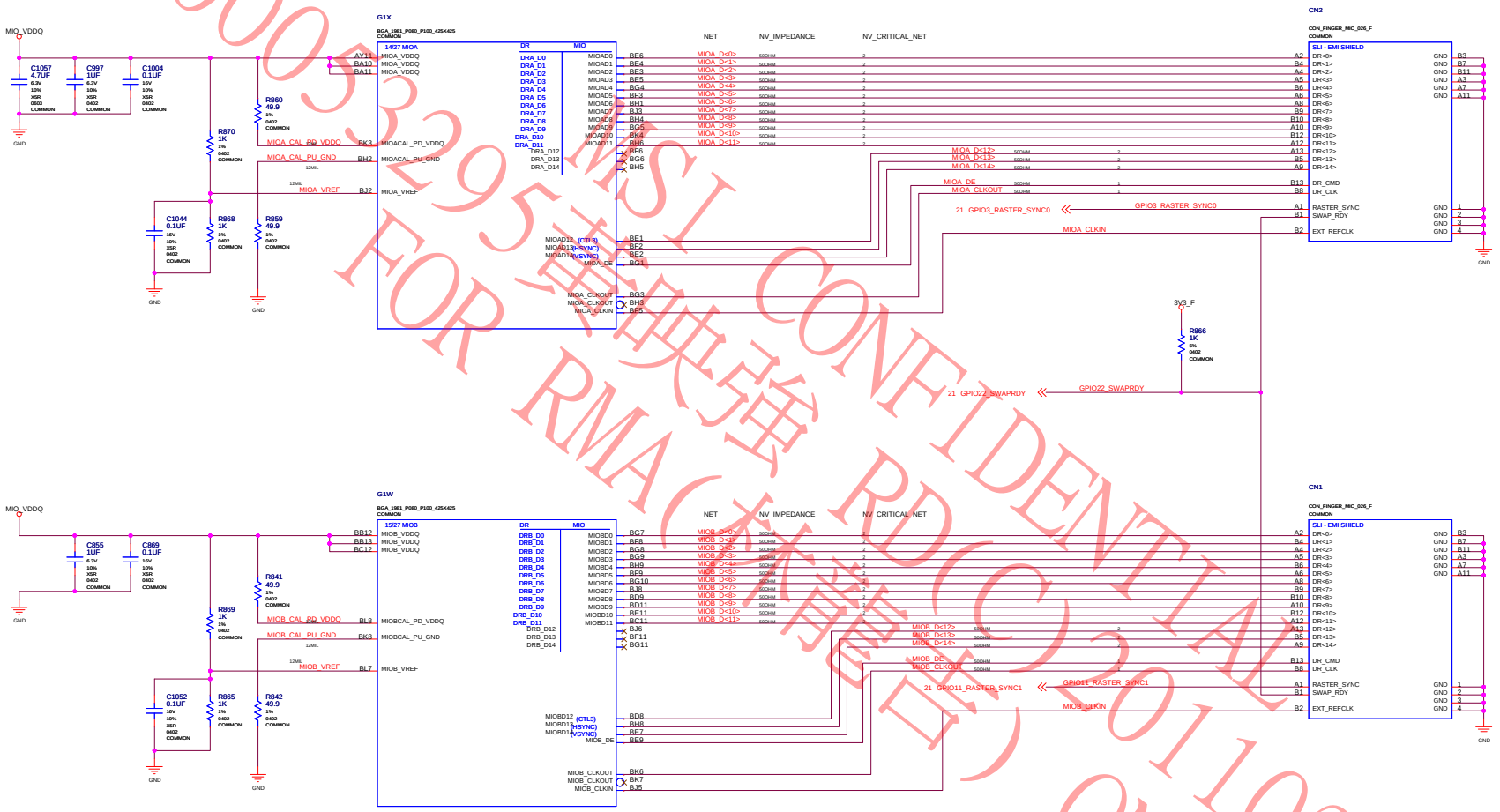
Size	Document Number	Rev
Custom	<Doc>	<RevCode>

Date: Tuesday, December 14, 2010 Sheet 19 of 32

Connectors: DR Interface (Dual SLI)



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PAGE DETAIL	Connectors: DR Interface (Dual SLI)

Micro-Star International Co., LTD.			
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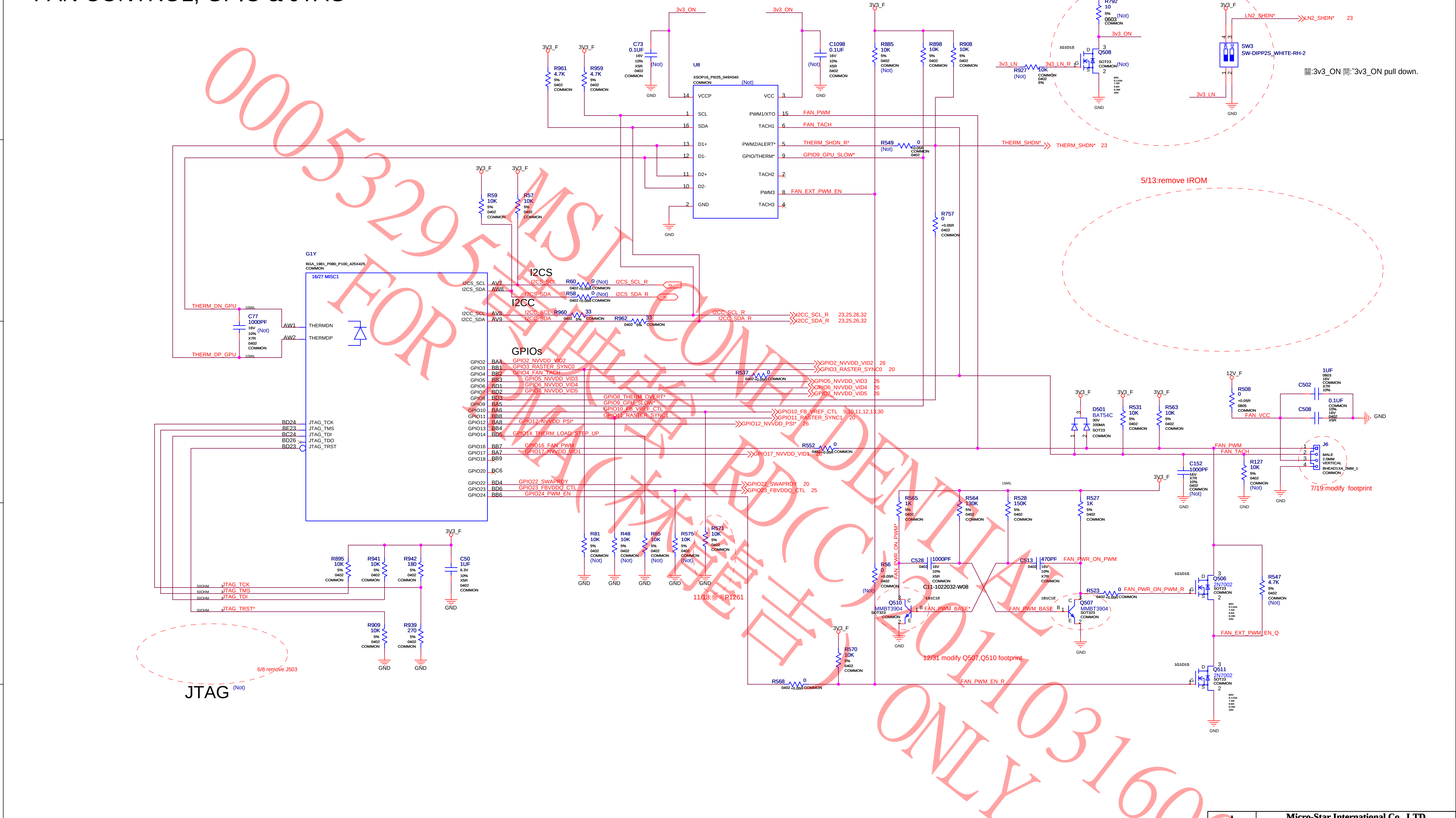
Size: Custom	Document Number: <Doc>		Rev: <RevCode>
Date: Tuesday, December 14, 2010	Sheet: 20 of 32		

FAN CONTROL, GPIO & JTAG



ASSEMBLY — BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL — FAN CONTROL, GPIO & JTAG

Micro-Star International Co., LTD.	
Title	<Title>
Size	Custom
Document Number	<Doc>
Rev	<RevCode>
Date:	Friday, December 31, 2010
Sheet	21 of 32

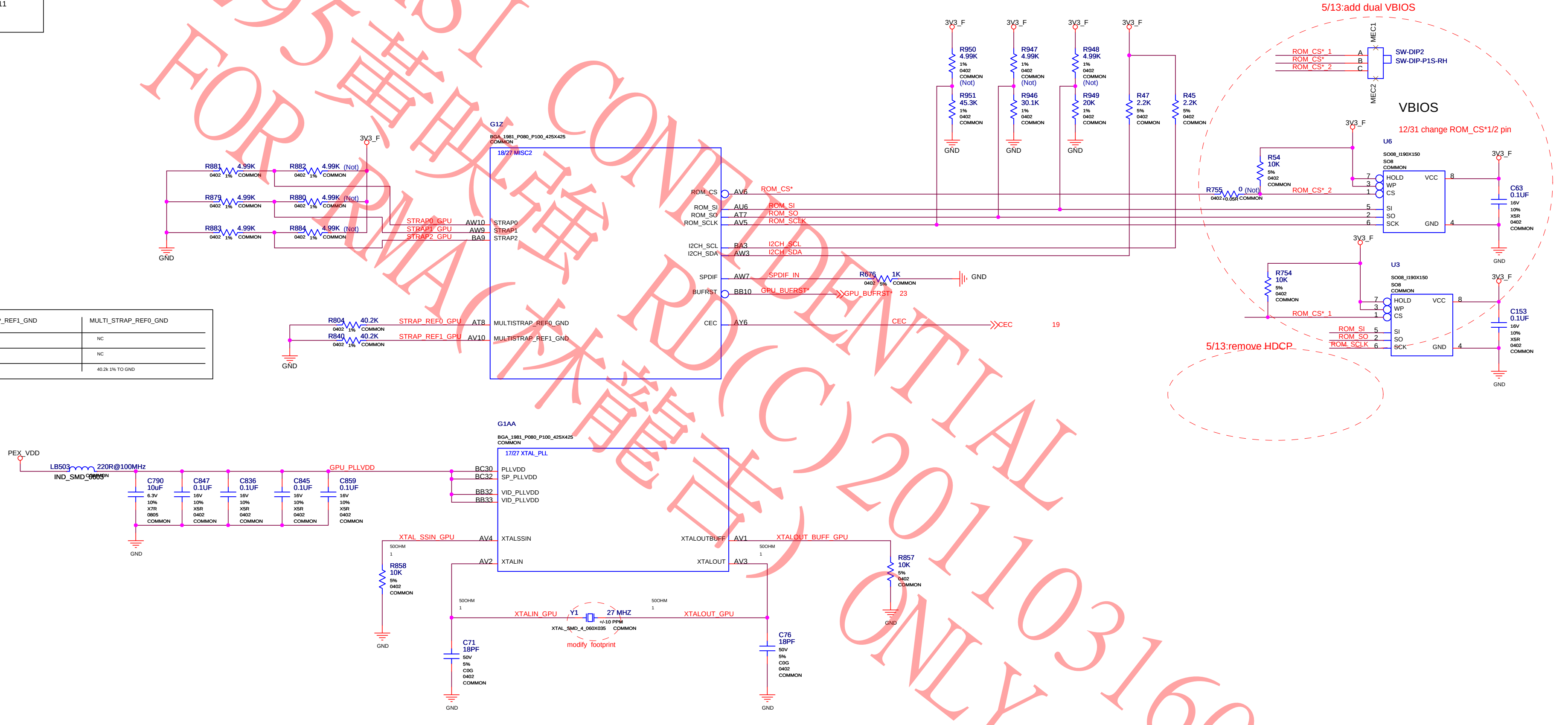
BIOS ROM, HDCP ROM, STRAPPING OPTIONS

STRAP0	USER_BIT [3..0]	0000:=> 5K PD	
STRAP1	3GIO_PADCFG_LUT_ADR	0000 :=>5K PD	0000 Desktop
STRAP2	PCI_DEVID [3:0]	0000 :=>5K PD For 0x06C0	

	GND	3V3
5k	0000	1000
10k	0001	1001
15k	0010	1010
20k	0011	1011
25k	0100	1100
30k	0101	1101
35k	0110	1110
45k	0111	1111

ROM_SI	RAMCFG[0]	0010 32Mx32 GDDR5 320-bit Hynix
	RAMCFG[1]	0011 32Mx32 GDDR5 320-bit Samsung
	RAMCFG[2]	0110 64Mx32 GDDR5 320-bit Hynix
	RAMCFG[3]	0111 64Mx32 GDDR5 320-bit Samsung
		1010 32Mx32 GDDR5 256-bit Hynix
		1011 32Mx32 GDDR5 256-bit Samsung
		1110 64Mx32 GDDR5 256-bit Hynix
		1111 64Mx32 GDDR5 256-bit Samsung

ROM_SO	VGA_DEVICE	1 FOR GPU0; 0 FOR GPU1	
	SMB_ALT_ADDR	0	10k PD FOR GPU0 / 5K PD FOR GPU1
	FB[0]_BAR_SIZE	0	
	XCLK_417	0	
ROM_SCLK	PEX_PLL_EN_TERM100	1 ENABLED	45K PD
	SLOT_CLK_CFG	1 ENABLE	
	SUB_VENDOR	1 Dedicated BIOS	
	PCI_DEVID_EXT	0 0xC	



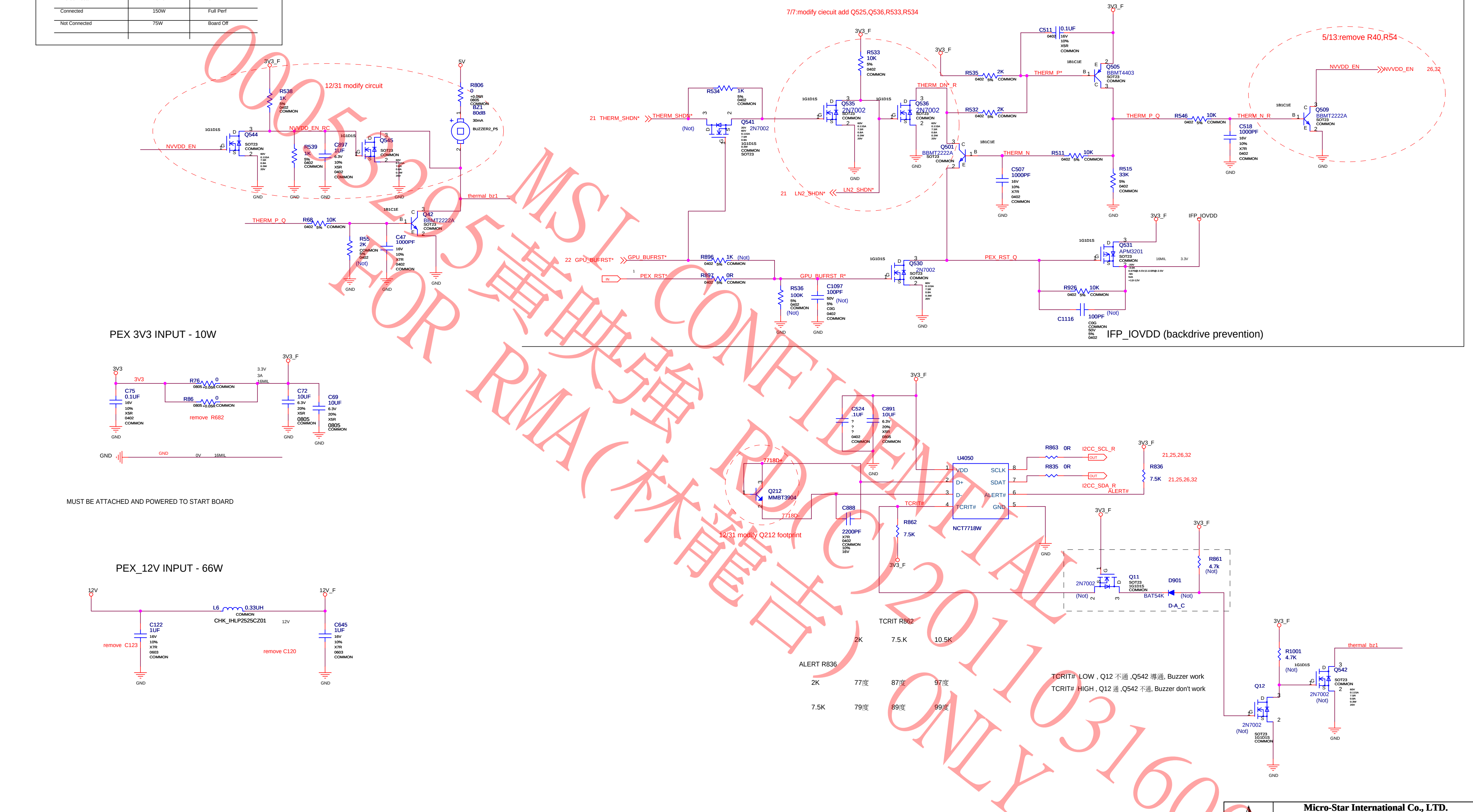
	MULTI_STRAP_REF1_GND	MULTI_STRAP_REF0_GND
BINARY PRODUCTION	40.2k 1% TO GND	NC
BINARY BRINGUP	NC	NC
MULTI-LEVEL	40.2k 1% TO GND	40.2k 1% TO GND

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	BIOS ROM, HDCP ROM, STRAPPING OPTIONS

Power Supply: PEX PS INPUT,DECTECTION LOGIC,THERM SHUTDOWN LATCH / IFP_IOVDD

Connector Power State Table

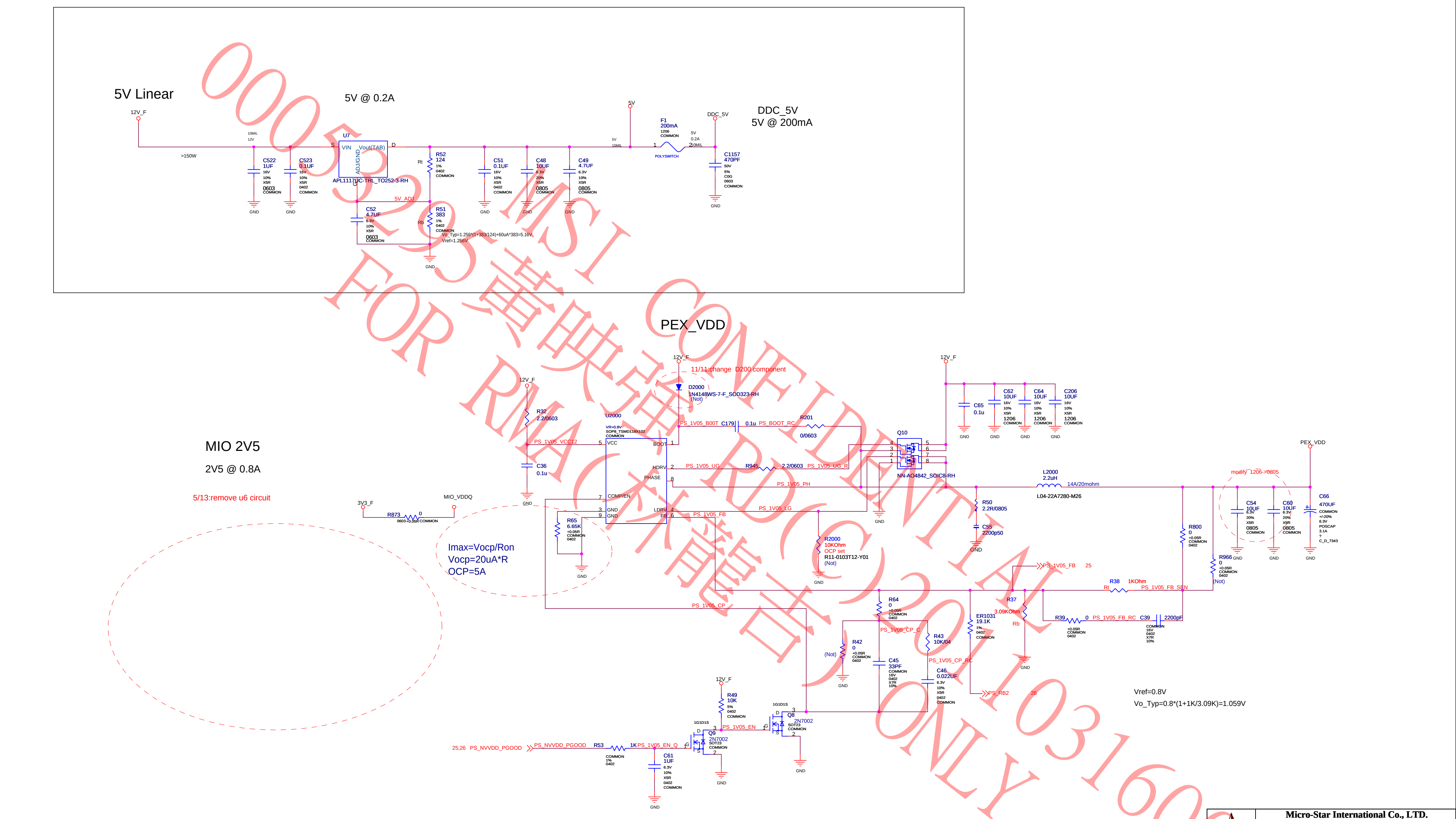
2x3 Connector	Power	STATE
Connected	150W	Full Perf
Not Connected	75W	Board Off



TCRIT R862	2K	7.5.K	10.5K
ALERT R836			
2K	77度	87度	97度
7.5K	79度	89度	99度

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PEX PS INPUT,DECT LOGIC,THERM SHUTDOWN LATCH / IFP_IOVDD

Power Supply: 2V5,5V, PEX_VDD



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Power Supply: 2V5,5V, PEX_VDD

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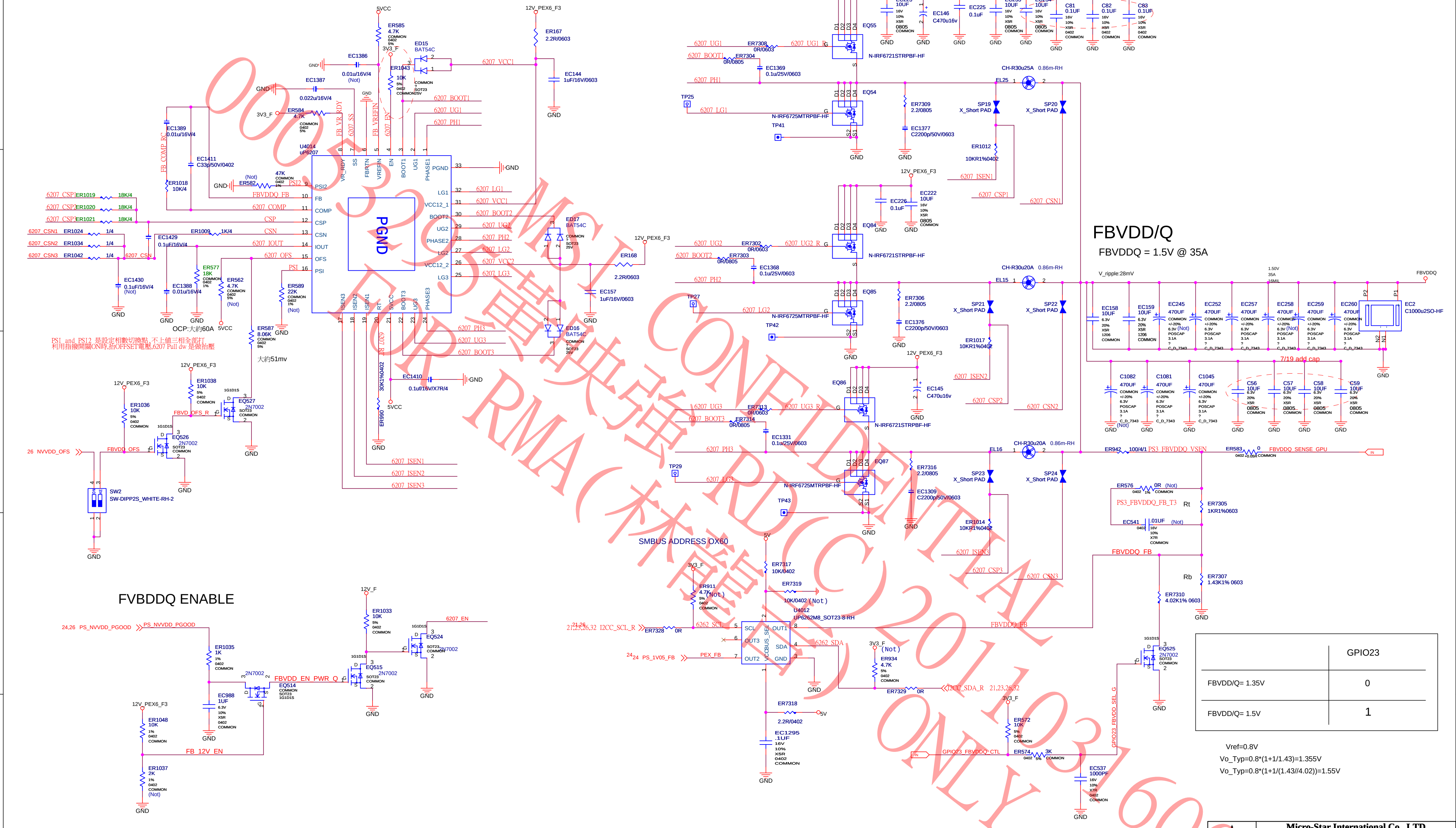
<Title>

Size	Document Number	Rev
Custom	<Doc>	<RevCode>

BOM REV

Power Supply: FBVDD/Q



FVBDDQ ENABLE

	GPIO23
FBVDD/Q= 1.35V	0
FBVDD/Q= 1.5V	1

Vref=0.8V

Vo_Typ=0.8*(1+1/1.43)=1.355V

Vo_Typ=0.8*(1+1/(1.43//4.02))=1.55V

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Power Supply: FBVDD/Q

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<Title>

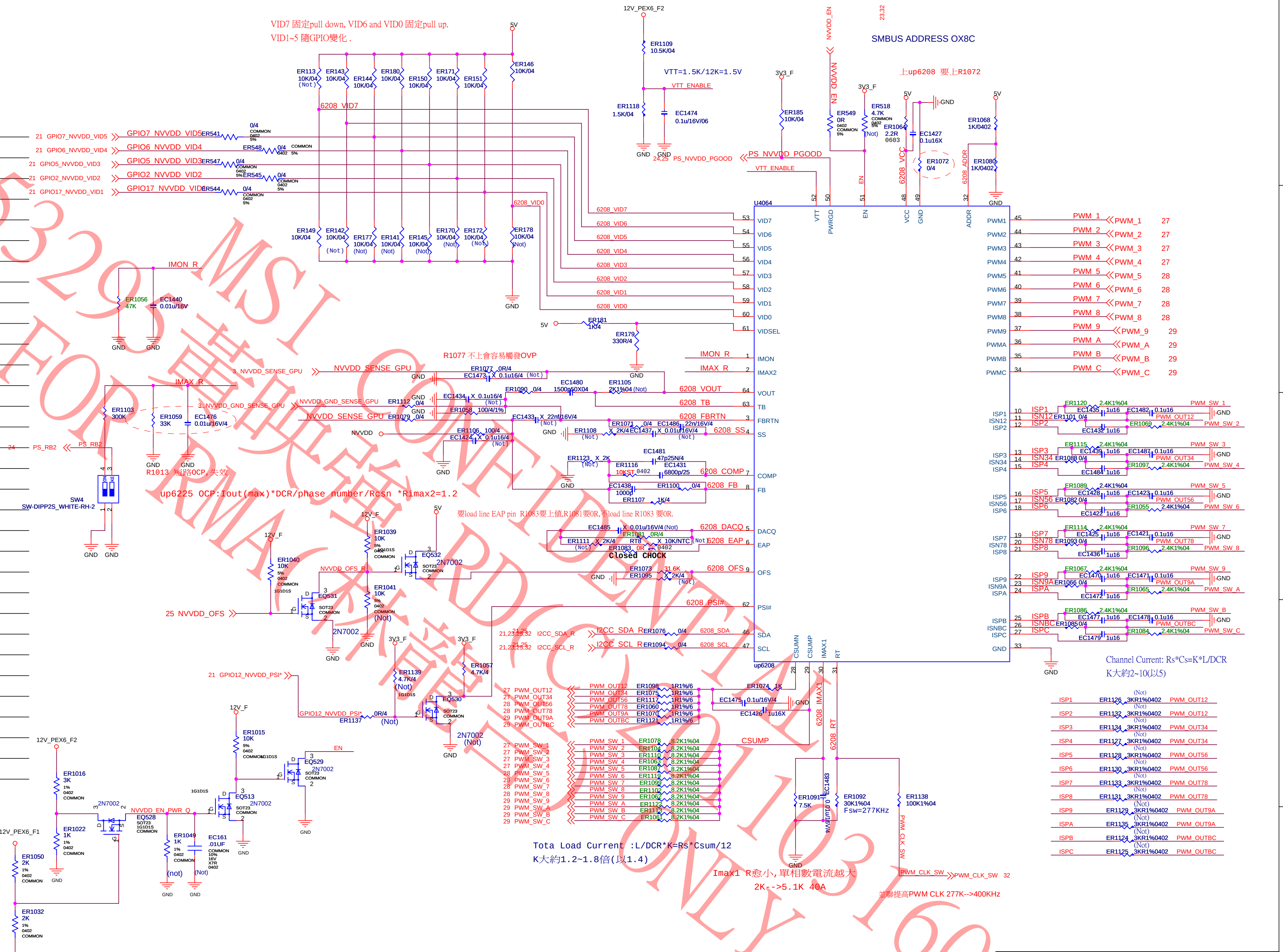
Size: Custom | Document Number: <Doc> | Rev: <RevCode>

Date: Thursday, January 06, 2011 | Sheet 25 of 32

Power Supply: NVVDD Regulator

VID Table

GPIO7	GPIO6	GPIO5	GPIO2	GPIO17	VOUT
VID_5	VID_4	VID_3	VID_2	VID_1	
0	0	0	0	0	1.21250V
0	0	0	0	1	1.20000V
0	0	0	1	0	1.18750V
0	0	0	1	1	1.17500V
0	0	1	0	0	1.16250V
0	0	1	0	1	1.15000V
0	0	1	1	0	1.13750V
0	0	1	1	1	1.12500V
0	1	0	0	0	1.11250V
0	1	0	0	1	1.10000V
0	1	0	1	0	1.08750V
0	1	0	1	1	1.07500V
0	1	1	0	0	1.06250V
0	1	1	0	1	1.05000V
0	1	1	1	0	1.03750V
0	1	1	1	1	1.02500V
1	0	0	0	0	1.01250V
1	0	0	0	1	1.00000V
1	0	0	1	0	0.98750V
1	0	0	1	1	0.97500V
1	0	1	0	0	0.96250V
1	0	1	0	1	0.95000V
1	0	1	1	0	0.93750V
1	0	1	1	1	0.92500V
1	1	0	0	0	0.91250V
1	1	0	0	1	0.90000V
1	1	0	1	0	0.88750V
1	1	0	1	1	0.87500V
1	1	1	0	0	0.86250V
1	1	1	0	1	0.85000V
1	1	1	1	0	0.83750V
1	1	1	1	1	0.82500V



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Power Supply: NVVDD Regulator

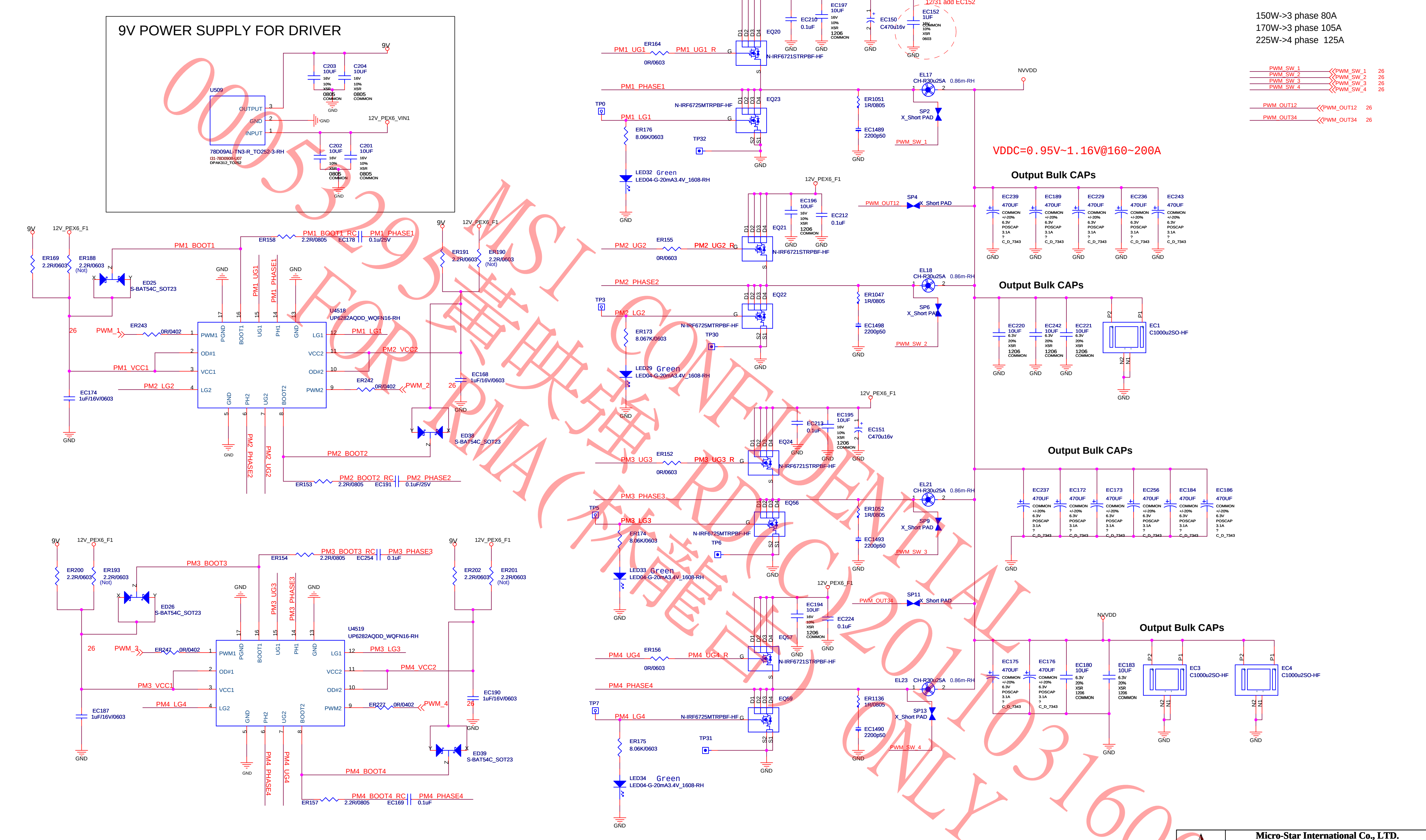
Micro-Star International Co., LTD.

<Title>

Size: Custom | Document Number: <Doc> | Rev: <RevCode>

Date: Tuesday, December 14, 2010 | Sheet 26 of 32

Power Supply: NVVDD PHASE 1,~4

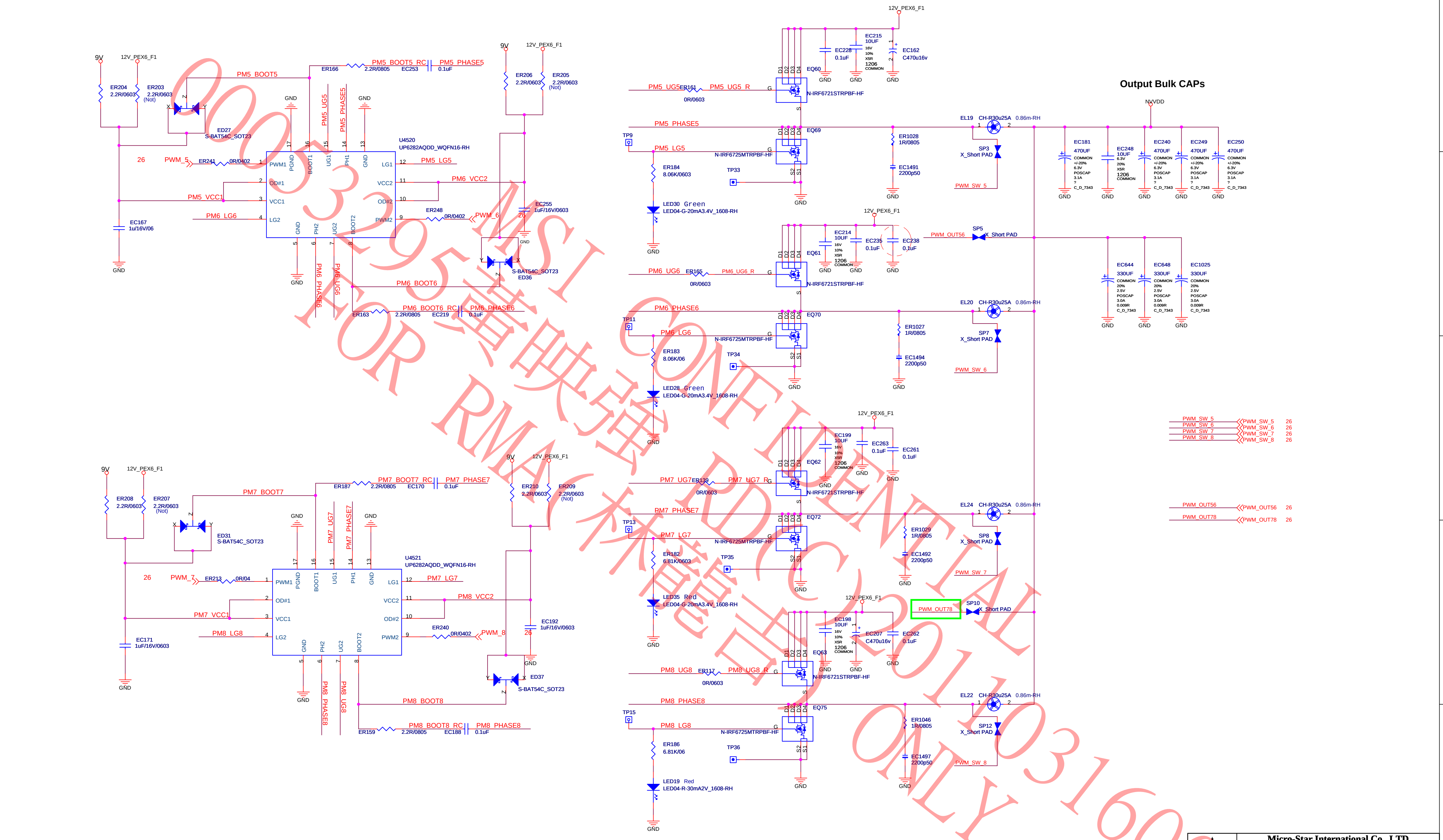


ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Power Supply: NVVDD PHASE 1, 2

Micro-Star International Co., LTD.

Title	<Title>	
Size: Custom	Document Number: <Doc>	Rev: <RevCode>
Date: Friday, December 31, 2010	Sheet 27 of 32	

Power Supply: NVVDD PHASE 5-8



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PAGE DETAIL: Power Supply: NVVDD PHASE 3, 4

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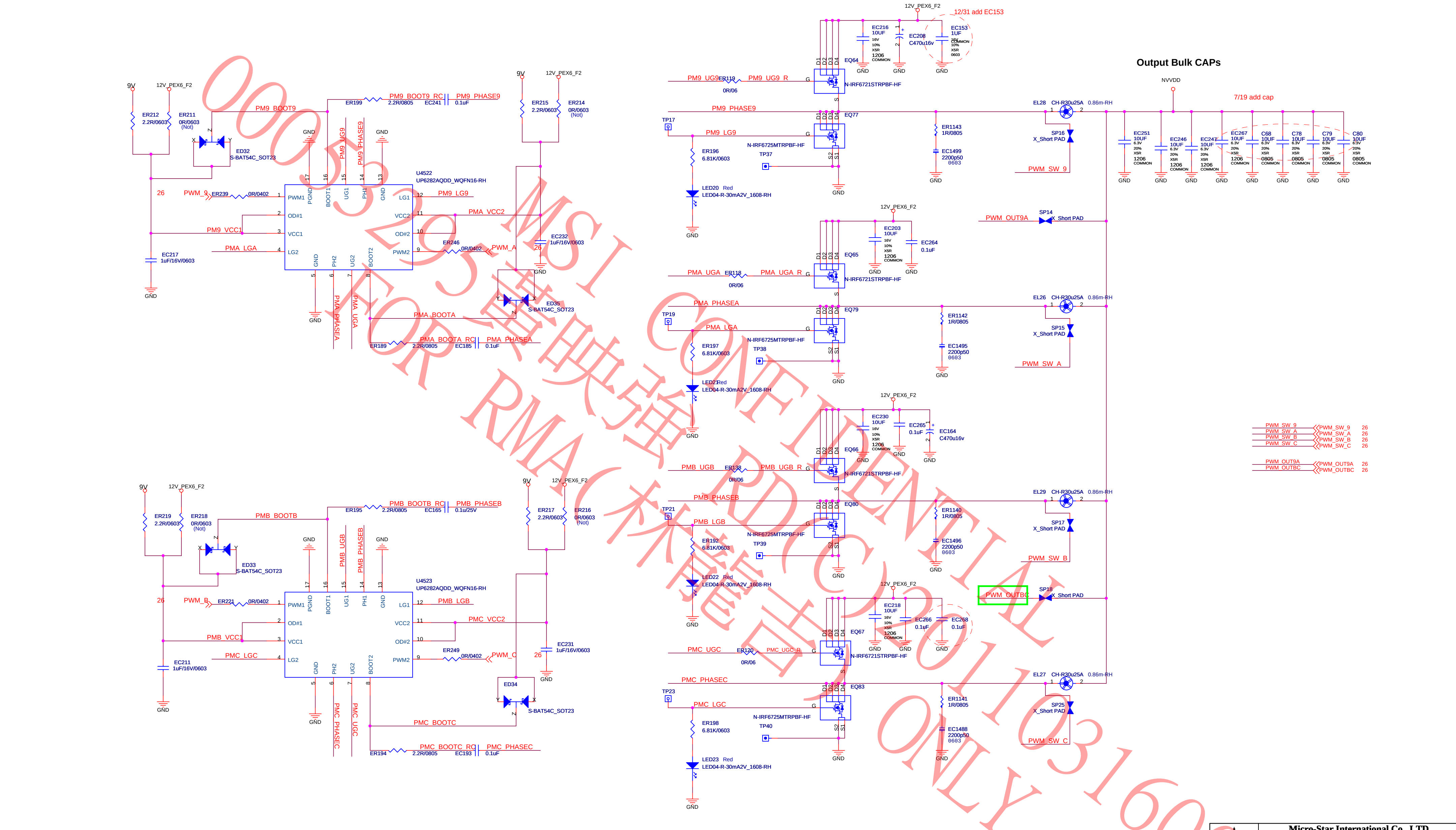
Title: <Title>		
Size: Custom	Document Number: <Doc>	Rev: <RevCode>
Date: Tuesday, December 14, 2010	Sheet 28 of 32	



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Power Supply: 2V5,5V, PEX_VDD

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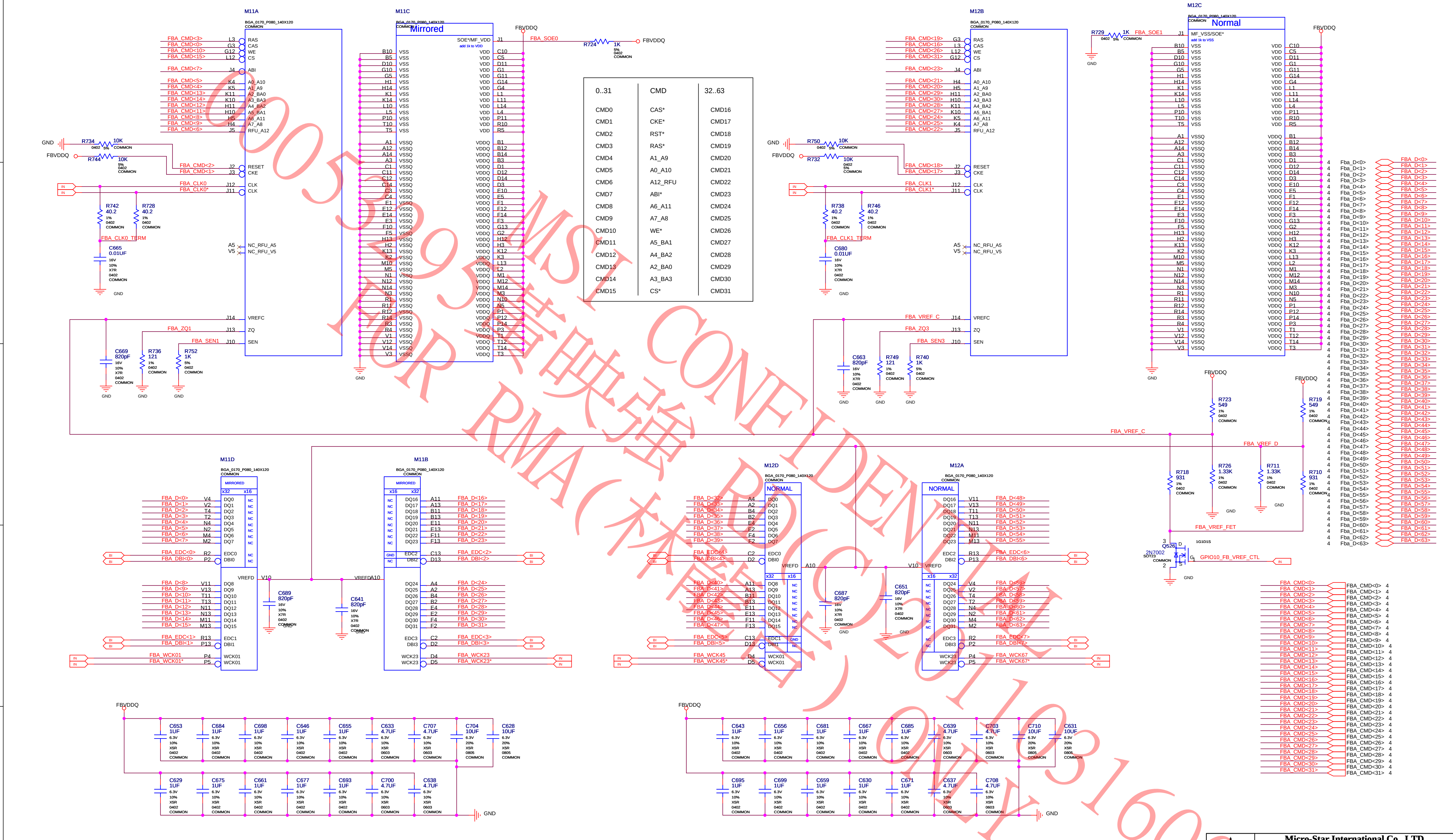
<Title>

Size	Document Number	Rev
Custom	<Doc>	<RevCode>

Date: Friday, December 31, 2010 | Sheet 29 of 32

SAMSUNG 32MX32 2000MHZ: 161-0051-600



0..31	CMD	32..63
CMD0	CAS*	CMD16
CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	ABI*	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BA0	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31

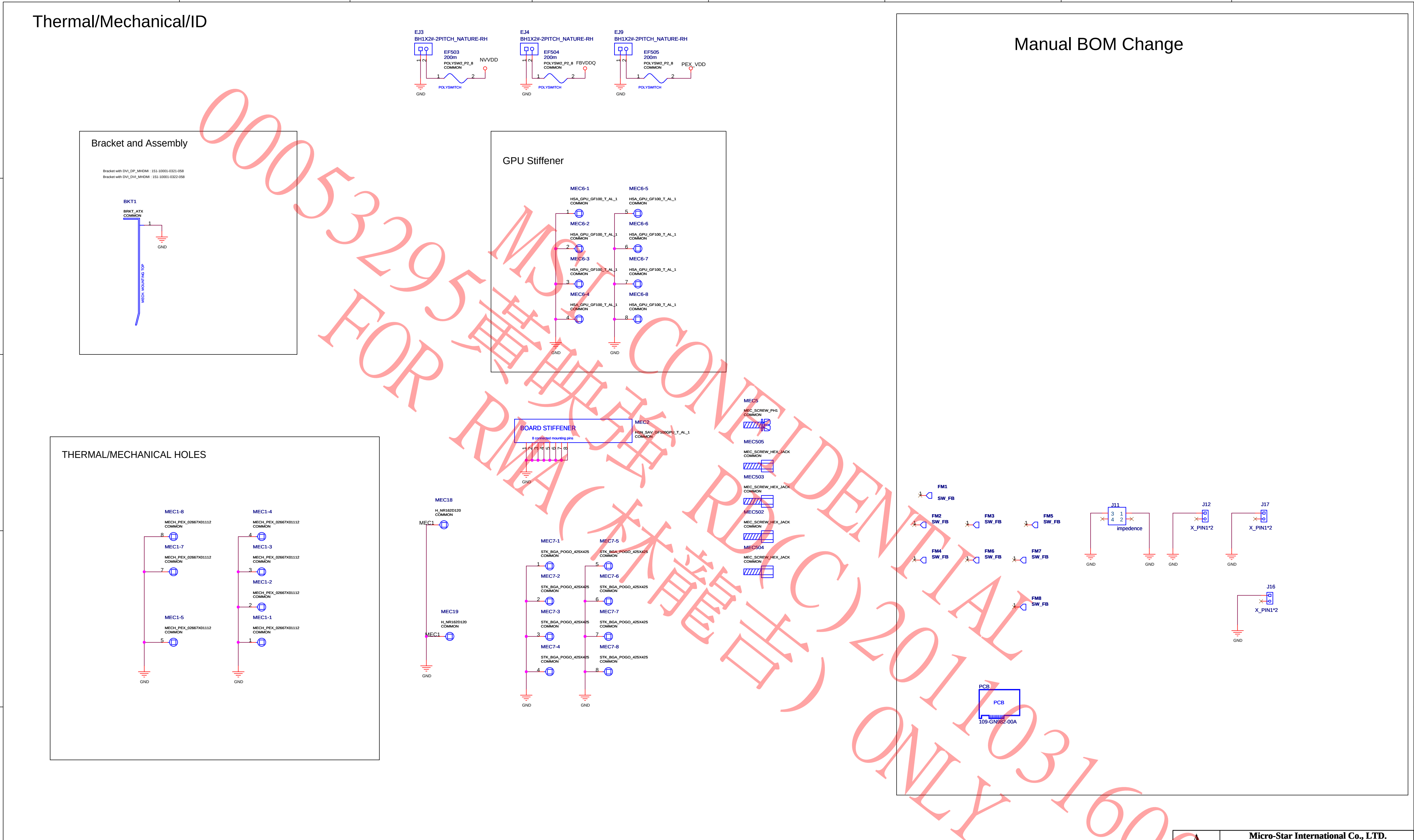
ASSEMBLY BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL

PAGE DETAIL Thermal/Mechanical/ID

Micro-Star International Co., LTD.

<Title>			
Size Custom	Document Number <Doc>		Rev <RevCode>
Date: Wednesday, December 15, 2010	Sheet 30 of 32		

Thermal/Mechanical/ID



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Thermal/Mechanical/ID

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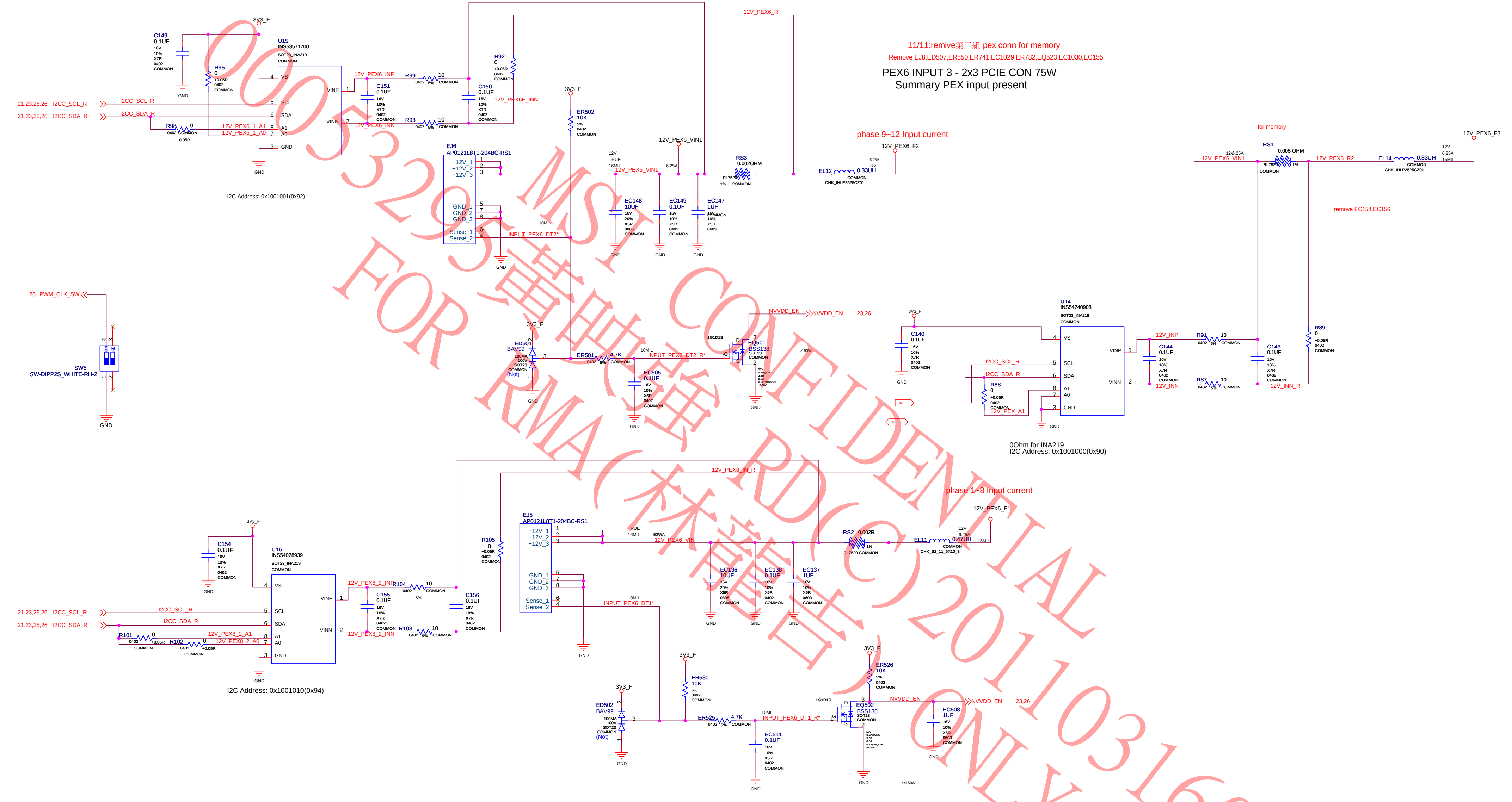
<Title>		
Size: Custom	Document Number: <Doc>	Rev: <RevCode>
Date: Thursday, December 02, 2010	Sheet 31 of 32	

Power Input



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Thermal/Mechanical/ID

Micro-Star International Co., LTD.

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Date: Wednesday, December 15, 2010 Sheet 32 of 32