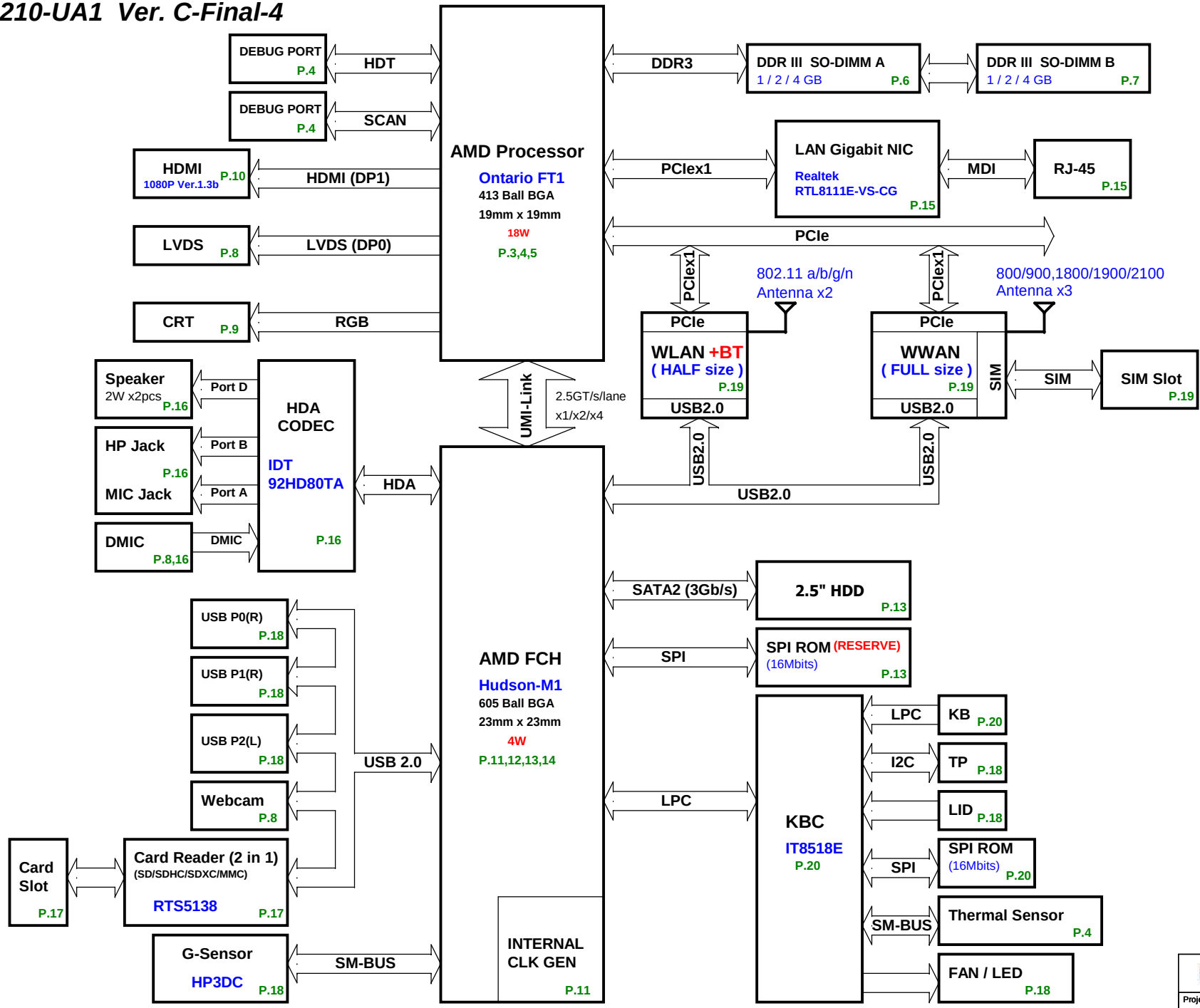
Garbo-Brazos Platform
H210-UA1 Ver. C-Final-4



Charger / B+
BQ24745 P.21

APU-CORE
APU-VDDNB
ISL6265C P.22

1.1VS
1.0VS
RT8015BGQW*2 P.24

1.5V
0.75VS-VTT
RT8209AGQW
G2997BF61U P.23

5V
3.3VSTBY
RT8205EGQW(2) P.25

5VS / 3.3VS / 1.5VS
3.3V-LAN
3.3V-DUAL
1.1V-DUAL/1.1V-USB
3.3-USB
1.8VS P.26

SMBus BLOCK

SMBCLK SMBDAT	SO-DIMM G-SENSOR	WLAN WWAN
KBC-BATCLK KBC-BATDAT	CHARGE	
KBC-TMCLK KBC-TMDAT	CPU ON-DIE THERMAL SENSOR CPU THERMAL SENSOR (G786)	

LED STATUS

(1) TP (Dual Color) : Amber: Off

(1) RF (Dual Color) : White: enable / Amber: disable

(2) Power on : White: Power on / Blink white: Stanby

(1) Battery Charging : Amber

(2) AC plugged and not charging : White

(3) HDD (Dual Color): White : Active / Amber: Park

(1) Mute LED : Amber

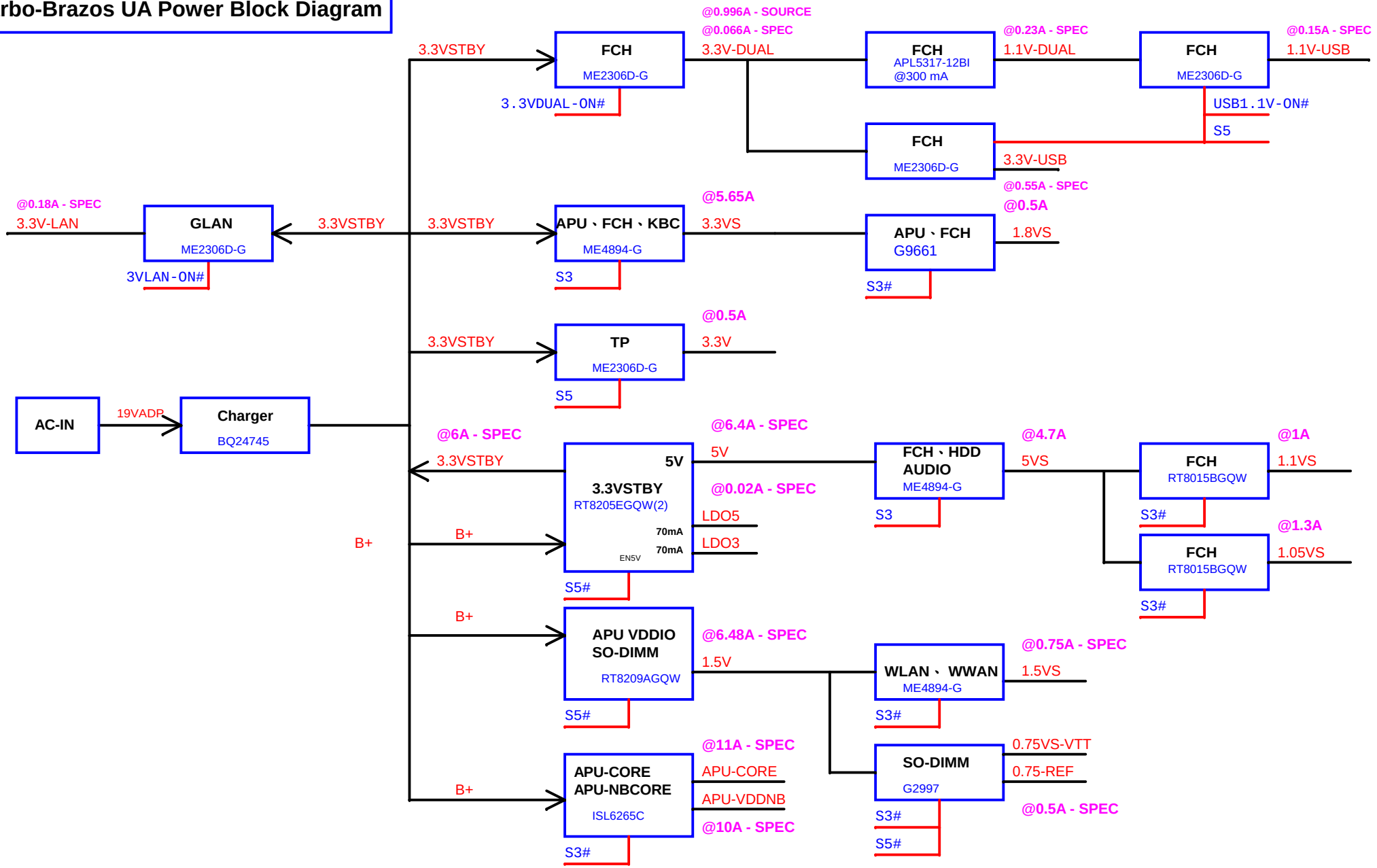
(2) Caps Lock : White

(1) Webcam : White : Active

FLEXComputing

Project Name : H210UA1	Title : System Block Diagram	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 1 of 28	

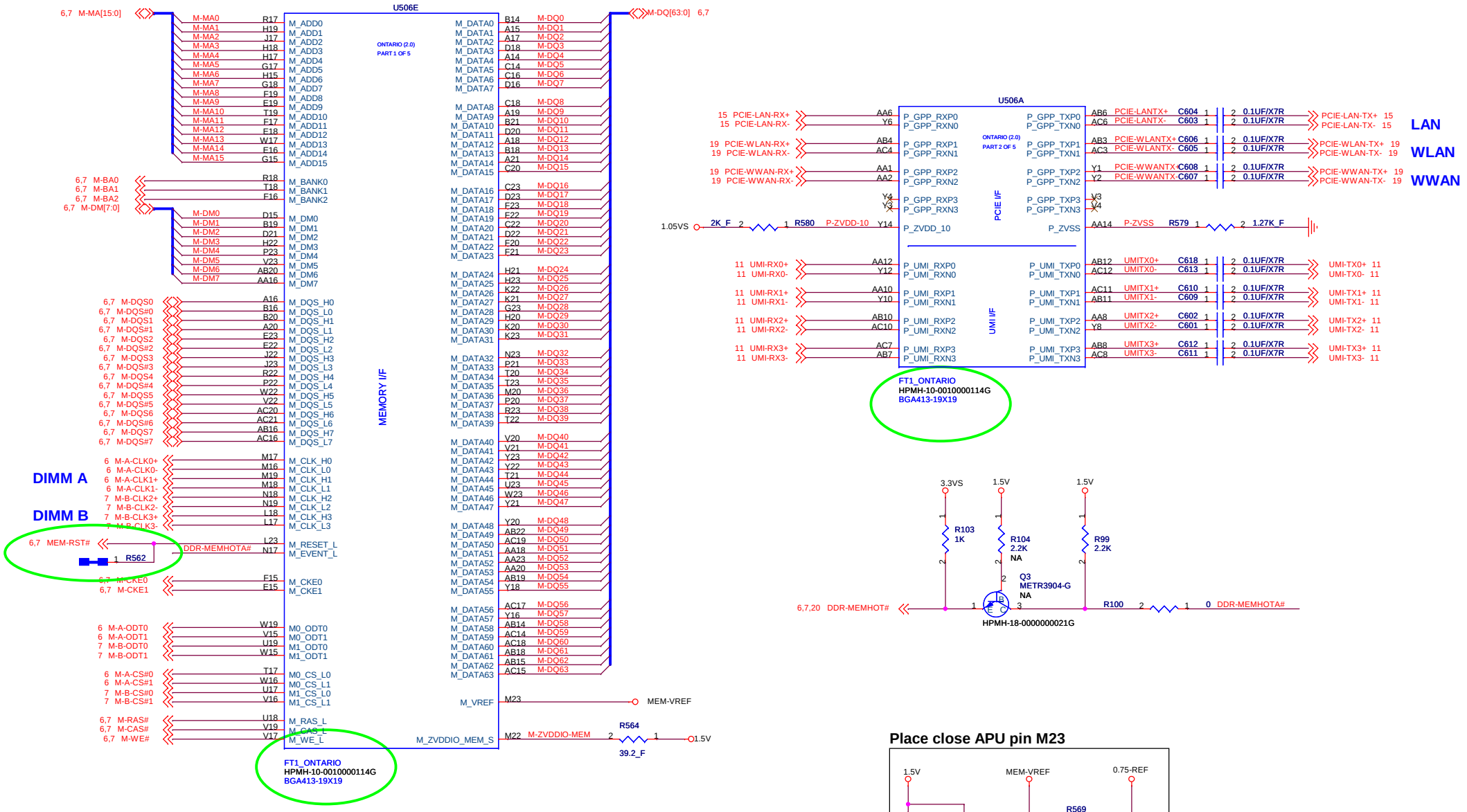
Garbo-Brazos UA Power Block Diagram



FLEXComputing

Project Name : H210UA1	Title : Power Block Diagram	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Tuesday, September 28, 2010	Sheet : 2 of 28	

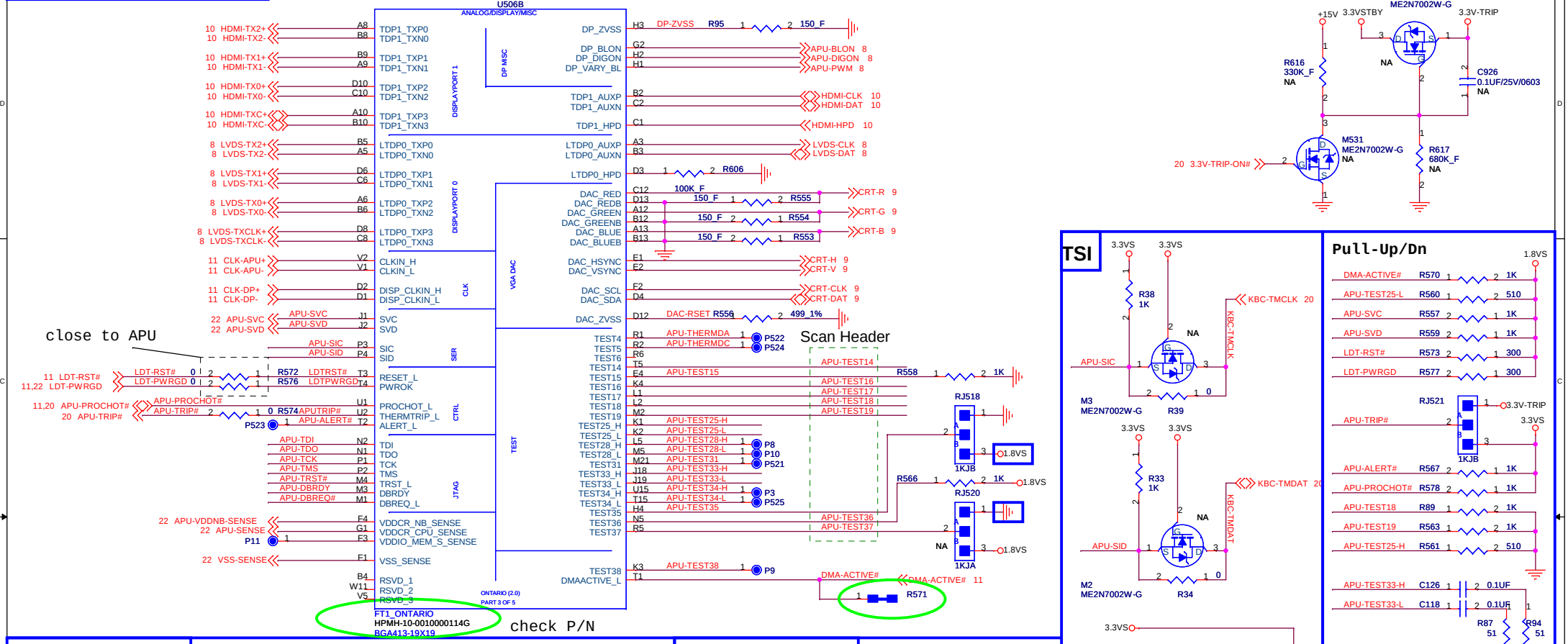
APU_MEMORY/PCIE/UMI



FLEXComputing

Project Name : H210UA1	Title : APU_MEMORY/PCIE/UMI	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 3 of 28	

APU_DISPLAY/CLK/MISC

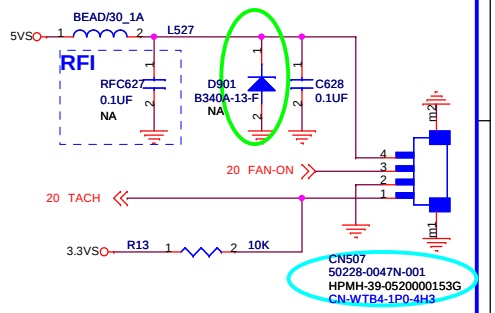


ME2N7002W-G VGS=1(min) ~ 2.5(max)
+15= 11.8V ,VG=7.94V
VGS=7.94V-3.3V=4.64V
+15= 14.6V ,VG=9.82V
VGS=9.82V-3.3V=6.52V

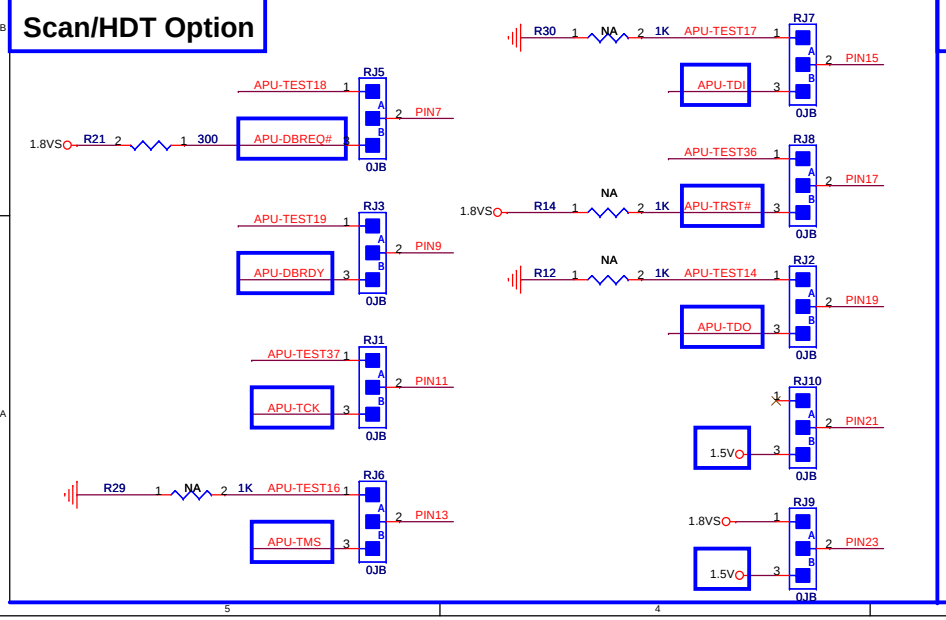
TSI

Pull-Up/Dn

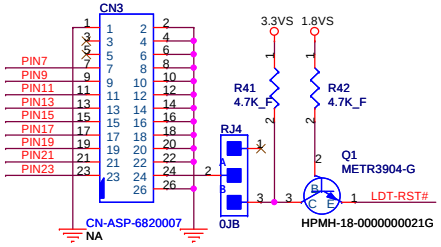
FAN



Scan/HDT Option



Scan/HDT Header

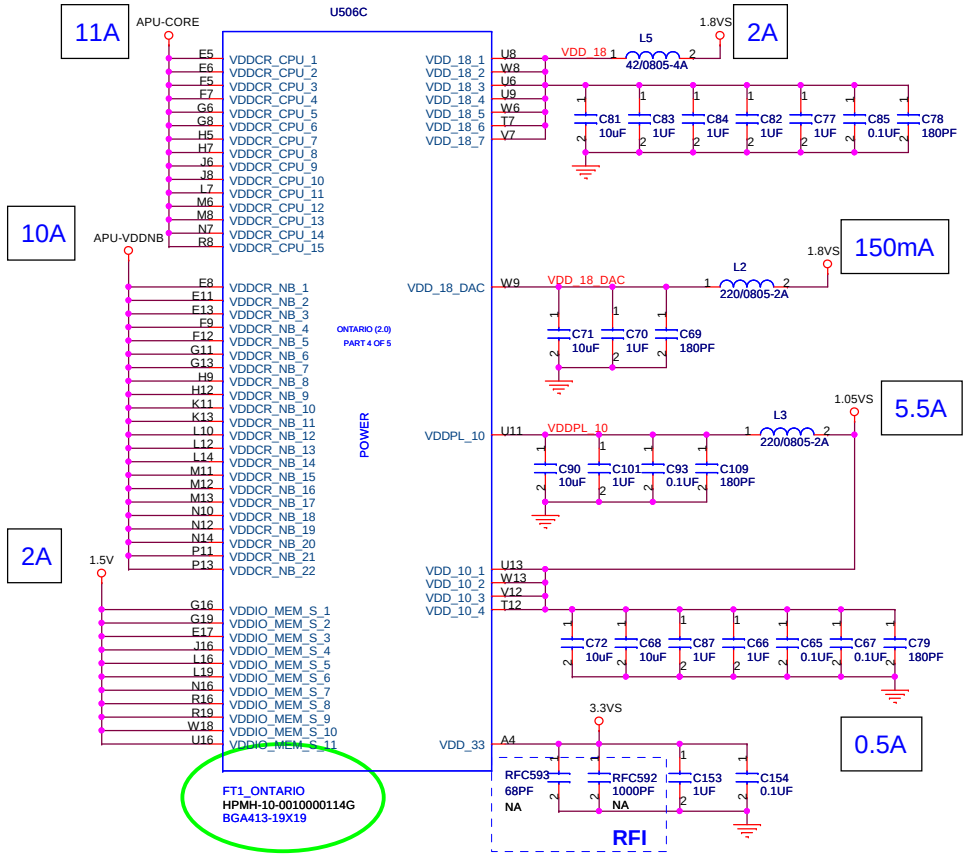


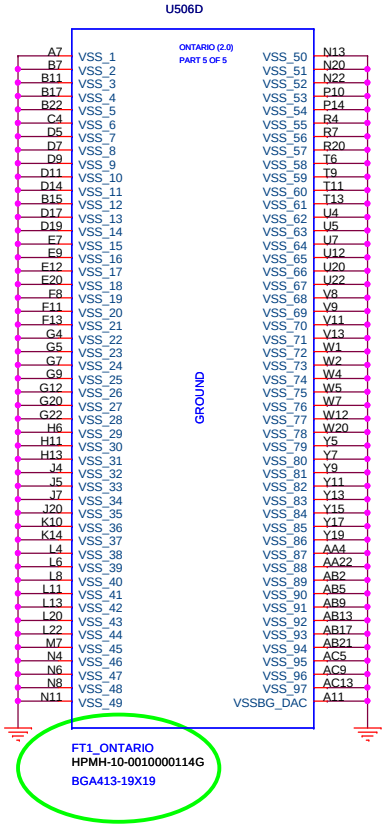
For Scan pin25
close to HDT conn
R28 0

FLEXComputing

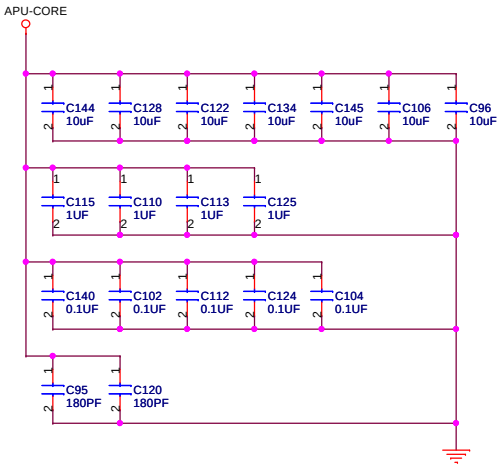
Project Name : H210UA1	Title : APU_DISPLAY/CLK/MISC	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 4 of 28	

APU_POWER & GND

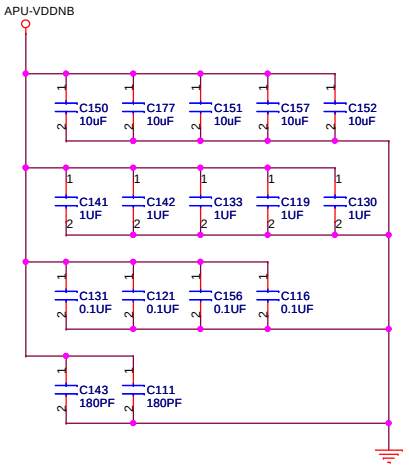




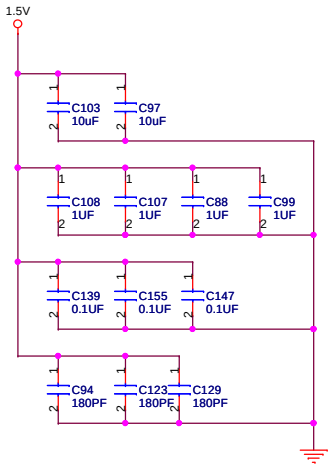
For APU-CORE



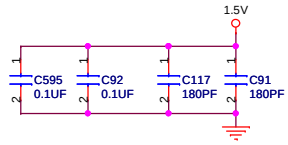
For APU-VDDNB



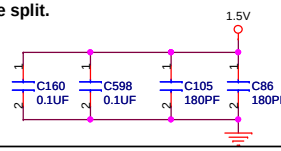
For 1.5V



If the VSS plane is cut to create a VDDIO_MEM_S plane, ceramic capacitors are connected across the VDDIO_MEM_S and VSS plane split.



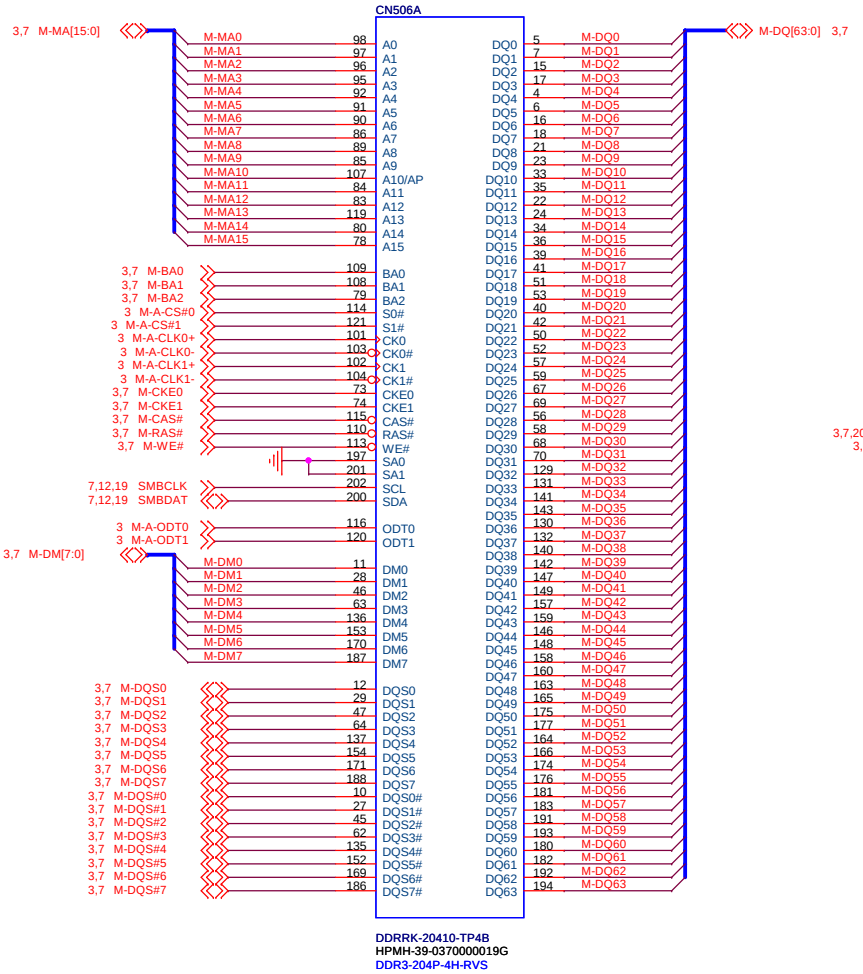
If the VSS plane is longer than 63.5 mm an additional two capacitors are required across the VDDIO_MEM_S and VSS plane split.

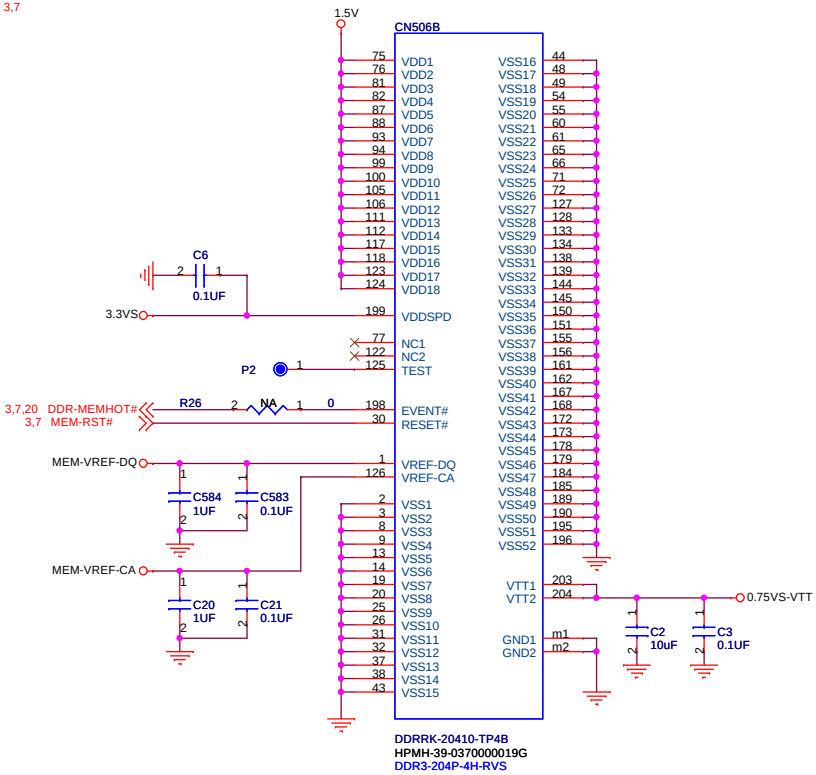


FLEXComputing

Project Name : H210UA1	Title : APU_POWER / GND	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Thursday, September 23, 2010	Sheet : 5 of 28	

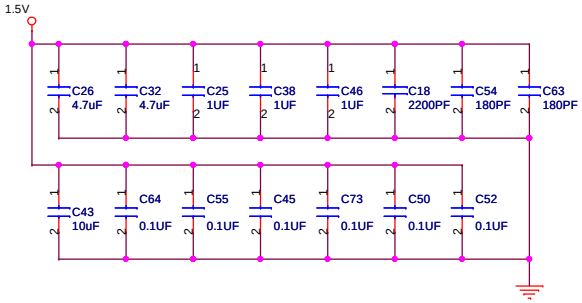
DDR3 DIMM A



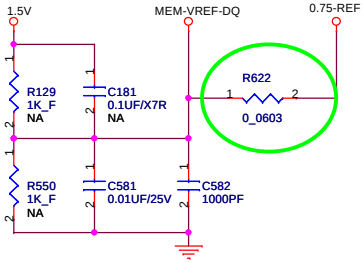


SA0	SA1	Address
0	0	A0
1	0	A2

Layout :
Place these Caps near So-DimmA



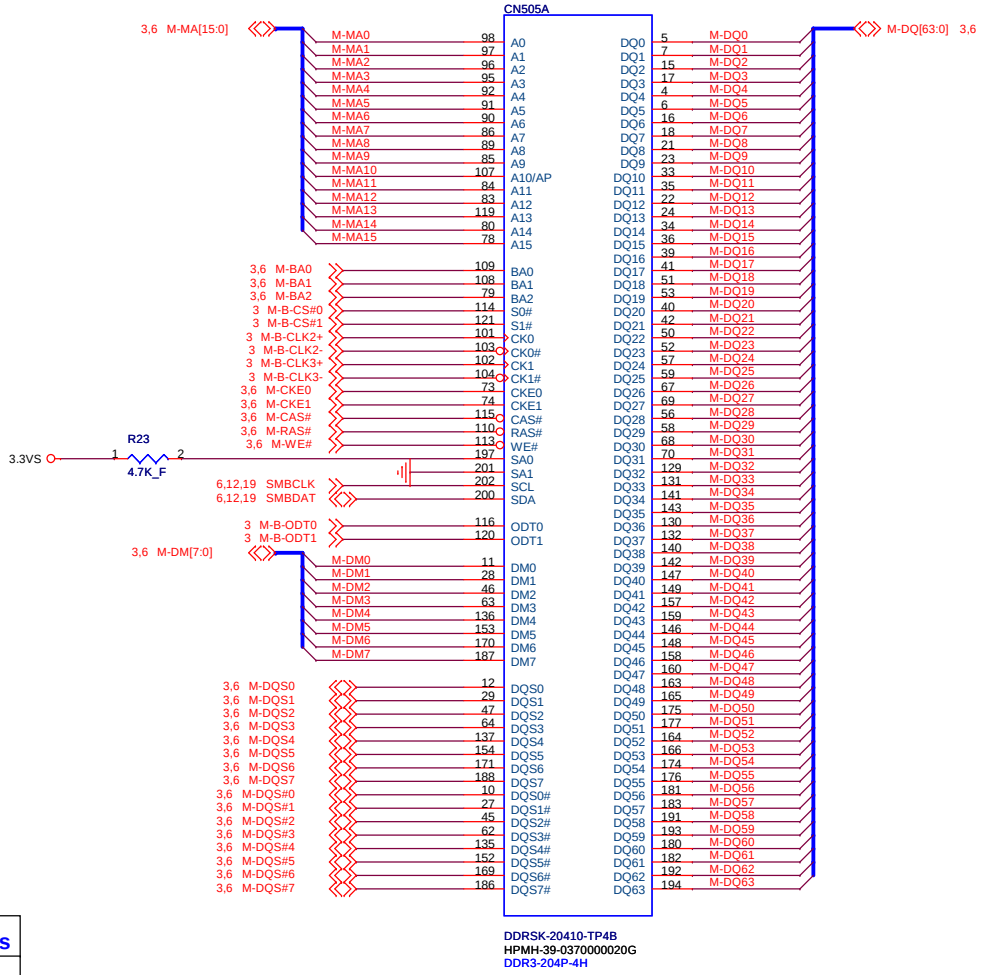
Layout :
Place near So-DimmA

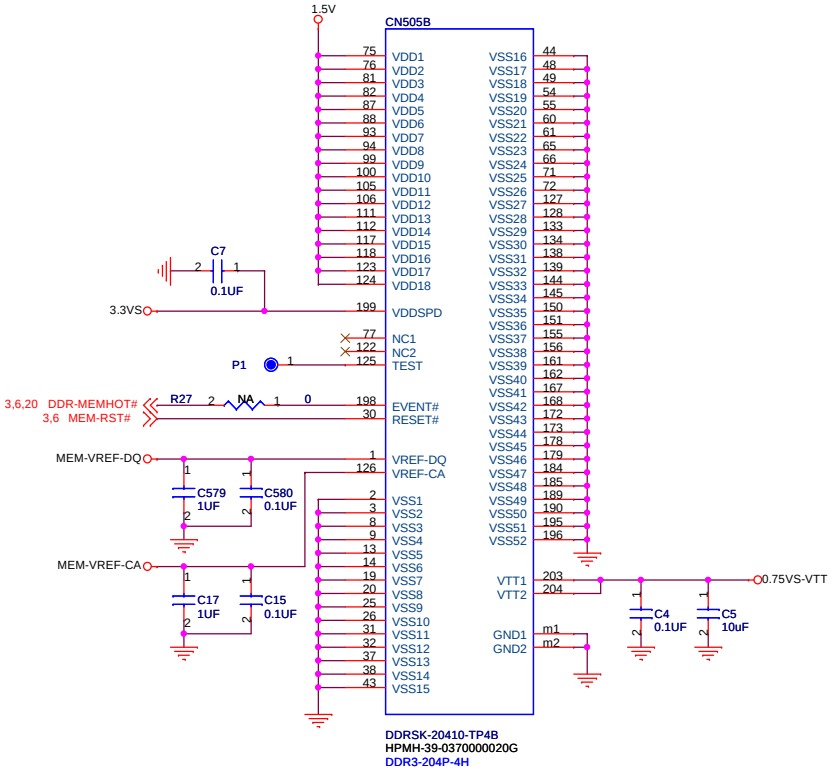


FLEXComputing

Project Name : H210UA1	Title : DDR3 SO-DIMM A	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 6 of 28	

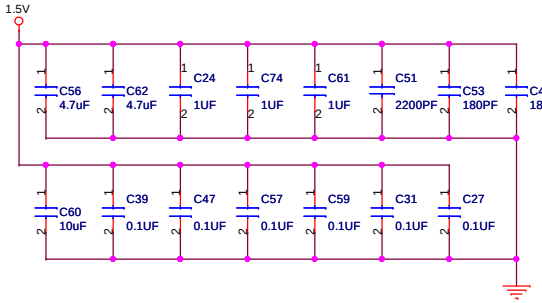
DDR3 DIMM B



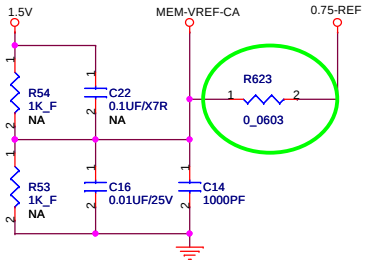


SA0	SA1	Address
0	0	A0
1	0	A2

Layout :
Place these Caps near So-DimmB



Layout :
Place near So-DimmB



FLEXComputing

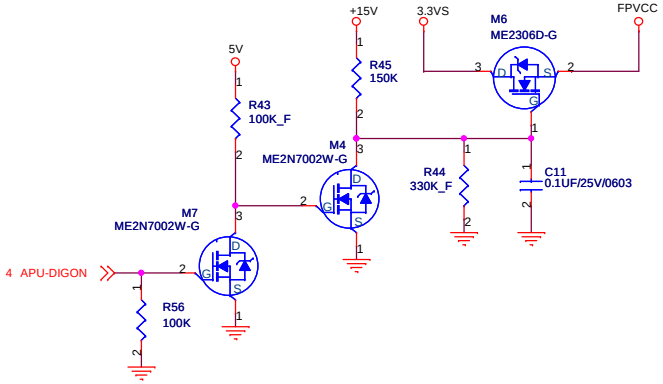
Project Name : H210UA1	Title : DDR3 SO-DIMM B	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 7 of 28	

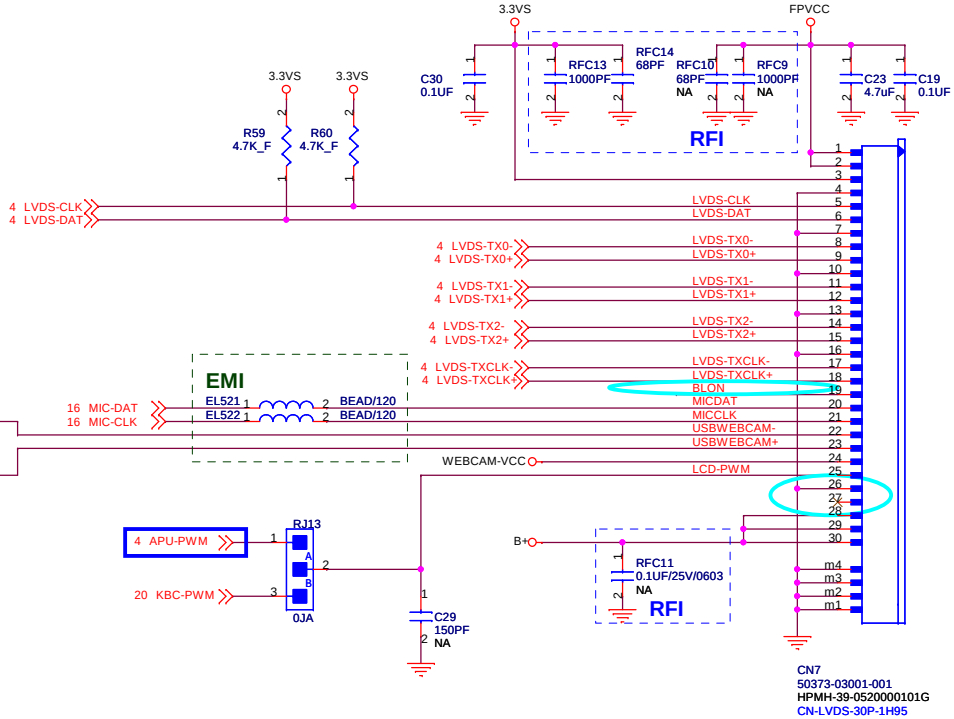
LVDS

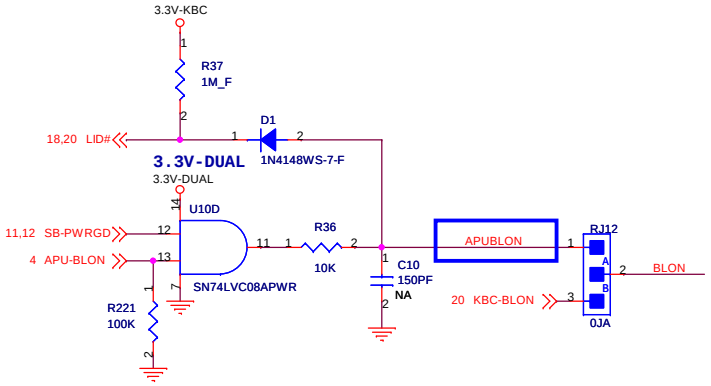
ME2306D-G VGS= 1(min) ~ 3(max)

+15= 11.8V ,VG=8.11V
VGS=8.11V-3.3V=4.81V

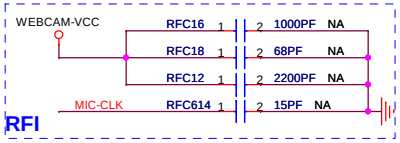
+15= 14.6V ,VG=10.03V
VGS=10.03V-3.3V=6.73V

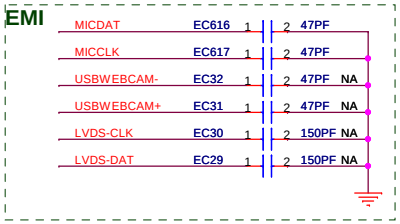






Mounted for AUO panel





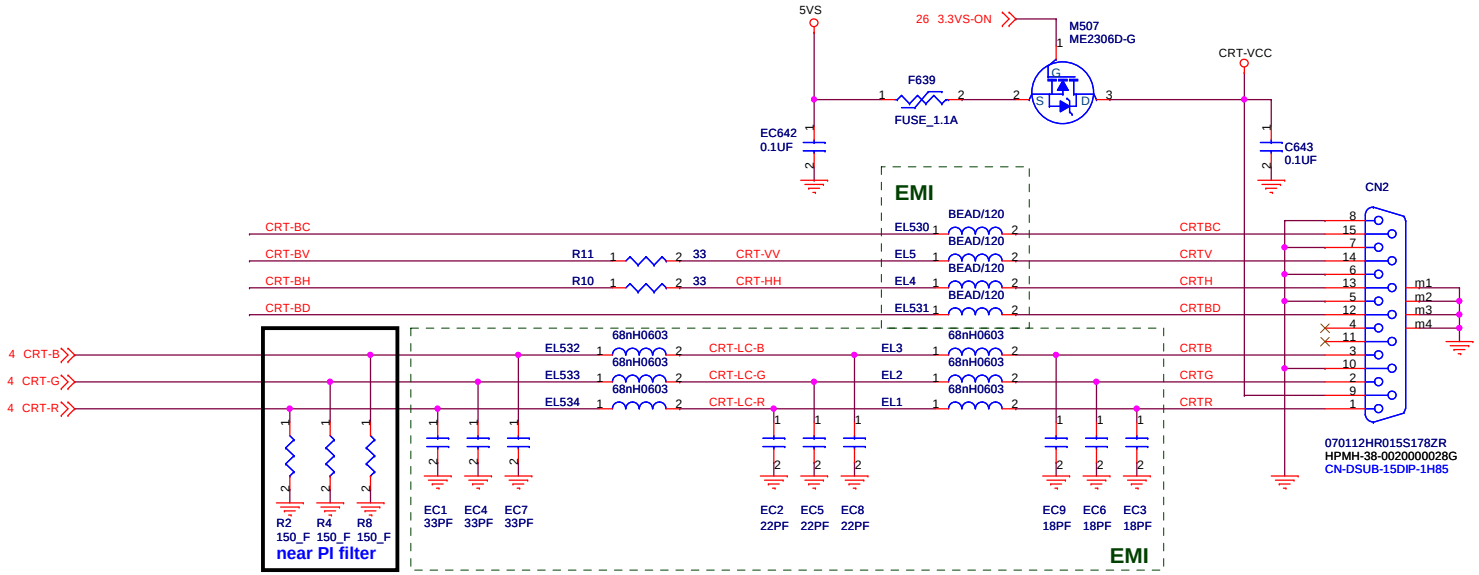
For DP to LVDS termination resistor

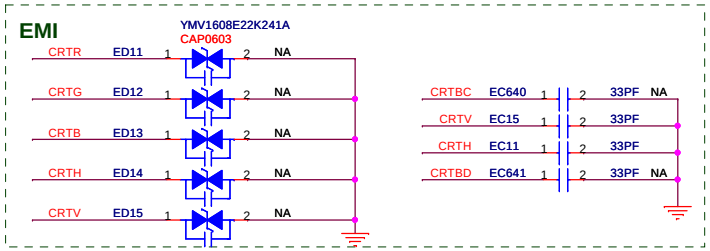
LVDS-TX0-	R64	100_1%		LVDS-TX0+
LVDS-TX1-	R57	100_1%		LVDS-TX1+
LVDS-TX2-	R58	100_1%		LVDS-TX2+
LVDS-TXCLK-	R61	100_1%		LVDS-TXCLK+

FLEXComputing

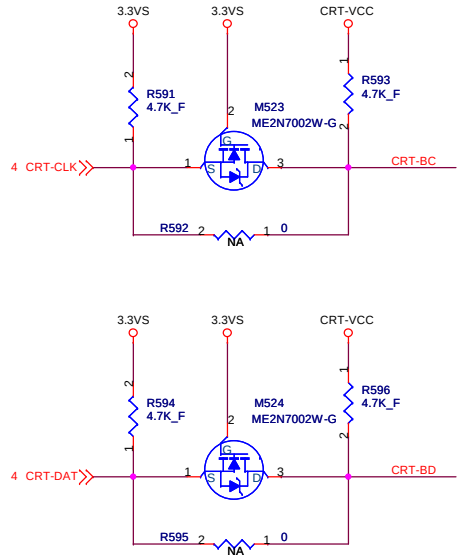
Project Name : H210UA1	Title : LVDS / eDP Connector	
Size : Custom	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Thursday, September 30, 2010	Sheet : 8 of 28	

CRT

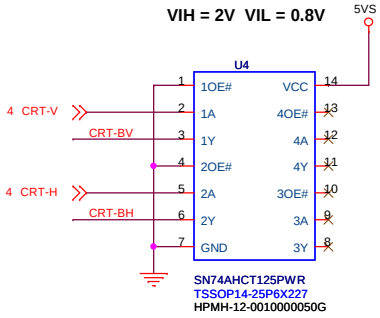




CRT LEVEL SHIFT



H / V SYNC BUFFER



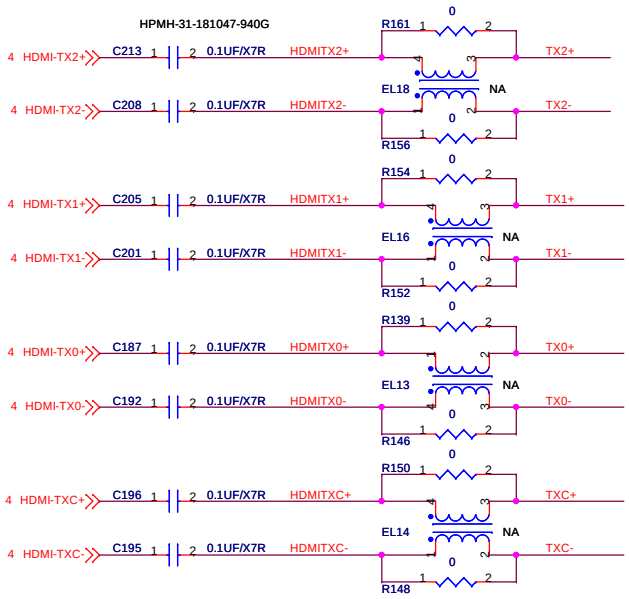
INPUT		OUTPUT
nOE	nA	nY
L	L	L
L	H	H
H	X	Z

FLEXComputing

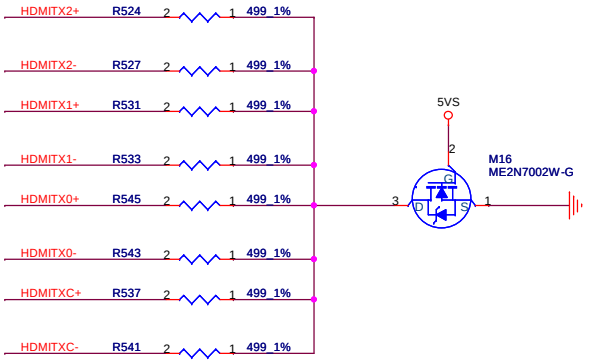
Project Name : H210UA1	Title : CRT Connector
Size : Custom	Document Number : HPMH-40GAB6000-C000 Rev : C
Date: Monday, September 27, 2010	Sheet : 9 of 28

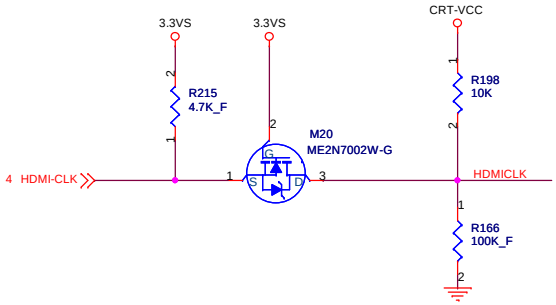
HDMI

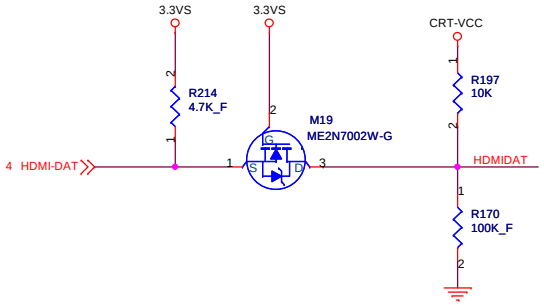
CLOSE CN514

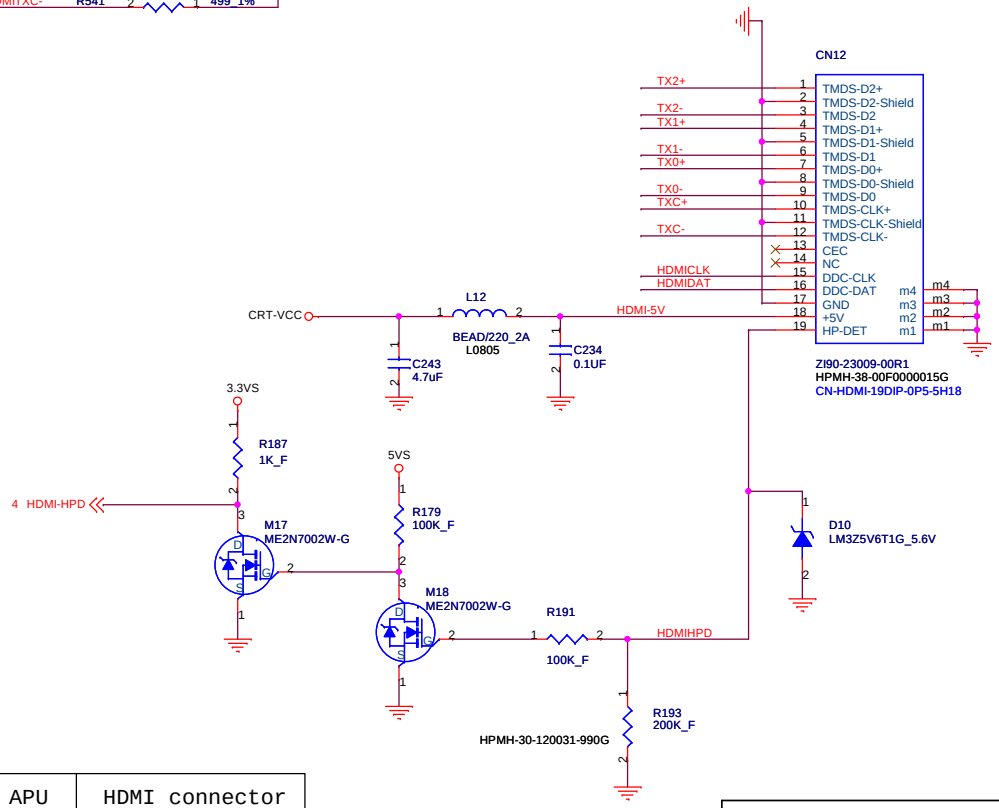


Connected a 499-Ω 5% resistor on each signal connected with a FET to GND (one FET per pair) located on the TMDS connector side of the series capacitors.









PLUG IN/OUT	APU	HDMI connector
IN	H	H
OUT	L	L

FLEXComputing

Project Name : H210UA1	Title : HDMI Connector	
Size : Custom	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 10 of 28	

FCH_UMI/PCIE/CLK/LPC/RTC

HUDSON-M1 DEBUG STRAPS

	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL DEFAULT	DISABLE ILA AUTORUN DEFAULT	USE FC PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	DISABLE PCI MEM BOOT DEFAULT
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM BOOT

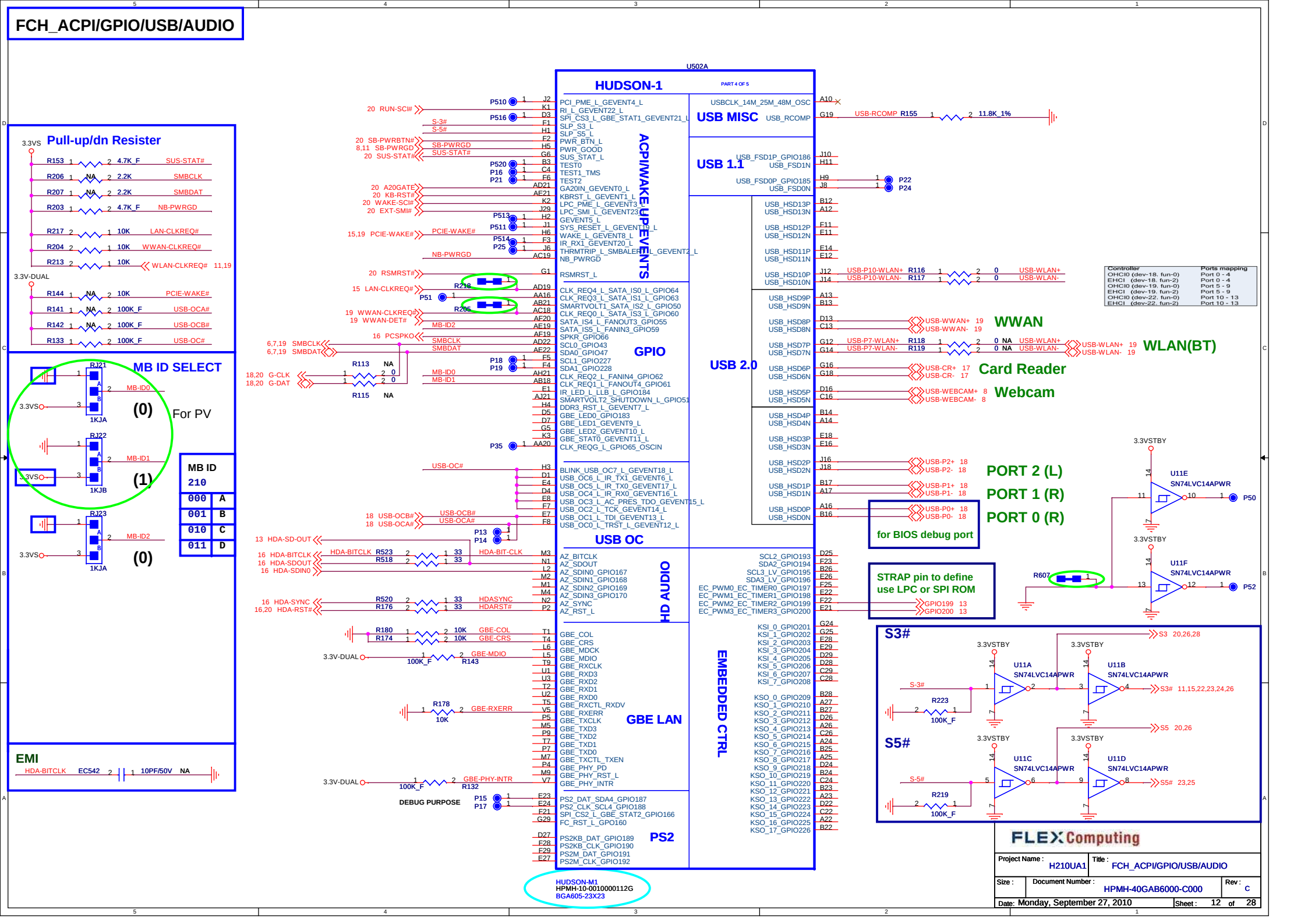
RESET# SB-PWRGD

RTC CLOCK

RTC BATTERY

RTC Holder

FCH_ACPI/GPIO/USB/AUDIO



Project Name :	H210UA1
Title :	FCH_ACPI/GPIO/USB/AUDIO
Size :	
Document Number :	HPMH-40GAB6000-C000
Rev :	C
Date:	Monday, September 27, 2010
Sheet :	12 of 28

FLEXComputing

FCH_SATA/IDE/SPI/STRAPS

SATA / IDE / SPI / STRAPS

Layout: AC caps place close as HDD connector

CN502
LVC-D20SFYG2C+/A
HPMH-39-0520000155G
CN-RECE-20P-0P5

SATA-TX0+ C148 0.01UF/25V SATATX0+ AH9
SATA-TX0- C159 0.01UF/25V SATATX0- AJ9
SATA-RX0- C161 0.01UF/25V SATARX0- AJ8
SATA-RX0+ C163 0.01UF/25V SATARX0+ AH8

5VS
NA RFC655 56PF
C167 0.1UF
CPOS1 100UF/POS6.3V1.9D HPMH-31-0700000004G

U502B

HUDSON-1 PART 2 OF 5

SATA_TX0P AH9
SATA_TX0N AJ9
SATA_RX0N AJ8
SATA_RX0P AH8
SATA_TX1P AH10
SATA_TX1N AJ10
SATA_RX1N AG10
SATA_RX1P AF10
SATA_TX2P AG12
SATA_TX2N AF12
SATA_RX2N AJ12
SATA_RX2P AH12
SATA_TX3P AH14
SATA_TX3N AJ14
SATA_RX3N AG14
SATA_RX3P AF14
SATA_TX4P AG17
SATA_TX4N AF17
SATA_RX4N AJ17
SATA_RX4P AH17
SATA_TX5P AJ18
SATA_TX5N AH18
SATA_RX5N AH19
SATA_RX5P AJ19

SERIAL ATA

Place as close as SB

VDDAN-11-SATA
R190 1K_F SATA-CALP AB14
R189 931_F SATA-CALN AA14
SATA_CALRP
SATA_CALRN

3.3VS R211 10K AD11
SATA_ACT_L_GPIO67
20 SATA-ACT#

P49 AD16
SATA_X1

P48 AC16
SATA_X2

SPI-DI J5
SPI-DO E2
SPI-CLK K4
SPI-CS# K9
P515 G2
SPI_DI_GPIO164
SPI_DO_GPIO163
SPI_CLK_GPIO162
SPI_CS1_L_GPIO165
ROM_RST_L_GPIO161

SPI ROM

HUDSON-M1
HPMH-10-0010000112G
BGA605-23X23

FC_CLK AH28
FC_FBCLKOUT AG28
FC_FBCLKIN AF26

FC_OE_L_GPIOD145 AF28
FC_AVD_L_GPIOD146 AG29
FC_WE_L_GPIOD148 AG26
FC_CE1_L_GPIOD149 AF27
FC_CE2_L_GPIOD150 AF29
FC_INT1_GPIOD144 AF29
FC_INT2_GPIOD147 AH27

FC_ADQ0_GPIOD128 AJ27
FC_ADQ1_GPIOD129 AJ26
FC_ADQ2_GPIOD130 AH25
FC_ADQ3_GPIOD131 AH24
FC_ADQ4_GPIOD132 AG23
FC_ADQ5_GPIOD133 AH23
FC_ADQ6_GPIOD134 AJ22
FC_ADQ7_GPIOD135 AG21
FC_ADQ8_GPIOD136 AF21
FC_ADQ9_GPIOD137 AH22
FC_ADQ10_GPIOD138 AJ23
FC_ADQ11_GPIOD139 AF23
FC_ADQ12_GPIOD140 AJ24
FC_ADQ13_GPIOD141 AJ25
FC_ADQ14_GPIOD142 AG25
FC_ADQ15_GPIOD143 AH26

GPIOD

FANOUT0_GPIO52 W5
FANOUT1_GPIO53 W6
FANOUT2_GPIO54 Y9

FANIN0_GPIO56 W7
FANIN1_GPIO57 Y9
FANIN2_GPIO58 W8

TEMPIN0_GPIO171 B6
TEMPIN1_GPIO172 A6
TEMPIN2_GPIO173 A5
TEMPIN3_TALERT_L_GPIO174 B5
TEMP_COMM C7
P519

VIN0_GPIO175 A3
VIN1_GPIO176 B4
VIN2_GPIO177 A4
VIN3_GPIO178 C5
VIN4_GPIO179 A7
VIN5_GPIO180 B7
VIN6_GBE_STAT3_GPIO181 B8
VIN7_GBE_LED3_GPIO182 A8

HW MONITOR

NC1 G27
NC2 Y2

Temperature Monitor Not Implemented: Connected to GND.

16M-bit SPI ROM

3.3V-DUAL
R136 10K NA
R137 10K NA
U5
SPI-CS# CE#
SPI-DI SO
WP#
GND
VDD
HOLD#
SCK
SI
SPI-CLK
SPI-DO
MX25L1605EM2I-12G
HPMH-14-0090000061G
NA

HUDSON-M1 H/W STRAPS

12 HDA-SD-OUT R517 10K
11 LPC-CLK0 R138 10K
11 LPC-CLK1 R147 10K 3.3V-DUAL
11 PCI-CLK2 R183 10K
11 PCI-CLK3 R186 10K
11 PCI-CLK4 R192 10K

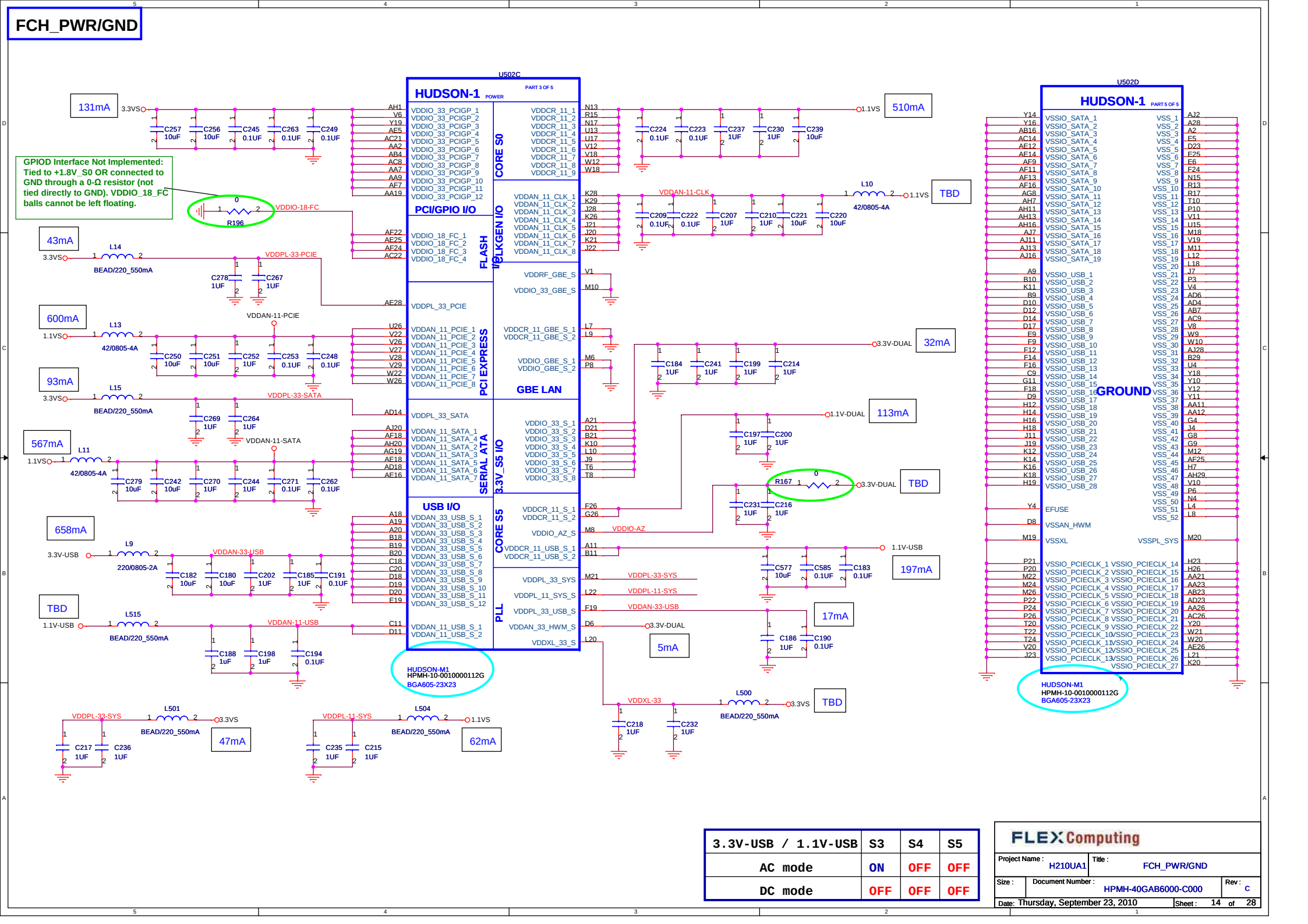
11 PCI-CLK1 RJ19 10KJA 3.3V-DUAL
12 GPIO200 RJ18 2.2KJA 3.3V-DUAL
12 GPIO199 RJ17 2.2KJA 3.3V-DUAL

	AZ_SDOUT	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	GPIO200 GPIO199
PULL HIGH	LOW POWER MODE	ALLOW PCIE Gen2	Watchdog Timer Enabled	USE DEBUG STRAP	non_Fusion CLOCK MODE	EC ENABLED	CLKGEN ENABLED DEFAULT	H,H = Reserved H,L = SPI ROM
PULL LOW	PERFORMANCE MODE DEFAULT	FORCE PCIE Gen1 DEFAULT	Watchdog Timer Disabled DEFAULT	IGNORE DEBUG STRAP DEFAULT	FUSION CLOCK MODE DEFAULT	EC DISABLED DEFAULT	CLKGEN DISABLED	L,H = LPC ROM (Default) L,L = FWH ROM

FLEXComputing

Project Name : H210UA1		Title : FCH_SATA/IDE/SPI/STRAPS	
Size :	Document Number : HPMH-40GAB6000-C000		Rev : C
Date: Monday, September 27, 2010		Sheet : 13 of 28	

FCH_PWR/GND

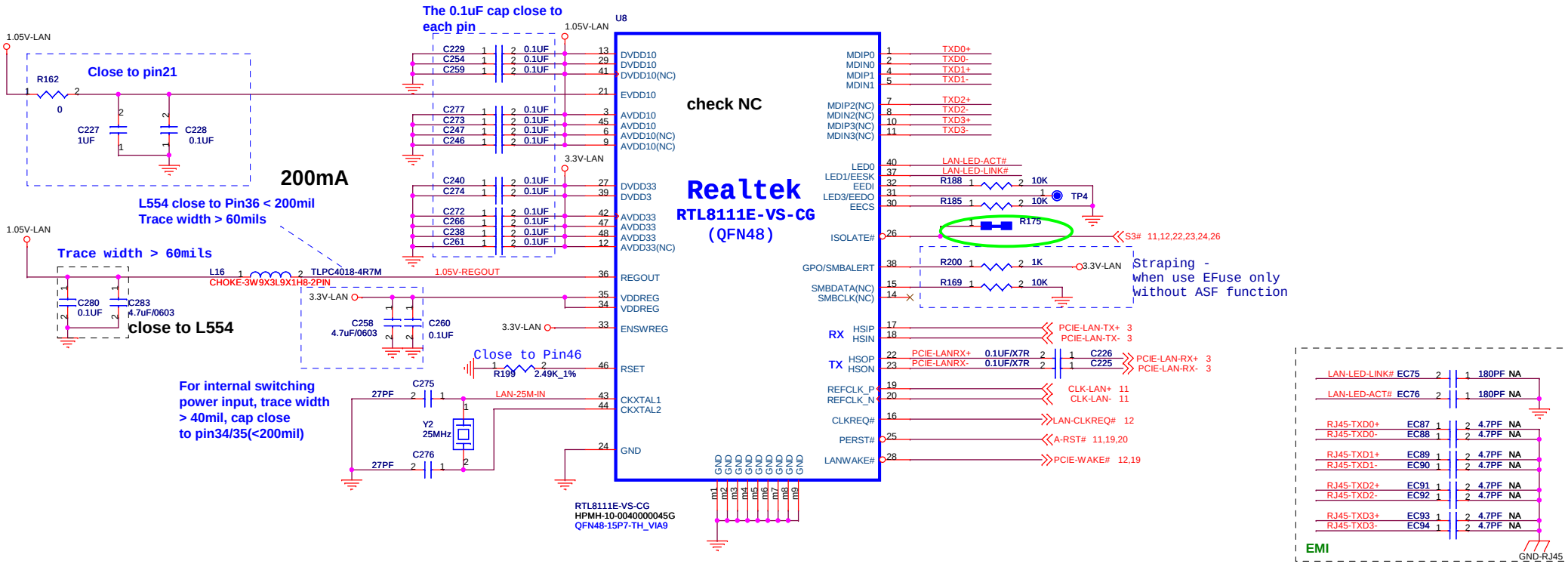


3.3V-USB / 1.1V-USB	S3	S4	S5
AC mode	ON	OFF	OFF
DC mode	OFF	OFF	OFF

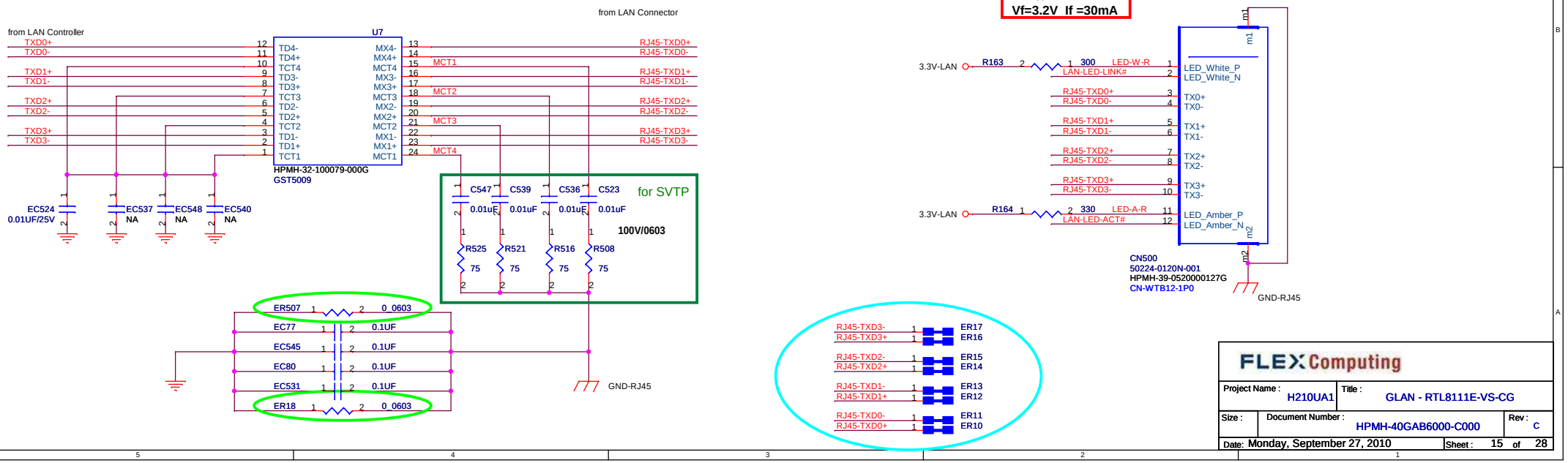
FLEXComputing

Project Name : H210UA1	Title : FCH_PWR/GND		
Size :	Document Number : HPMH-40GAB6000-C000		Rev : C
Date: Thursday, September 23, 2010	Sheet : 14 of 28		

GLAN Controller



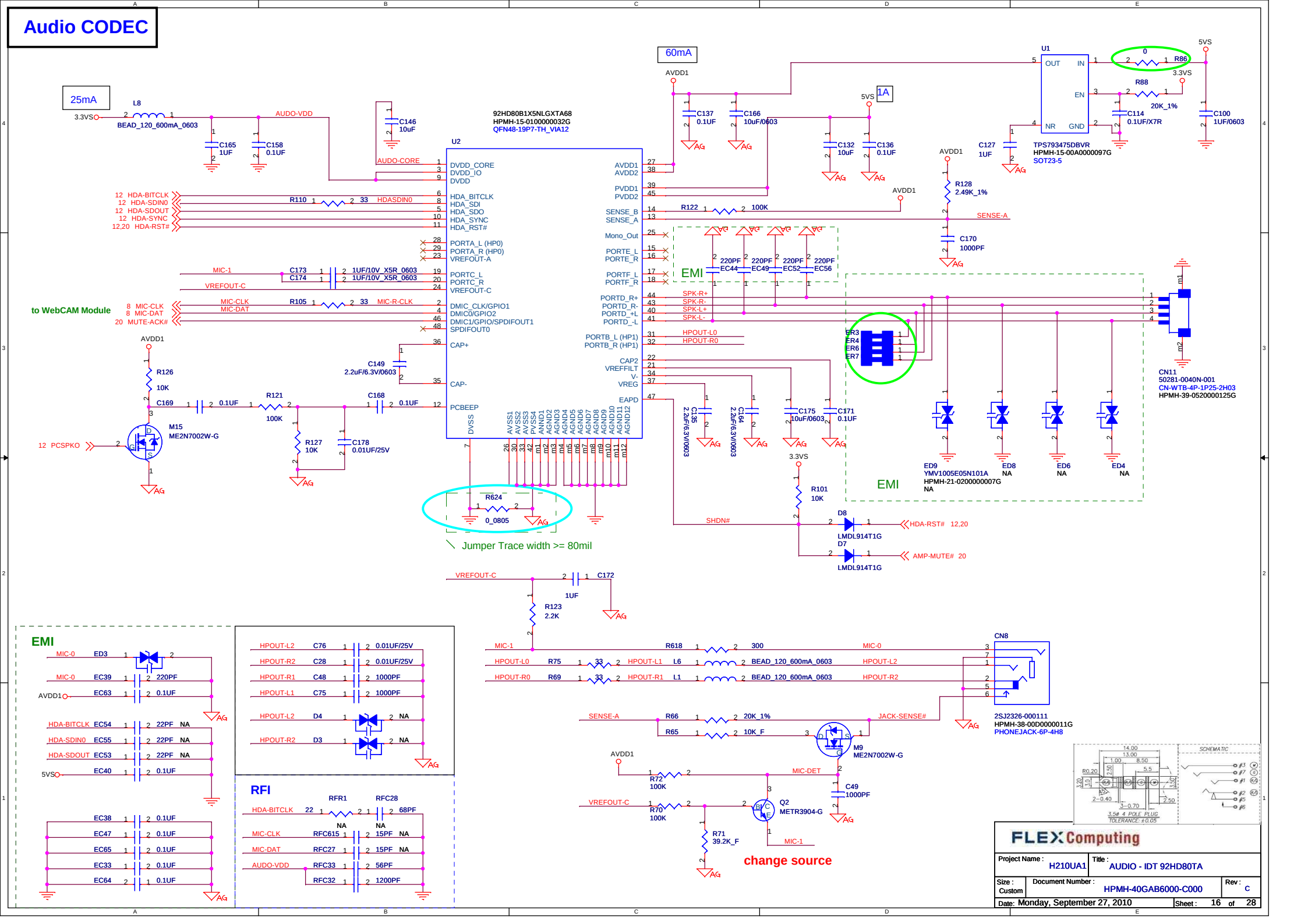
RJ45 connector



FLEX Computing

Project Name : H210UA1	Title : GLAN - RTL8111E-VS-CG	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 15 of 28	

Audio CODEC


25mA
60mA
1A
L8
BEAD_120_600mA_0603
AUDO-VDD
AUDO-CORE
92HD80B1X5NLGXTA68
HPMH-15-0100000032G
QFN48-19P7-TH_VIA12
U2
DVDD_CORE
DVDD_IO
DVDD
HDA_BITCLK
HDA_SDI
HDA_SDO
HDA_SYNC
HDA_RST#
PORTA_L (HP0)
PORTA_R (HP0)
VREFOUT-A
PORTC_L
PORTC_R
VREFOUT-C
DMIC_CLK/GPIO1
DMIC0/GPIO2
DMIC1/GPIO/SPDIFOUT1
SPDIFOUT0
CAP+
CAP-
PCBEEP
AVDD1
AVDD2
PVDD1
PVDD2
SENSE_B
SENSE_A
Mono_Out
PORTE_L
PORTE_R
PORTF_L
PORTF_R
PORTD_R+
PORTD_R-
PORTD_+L
PORTD_-L
PORTB_L (HP1)
PORTB_R (HP1)
CAP2
VREFFILT
V-
VREG
EAPD
DVSS
AVSS1
AVSS2
AVSS3
PVSS4
ANND1
AGND2
AGND3
AGND4
AGND5
AGND6
AGND7
AGND8
AGND9
AGND10
AGND11
AGND12
U1
TPS793475DBVR
HPMH-15-00A0000097G
SOT23-5
OUT
IN
EN
NR
GND
5VS
3.3VS
AVDD1
SENSE-A
EMI
SPK-R+
SPK-R-
SPK-L+
SPK-L-
HPOUT-L0
HPOUT-R0
CN11
50281-0040N-001
CN-WTB-4P-1P25-2H03
HPMH-39-0520000125G
ED9
YMV1005E05N101A
HPMH-21-0200000007G
NA
ED8
ED6
ED4
D8
D7
LMDL914T1G
HDA-RST# 12,20
AMP-MUTE# 20
SHDN#
to WebCAM Module
MIC-CLK
MIC-DAT
MUTE-ACK#
MIC-1
MIC-R-CLK
VREFOUT-C
12 PCSPKO
M15
ME2N7002W-G
Jumper Trace width >= 80mil
R624
0_0805
VREFOUT-C
R123
2.2K
CN8
2SJ2326-000111
HPMH-38-00D0000011G
PHONEJACK-6P-4H8
JACK-SENSE#
M9
ME2N7002W-G
MIC-DET
Q2
METR3904-G
change source
EMI
RFI
HPOUT-L2
HPOUT-R2
HPOUT-R1
HPOUT-L1
HPOUT-L0
HPOUT-R0
HDA-BITCLK
HDA-SDIN0
HDA-SDOUT
HDA-SYNC
HDA-RST#
HDASDIN0
MIC-0
MIC-1
MIC-CLK
MIC-DAT
AUDO-VDD
AVDD1
5VS
3.3VS
SCHEMATIC
FLEX Computing
Project Name : H210UA1
Title : AUDIO - IDT 92HD80TA
Size : Custom
Document Number : HPMH-40GAB6000-C000
Rev : C
Date: Monday, September 27, 2010
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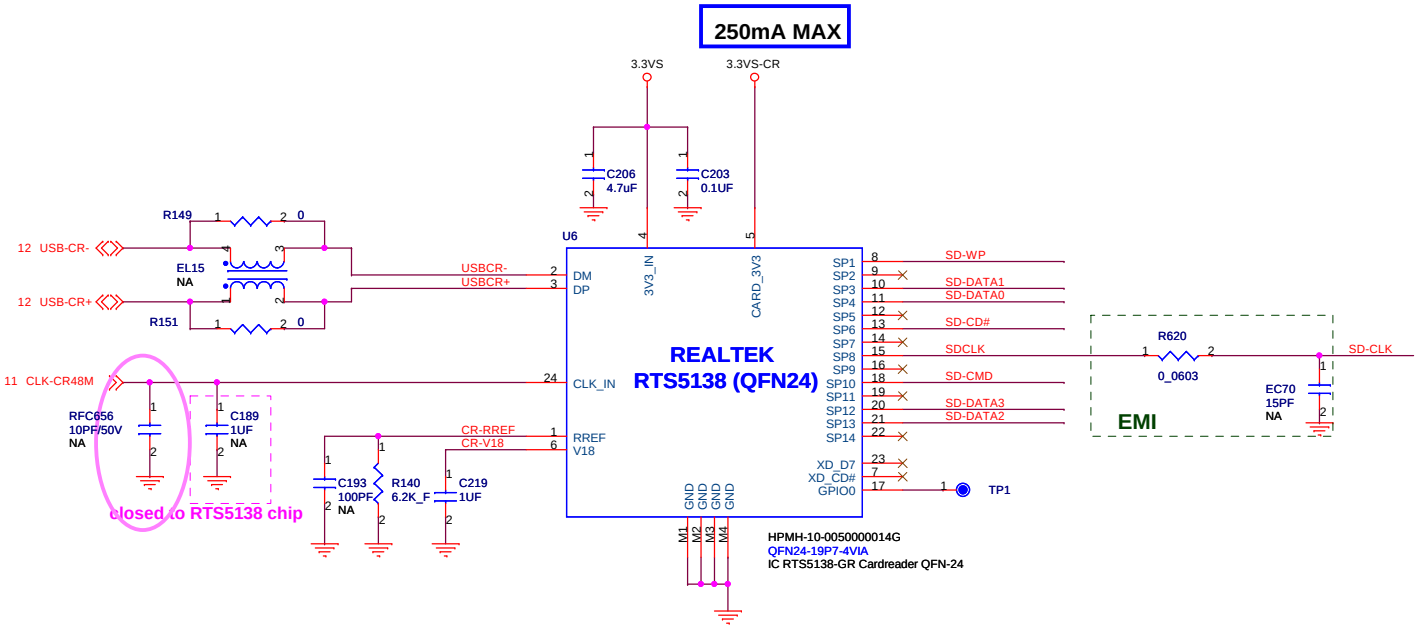
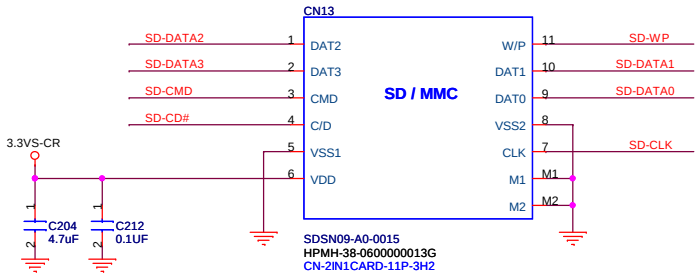
Card Reader



SD/MMC	
SP1	SD_WP
SP2	
SP3	SD_D1
SP4	SD_D0
SP5	SD_D7
SP6	SD_CD#
SP7	SD_D6
SP8	SD_CLK
SP9	SD_D5
SP10	SD_CMD
SP11	SD_D4
SP12	SD_D3
SP13	SD_D2
SP14	

Memory Card Socket

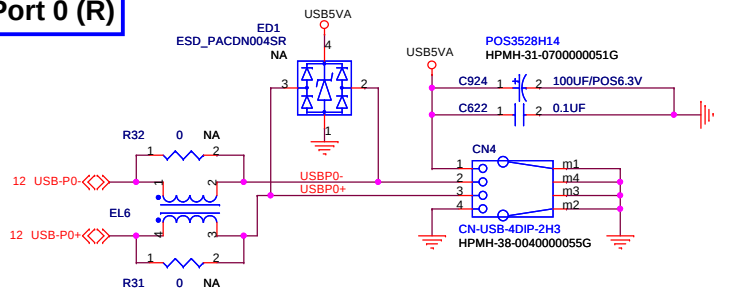


SD/MMC	
1	DAT2
2	DAT3
3	CMD
4	C/D
5	VSS1
6	VDD
7	CLK
8	VSS2
9	DAT0
10	DAT1
11	W/P

FLEXComputing

Project Name : H210UA1	Title : RTS5138 CardReader	
Size : Custom	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 17 of 28	

USB Port 0 (R)

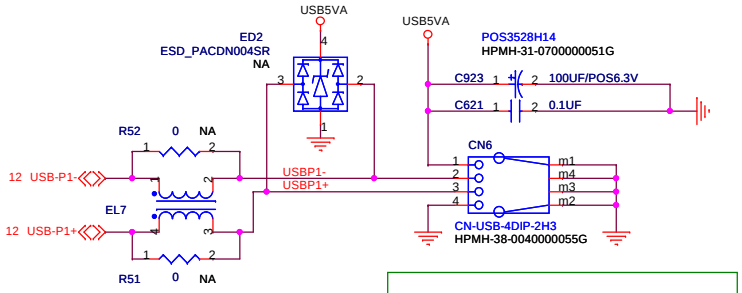


Note 1

For USB ports that have trace length of <=10", the rise and fall time parameters may not meet the specification of > 450 ps.

USBP0- C9 15PF NA
USBP0+ C8 15PF NA

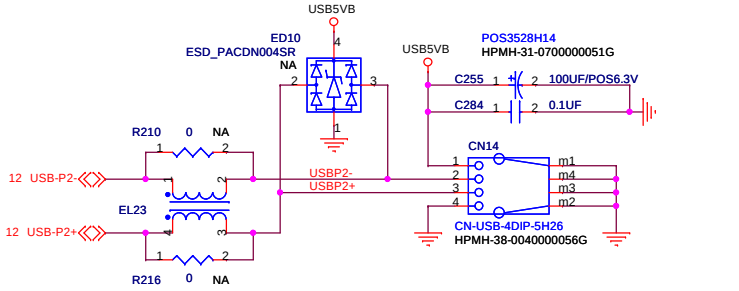
USB Port 1 (R)



Note 1

USBP1- C13 15PF NA
USBP1+ C12 15PF NA

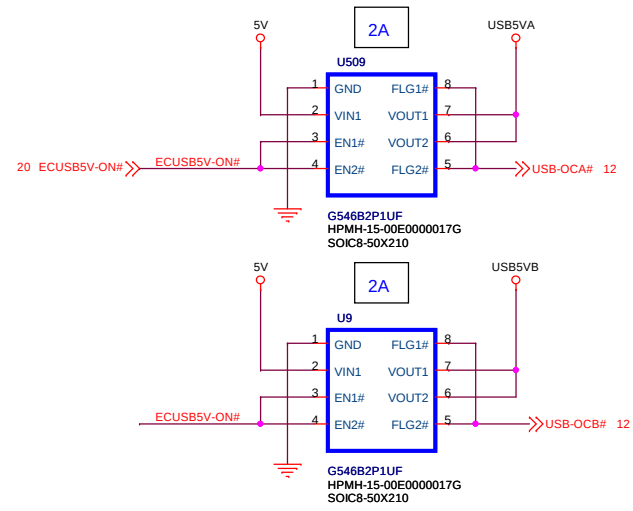
USB Port 2 (L)



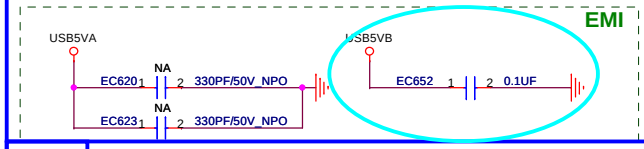
Note 1

For USB ports that have trace length of <=10", the rise and fall time parameters may not meet the specification of > 450 ps.

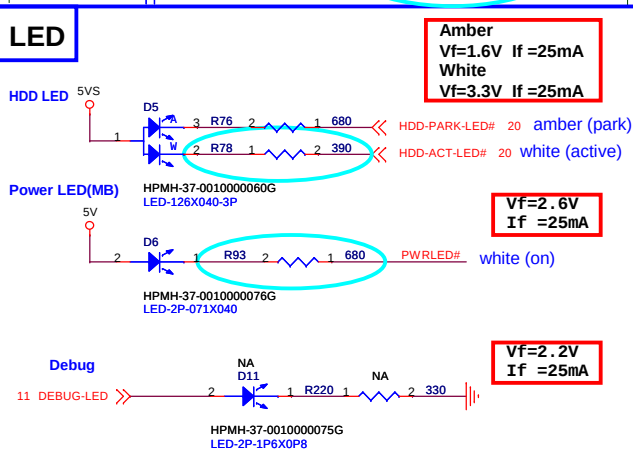
USBP2- C281 15PF NA
USBP2+ C282 15PF NA



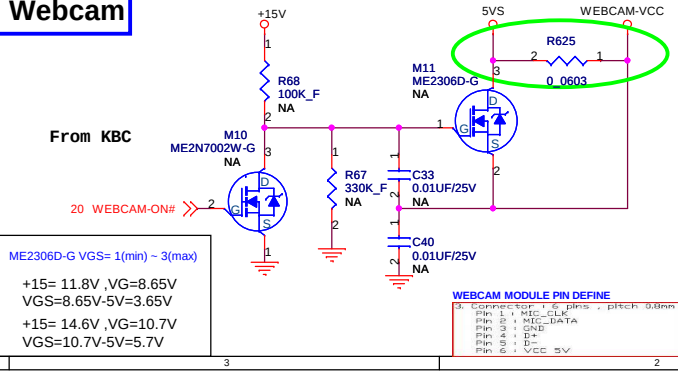
EMI



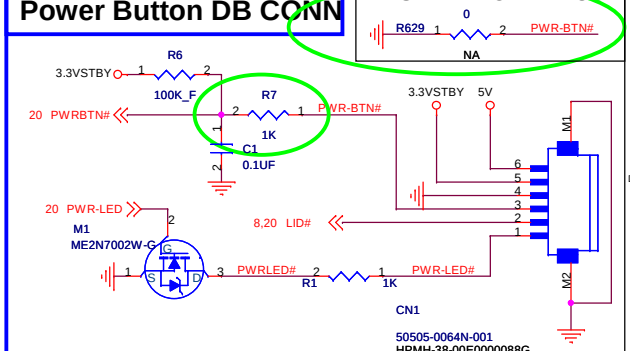
LED



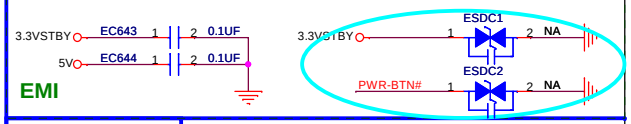
Webcam



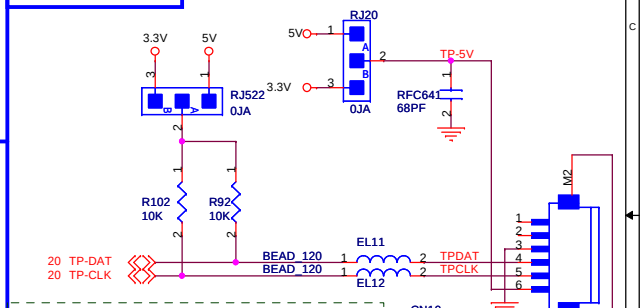
Power Button DB CONN



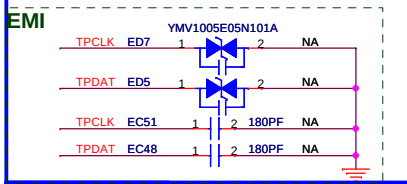
EMI



Touch Pad

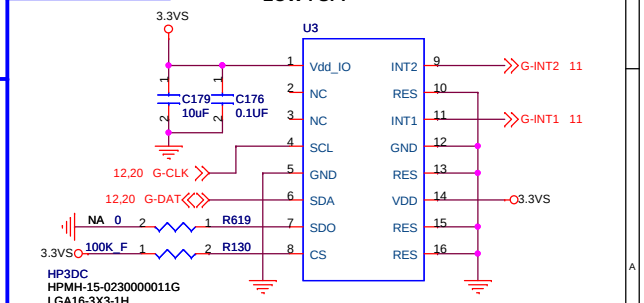


EMI



G-Sensor

Pin 7 = High : I2C
LOW : SPI

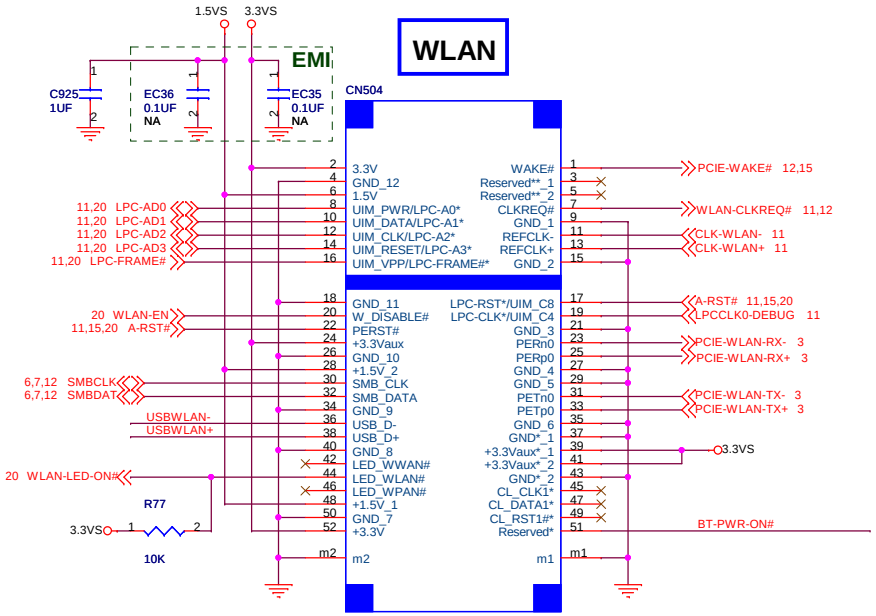


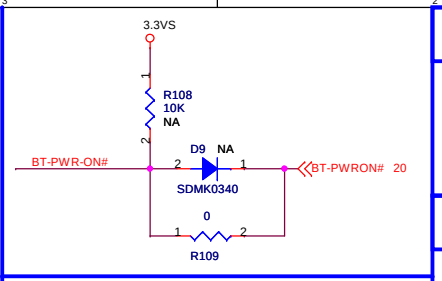
HP3DC Address:
0011 0010 : 0x32

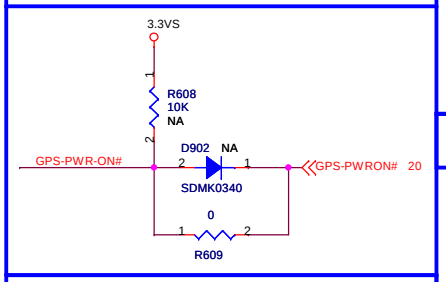
FLEX Computing

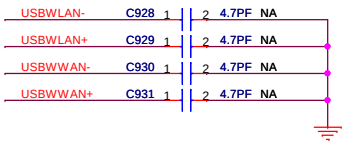
Project Name : H210UA1	Title : USB CONN/LED/WEBCAM/TP/G-SENSOR
Size : Custom	Document Number : HPMH-40GAB6000-C000
Rev : C	
Date: Monday, September 27, 2010	Sheet : 18 of 28

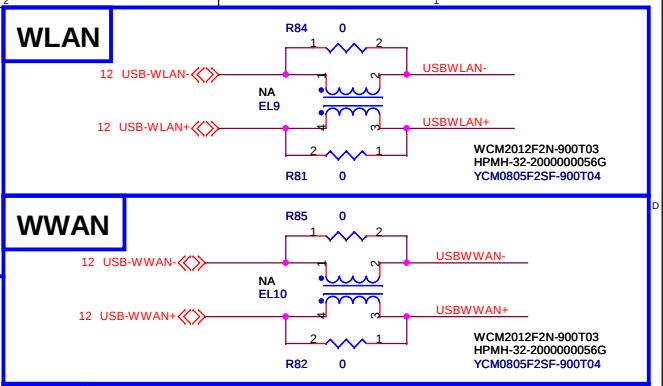
WLAN / WWAN

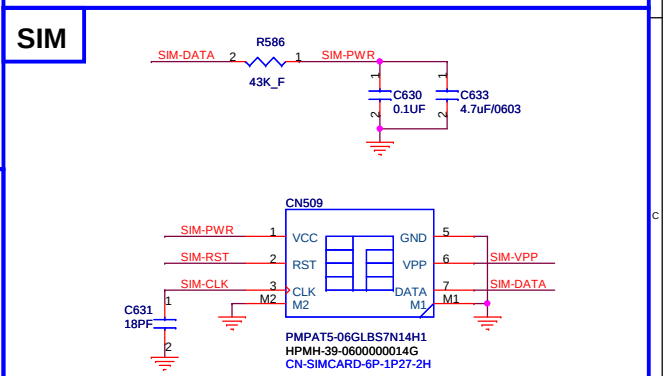


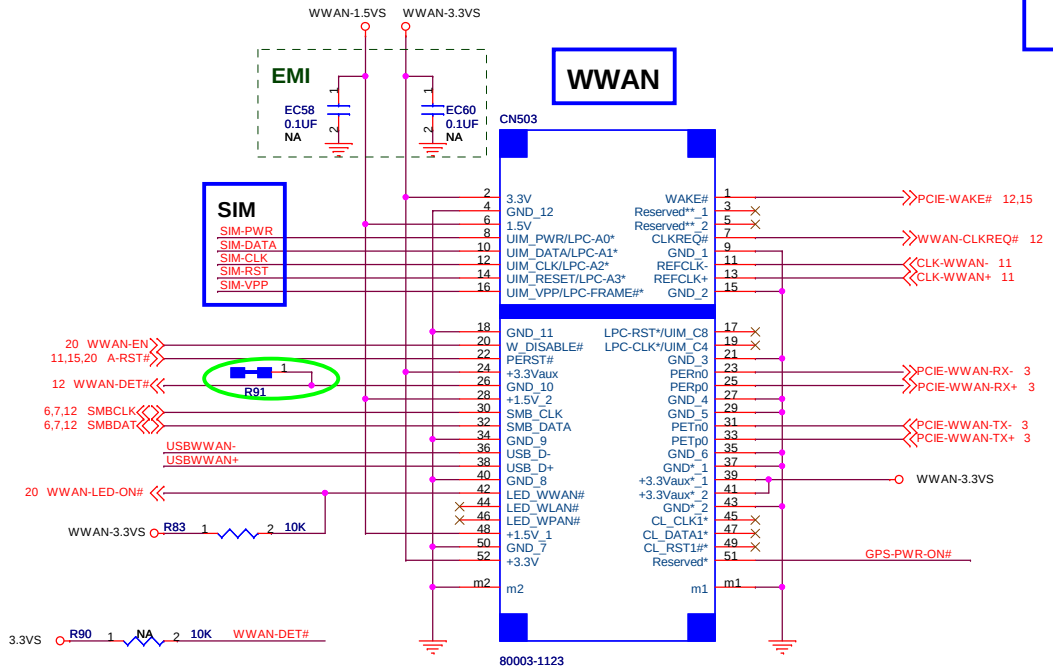


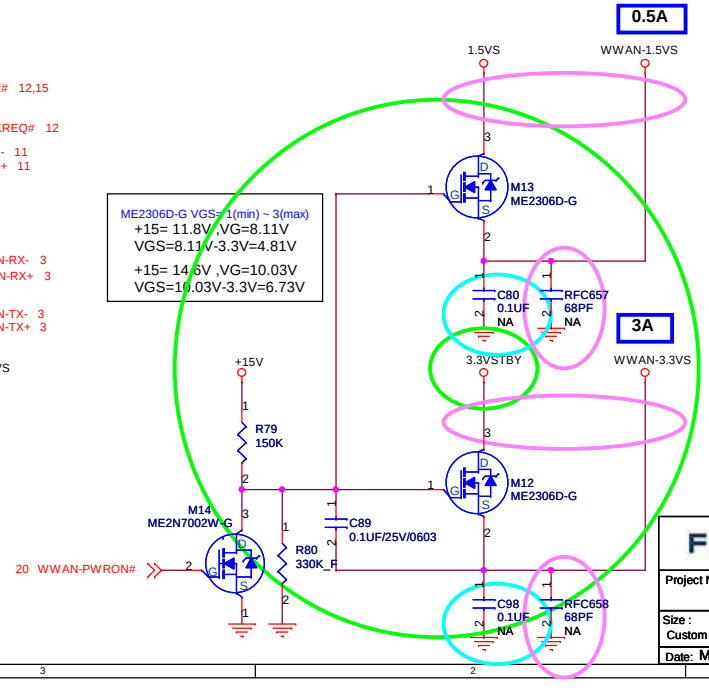


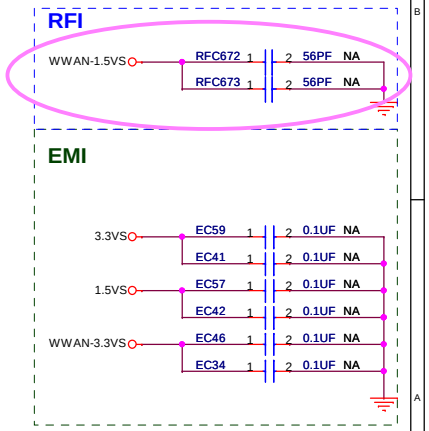












FLEXComputing

Project Name : H210UA1	Title : WLAN/WWAN/BT/SIM	
Size : Custom	Document Number : HPMH-40GAB6000-C000	Rev : C
Date: Monday, September 27, 2010	Sheet : 19 of 28	

KBC

pin 28	pin 29	KB LED status
H	L	White (RF-ON)
L	H	Amber (RF-OFF)

IT8502E

U503

SPI

KB & PP

SMB

PS/2

LPC

HW-PWRGD= ALL-PWRPG+35 ms

IT8518E
HPMH-10-0090000025G
LQFP128-15P7

AC-IN
Amber
Vf=2V If =20mA
White
Vf=3.3V If =20mA

Mute
Amber
Vf=2V If =30mA

Cap
Amber
Vf=3.15V If =20mA

RF
Amber
Vf=2.5V If =30mA
White
Vf=3.15V If =30mA

CN9
HPMH-38-00E0000089G
CN-FPC30-1P0-2H-RVS
50523-03001-001

EMI

RFI

SPI ROM (16M-bit)

U504
MX25L1606EM2I-12G
HPMH-14-0090000061G

Close to KBC

ALL-PWRGD form PWR IC
OD pin

FLEX Computing

Project Name :	H210UA1
Title :	ITE8502E/SPI ROM
Size :	Custom
Document Number :	HPMH-40GAB6000-C000
Rev :	C
Date:	Monday, September 27, 2010
Sheet :	20 of 28

Charger

CN-WAFER-7P-1P5-3H7
HPMH-39-0520000132G
CN510

JP525
PAD:3.5*1.3mm

VADP

PQ528
P-ch_ME4425-G

PQ529
P-ch_ME4425-G

19VADP

PR597
0.01_1%_3720

B+

PQ3
P-ch_ME4425-G
HPMH-18-0020000220G

PC642
0.1UF/25V/0603

PC934
0.1UF/25V

PR613
240K_F

PD504
LMDL914T1G

PR614
10K_F

PR615
100K_F

PR599

PR598

PR25
0_0603
NA

PC5
0.1UF/25V/0603

PR22
499_1%

PQ530
LMUN5312

PR616
47K_F

CHG-LED# 20
ACIN-LED# 20

PQ531
ME2N7002W-G

PR589
309K_1%

PR590

PC634
0.1UF/25V/0603

PC629
0.1UF/25V/0603

20,26 ADAPIN

PR618
10K_F

PR4
33K_1%

PC14
0.1UF/25V

24745AGND

3.3VSTBY

20 AC-OFF

PR617
0

PC935
47PF

AC-OFF :
0 = AC On
1 = AC Off

PR600
10K

D505
1N4148

AD-TYPE 20

PR602
10K

PC645
1500PF/50V/0402

PC644
NA
0.47UF/10V/0603

PR601
0

20 ADAPIN-SEL

ACIN-DETECT

PR5
33K_1%

24745VREF

3.3VSTBY

PR21
10K

PC7
1UF

24745AGND

20,26 ADAPIN

ACOK active HI when ACIN>0.6V

PU1

BQ24745

DCIN
ACIN
VDDSMB
ACOK
SDA
SCL
ICOUT
VREF
CE
EAO
EAI
FBO
CSSP
CSSN
VDDP
BOOT
UGATE
PHASE
LGATE
PGND
CSOP
CSON
VFB
ICREF
VICM
NC_1
NC_2
PADGND
GND

QFN28-19P7
HPMH-15-00C0000006G

Adapter rating (W)	AD_TYPE (V)
40W/RID=499Kohm	0.32V
65W/RID=383Kohm	0.484
90W/RID=294Kohm	0.621
120W/RID=221Kohm	0.809V
>120W	>0.97V

Adapter Voltage=18.5V
ACIN > 2.4V (Adapter Exist)
ACIN < 2.4V (Adapter non-Exist)

When VICM < ICREF -> ICOUT=Hi (In low power mode)
When VICM > ICREF -> ICOUT=Lo (over low power mode)

20 KBC-BATDAT
20 KBC-BATCLK
20 OVERPW#

24745VREF

PR17
10K

PC637
1UF

PR16

20 CHGA

PR13
1M

PR3
7.5K_F

PC1
2200PF

PC2
47PF

PR1
4.7K_F

PC3
150PF/25V/0402

PR2
200K_F

3/25 by Jason

ID0	Adapter(W)
L	65
H	40

PR19
11.5K_F

2475ICREF

KBC

PQ4
ME2N7002W-G

20 ADAP-ID

PD2
LMDL914T1G

PC17
1UF

PR18
0_0603

PC12
0.1UF/25V/0603

CGH-DH

CGH-CH

PQ507A
AO4932L/30V/SO-8
HPMH-18-0020000121G

AO4932L/30V/SO-8

PQ507B

PL525
FMJ-0630T-6R8-HF

PR585
0.01_1%_3720

PC9
4.7UF/25V/0805

PC10
4.7UF/25V/0805

PC11
4.7UF/25V/0805

EC23
0.1UF/25V/0603

EC647
4.7UF/25V/0805

EMI

BATA+

NA
ER588
0_0603

NA
EC635
470PF/50V

PR583

PR582

EC20
0.1UF/25V/0603

NA
PC8
4.7UF/25V/0805

PC4
4.7UF/25V/0805

PC13
4.7UF/25V/0805

EC649
4.7UF/25V/0805

PR587 0_0603

PC21
0.1UF/25V/0603

EC625
470PF/50V

24745AGND

PC15
0.1UF/25V/0603

PR24

PC16
0.1UF/25V/0603

PR12
1.3M_F

OVERPW#

PR6
38.3K_F

24745VREF

PR7
10K_F

Set low power mode point

Output adapter current

745VICM

PC6
100PF/50V/0402

Set ICREF and VICM comparator Hysteresis

To KBC_SMB
20 KBC-BATDAT
20 KBC-BATCLK

PR15
PR14
100_1%

To KBC_GPIO
20 BATID
20 BATTIN#

PR10
PR9
100_1%

3.3VSTBY
BATA+

JP1
PAD:3.5*1.3mm

PR8
20K_F

PR11
100K_F

CN508

BATDAT
BATCLK
BAT-IN#

EC13
EC14
EC18
EC19
47PF

EC636
0.1UF/25V/0402

C144EV-105A3-L
HPMH-39-0510000123G
POWERCONN-6DIP-2P0-3H65

EMI

ESDC7
NA

EC663
0.1UF/25V/0603

EC662
4.7uF/25V/0805

EC645
0.1UF/25V/0603

BAT-IN#

EZD1

LM3Z5V6T1G_5.6V

PZD1
PZD2

LM3Z5V6T1G_5.6V
LM3Z5V6T1G_5.6V

FLEX Computing

Project Name : H210UA1	Title : BATTERY CHARGER		
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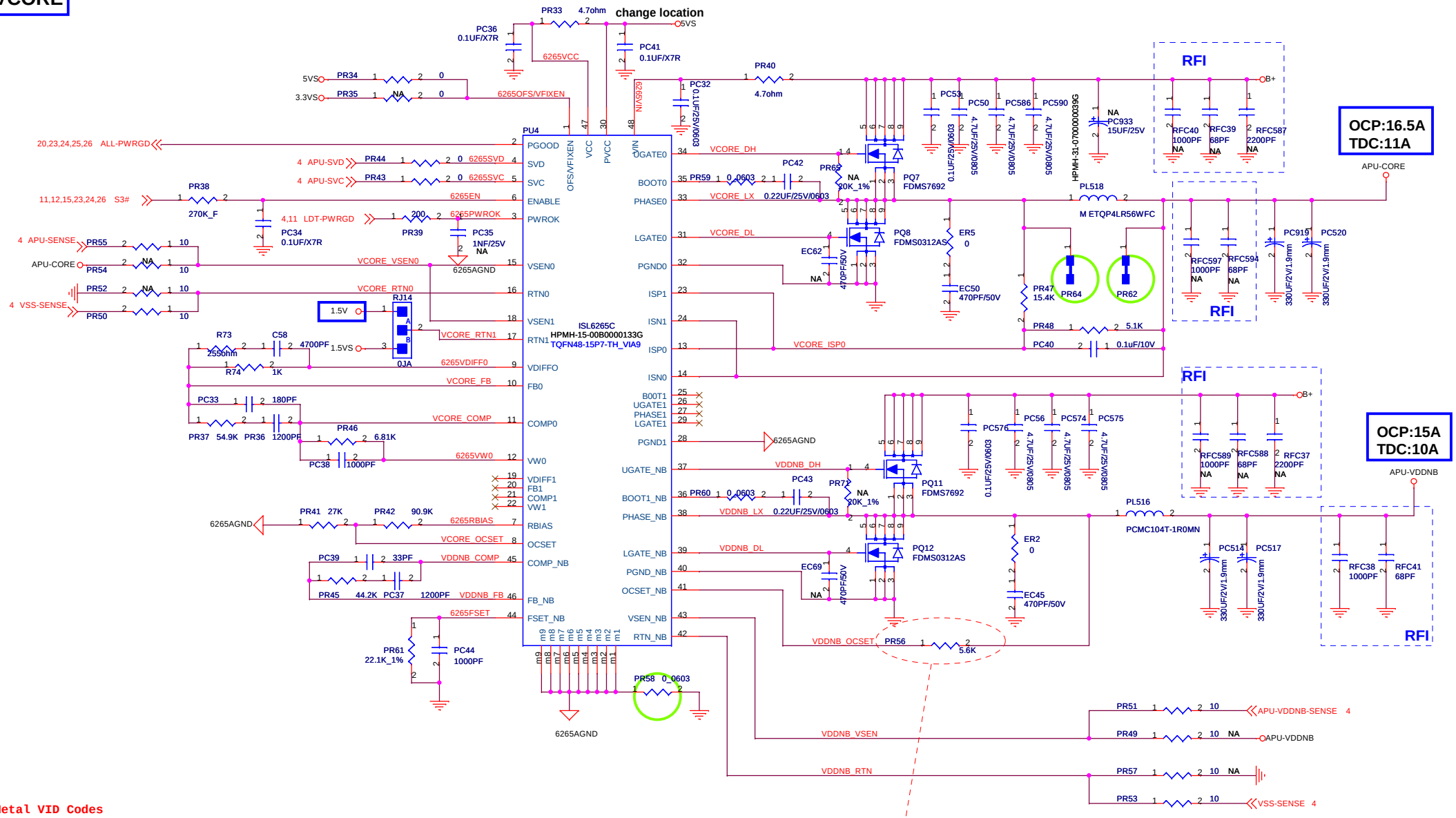
VCORE



Metal VID Codes

SVC	SVD	Output
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

VFIXEN VID Codes

SVC	SVD	Output
0	0	1.4
0	1	1.2
1	0	1.0
1	1	0.8

OFS/VFIXEN	Offset & Droop	SVI	VFIX
GND	0	0	X
+3.3V	X	X	0
+5V	X	0	X

FLEXComputing

Project Name : H210UA1	Title : APU-CORE/APU-VDDNB	
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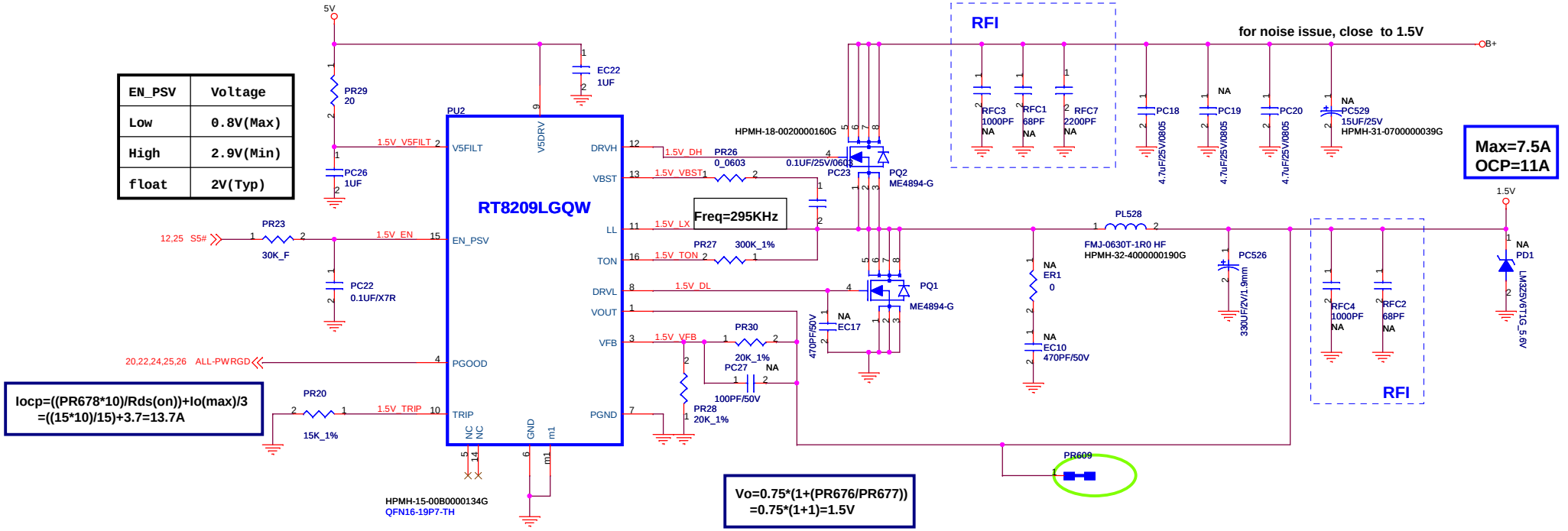
1.5VDDR



EN_PSV	Voltage
Low	0.8V(Max)
High	2.9V(Min)
float	2V(Typ)

0.75VS

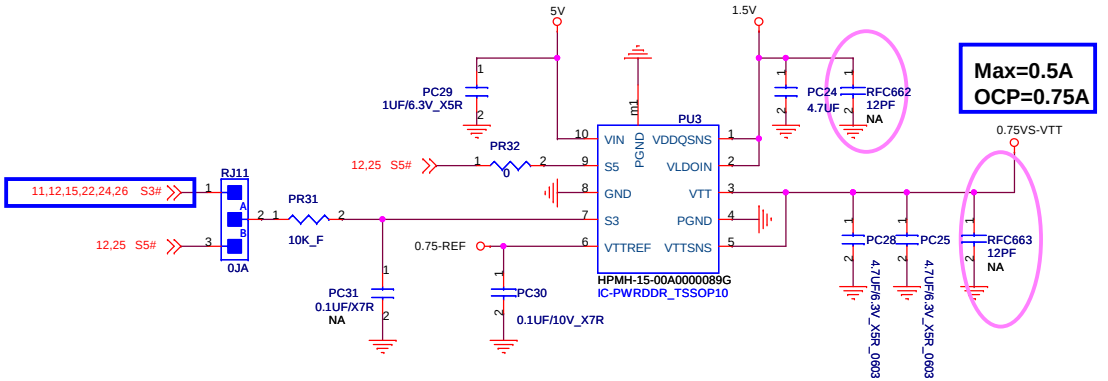


Table 1. S3 and S5 Control Table

STATE	S3	S5	VTT	VREF
Normal	Hi	Hi	1.25V/0.9V	1.25V/0.9V
Standby	Lo	Hi	12mV/6mV (High-Z)	1.25V/0.9V
Shutdown	Lo	Lo	0V (Discharge)	0V (Discharge)
Shutdown	Hi	Lo	0V (Discharge)	0V (Discharge)

FLEX Computing

Project Name : H210UA1	Title : 1.5V / 0.75VS-VTT	
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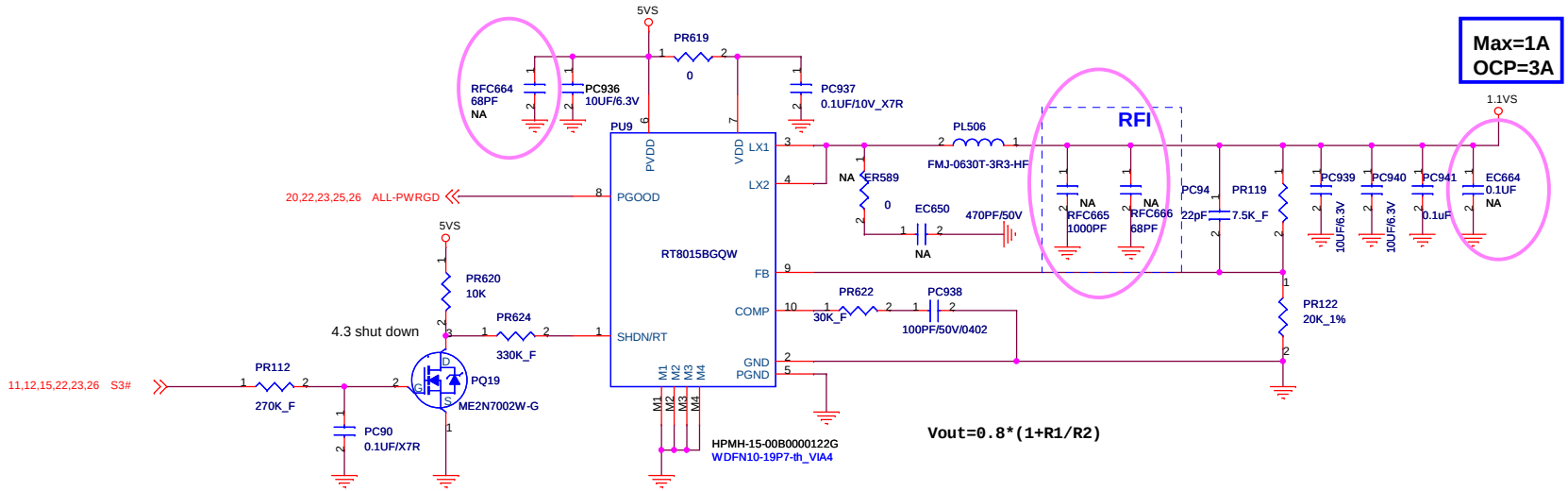
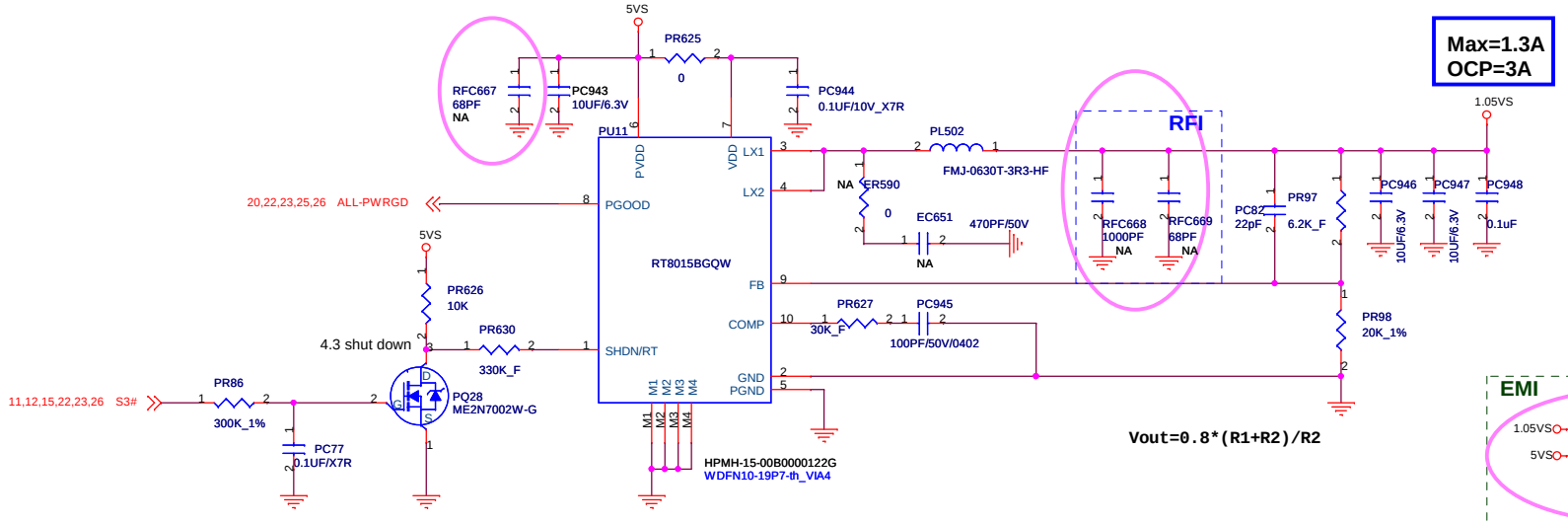
1.1VS



1.05VS



FLEX Computing

Project Name : H210UA1	Title : 1.1VS / 1.0VS	
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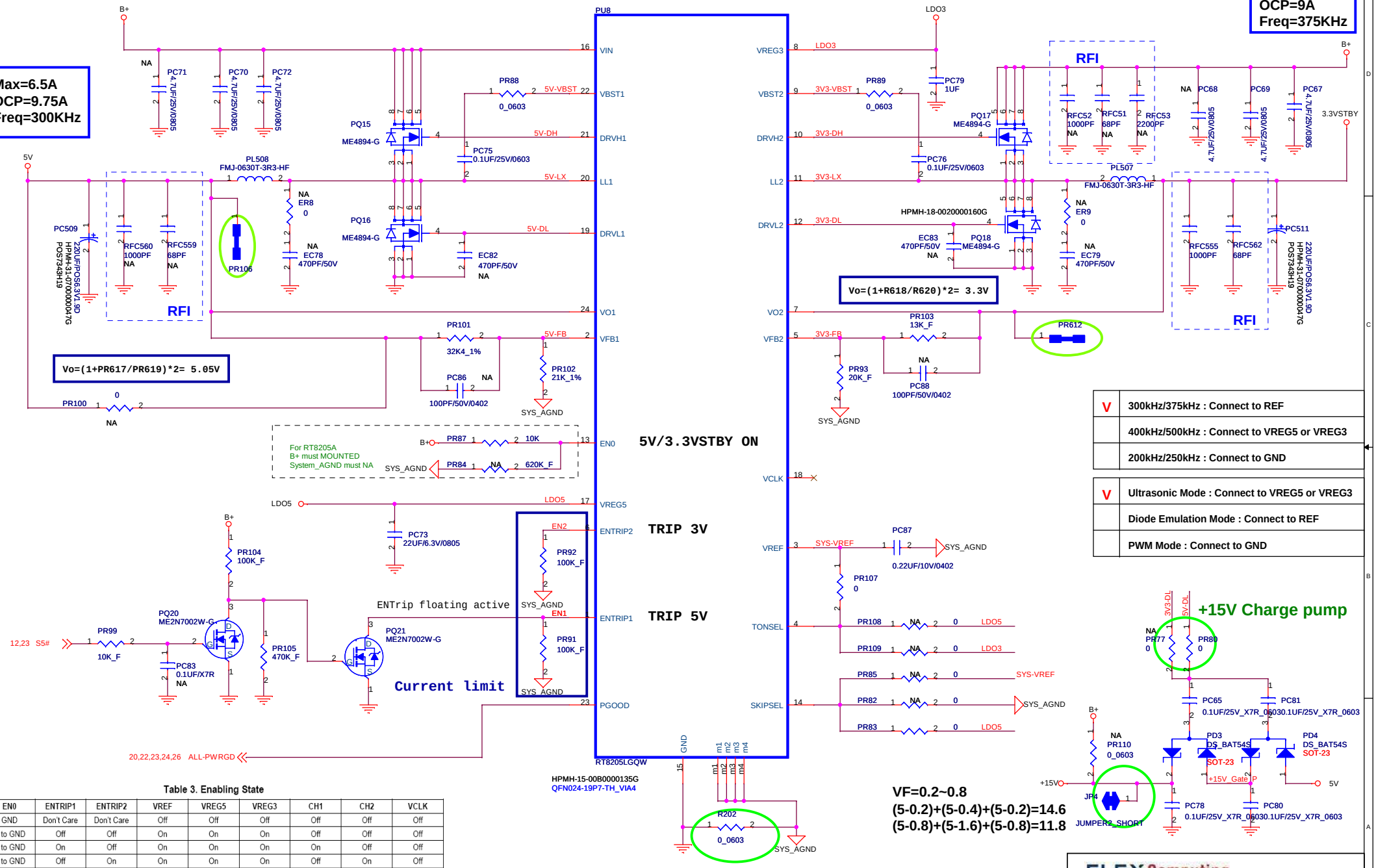
5V / 3.3VSTBY

Max=6.5A
OCP=9.75A
Freq=300KHz

Max=6A
OCP=9A
Freq=375KHz



V	300kHz/375kHz : Connect to REF
	400kHz/500kHz : Connect to VREG5 or VREG3
	200kHz/250kHz : Connect to GND

V	Ultrasonic Mode : Connect to VREG5 or VREG3
	Diode Emulation Mode : Connect to REF
	PWM Mode : Connect to GND

+15V Charge pump

VF=0.2~0.8
(5-0.2)+(5-0.4)+(5-0.2)=14.6
(5-0.8)+(5-1.6)+(5-0.8)=11.8

Table 3. Enabling State

EN0	ENTRIP1	ENTRIP2	VREF	VREG5	VREG3	CH1	CH2	VCLK
GND	Don't Care	Don't Care	Off	Off	Off	Off	Off	Off
R to GND	Off	Off	On	On	On	Off	Off	Off
R to GND	On	Off	On	On	On	On	Off	Off
R to GND	Off	On	On	On	On	Off	On	Off
R to GND	On	On	On	On	On	On	On	Off
Open	Off	Off	On	On	On	Off	Off	Off
Open	On	Off	On	On	On	On	Off	On
Open	Off	On	On	On	On	Off	On	Off
Open	On	On	On	On	On	On	On	On

FLEXComputing

Project Name : H210UA1		Title : 5V / 3.3VSTBY	
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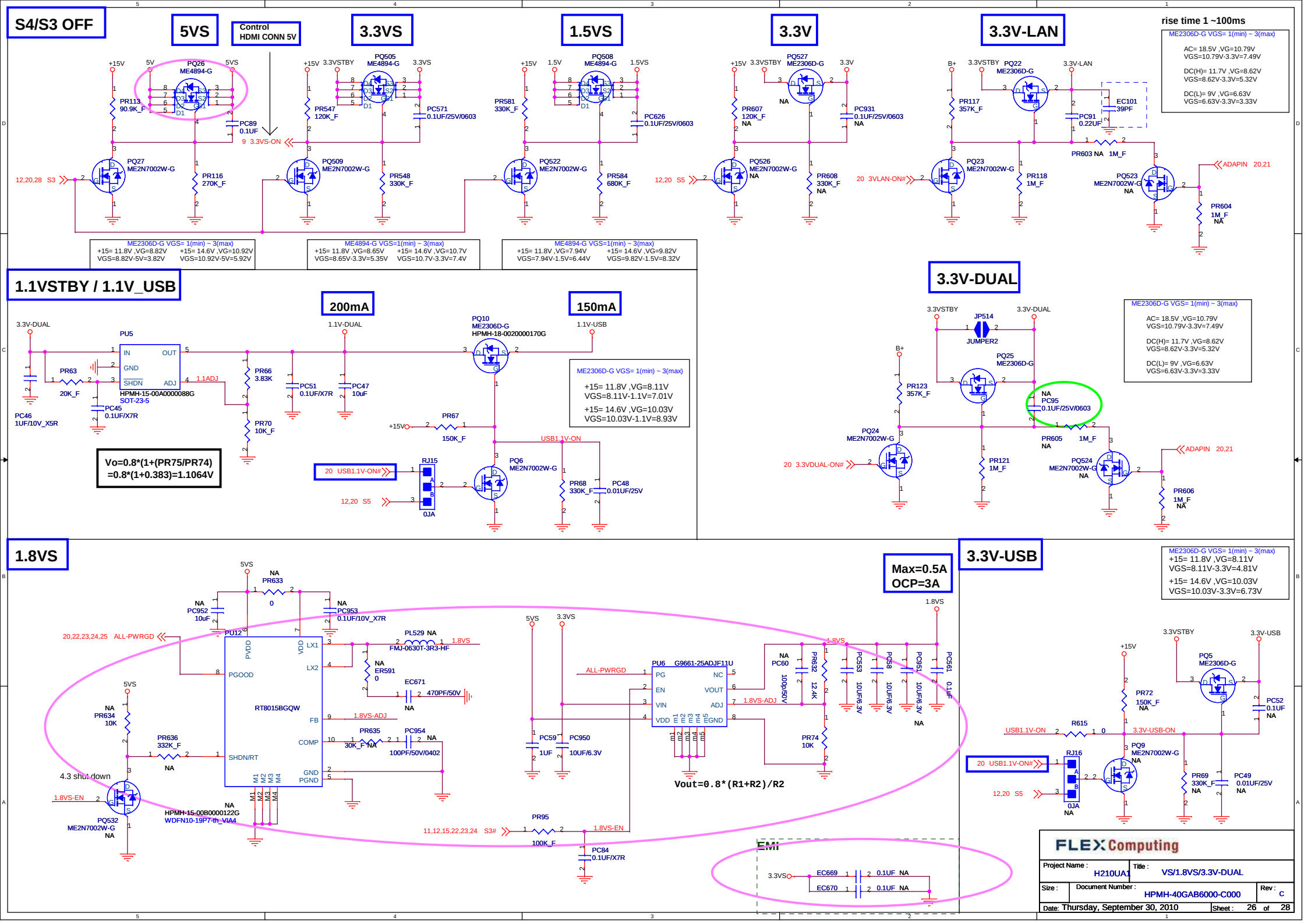
S4/S3 OFF
5VS
Control
HDMI CONN 5V
3.3VS
1.5VS
3.3V
3.3V-LAN
rise time 1 ~100ms
ME2306D-G VGS= 1(min) ~ 3(max)
AC= 18.5V ,VG=10.79V
VGS=10.79V-3.3V=7.49V
DC(H)= 11.7V ,VG=8.62V
VGS=8.62V-3.3V=5.32V
DC(L)= 9V ,VG=6.63V
VGS=6.63V-3.3V=3.33V
PQ26 ME4894-G
PR113 90.9K_F
PC89 0.1UF
9 3.3VS-ON
PQ27 ME2N7002W-G
PR116 270K_F
12,20,28 S3
PQ505 ME4894-G
PR547 120K_F
PC571 0.1UF/25V/0603
PQ509 ME2N7002W-G
PR548 330K_F
PQ508 ME4894-G
PR581 330K_F
PC626 0.1UF/25V/0603
PQ522 ME2N7002W-G
PR584 680K_F
12,20 S5
PQ527 ME2306D-G
PR607 120K_F
NA
PC931 0.1UF/25V/0603
PQ526 ME2N7002W-G
NA
PR608 330K_F
NA
20 3VLAN-ON#
PQ22 ME2306D-G
PR117 357K_F
EC101 39PF
PC91 0.22UF
PR603 NA 1M_F
PQ23 ME2N7002W-G
PR118 1M_F
PQ523 ME2N7002W-G
NA
PR604 1M_F
NA
ADAPIN 20,21
ME2306D-G VGS= 1(min) ~ 3(max)
+15= 11.8V ,VG=8.82V
VGS=8.82V-5V=3.82V
+15= 14.6V ,VG=10.92V
VGS=10.92V-5V=5.92V
ME4894-G VGS=1(min) ~ 3(max)
+15= 11.8V ,VG=8.65V
VGS=8.65V-3.3V=5.35V
+15= 14.6V ,VG=10.7V
VGS=10.7V-3.3V=7.4V
ME4894-G VGS=1(min) ~ 3(max)
+15= 11.8V ,VG=7.94V
VGS=7.94V-1.5V=6.44V
+15= 14.6V ,VG=9.82V
VGS=9.82V-1.5V=8.32V
1.1VSTBY / 1.1V_USB
200mA
150mA
3.3V-DUAL
PU5
HPMH-15-00A0000088G
SOT-23-5
PR63 20K_F
PC45 0.1UF/X7R
PC46 1UF/10V_X5R
PR66 3.83K
PR70 10K_F
PC51 0.1UF/X7R
PC47 10uF
1.1ADJ
1.1V-DUAL
PQ10 ME2306D-G HPMH-18-0020000170G
1.1V-USB
PR67 150K_F
+15V
USB1.1V-ON
20 USB1.1V-ON#
RJ15
0JA
12,20 S5
PQ6 ME2N7002W-G
PR68 330K_F
PC48 0.01UF/25V
ME2306D-G VGS= 1(min) ~ 3(max)
+15= 11.8V ,VG=8.11V
VGS=8.11V-1.1V=7.01V
+15= 14.6V ,VG=10.03V
VGS=10.03V-1.1V=8.93V
Vo=0.8*(1+(PR75/PR74)
=0.8*(1+0.383)=1.1064V
3.3V-DUAL
3.3VSTBY
JP514
JUMPER2
3.3V-DUAL
PQ25 ME2306D-G
PR123 357K_F
NA
PC95 0.1UF/25V/0603
PR605 NA 1M_F
PQ24 ME2N7002W-G
PR121 1M_F
20 3.3VDUAL-ON#
PQ524 ME2N7002W-G
NA
PR606 1M_F
NA
ADAPIN 20,21
ME2306D-G VGS= 1(min) ~ 3(max)
AC= 18.5V ,VG=10.79V
VGS=10.79V-3.3V=7.49V
DC(H)= 11.7V ,VG=8.62V
VGS=8.62V-3.3V=5.32V
DC(L)= 9V ,VG=6.63V
VGS=6.63V-3.3V=3.33V
1.8VS
Max=0.5A
OCP=3A
3.3V-USB
PU12 RT8015BGQW
PVDD
VDD
LX1
LX2
PGOOD
FB
COMP
SHDN/RT
GND
PGND
NA PR633 0
NA PC952 10uF
NA PC953 0.1UF/10V_X7R
20,22,23,24,25 ALL-PWRGD
PL529 NA
FMJ-0630T-3R3-HF
1.8VS
NA ER591 0
EC671 470PF/50V
NA
1.8VS-ADJ
PR635 30K_F NA
PC954 NA
100PF/50V/0402
PR636 332K_F
NA
NA PR634 10K
4.3 shut down
1.8VS-EN
PQ532 ME2N7002W-G
NA
NA HPMH-15-00B0000122G
WDFN10-19P7-th_VIA4
PU6 G9661-25ADJF11U
PG
EN
VIN
VDD
NC
VOUT
ADJ
GND
ALL-PWRGD
1.8VS-ADJ
NA PC60 100p/50V
PR632 12.4K
PR74 10K
PC59 1UF
PC950 10UF/6.3V
PC553 10UF/6.3V
PC558 10UF/6.3V
PC951 10UF/6.3V
NA
PC561 0.1uF
Vout=0.8*(R1+R2)/R2
PR95 100K_F
11,12,15,22,23,24 S3#
PC84 0.1UF/X7R
EMI
EC669 0.1UF NA
EC670 0.1UF NA
3.3VSTBY
3.3V-USB
PQ5 ME2306D-G
PR72 150K_F
NA
PC52 0.1UF
NA
R615 0
USB1.1V-ON
3.3V-USB-ON
PQ9 ME2N7002W-G
NA
20 USB1.1V-ON#
RJ16
0JA
NA
12,20 S5
PR69 330K_F
NA
PC49 0.01UF/25V
NA
ME2306D-G VGS= 1(min) ~ 3(max)
+15= 11.8V ,VG=8.11V
VGS=8.11V-3.3V=4.81V
+15= 14.6V ,VG=10.03V
VGS=10.03V-3.3V=6.73V
FLEX Computing
Project Name : H210UA1
Title : VS/1.8VS/3.3V-DUAL
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FID

FID4 *FIDUCIAL NC, NO CONNECT TO ANY.

FID1 *FIDUCIAL NC, NO CONNECT TO ANY.

FID501 *FIDUCIAL NC, NO CONNECT TO ANY.

FID502 *FIDUCIAL NC, NO CONNECT TO ANY.

FID503 *FIDUCIAL NC, NO CONNECT TO ANY.

FID500 *FIDUCIAL NC, NO CONNECT TO ANY.

FID2 *FIDUCIAL NC, NO CONNECT TO ANY.

FID3 *FIDUCIAL NC, NO CONNECT TO ANY.

Heatsink x4

H8 PTH6_4.7_6 THR236_185
H9 PTH6_4.7_6 THR236_185
H14 PTH6_4.7_6 THR236_185
H15 PTH6_4.7_6 THR236_185

Mini Card x4

H11 NUT_MINIPCIE THR276_181
H10 NUT_MINIPCIE THR276_181
HPMH-75110-0000050G
H17 NUT_MINIPCIE THR276_181
H18 NUT_MINIPCIE THR276_181

SB x2

H20 NUT_SB BRKT THR276_181 NA
H23 NUT_SB BRKT THR276_181 NA

MB x18

H1 PTH8_5.5_8 THR315_217
H3 PTH8_5.5_8 THR315_217
H2 PTH8_5.5_8 THR315_217
H5 PTH8_2.8_7 THR315B276_110
H4 PTH8_2.8_7 THR315B276_110
H7 PTH8_2.8_7 THR315B276_110
H12 PTH8_2.8_7 THR315B276_110
H13 PTH8_2.8_7 THR315B276_110 AG
H26 PTH8_2.8_8 THR315_110
H27 PTH8_2.8_8 THR315_110
H19 PTH7_2.8_7 THR276_110
H24 PTH7_2.8_7 THR276_110
H21 PTH8_2.8_8 THR315_110
H22 PTH8_2.8_8 THR315_110
H25 PTH8_2.8_8 THR315_110
H28 PTH8_2.8_8 THR315_110
H16 NPTH0_2.2_0 NPTH087
H6 NPTH8_0_0 PAD315
H29 NPTH0_3x2.2_0 NPTH118X087

030 list

Type	Q'ty	P/N	Description
CPU Support	1	HPMH-B2985120G00001	BRKT CPU SUPPORT G AB600
SCREW	2	HPMH-7030730000069G	SCREW PH M1.6*0.35 L3 D3.6 T0.8 G AB600
RTC BATTERY CABLE	1	HPMH-B2985050G00001	CABLE ASSY RTC BATTERY G AB600
MYLAR	1	HPMH-B2985111G00001	MYLAR CPU MB TOP G AB600
MYLAR	1	HPMH-B2985111G00003	MYLAR FAN MB BOT G AB600
MYLAR	1	HPMH-B2985111G00004	MYLAR IO L MB BOT G AB600
MYLAR	1	HPMH-B2985111G00005	MYLAR IO R MB TOP G AB600
MYLAR	1	HPMH-B2985111G00006	MYLAR KB MB TOP G AB600
MYLAR	1	HPMH-B2985111G00008	MYLAR SB MB BOT G AB600
MYLAR	1	HPMH-B2985111G00010	MYLAR WWAN MB BOT G AB600
KAPTON	1	HPMH-B2985111G00035	KAPTON CPU AMD G AB600
KAPTON	1	HPMH-B2985111G00044	KAPTON FOR SB G AB600
SPONGE	2	HPMH-B2985111G00037	SPONGE L5.5W4H3 G AB600
SPONGE	4	HPMH-B2985111G00045	SPONGE L4.8*W4*H2.55 G AB600
GASKET	1	HPMH-B2985111G00048	GASKET W8*H1*L30 G AB600
GASKET	1	HPMH-B2985111G00049	GASKET W5*H0.7*L25 G AB600
GASKET	1	HPMH-B2985111G00050	GASKET W3*H1*L25 G AB600
CONDUCTIVE TAPE	1	HPMH-B2985111G00039	CONDUCTIVE TAPE FOR HDMI G AB600
CONDUCTIVE TAPE	1	HPMH-B2985111G00040	CONDUCTIVE TAPE W7*L12 G AB600
CONDUCTIVE FABRIC	2	HPMH-B2985111G00041	CONDUCTIVE FABRIC W7*T0.25*L10 G AB600
CONDUCTIVE TAPE	1	HPMH-B2985111G00042	CONDUCTIVE TAPE W6*L26 G AB600
RUBBER	2	HPMH-B2985111G00055	RUBBER FOR MB TOP G AB600

Normal short list

Location	Footprint
ER10 ER11 ER12 ER13 ER14 ER15 ER16 ER17 PR16 PR62 PR64 PR582 PR583 PR590 PR598 PR599 PR609 R91 R175 R205 R208 R209 R212 R218 R562 R571 R604 R605 R607 R612 R613 R614	PAD0402-SHORT5

Location	Footprint
PR24 PR106 PR612	PAD0402-SHORT
ER3 ER4 ER6 ER7	PAD0603-SHORT
JP4	PAD-JUMPER-SHORT

FLEX Computing

Project Name : H210UA1	Title : SCREW/SPRING/ESD	
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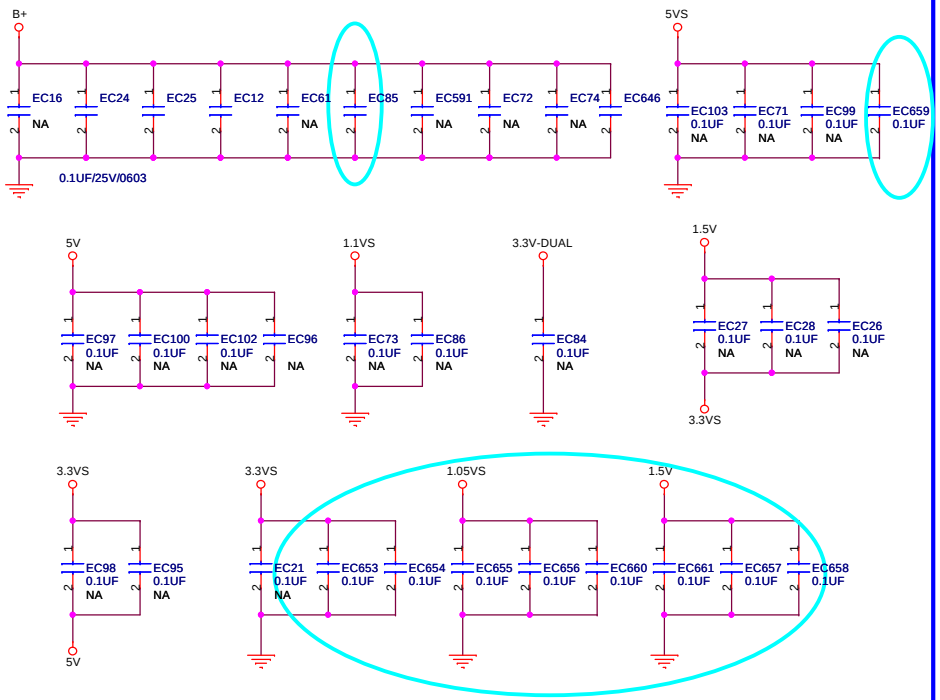
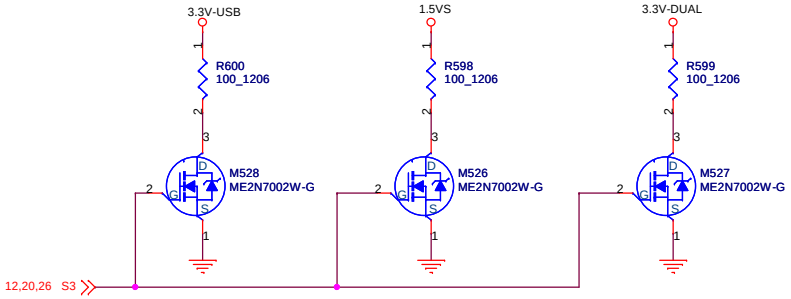
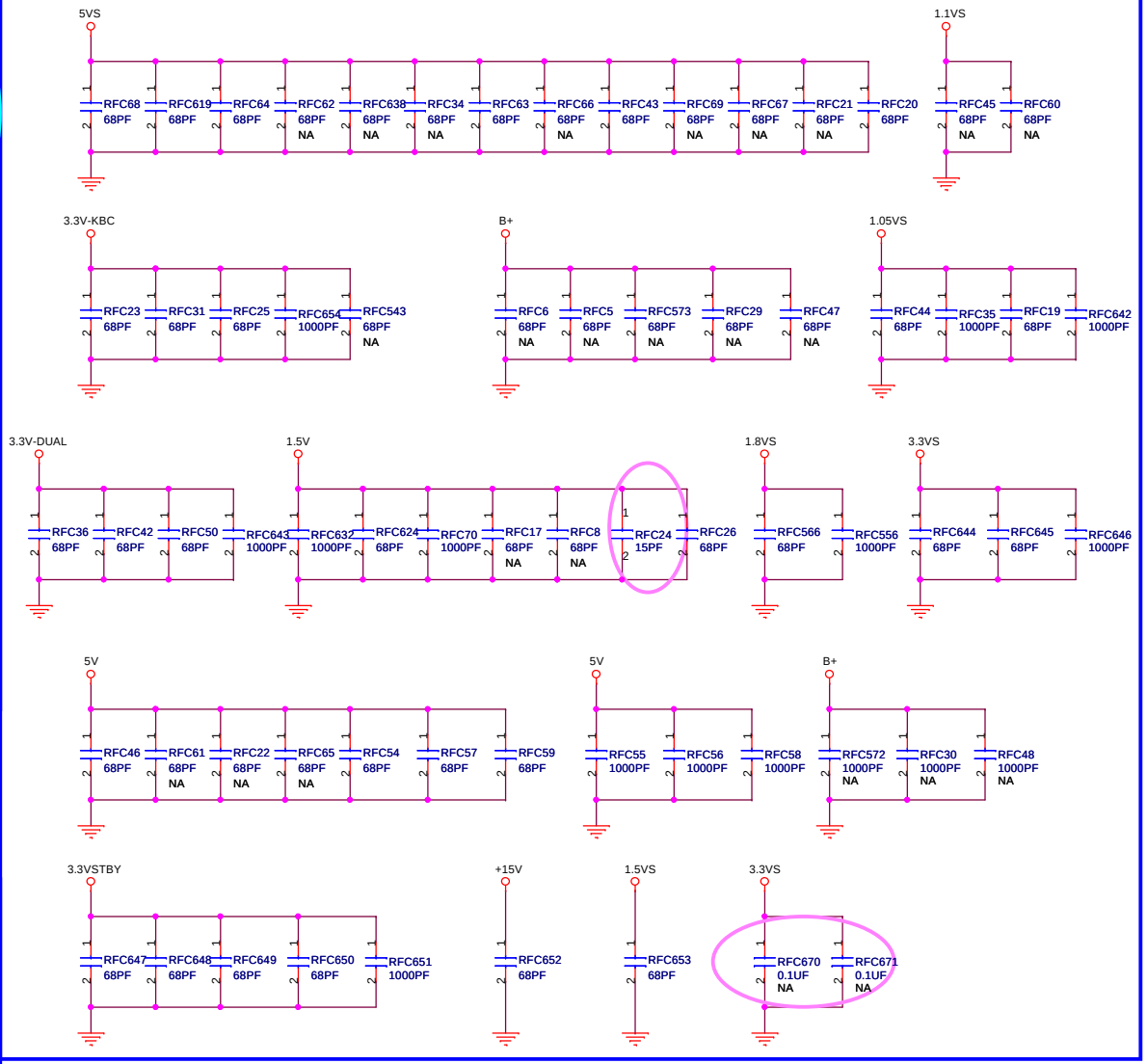
EMI Caps



Discharge



RFI Caps



FLEX Computing

Project Name : H210UA1	Title : EMI/RFI/DISCHARGE	
Size :	Document Number : HPMH-40GAB6000-C000	Rev : C
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