

P360-A00 Base Design

P360-A00, G92, 16Mx32 GDDR3 (900MHz),TV(OPTION)
DVI-I-DL, DVI-I-DL

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V186-1.0 Base on P360

- 1.PAGE11: ADD VGA display connector
- 2.PAGE12: Move IFP C/D HMDI to page 13
- 3.PAGE13: Unused DACB Interface, ADD IFP C/D HMDI interface
- 4.PAGE15: Use I2CC for HDMI control, add GPIO10/14 for HDMI control
- 5.PAGE18:Add FM1~FM6

V186-1.1 Base on V186-1.0

V186-1.1 Base on V186-1.0 remove the reference place of the 6.1 mil RGB signal.

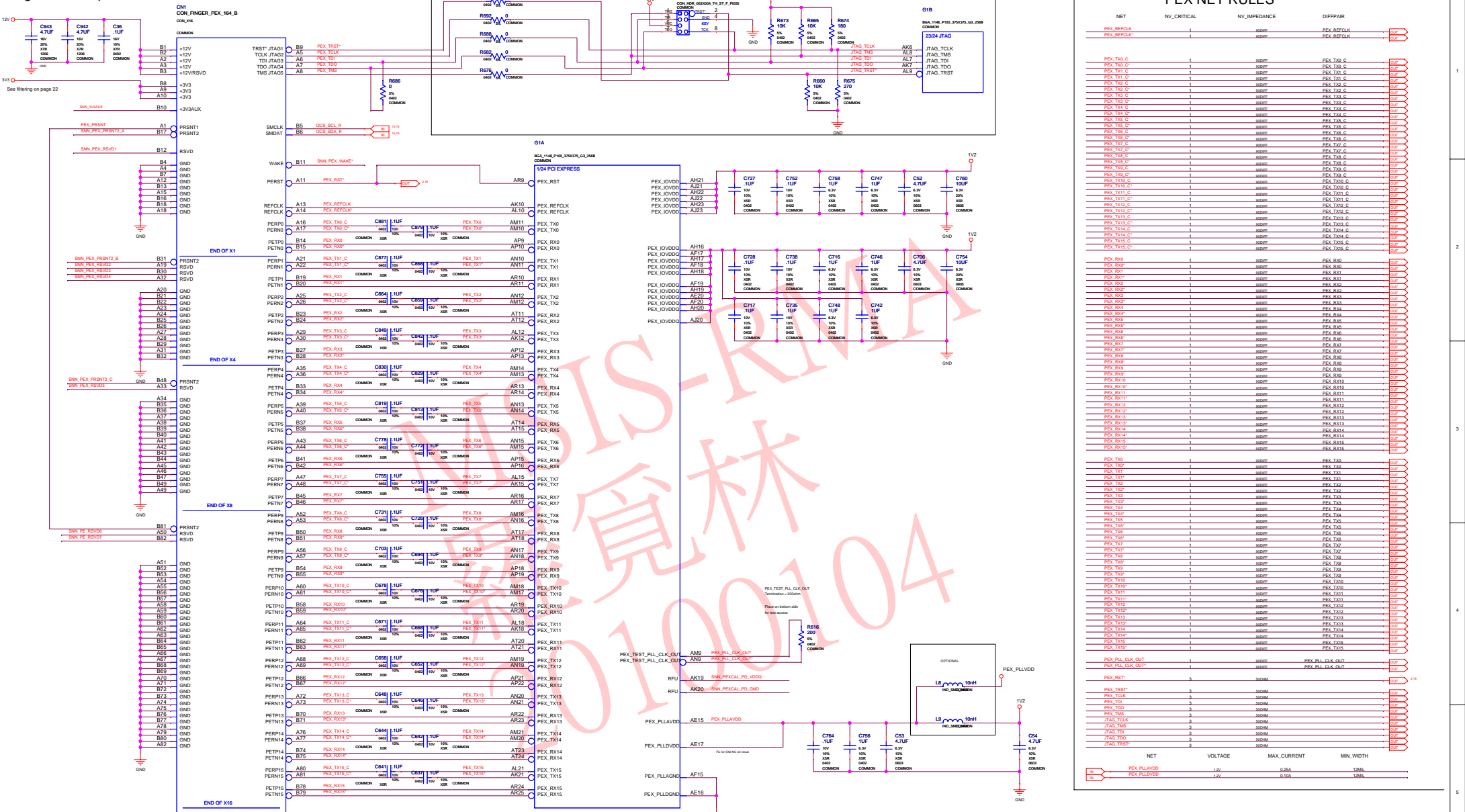
REV	VARIANT	NVPN	ASSEMBLY
B	BASE	600-10360-base-000	P360 - BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	SKU0060	600-10360-0050-000	P360 G92-287 512MB GDDR3 16Mx32 DVI-I+DVI-I
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PAGE DETAIL	Overview


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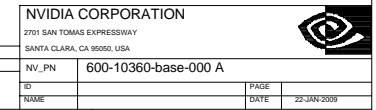


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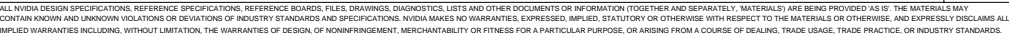
NVIDIA CORPORATION 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA			
NV_PN 600-10360-base-000 A			
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ID	PAGE
NAME	DATE 22-JAN-2009



1386GA CMD Mapping	
RAS	CM01
CAS	CM02
WE	CM03
CS0	CM04
BA0	CM05
BA1	CM06
A0	CM07
A1	CM08
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A537	CM544

NET RULES for FrameBuffer C/D

	NET	NV_CRITICAL	NV_IMPEDANCE	DIFFPAIR
6.7	OUT ← FBC_CLK0	1	NOFFT	FBC_CLK0
6.7	OUT ← FBC_CLK0*	1	NOFFT	FBC_CLK0
6.7	OUT ← FBC_CLK1	1	NOFFT	FBC_CLK1
6.7	OUT ← FBC_CLK1*	1	NOFFT	FBC_CLK1

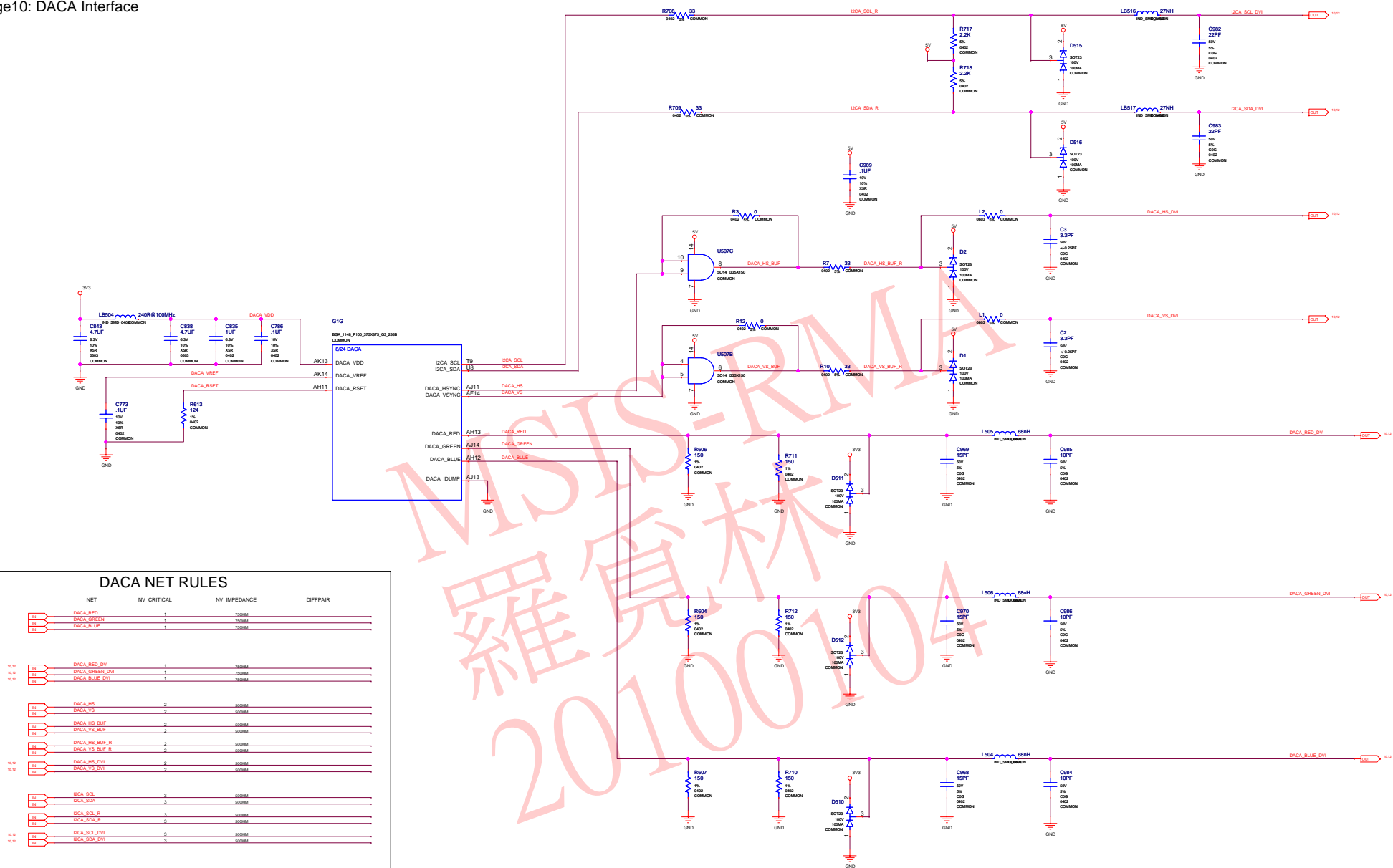
0.7	OUT	FBC, DQ28, 0	1	ACORN
0.7	OUT	FBC, DQ5, 0017, 0	1	ACORN
0.7	OUT	FBC, DQ5, 0017, 0	1	ACORN
0.7	IN	FBC, DQ007, 0	1	ACORN
0.7	OUT	FBC, DQ007, 0	1	ACORN
0.7	BI	FBC, DQ03, 0	1	ACORN

	NET	NV_CRITICAL	NV_IMPEDANCE	DIFFPAIR
0.0	CLUT FBO_CLK0	1	MODET	FBO_CLK0
0.0	CLUT FBO_CLK0*	1	MODET	FBO_CLK0
0.0	CLUT FBO_CLK1	1	MODET	FBO_CLK1
0.0	CLUT FBO_CLK1*	1	MODET	FBO_CLK1

[illegible]

NET	VOLTAGE	MAX_CURRENT	MIN_WIDTH
W	1.0V	0.028	12MIL
FPC_WF00	1.0V	0.028	12MIL
FPC_WF01	1.0V	0.028	12MIL
FPC_WF02	1.0V	0.028	12MIL
FPC_WF03	1.0V	0.028	12MIL
FPC_WF04	1.0V	0.028	12MIL
FPC_WF05	1.0V	0.028	12MIL
FPC_WF06	1.0V	0.028	12MIL
FPC_WF07	1.0V	0.028	12MIL
FPC_WF08	1.0V	0.028	12MIL
FPC_WF09	1.0V	0.028	12MIL
FPC_WF10	1.0V	0.028	12MIL
FPC_WF11	1.0V	0.028	12MIL
FPC_WF12	1.0V	0.028	12MIL
FPC_WF13	1.0V	0.028	12MIL
FPC_WF14	1.0V	0.028	12MIL
FPC_WF15	1.0V	0.028	12MIL
FPC_WF16	1.0V	0.028	12MIL
FPC_WF17	1.0V	0.028	12MIL
FPC_WF18	1.0V	0.028	12MIL
FPC_WF19	1.0V	0.028	12MIL
FPC_WF20	1.0V	0.028	12MIL
FPC_WF21	1.0V	0.028	12MIL
FPC_WF22	1.0V	0.028	12MIL
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FPC_WF59	1.0V	0.028	12MIL
FPC_WF60	1.0V	0.028	12MIL
FPC_WF61	1.0V	0.028	12MIL
FPC_WF62	1.0V	0.028	12MIL
FPC_WF63	1.0V	0.028	12MIL
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FPC_WF67	1.0V	0.028	12MIL
FPC_WF68	1.0V	0.028	12MIL
FPC_WF69	1.0V	0.028	12MIL
FPC_WF70	1.0V	0.028	12MIL
FPC_WF71	1.0V	0.028	12MIL
FPC_WF72	1.0V	0.028	12MIL
FPC_WF73	1.0V	0.028	12MIL
FPC_WF74	1.0V	0.028	12MIL
FPC_WF75	1.0V	0.028	12MIL
FPC_WF76	1.0V	0.028	12MIL
FPC_WF77	1.0V	0.028	12MIL
FPC_WF78	1.0V	0.028	12MIL
FPC_WF79	1.0V	0.028	12MIL
FPC_WF80	1.0V	0.028	12MIL
FPC_WF81	1.0V	0.028	12MIL
FPC_WF82	1.0V	0.028	12MIL
FPC_WF83	1.0V	0.028	12MIL
FPC_WF84	1.0V	0.028	12MIL
FPC_WF85	1.0V	0.028	12MIL
FPC_WF86	1.0V	0.028	12MIL
FPC_WF87	1.0V	0.028	12MIL
FPC_WF88	1.0V	0.028	12MIL
FPC_WF89	1.0V	0.028	12MIL
FPC_WF90	1.0V	0.028	12MIL
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FPC_WF96	1.0V	0.028	12MIL
FPC_WF97	1.0V	0.028	12MIL
FPC_WF98	1.0V	0.028	12MIL
FPC_WF99	1.0V	0.028	12MIL

+	BI	F8D_VREF0	1.25V	0.02A	125mW
-	BI	F8D_VREF1	1.25V	0.02A	125mW
+	BI	F8D_VREF2	1.25V	0.02A	125mW
-	BI	F8D_VREF3	1.25V	0.02A	125mW
+	BI	F8D_Z00	1.0V	0.02A	125mW
-	BI	F8D_Z01	1.0V	0.02A	125mW




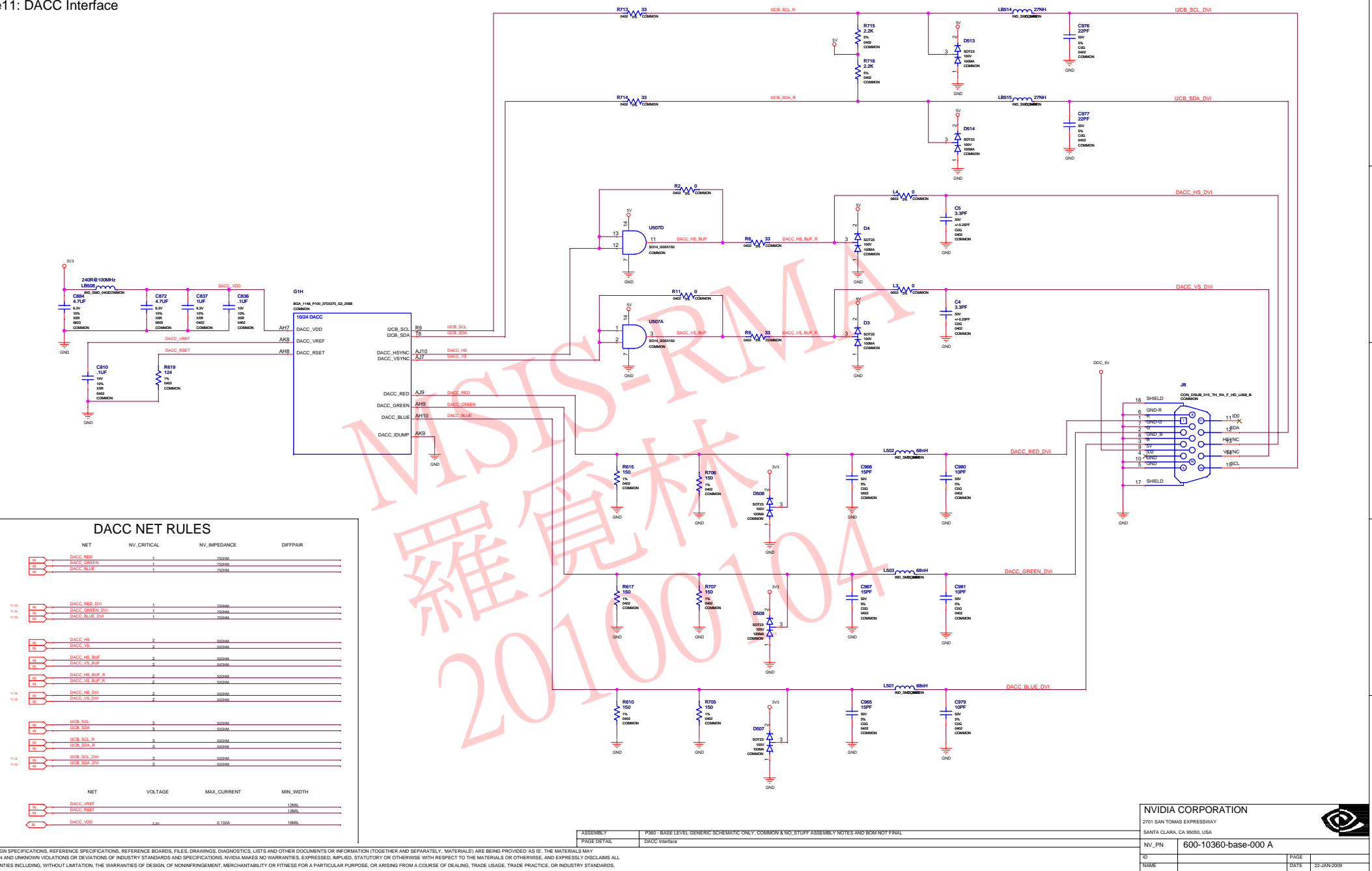
DACA NET RULES

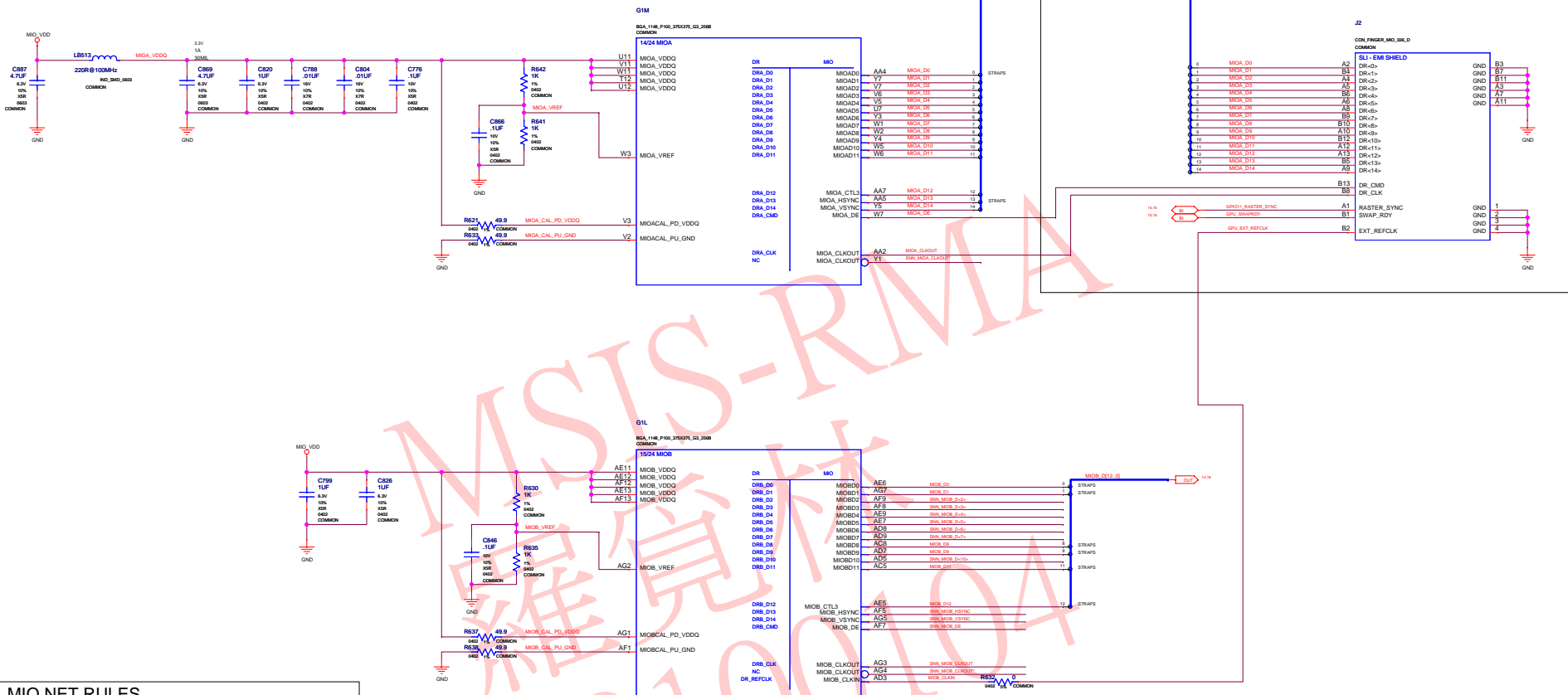
		NV_CRITICAL	NV_IMPEDANCE	DIFFPAIR
	DACA_RED	1	750MR	
	DACA_GREEN	1	750MR	
	DACA_BLUE	1	750MR	
10:10	DACA_RED_DVI	1	750MR	
10:10	DACA_GREEN_DVI	1	750MR	
10:10	DACA_BLUE_DVI	1	750MR	
	DACA_HS	2	500MR	
	DACA_VS	2	500MR	
	DACA_HS_BUF	2	500MR	
	DACA_VS_BUF	2	500MR	
	DACA_HS_BUF_R	2	500MR	
	DACA_VS_BUF_R	2	500MR	
10:10	DACA_HS_DVI	2	500MR	
10:10	DACA_VS_DVI	2	500MR	
	DCA_S0L	3	500MR	
	DCA_S0A	3	500MR	
	DCA_S0L_R	3	500MR	
	DCA_S0A_R	3	500MR	
10:10	DCA_S0L_DVI	3	500MR	
10:10	DCA_S0A_DVI	3	500MR	
	NET	VOLTAGE	MAX_CURRENT	MN_WIDTH
	DACA_VREF			12MR
	DACA_WSET			12MR
	DACA_VDD	3.3V	0.100A	18MR

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ASSEMBLY	P360 - BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	DACA Interface

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MIO NET RULES

	NET	NV_CRITICAL	NV_IMPEDANCE	DIFFPAIR
10-18	MC0A_D114_0	1	500082	
	MC0A_D1200V1	1	500082	
	MC0A_05	1	500082	
	MC0B_D112_0	1	500082	
10-18	MC0B_CLKIN	1	500082	
	GPU_EXT_REFCLK	1	500082	
	NET	VOLTAGE	MAX_CURRENT	MIN_WIDTH
10-18	MC0A_VREF	1.65V		125ML
	MC0A0A_P0_VDD0			125ML
	MC0A0A_P0_VDD2			125ML
10-18	MC0B_VREF	1.65V		125ML
	MC0B0A_P0_VDD0			125ML
	MC0B0A_P0_VDD2			125ML

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ASSEMBLY	P360 - BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Multi-use IO(MIO) Interface

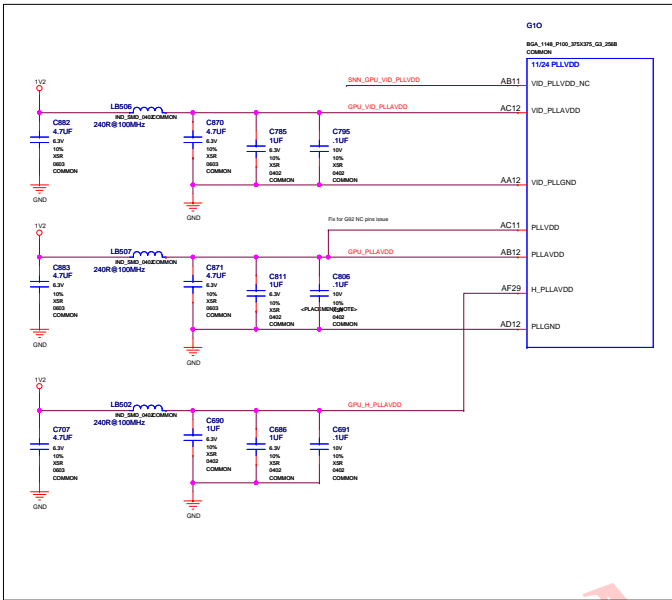
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[illegible][illegible]

GPIO

RS4, 1148, P10, 375X2, 51, 2568
COMMON

1802 GPIO

GPIO0-1 N3 GPIO0_DV18B_HPD 10 10

GPIO2-3 U3 GPIO0_DV18C_HPD 10 10

GPIO4-6 T4 BMT_GPIO0 10 10

GPIO8-9 M2 BMT_GPIO5 10 10

GPIO10-11 N1 GPIO4_FAN_PWM 10 10

GPIO12-13 T3 GPIO0_VIBEL 10 10

GPIO14-15 T5 GPIO0_VIBEL1 10 10

GPIO16-17 PT GPIO7_FAN_TACH 10 10

GPIO18-19 M2 GPIO6_THERM_OVERT 10 10

GPIO20-21 N2 BMT_GPIO5 10 10

GPIO22-23 K1 BMT_GPIO3 10 10

GPIO24-25 K3 GPIO11_RASTER_SYNC 10 10

GPIO26-27 K2 BMT_GPIO4 10 10

GPIO28-29 T2 BMT_GPIO13 10 10

GPIO30-31 U4 GPIO14_HDMI_CEC 10 10

GPIO32-33

GPIO34-35

GPIO36-37

GPIO38-39

GPIO40-41

GPIO42-43

GPIO44-45

GPIO46-47

GPIO48-49

GPIO50-51

GPIO52-53

GPIO54-55

GPIO56-57

GPIO58-59

GPIO60-61

GPIO62-63

GPIO64-65

GPIO66-67

GPIO68-69

GPIO70-71

GPIO72-73

GPIO74-75

GPIO76-77

GPIO78-79

GPIO80-81

GPIO82-83

GPIO84-85

GPIO86-87

GPIO88-89

GPIO90-91

GPIO92-93

GPIO94-95

GPIO96-97

GPIO98-99

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GPIO102-103

GPIO104-105

GPIO106-107

GPIO108-109

GPIO110-111

GPIO112-113

GPIO114-115

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GPIO206-207

GPIO208-209

GPIO210-211

GPIO212-213

GPIO214-215

GPIO216-217

GPIO218-219

GPIO220-221

GPIO222-223

GPIO224-225

GPIO226-227

GPIO228-229

GPIO230-231

GPIO232-233

GPIO234-235

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GPIO246-247

GPIO248-249

GPIO250-251

GPIO252-253

GPIO254-255

GPIO256-257

GPIO258-259

GPIO260-261

GPIO262-263

GPIO264-265

GPIO266-267

GPIO268-269

GPIO270-271

GPIO272-273

GPIO274-275

GPIO276-277

GPIO278-279

GPIO280-281

GPIO282-283

GPIO284-285

GPIO286-287

GPIO288-289

GPIO290-291

GPIO292-293

GPIO294-295

GPIO296-297

GPIO298-299

GPIO300-301

GPIO302-303

GPIO304-305

GPIO306-307

GPIO308-309

GPIO310-311

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GPIO314-315

GPIO316-317

GPIO318-319

GPIO320-321

GPIO322-323

GPIO324-325

GPIO326-327

GPIO328-329

GPIO330-331

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GPIO396-397

GPIO398-399

GPIO400-401

GPIO402-403

GPIO404-405

GPIO406-407

GPIO408-409

GPIO410-411

GPIO412-413

GPIO414-415

GPIO416-417

GPIO418-419

GPIO420-421

GPIO422-423

GPIO424-425

GPIO426-427

GPIO428-429

GPIO430-431

GPIO432-433

GPIO434-435

GPIO436-437

GPIO438-439

GPIO440-441

GPIO442-443

GPIO444-445

GPIO446-447

GPIO448-449

GPIO450-451

GPIO452-453

GPIO454-455

GPIO456-457

GPIO458-459

GPIO460-461

GPIO462-463

GPIO464-465

GPIO466-467

GPIO468-469

GPIO470-471

GPIO472-473

GPIO474-475

GPIO476-477

GPIO478-479

GPIO480-481

GPIO482-483

GPIO484-485

GPIO486-487

GPIO488-489

GPIO490-491

GPIO492-493

GPIO494-495

GPIO496-497

GPIO498-499

GPIO500-501

GPIO502-503

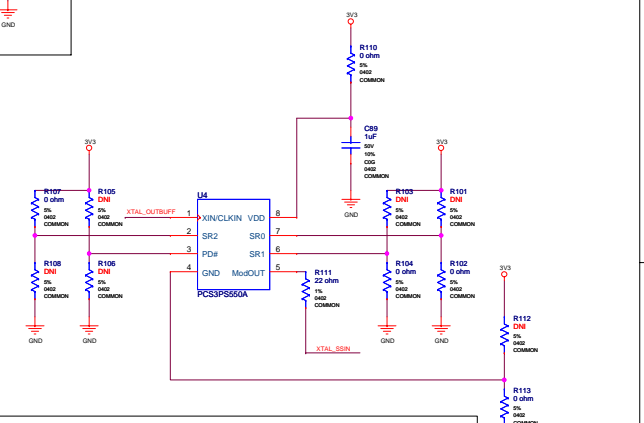
GPIO504-505

GPIO506-507

GPIO508-509

GPIO510-511</

NET		NV_CRITICAL		NV_IMPEDANCE		DIFFPAIR	
IN	QCH_BCL	3	500MR				
IN	QCH_BDA	3	500MR				
IN	QCS_BCL	3	500MR				
IN	QCS_BDA	3	500MR				
IN	QCS_BCL_R	3	500MR				
IN	QCS_BDA_R	3	500MR				
IN	ROM_CS*	3	500MR				
IN	ROM_E	3	500MR				
IN	ROM_EO	3	500MR				
IN	ROM_SEUX	3	500MR				
IN	GPU_SWAPDRY	3	500MR				
IN	GPU_THERMDO	3	500MR				
IN	GPIO_DIN_A_HPD	3	500MR				
IN	GPIO_DIN_C_HPD	3	500MR				
IN	GPIO_FAN_PWM	3	500MR				
IN	GPIO_VDD1	3	500MR				
IN	GPIO_VDD12	3	500MR				
IN	GPIO_ZEN_FACH	3	500MR				
IN	GPIO_ZEN_THERM_OVERT*	3	500MR				
IN	GPIO11_RASTER_SYNC	3	500MR				
IN	XTAL_SBN	1	500MR				
IN	XTAL_OUT1	1	500MR				
IN	XTAL_OUTBUF	1	500MR				
NET	VOLTAGE	MAX_CURRENT	MIN_WIDTH				
GPU_VDD_PLVDD0	1.2V	0.05A	128ML				
GPU_VDD_PLVDD1	1.2V	0.05A	128ML				
GPU_VDD_PLVDD2	1.2V	0.05A	128ML				
GPU_VDD_PLVDD3	1.2V	0.05A	128ML				
GPU_VDD_PLVDD4	1.2V	0.05A	128ML				

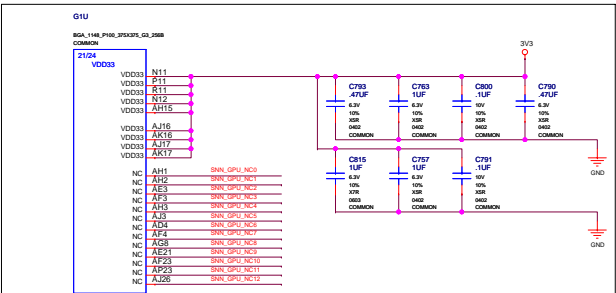


	GPIO	I/O	Function
0	IN		DVI1 Hopding Detect South
1	IN		DVI1 Hopding Detect North
2	NA		Transceiver Interrupt
3	NA		Not used
4	OUT		Fan PWM Output
5	OUT		Voltage Detect 0
6	OUT		Voltage Detect 1
7	IN		THEMA_OVERT
8	OUT		Fan Tach Input
9	NA		Not used
10	OUT		RASTER (SL) SYNC
11	NA		Not used
12	NA		Not used
13	IN		GPIO14_HDMI_CEC

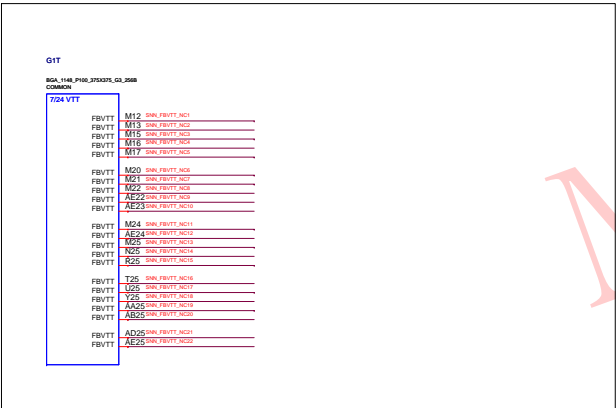
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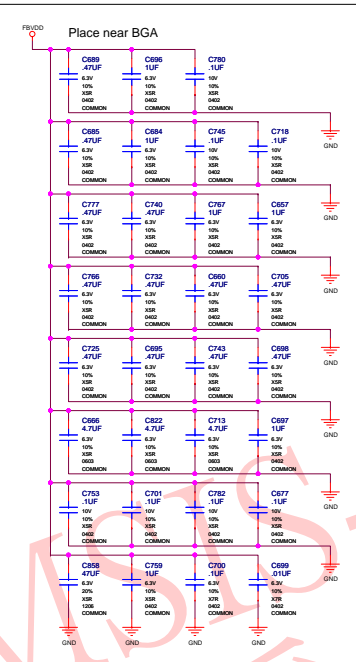
VDD33



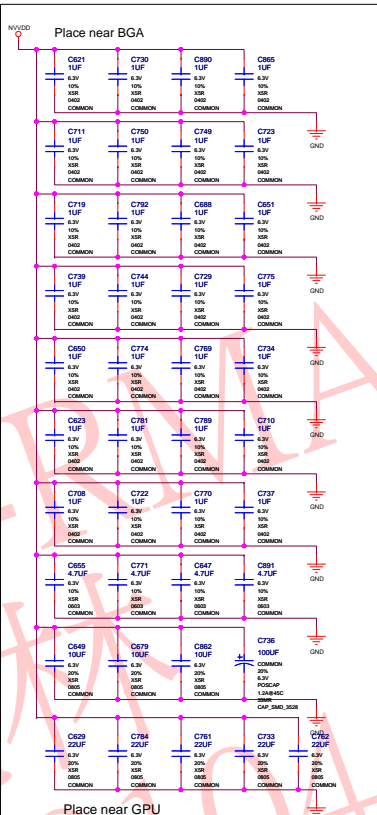
FBVTT



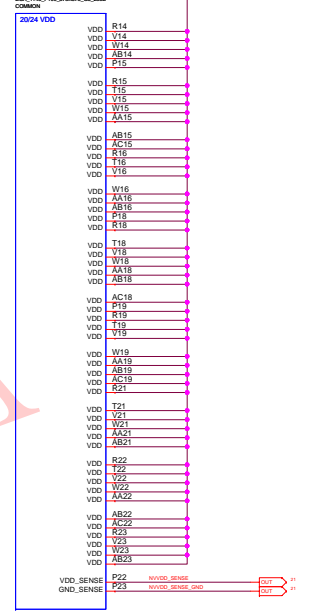
FBVDDQ



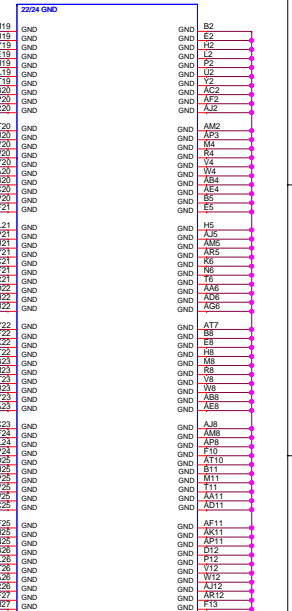
NVVD



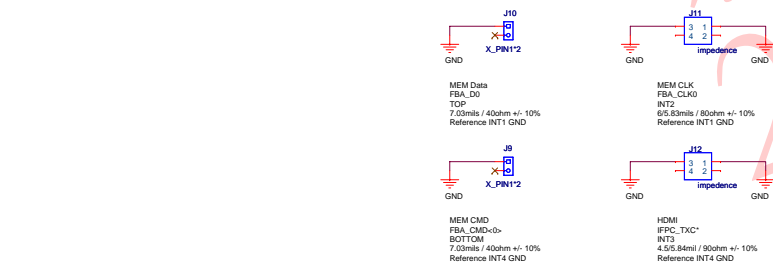
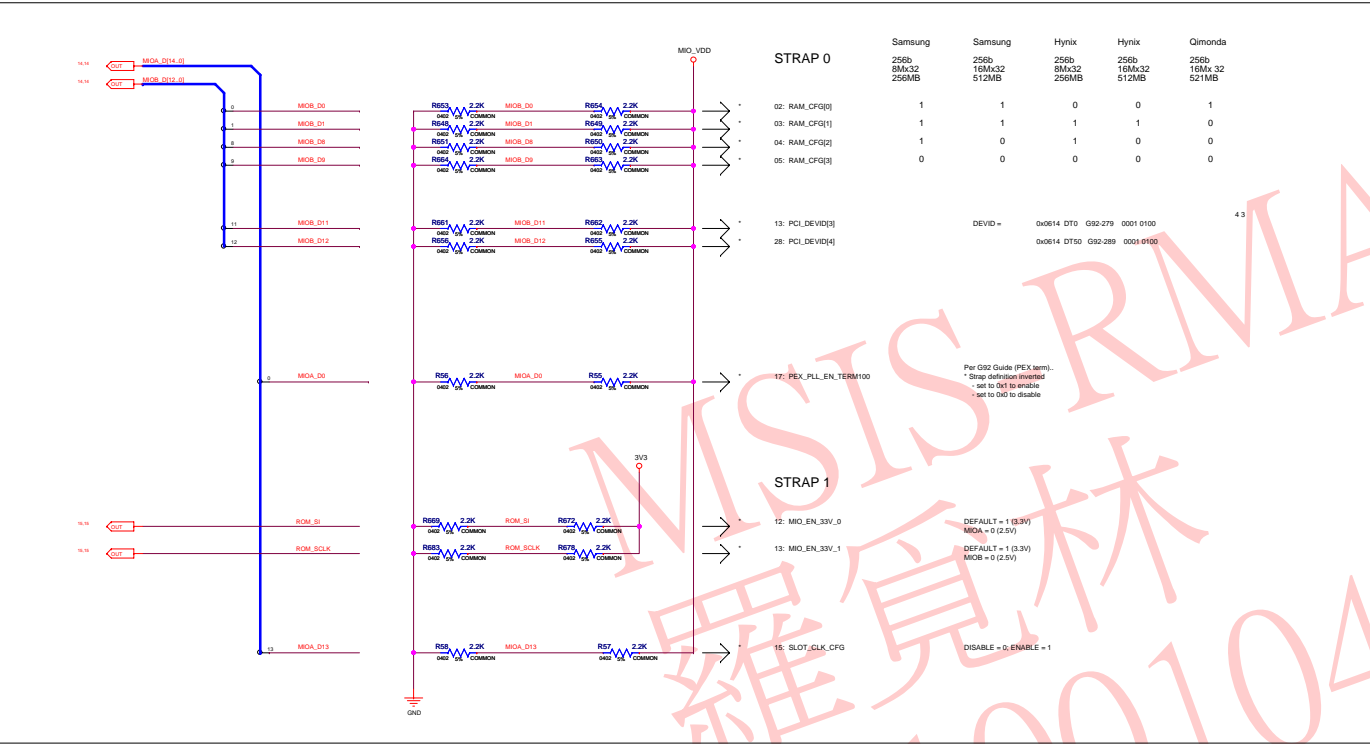
G1V



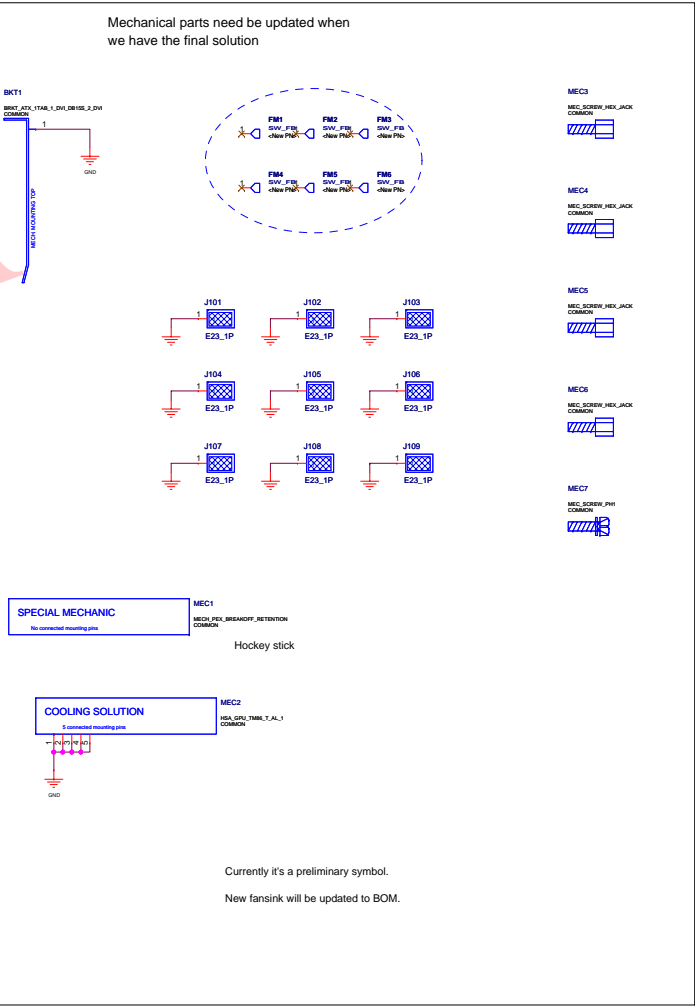
G1X



STRAPS



MECHANICAL

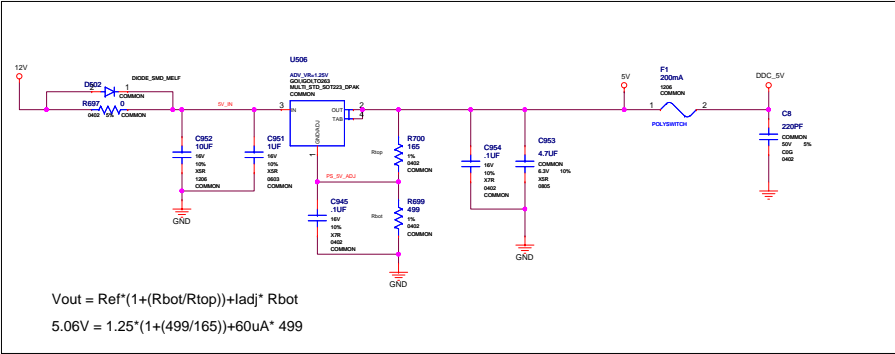


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ASSEMBLY
PAGE DETAIL
Configuration Straps and Mechanical

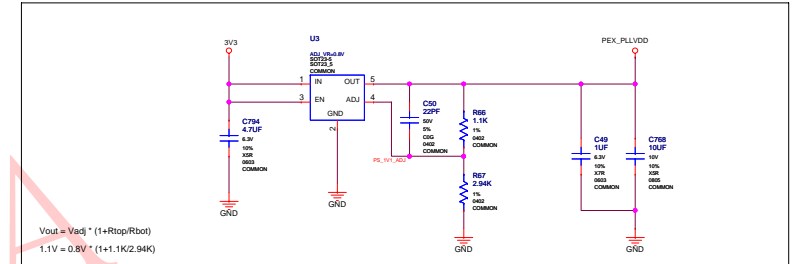
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5V REGULATOR



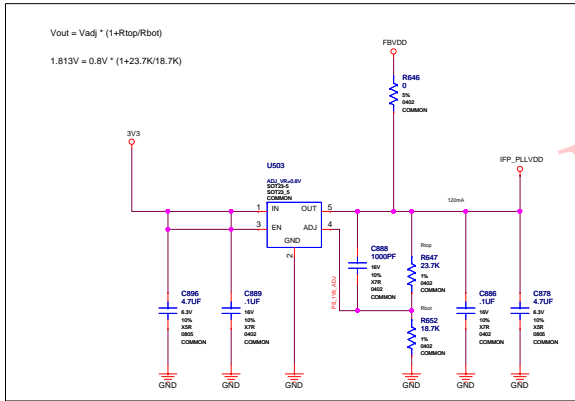
5V DDC

PEX_PLLVDD Optional (Stuff option)



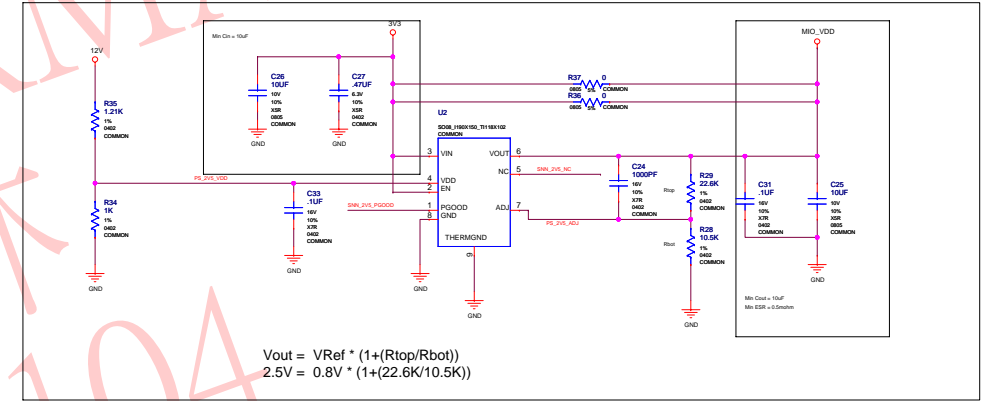
IFP PLL Supply 1.8V

(Stuff option)



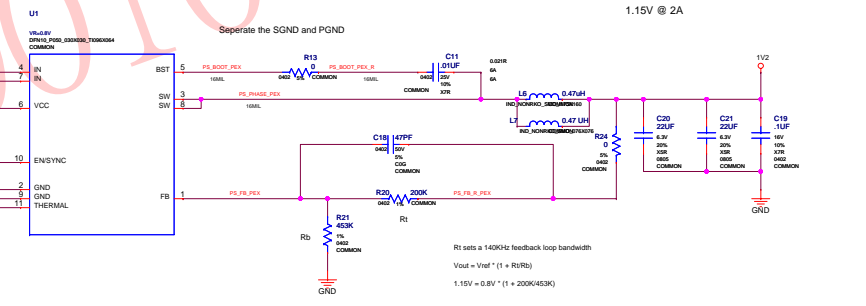
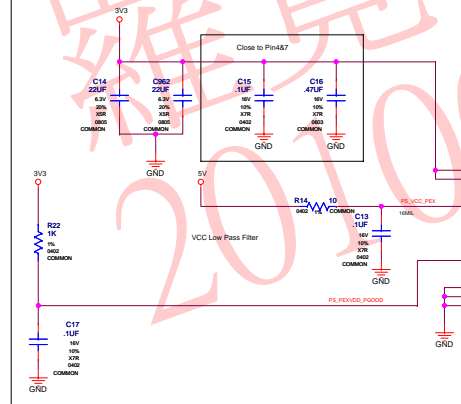
MIO_VDD

(Stuff option)



1V2

Stuff MP28115 in the bom for lower input limitation, and meanwhile no stuff Pin 6 component.



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NETNAME	MAX_CURRENT	MIN_LINE_WIDTH	VOLTAGE
FBVDD	11A	35MIL	1.8V
1V2	2A	16MIL	1.15V

PEXVDD Power Supply

PEXVDD = 1.15V @ 2A

$V_{out} = V_{ref} * (1 + (R_{top}/R_{bot}))$
 $1.152V = 0.8V * (1 + (1.07K/2.43K))$

FBVDD Power Supply

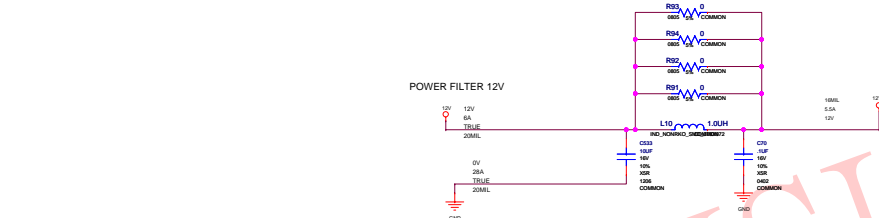
FBVDD = 1.8V@ 11A

$I_{ripple} = 3.19A$
 $V_{ripple} = 22mV$

$FBVDDQ = V_{REF} * (1 + (R_{top}/R_{bot1}))$
 $2.06V = 0.8V * (1 + (1.58K/1K))$
 $1.819V = 0.8V * (1 + (1.58K/1.24K))$

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