

**Project Name : SFBW01**

**Platform : Braswell(For Valleyview-D/I/M System On Chip)**

## PAGE CONTENT

1	INDEX
2	SYSTEM BLOCK
3	POWER DIAGRAM
4	SEQUENCE
5	EC GPIO Table
6	CPU-DDR
7	CPU-DISPLAY
8	CPU-CPU-SATA/PCIE/SPI ROM
9	CPU-USB
10	CPU GPIO and I2C
11	CPU POWER1
12	CPU POWER2
13	CPU VCC
14	DDR3L SODIMM0
15	LVDS/eDP CONN
16	EC ITE8528
17	HDD/ODD/MINI CARD
18	HDMI CONN
19	LAN/CARD READER /15DB
20	CODEC(ALC269Q)/INT MIC/SPKR
21	EXT_MIC/C_PAD/FAN/G-SEN
22	DC IN/TPM/EXT PORT/D-Resis
23	CPU CORE (OZ8271)
24	VGG_Core (OZ8271)
25	1.05VA/+5VA (OZ8153)
26	3.3VA/VCC SW
27	1.8VA/1.35/VTT
28	CHARGER(OZ8690)
29	TP/LED
30	USB HUB/USB CONN
31	HIGH-SPEED CAP

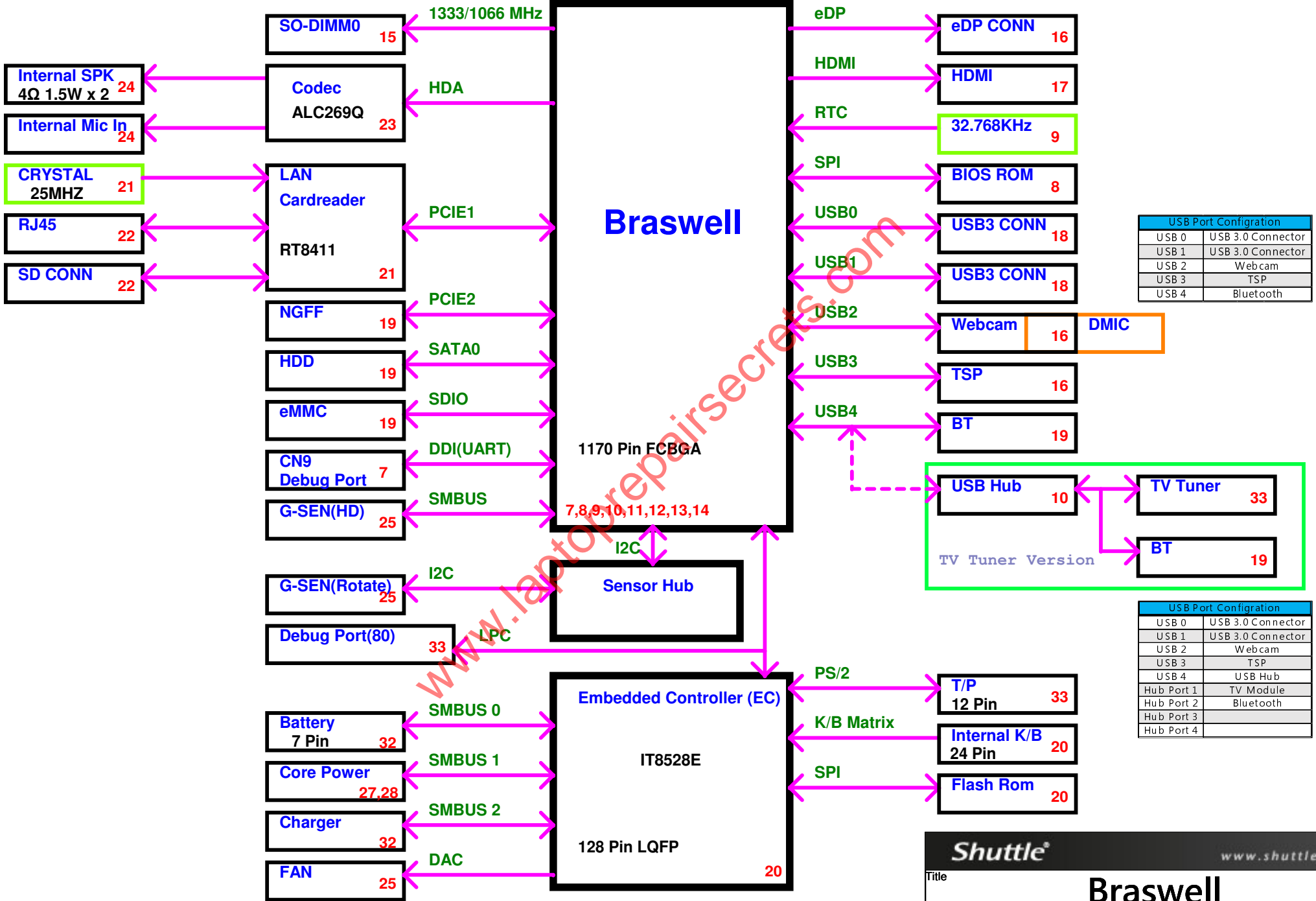
## M/B Schematic Version Change List

[illegible]

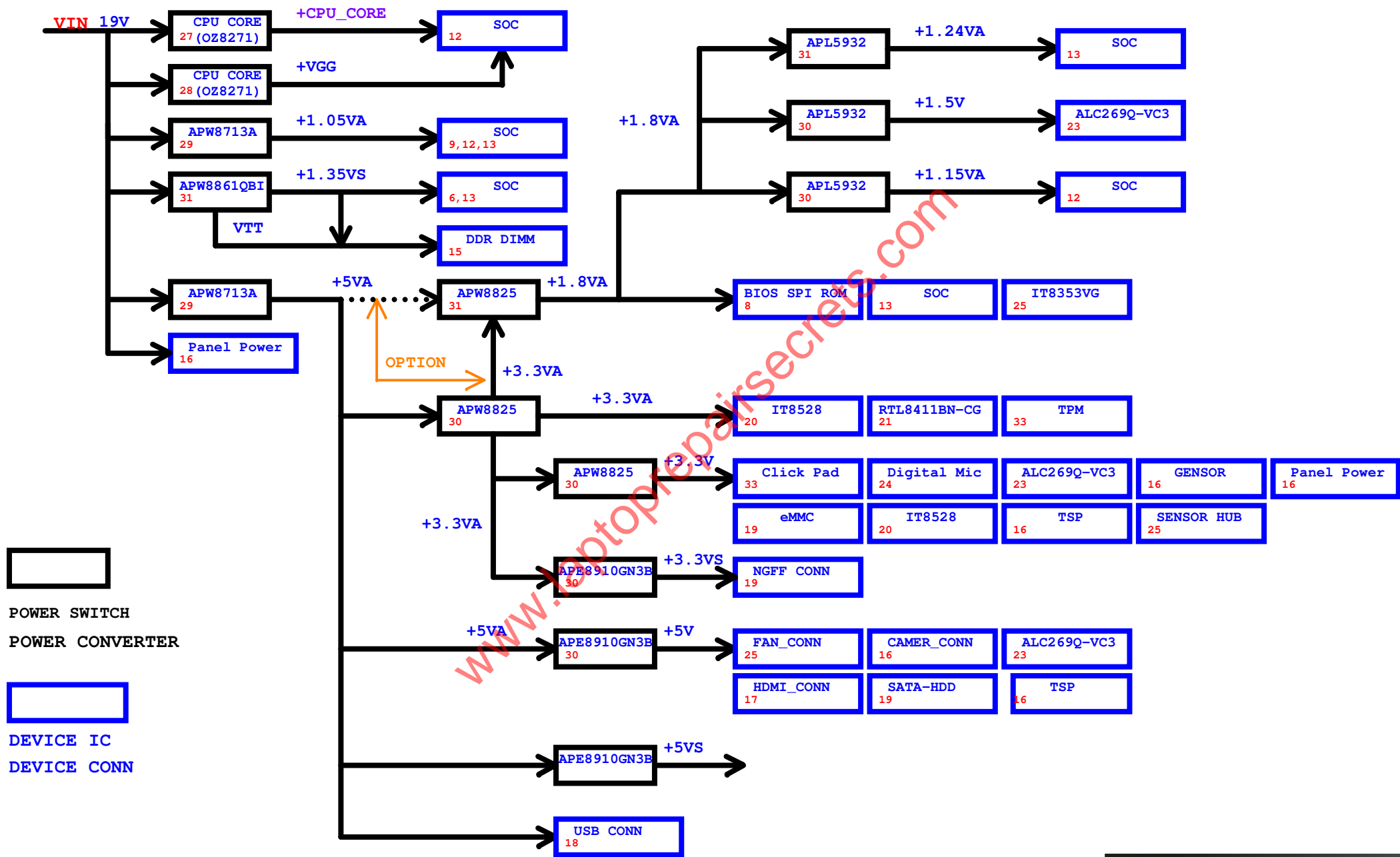
## Daughter Board Schematic Version Change List

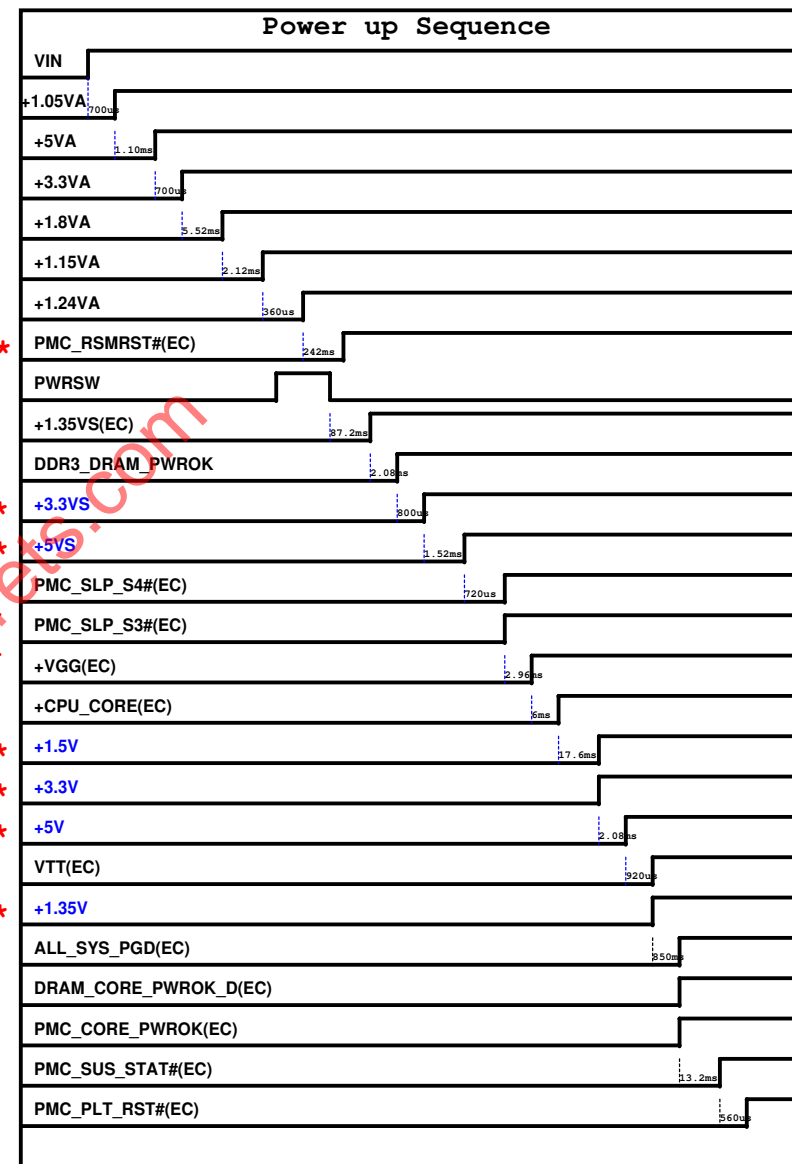
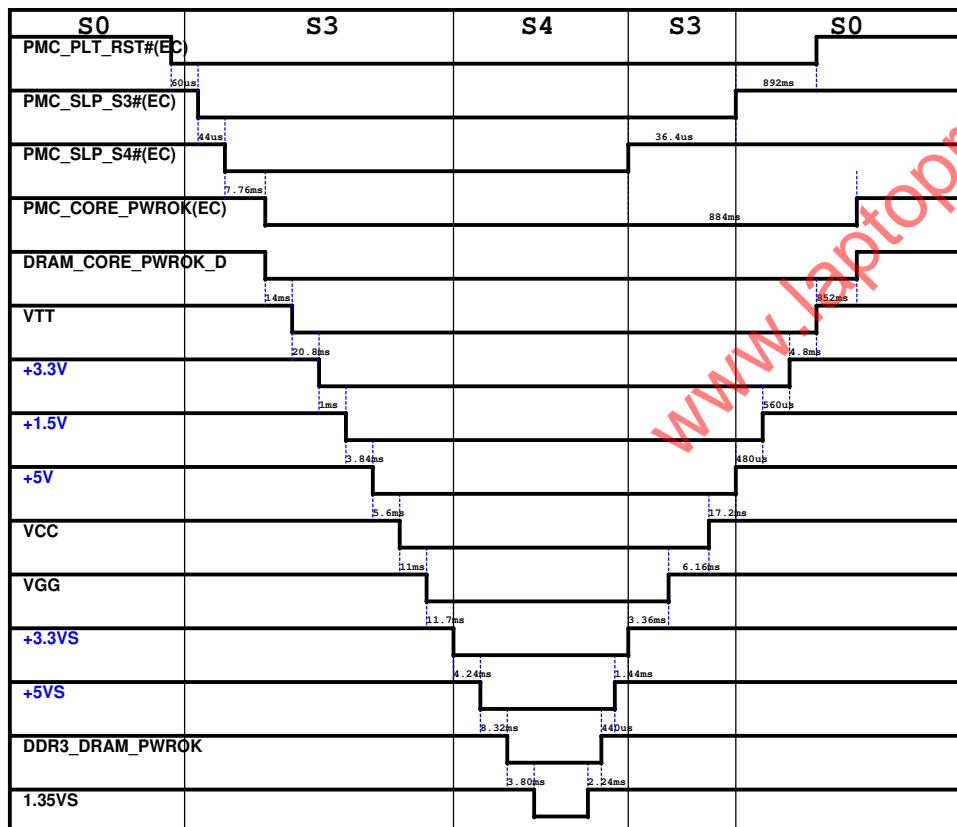
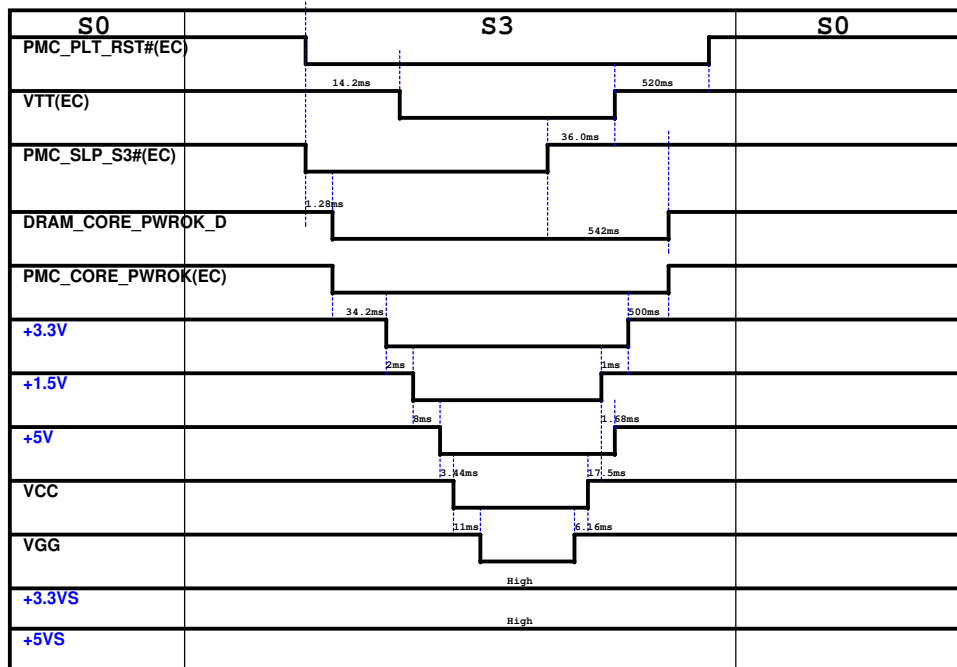
[illegible]

SYSTEM BLOCK DIAGRAM



POWER BLOCK DIAGRAM





- \* EC Control Pin (O/P)
- \*\* EC Control Pin (I/P)
- \*\*\* Add test item

EC GPIO Table

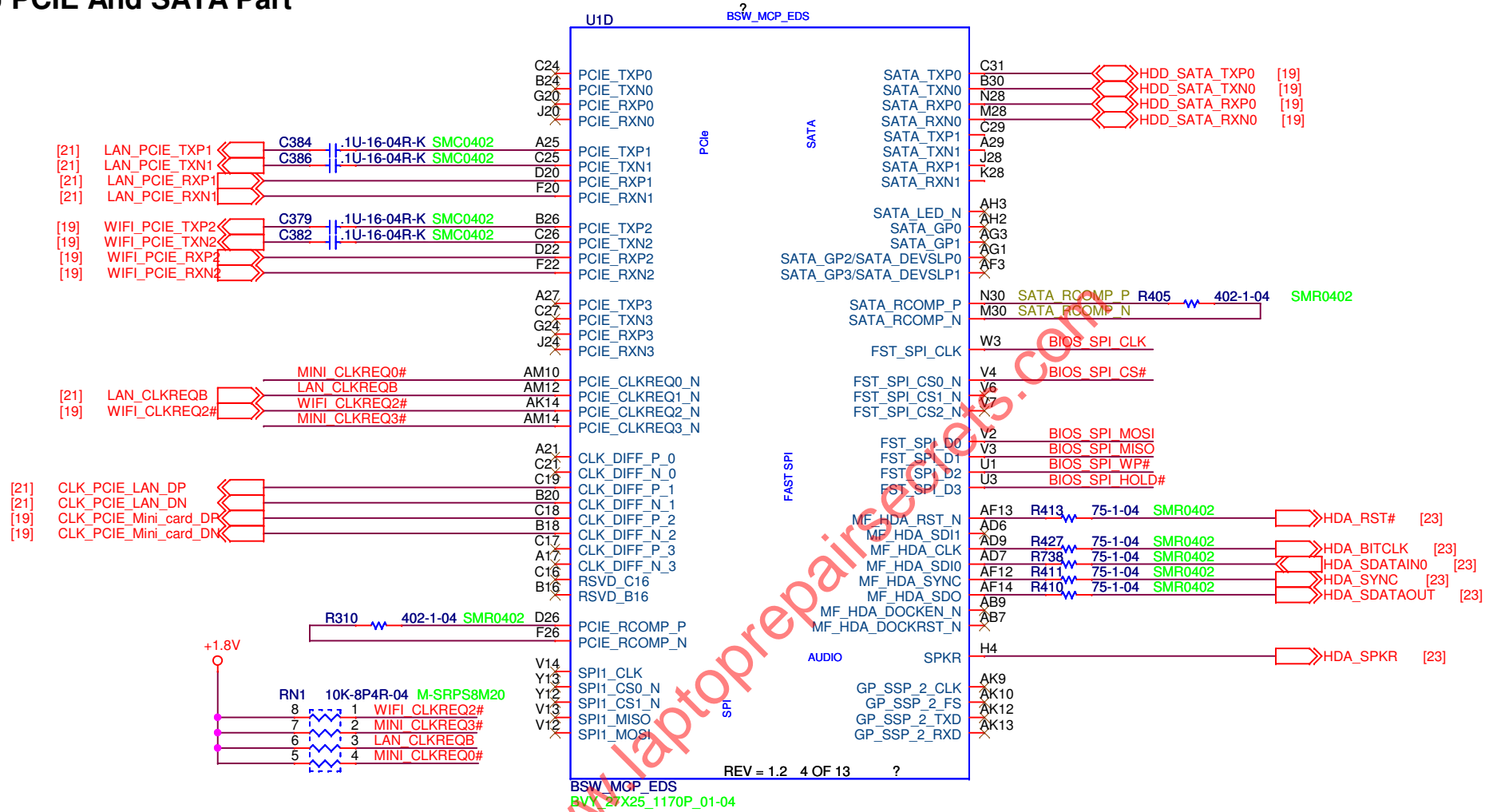
Port	PIN	Pin Name	Net Name	I/O	PU/PD
Port.A	A0	24	PWM0/GPA0(Up)		
	A1	25	PWM1/GPA1(Up)	BATT_VA_OFF#	O PD
	A2	28	PWM2/GPA2(Up)	BT_L_BEEP	O NC
	A3	29	PWM3/GPA3(Up)	OZ8690_CEN	O NC
	A4	30	PWM4/GPA4(Up)	+1.8V_ON	O NC
	A5	31	PWM5/GPA5(Up)	SENBAT_V	O PD
	A6	32	PWM6/SSCK/GPA6(Up)	PM_C_RSM_RST#	O PD
Port.B	B0	108	RXD/SIN0/GPB0(Up)	PM_SLP_S4#	I PU
	B1	109	TXD/SOUT0/GPB1(Up)	PM_SLP_S3#	I PU
	B2	123	CTX0/TMA0/GPB2(Dn)	CPU_BL_ON_RTD_DET	I PU
	B3	110	SMCLK0/GPB3(X)	BAT_SMBCLK	O NC
	B4	111	SMDAT0/GPB4(X)	BAT_SMBDAT	IO PU
	B5	126	GA20/GPB5(X)	RTC_RST	O PD
	B6	4	KBRST#/GPB6(X)	+3.3V	I PU
Port.C	B7	112	RING#/PWRFAIL#/CK32KOUT/LPCRST#/GPB7(Dn)	SAFETY_PROTECT	O PD
	C0	119	CRX0/GPC0(Dn)	LAN_PWR_ON	O NC
	C1	115	SMCLK1/GPC1(X)	SMB_CLK_EC	O PU
	C2	116	SMDAT1/GPC2(X)	SMB_DATA_EC	IO PU
	C3	56	KSO16/SMOSI/GPC3(Dn)		
	C4	120	TMR10/WUI2/GPC4(Dn)		
	C5	57	KSO17/SMISO/GPC5(Dn)	1.5V_3.3V_5V_ON	O NC
Port.D	C6	124	TMR11/WUI3/GPC6(Dn)	PANEL_3.3V_ON	O NC
	C7	16	PWUREQ#/BBO/SMCLK2ALT/GPC7(Up)	+1.35VS_ON	O NC
	D0	18	RI1#/WUI0/GPD0(Up)	ADAP_IN	I PD
	D1	21	RI2#/WUI1/GPD1(Up)	PWRBTN#	O NC
	D2	22	LPCRST#/WUI4/GPD2(Up)	PLT_RST#	I PU
	D3	23	ECSCI#/GPD3(Up)	SM_C_WAKE_SCI#	O NC
	D4	15	ECSMI#/GPD4(Up)	EC_EXTSMI#	O PU
Port.E	D5	33	GINT/CTS0#/GPD5(Up)	CPU_LCDVDD_EN_EC_DET	I PU
	D6	47	TACH0A/GPD6(Dn)	FAN_RPM	I NC
	D7	48	TACH1A/TMA1/GPD7(Dn)	PWR_USB#	O PU
	E0	19	L80HLAT/BAO/WUI24/GPE0(Dn)	LID#	I PU
	E1	82	EGAD/WUI25/GPE1(Dn)	+1.05VA_ON	O NC
	E2	83	EGCS#/WUI26/GPE2(Dn)	ALL_SYS_PGD	O NC
	E3	84	EGCLK/WUI27/GPE3(Dn)	VCORE_ON	O NC
Port.F	E4	125	PWRSW/GPE4(Up)	PWRSW	I PU
	E5	35	RTS1#/WUI5/GPE5(Dn)	LVDS_VIN	O NC
	E6	17	LPCPD#/WUI6/GPE6(Dn)	WLAN_ON	O PD

Port	PIN	Pin Name	Net Name	I/O	PU/PD
Port.F	F0	85	PS2CLK0/TMB0/GPF0(Up)		
	F1	86	PS2DAT0/TMB1/GPF1(Up)	TXE_DISABLE	O NC
	F2	87	PS2CLK1/DTR0#/GPF2(Up)	BT_ON	O PU
	F3	88	PS2DAT1/RTS0#/GPF3(Up)		
	F4	89	PS2CLK2/WUI20/GPF4(Up)	TP_CLK	O NC
	F5	90	PS2DAT2/WUI21/GPF5(Up)	TP_DATA	IO NC
	F6	117	PECI/SMCLK2/WUI22/GPF6(Up)	CHG_SMCLK	O NC
Port.G	F7	118	SMDAT2/WUI23/GPF7(Up)	CHG_SMDATA	IO NC
	G0	106	SSCE1#/GPG0(X)		
	G1	107	DTR1#/SBUSY/GPG1/ID7(Dn)	+3.3VS_5VS_ON	O NC
	G2	100	SSCE0#/GPG2(X)		
Port.H	G6	104	DSR0#/GPG6(X)	WEBCAM_ON	O NC
	H0	93	CLKRUN#/WUI16/GPH0/ID0(Dn)	PLATFORM_ID1	I PD
	H1	94	CRX1/WUI17/SIN1/SMCLK3/GPH1/ID1(Dn)	PID_1_CHG_R_LED	O NC
	H2	95	CTX1/WUI18/SOUT1/GPH2/SMDAT3/ID2(Dn)	PID_2_PWR_LED	O NC
	H3	96	HSCE#/WUI19/GPH3/ID3(Dn)	VGG_ON	O NC
	H4	97	HSCK/GPH4/ID4(Dn)	PLATFORM_ID2	I PD
	H5	98	HMISO/GPH5/ID5(Dn)	PLATFORM_ID3	I PD
Port.I	H6	99	HMO5I/GPH6/ID6(Dn)	eMMC_RST	O PU
	I0	66	ADC0/GPI0(X)	PLATFORM_ID4	I PD
	I1	67	ADC1/GPI1(X)	Angle_ID1	I PU
	I2	68	ADC2/GPI2(X)	PCE_WAKE#	I PU
	I3	69	ADC3/GPI3(X)	Angle_ID2	I NC
	I4	70	ADC4/WUI28/GPI4(X)	BAT_I	I NC
	I5	71	ADC5/DCD1#/WUI29/GPI5(X)	BATT_TEMP	I PU
Port.J	I6	72	ADC6/DSR1#/WUI30/GPI6(X)	ADAPTOR_I	I NC
	I7	73	ADC7/CTS1#/WUI31/GPI7(X)	BAT_V	I PU
	J0	76	TACH2/GPJ0(X)	EC_BL_ON	O NC
	J1	77	GPJ1(X)	EC_PROCHOT	O PD
	J2	78	DAC2/TACH0B/GPJ2(X)	FAN_CTRL0	O NC
	J3	79	DAC3/TACH1B/GPJ3(X)	VTT_ON	O NC
	J4	80	DAC4/DCD0#/GPJ4(X)	CHG_REF	O NC
Port.M	J5	81	DAC5/RIG0#/GPJ5(X)		O NC
	M.0	10	LAD0/GPM0(X)	LPC_AD0_EC	IO NC
	M.1	9	LAD1/GPM1(X)	LPC_AD1_EC	IO NC
	M.2	8	LAD2/GPM2(X)	LPC_AD2_EC	IO NC
	M.3	7	LAD3/GPM3(X)	LPC_AD3_EC	IO NC
	M.4	13	LPCLK/GPM4(X)	CLK_EC_LPC	I NC
	M.5	6	LFRAME#/GPM5(X)	LPC_FRAME#	I NC

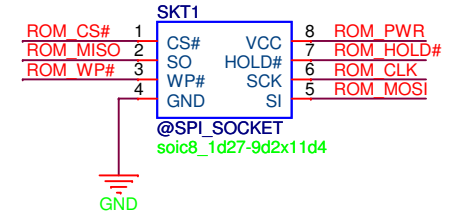
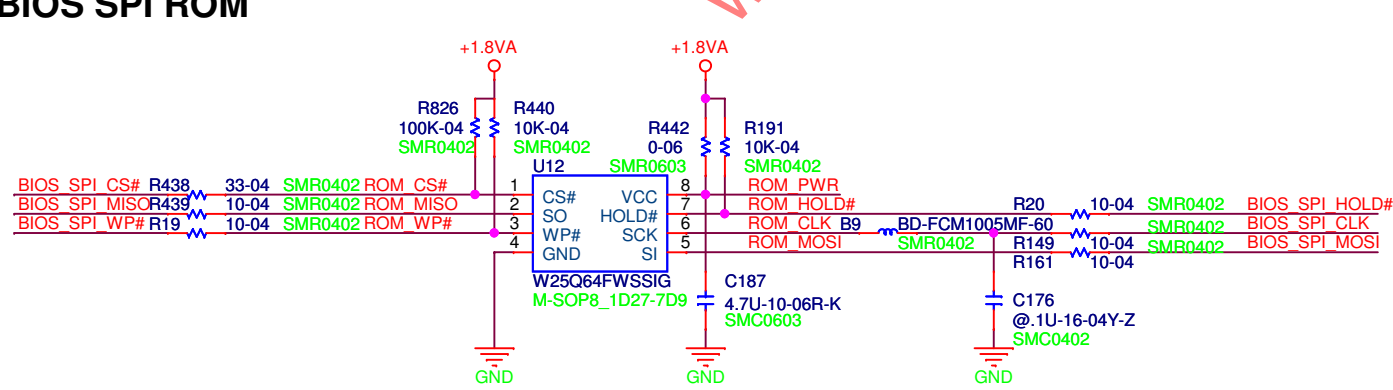


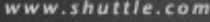



CPU PCIE And SATA Part



BIOS SPI ROM





Title

# Braswell

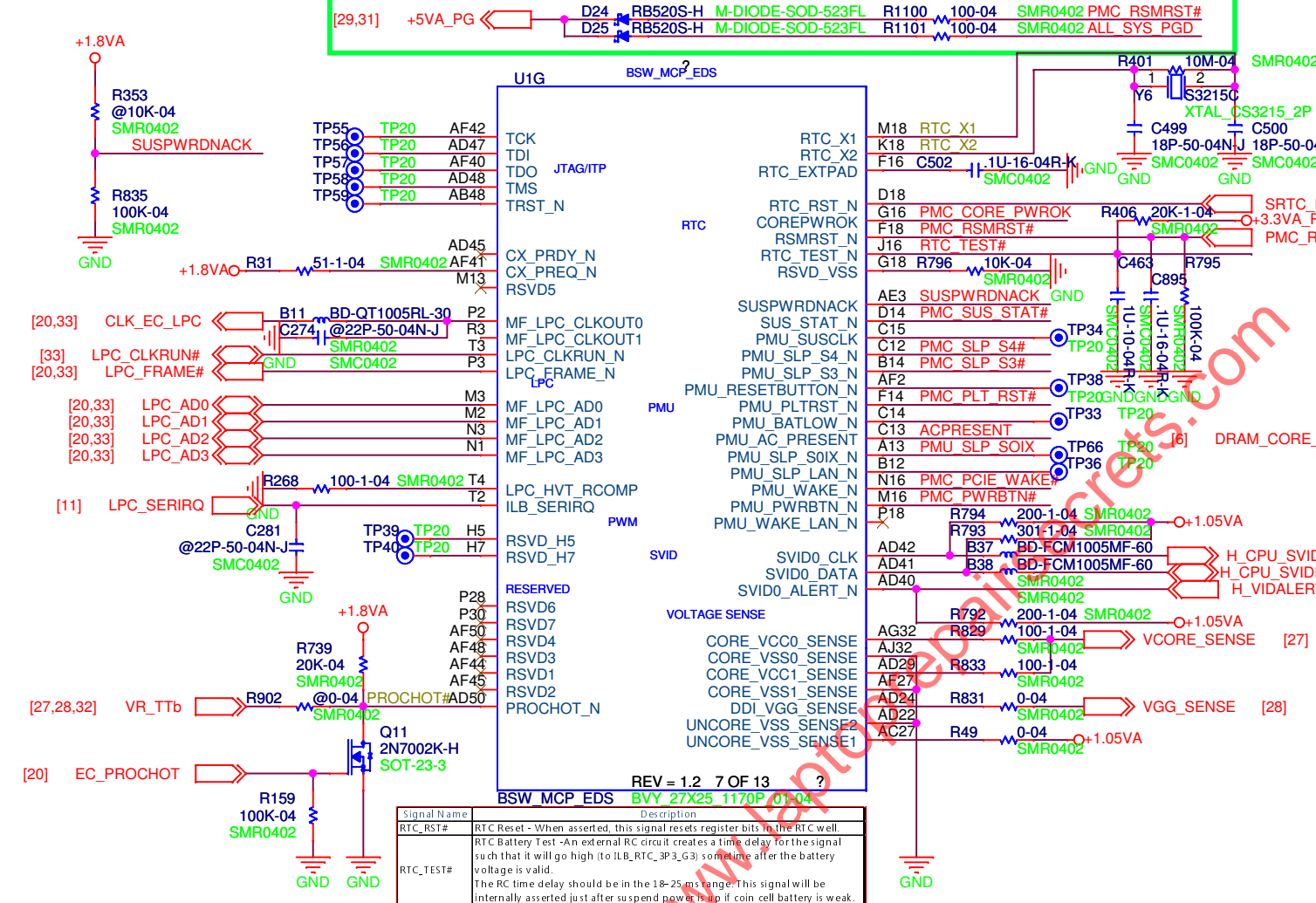
Size	Document Number	Rev
A4	CPU-SATA/PCIE/SPI ROM	1.1

Date: Tuesday, February 16, 2016

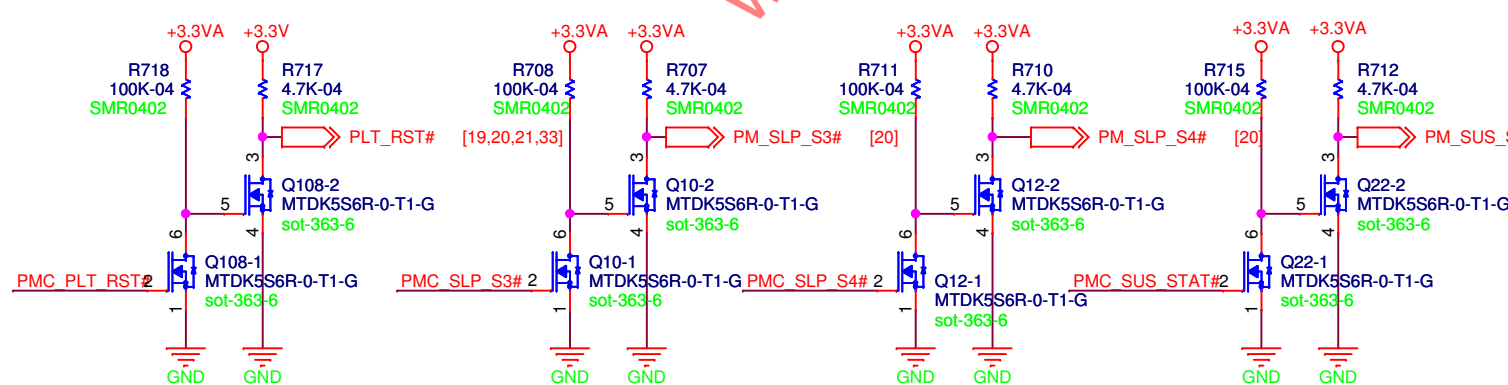
Sheet 8 of 36



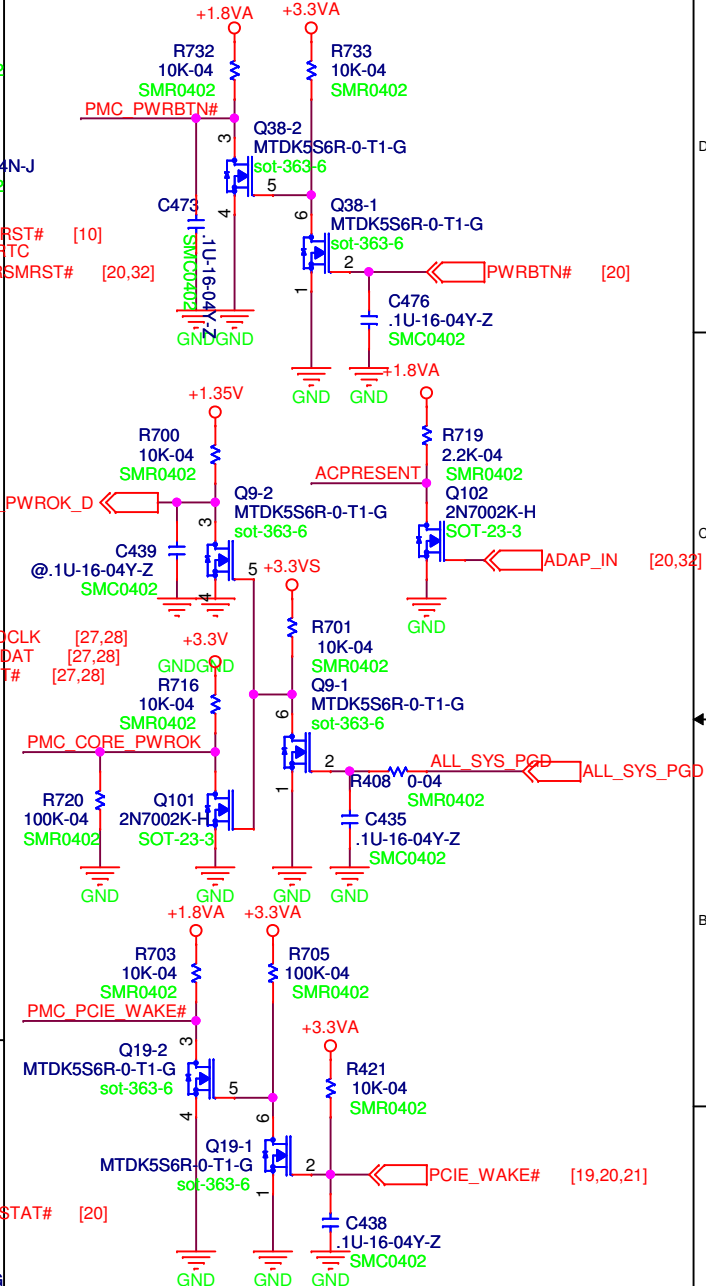
## CPU PMU Part



### Level Shift to EC 3.3V



## Level Shift to CPU 1.8V

**Shuttle®**

[www.shuttle.com](http://www.shuttle.com)

Title

Document Number

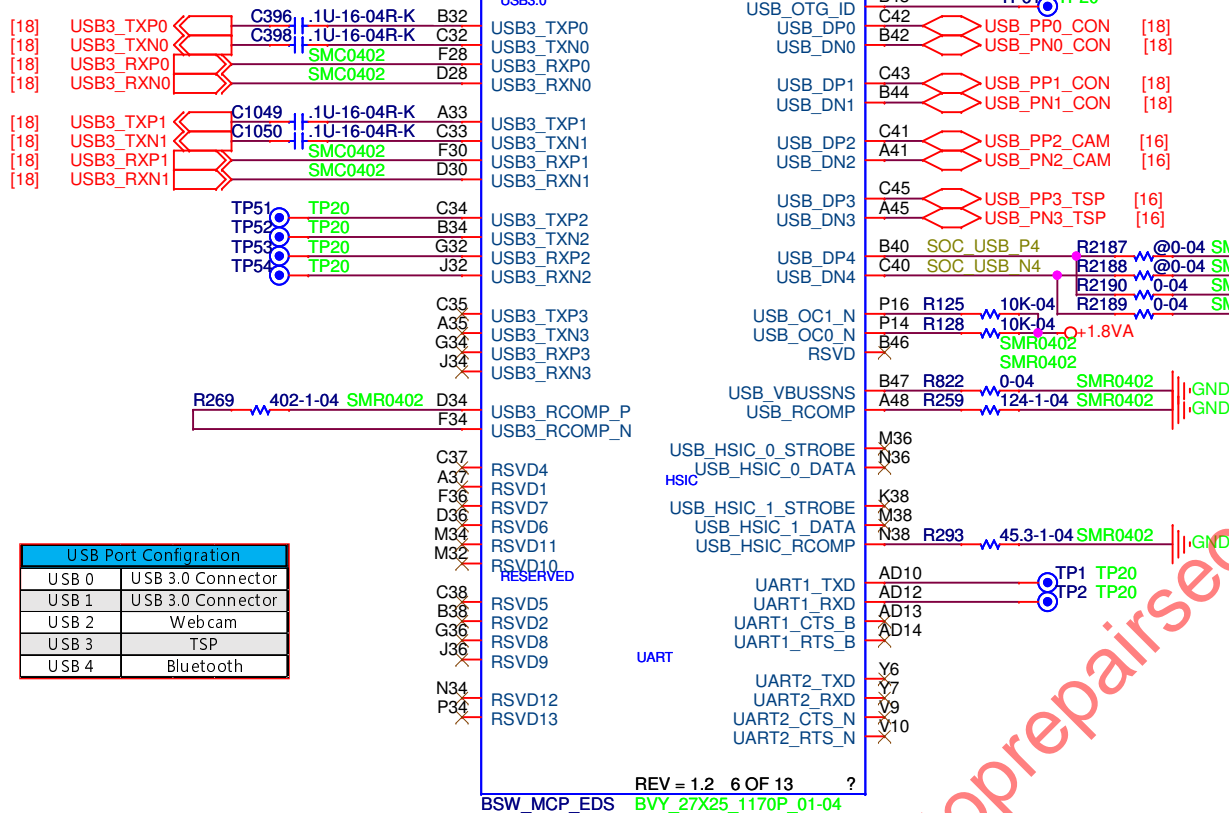
# Braswell

## CPU-PMU

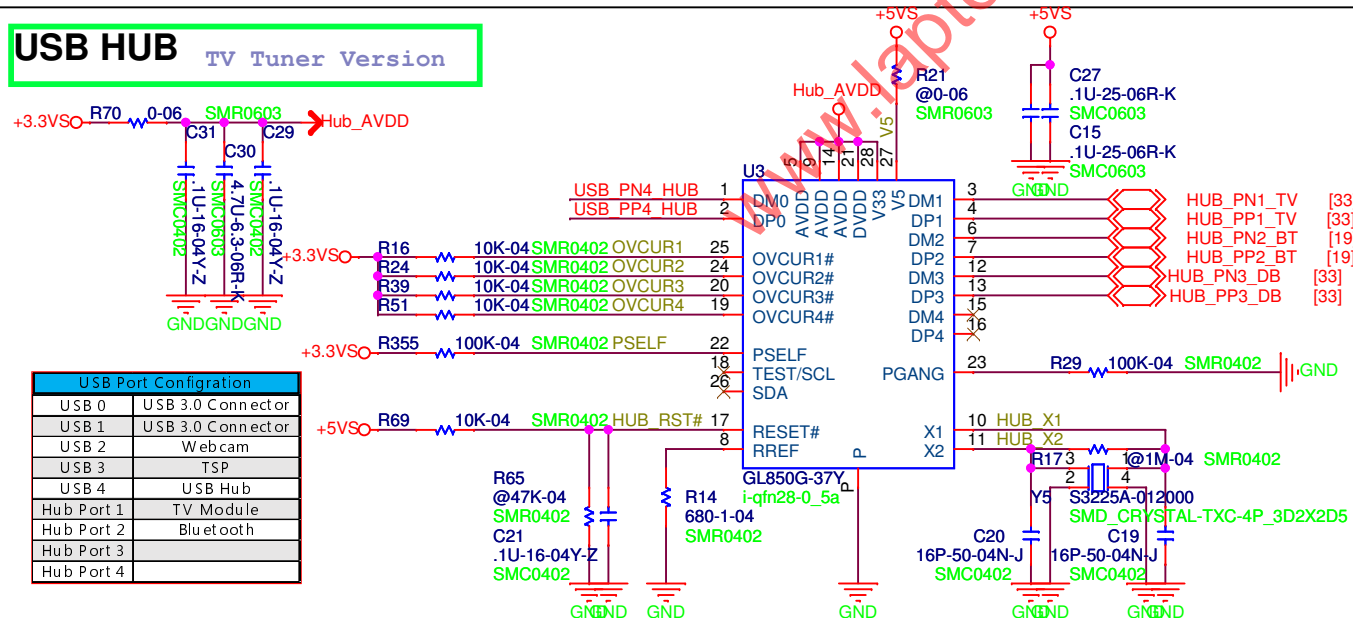
Rev	1.1
-----	-----

Date: Tuesday, February 16, 2016 Sheet 9 of 36

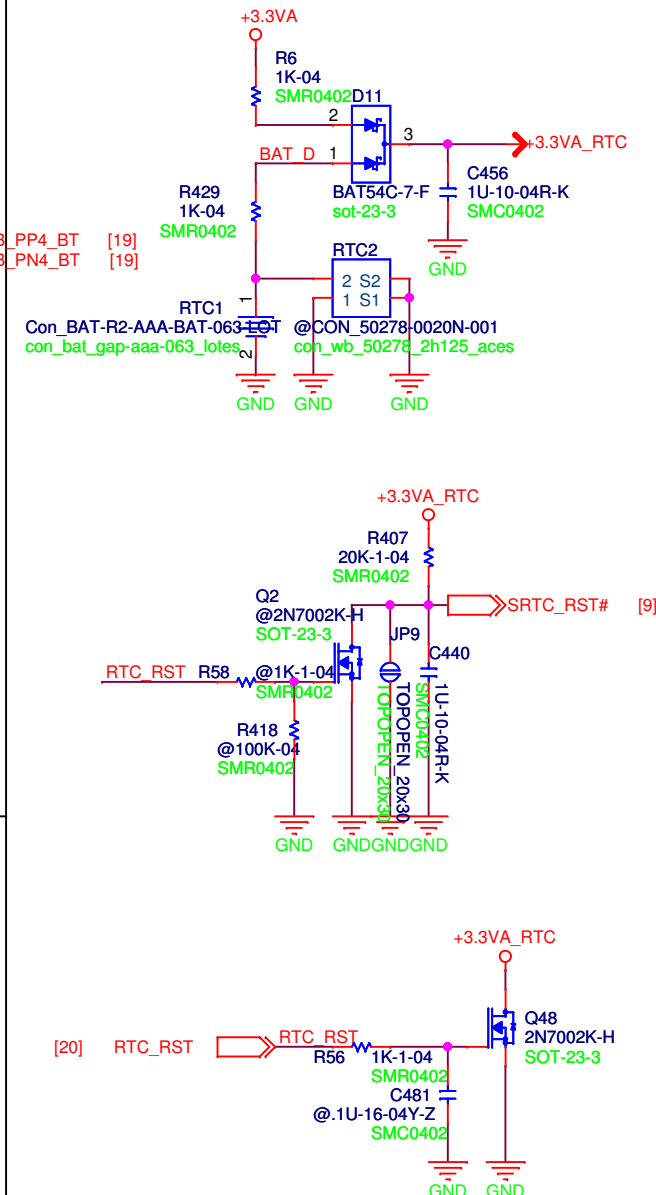
## CPU USB Part



## USB HUB TV Tuner Version



## RTC Reset Function



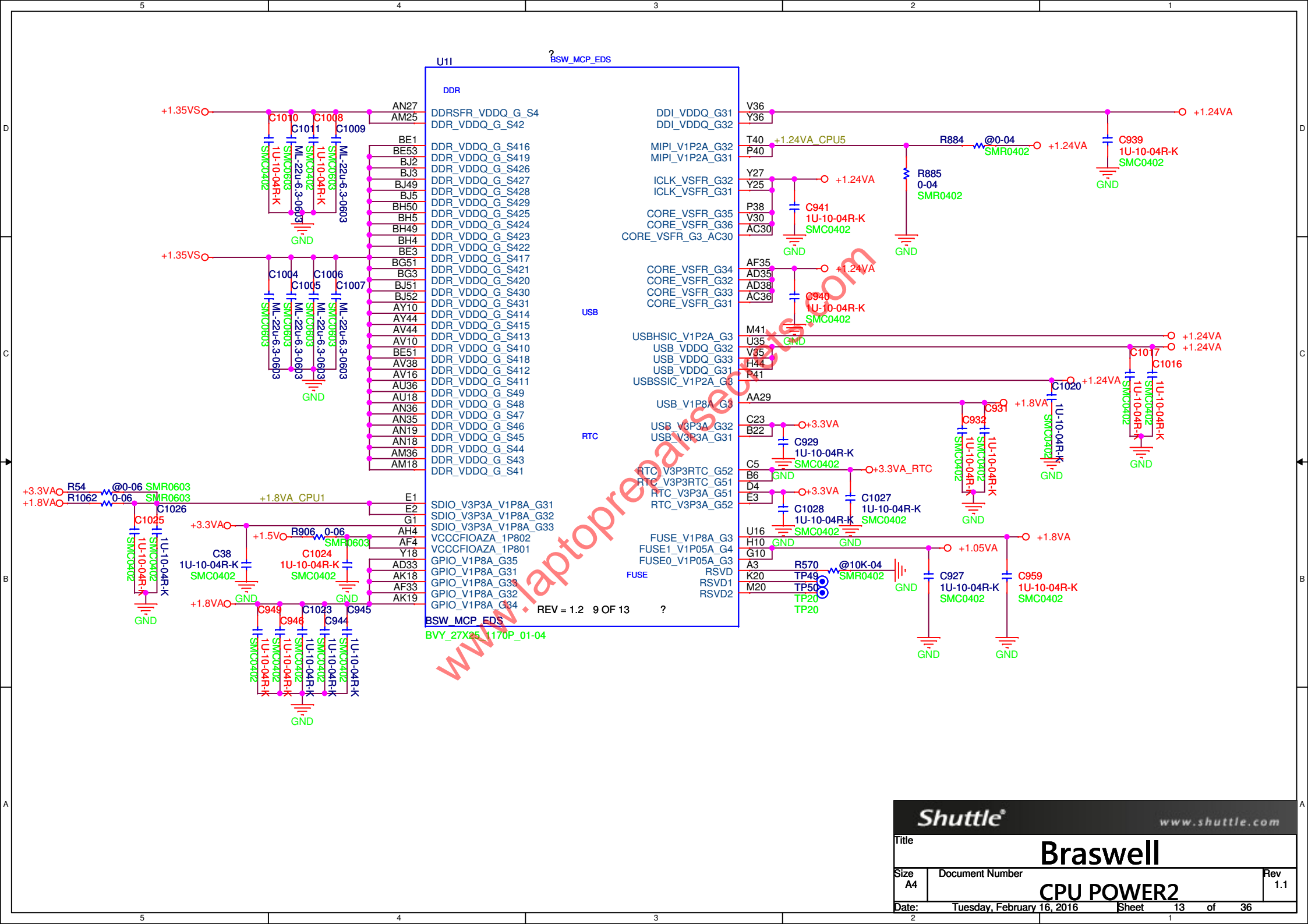
Shuttle®

www.shuttle.com

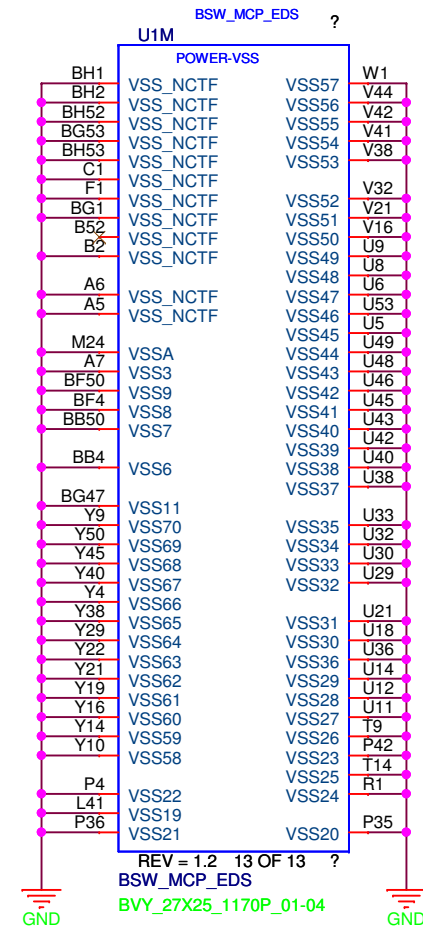
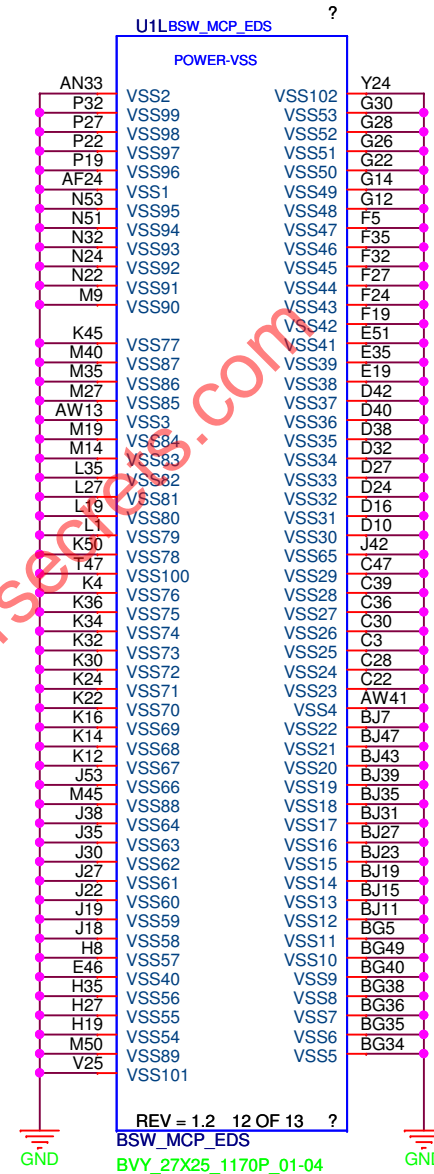
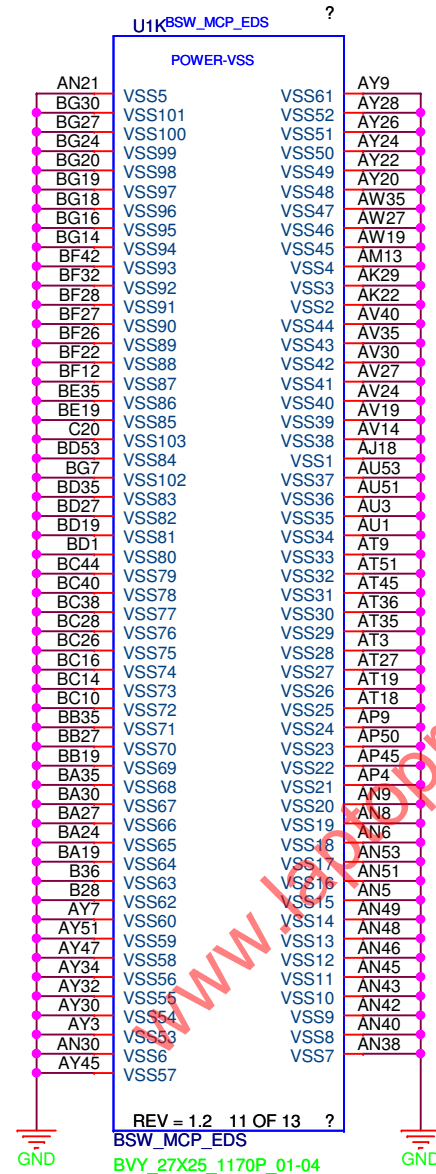
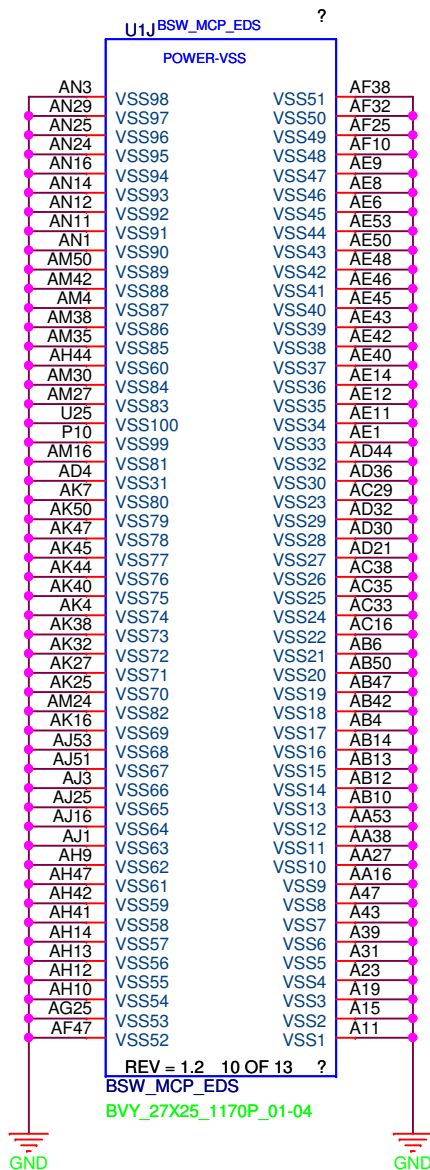
Braswell

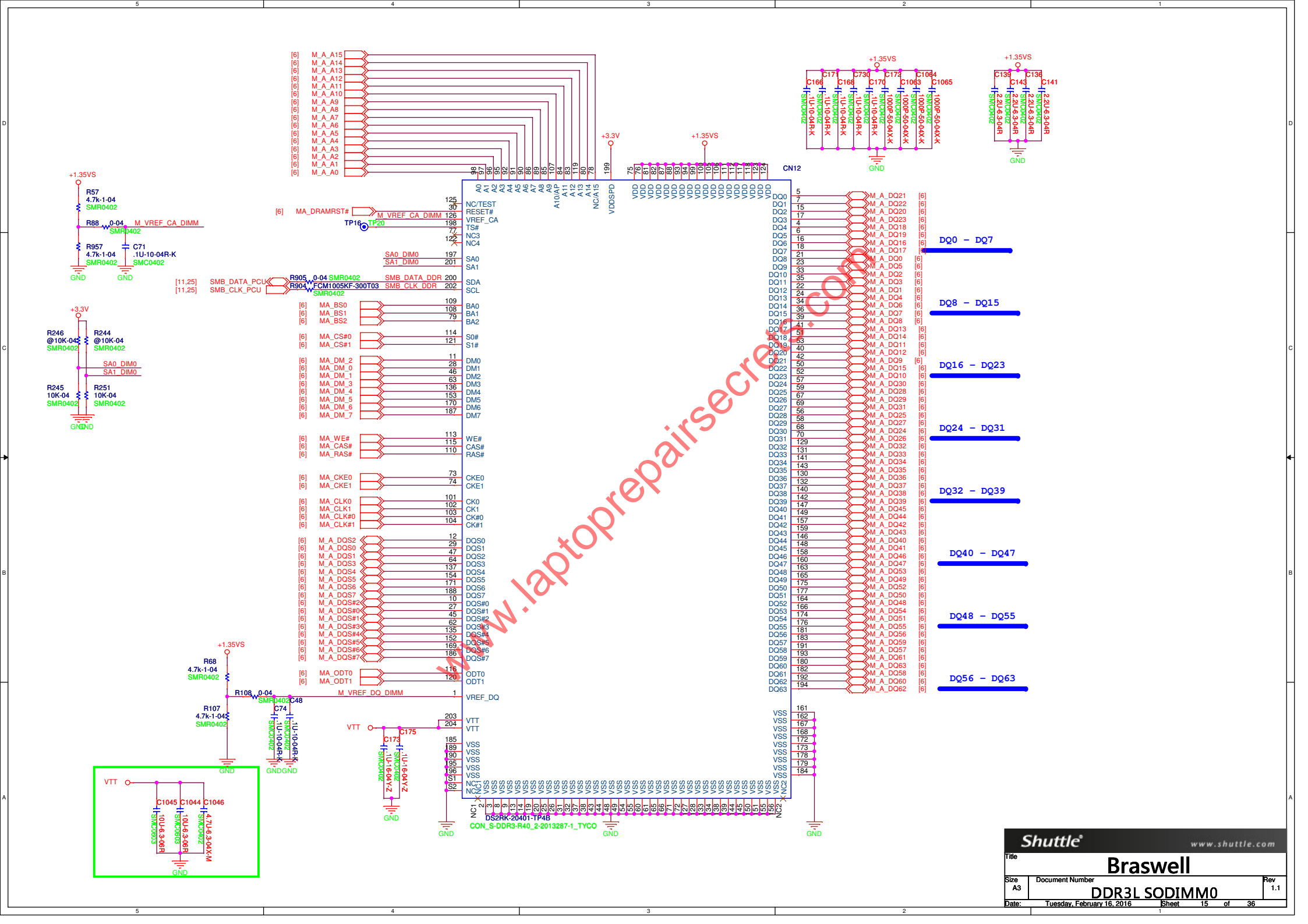




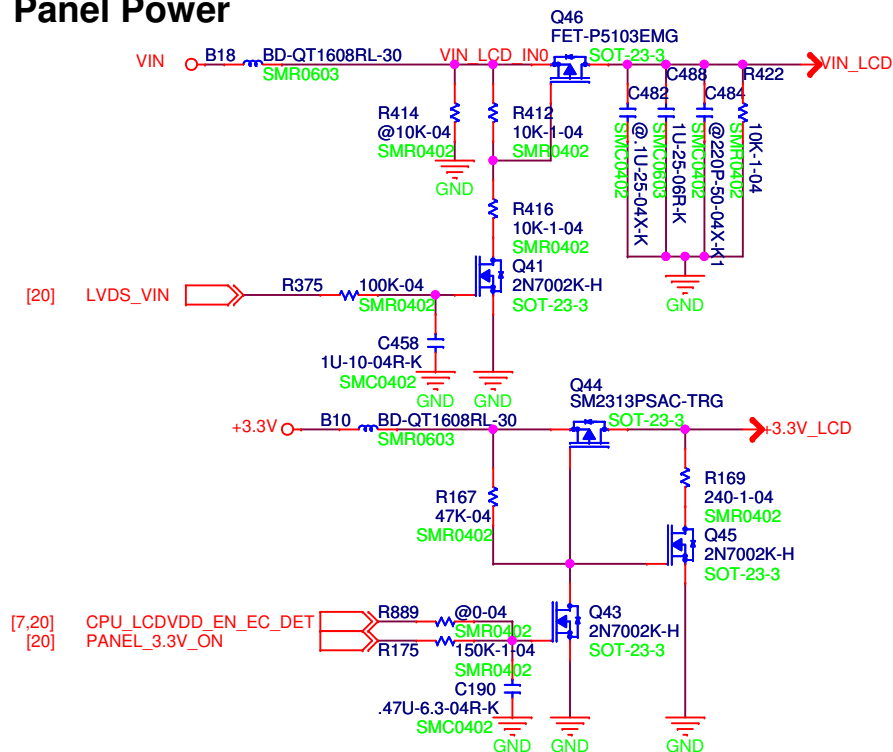




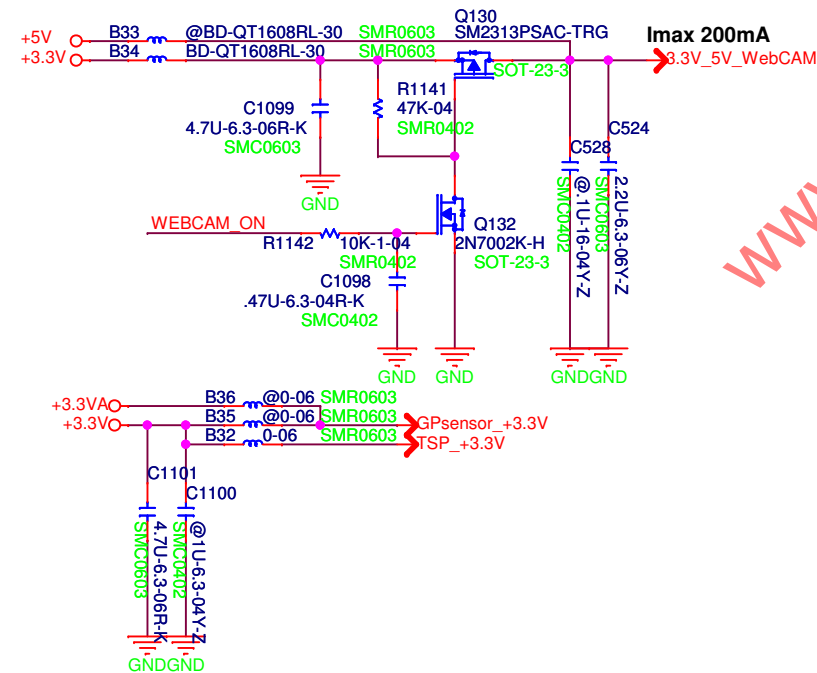




## Panel Power

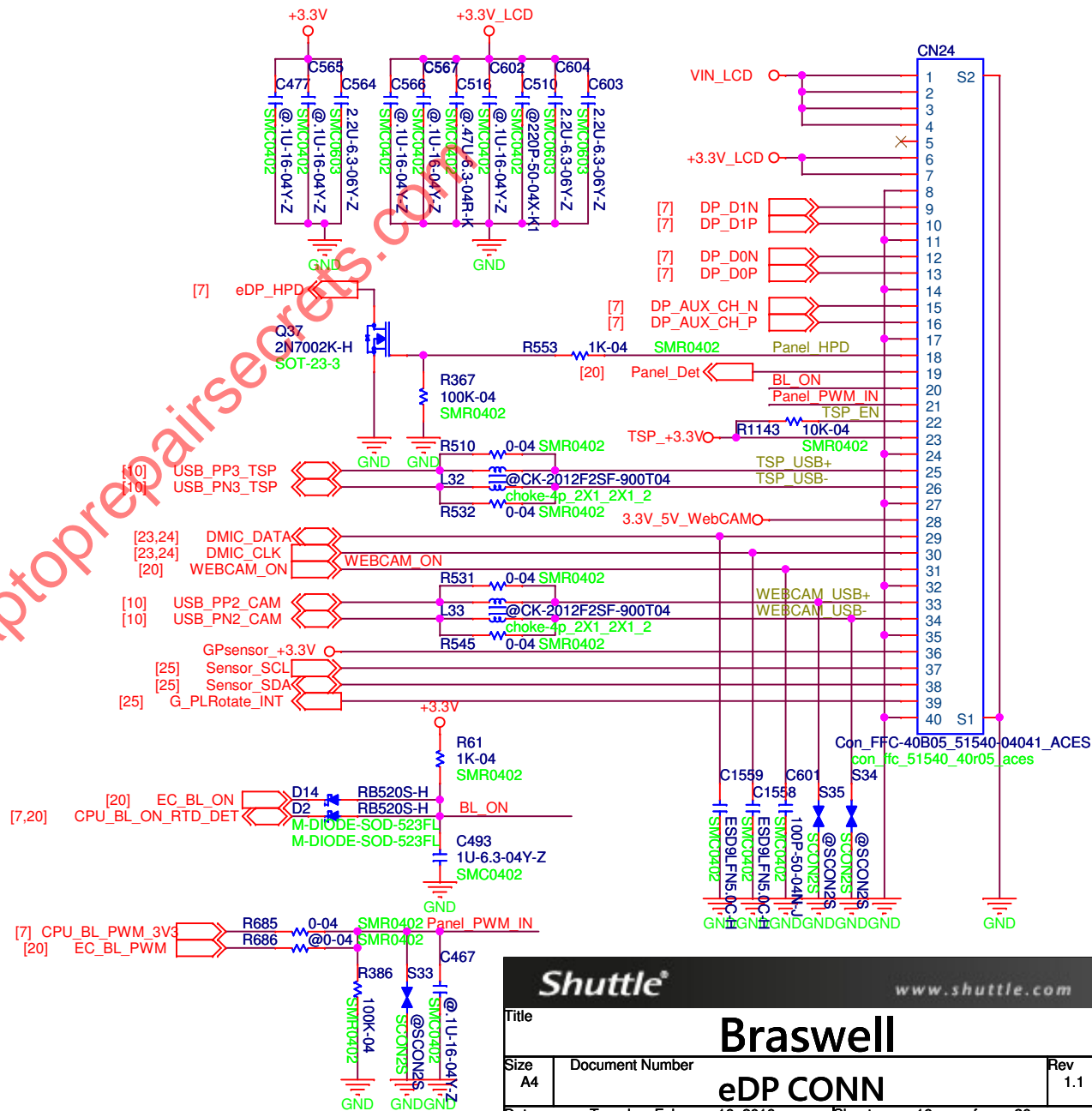


## TSP/CAM/G-SENSOR Power



## DP CONN CO-LAYOUT OPTION

CAM+DMIC : MOUNT B34、C1099、R1141、Q130、Q132、R1142、C1098、C528、C524  
 CAM+DMIC : UNMOUNT B33  
 CAM ONLY : MOUNT B33  
 CAM ONLY : UNMOUNT B34、C1099、R1141、Q130、Q132、R1142、C1098、C528、C524



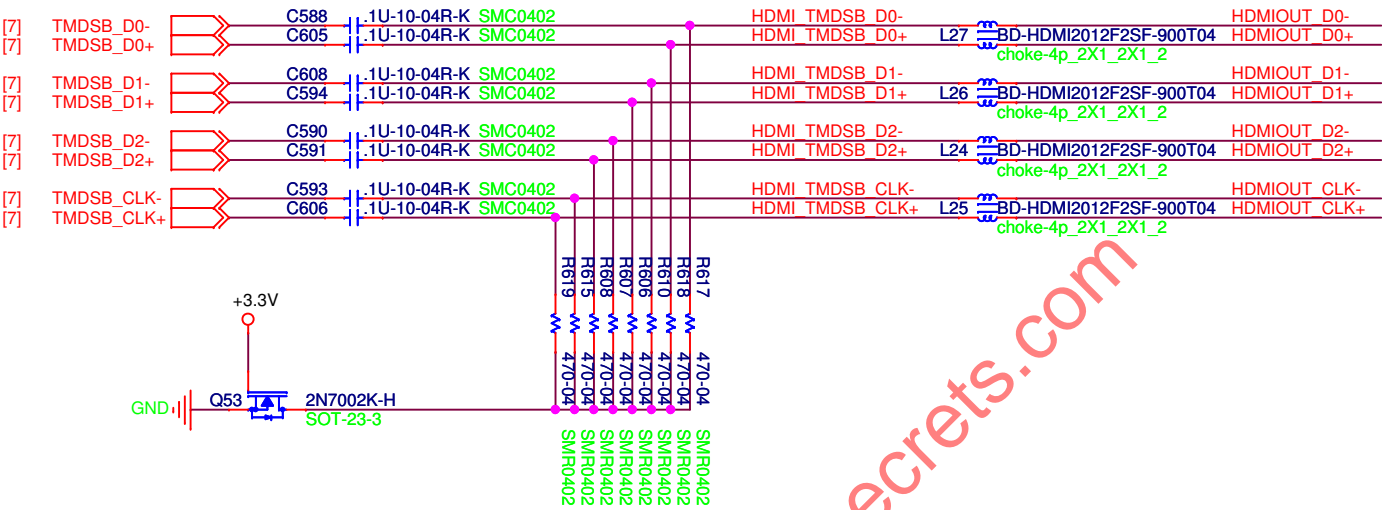
Shuttle®

www.shuttle.com

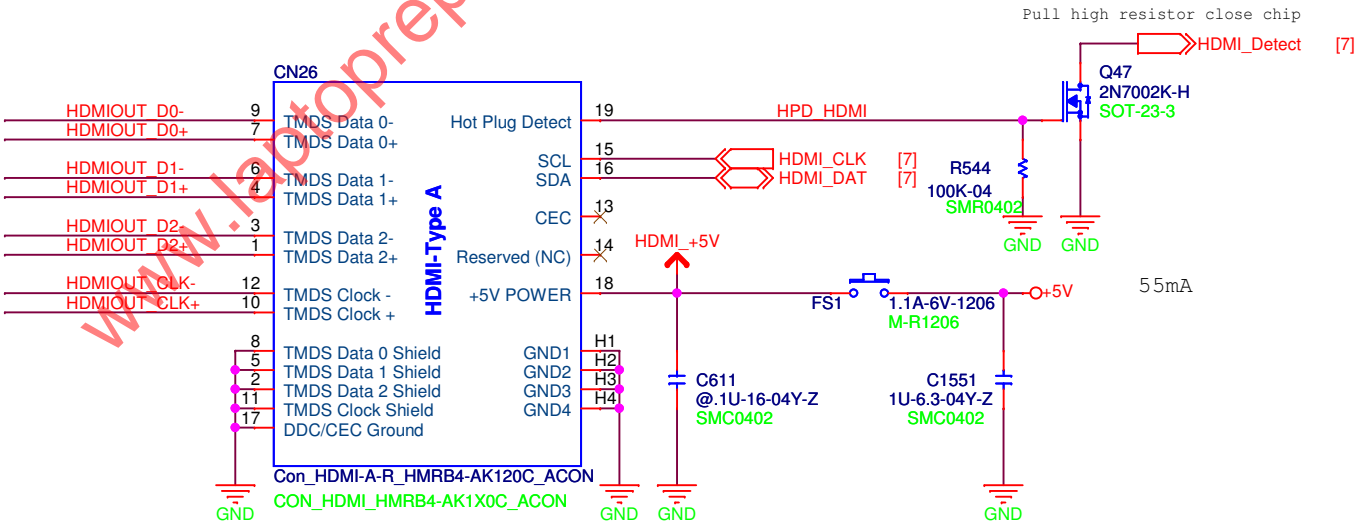
Title		Braswell	
Size	A4	Document Number	Rev 1.1
Date		Tuesday, February 16, 2016	
Sheet		16 of 36	



HDMI ESD Protection

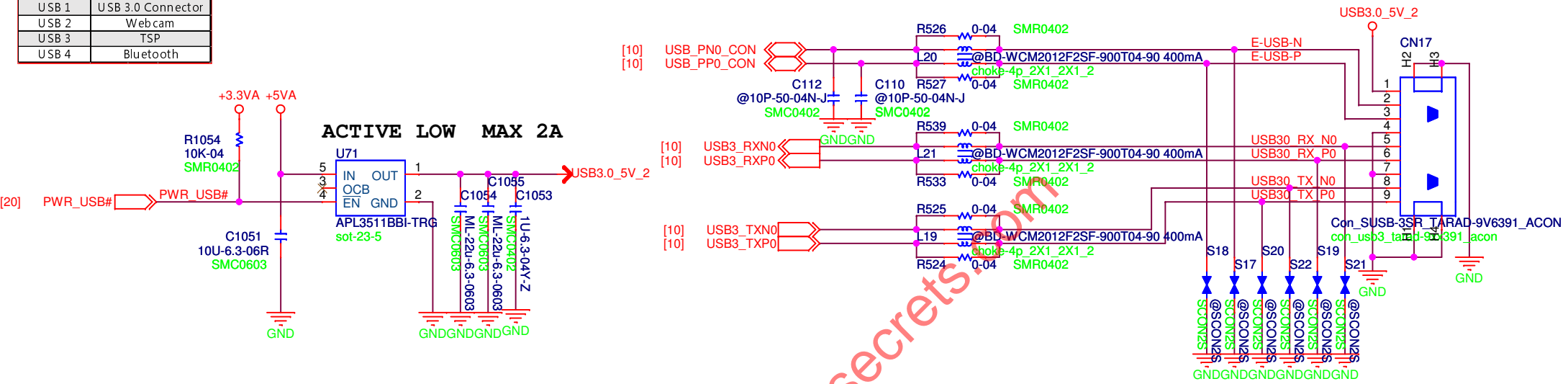


HDMI CONN

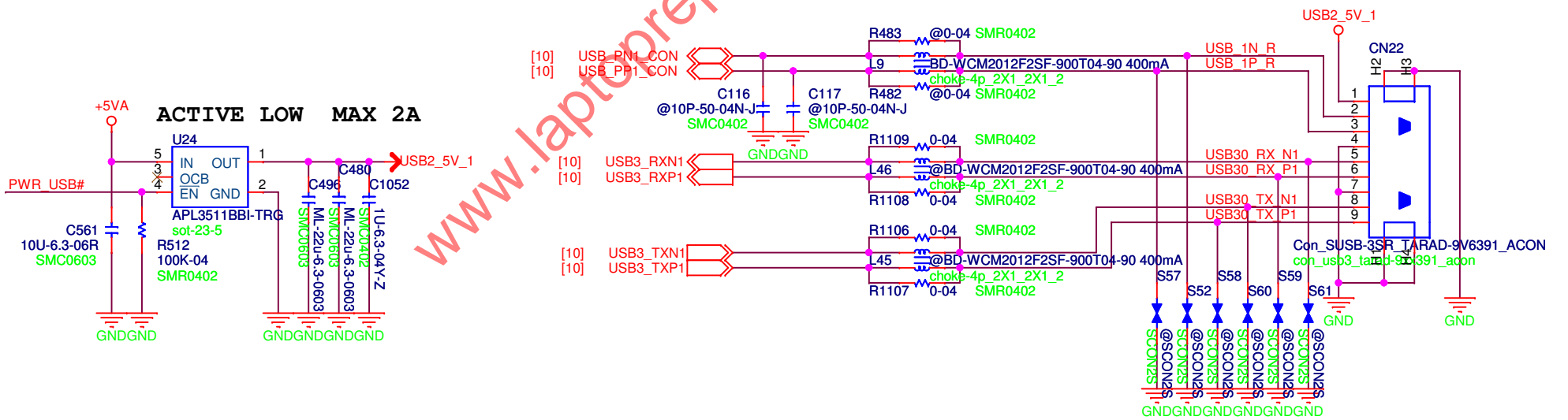


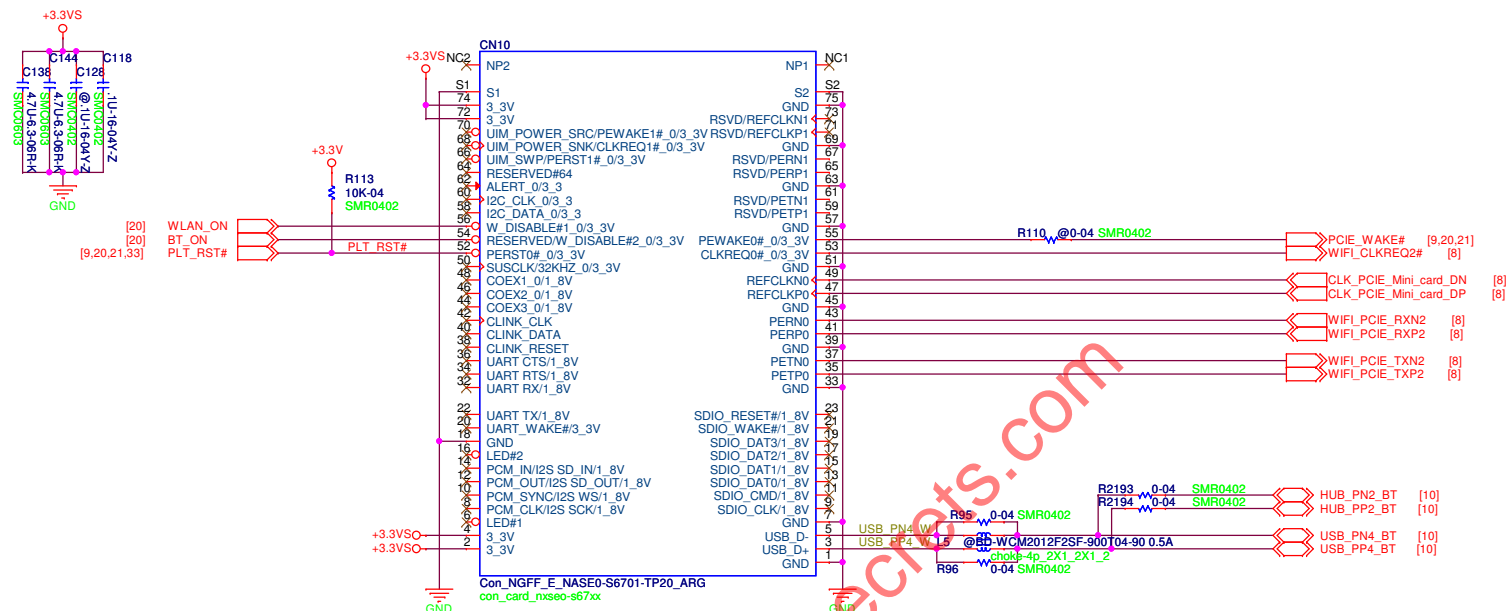
USB3.0 (Left Side)

USB Port Configuration	
USB 0	USB 3.0 Connector
USB 1	USB 3.0 Connector
USB 2	Webcam
USB 3	TSP
USB 4	Bluetooth

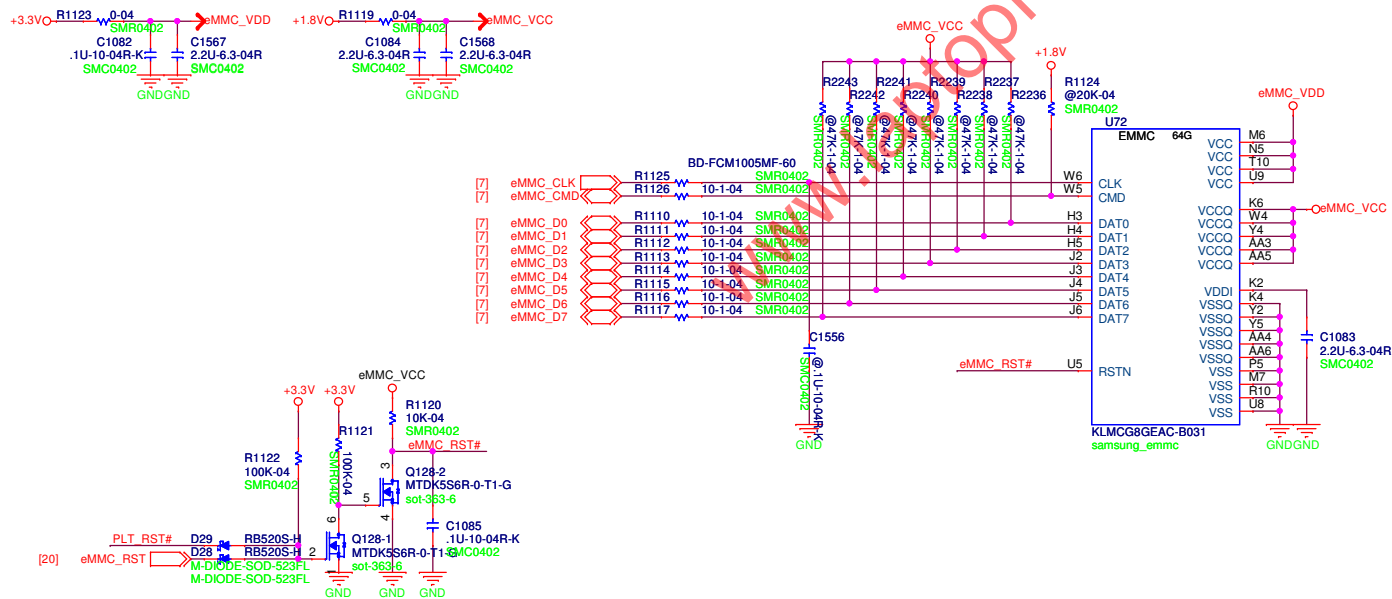


USB3.0 (Left Side)

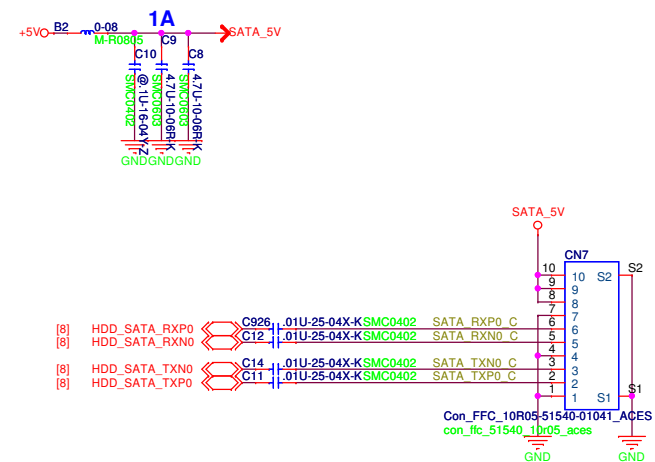


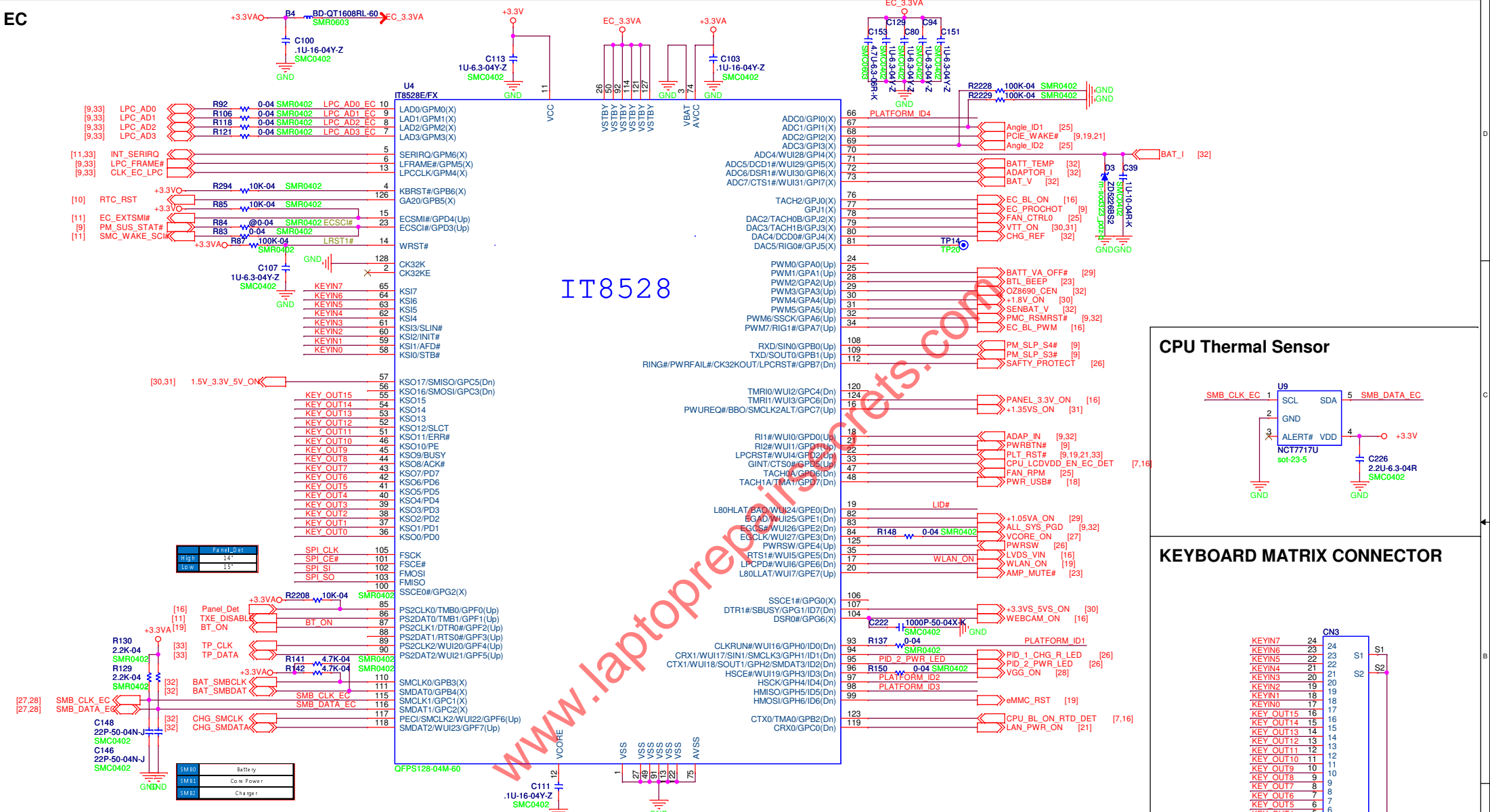
**NGFF CONN**

## eMMC

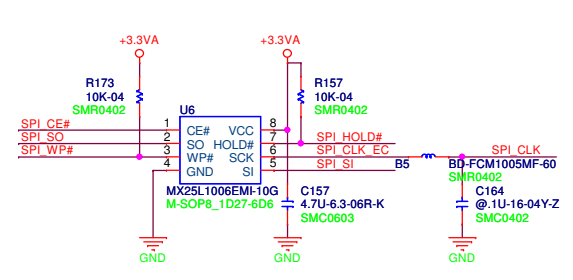


## SATA-HDD

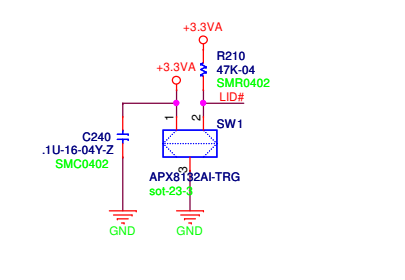




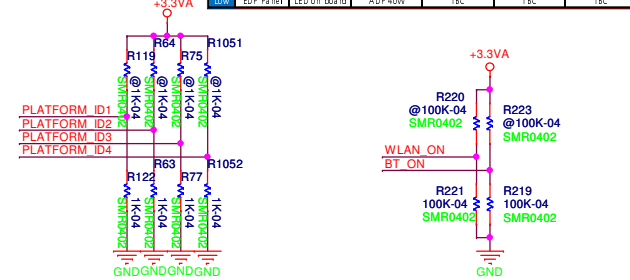
EC FLASH ROM(SPI)



LID SWITCH



Platform ID



**Shuttle®**

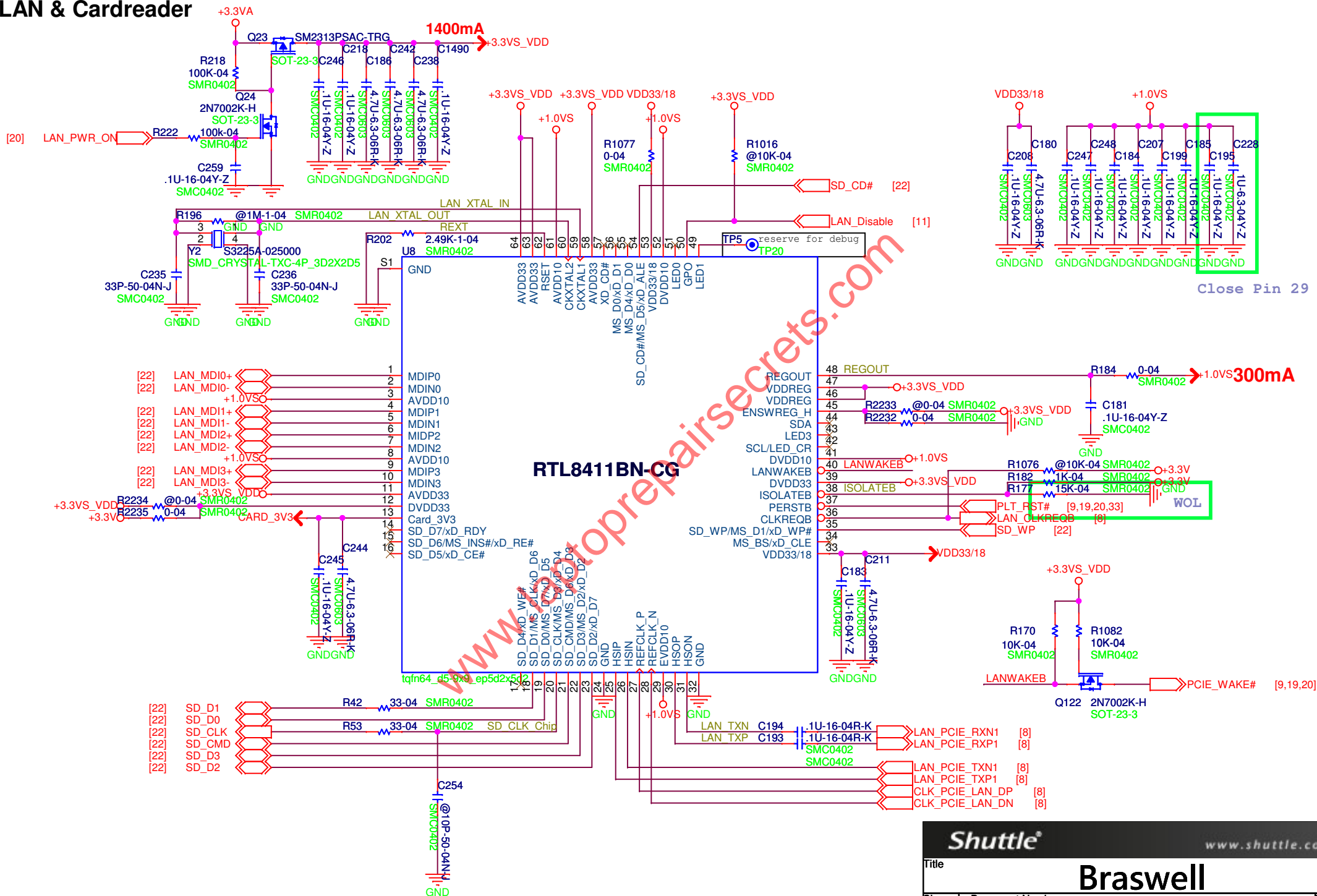
www.shuttle.com

Title: **Braswell**

Size: A3 Document Number: **ECITE8528** Rev: 1.1

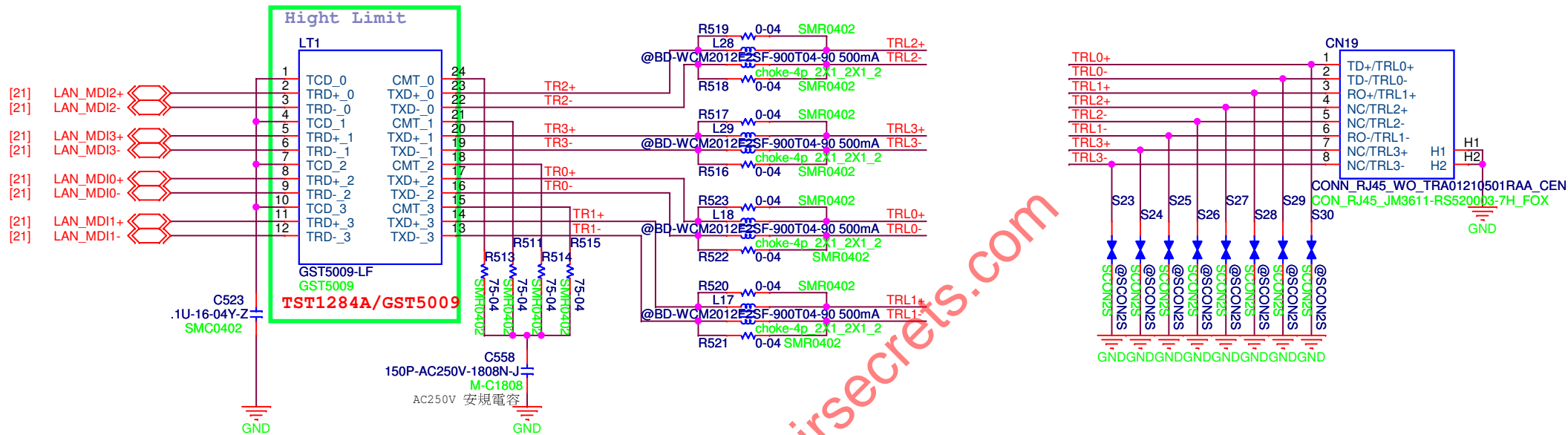
Date: Tuesday, February 16, 2016 Sheet: 20 of 36

## LAN & Cardreader

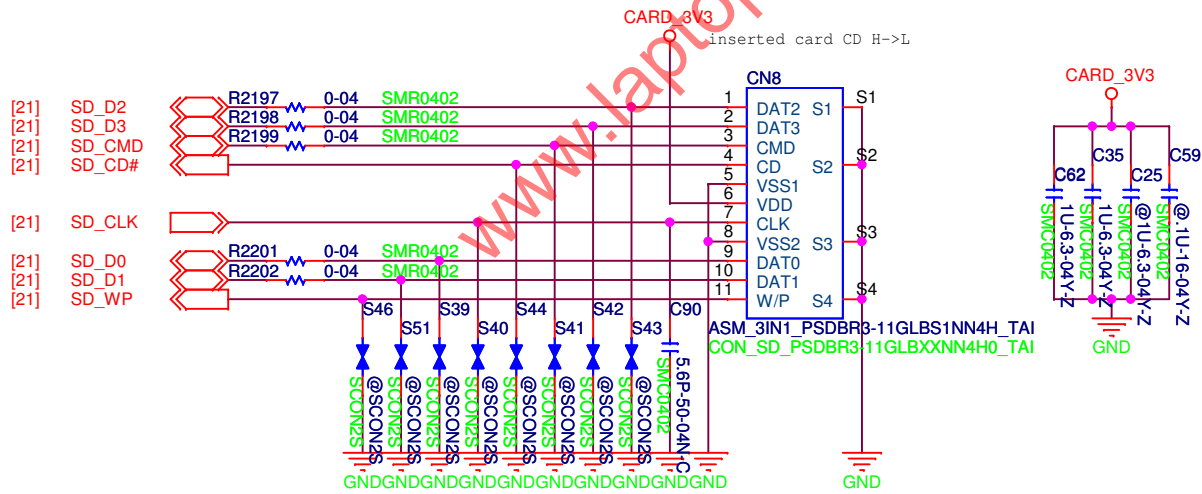



Transformer

RJ45 CONN



Cardreader Connector



www.shuttle.com

Title

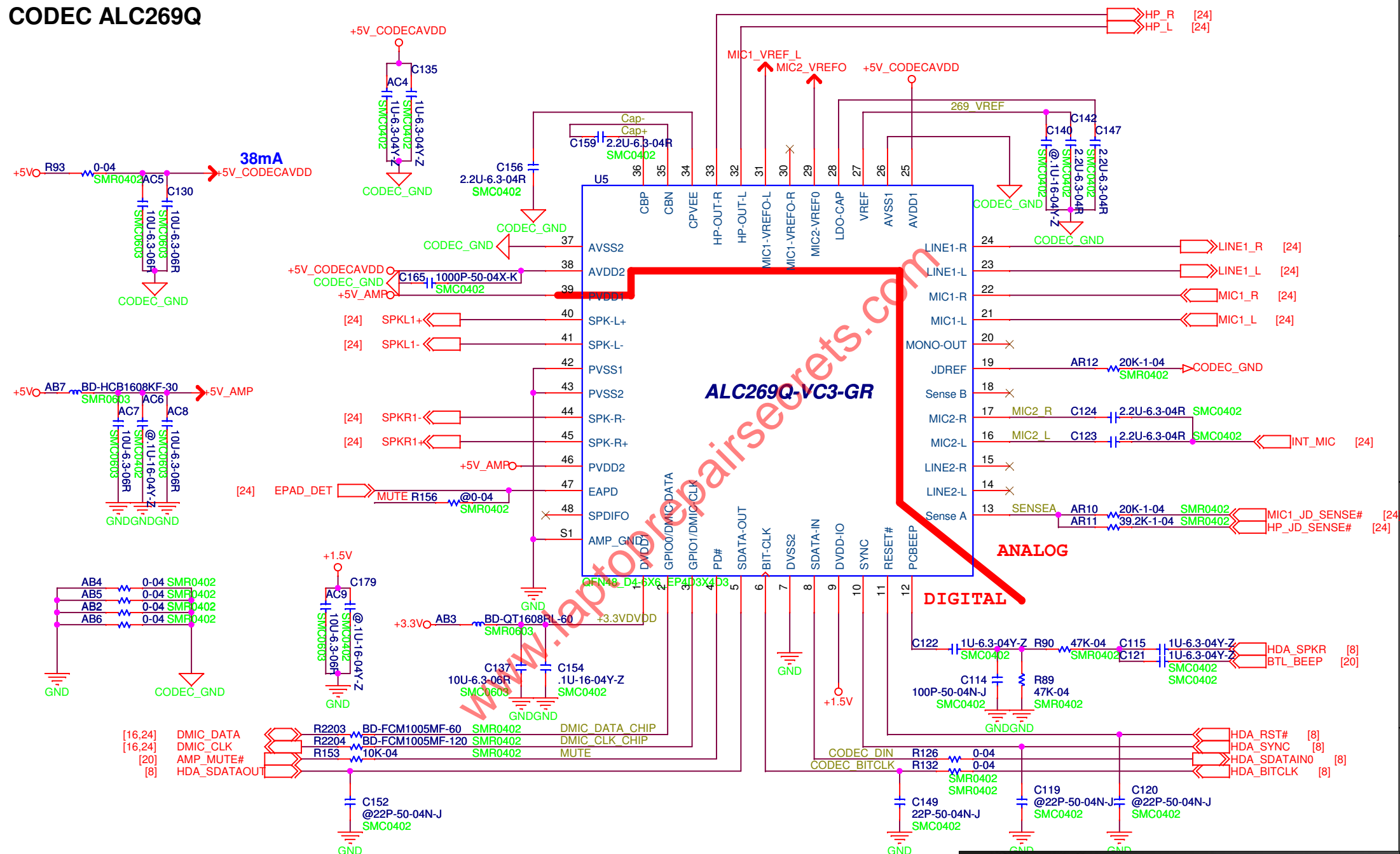
# Braswell

Size	Document Number	Rev
A4	RJ45 CONN/ SD Card Socket	1.1

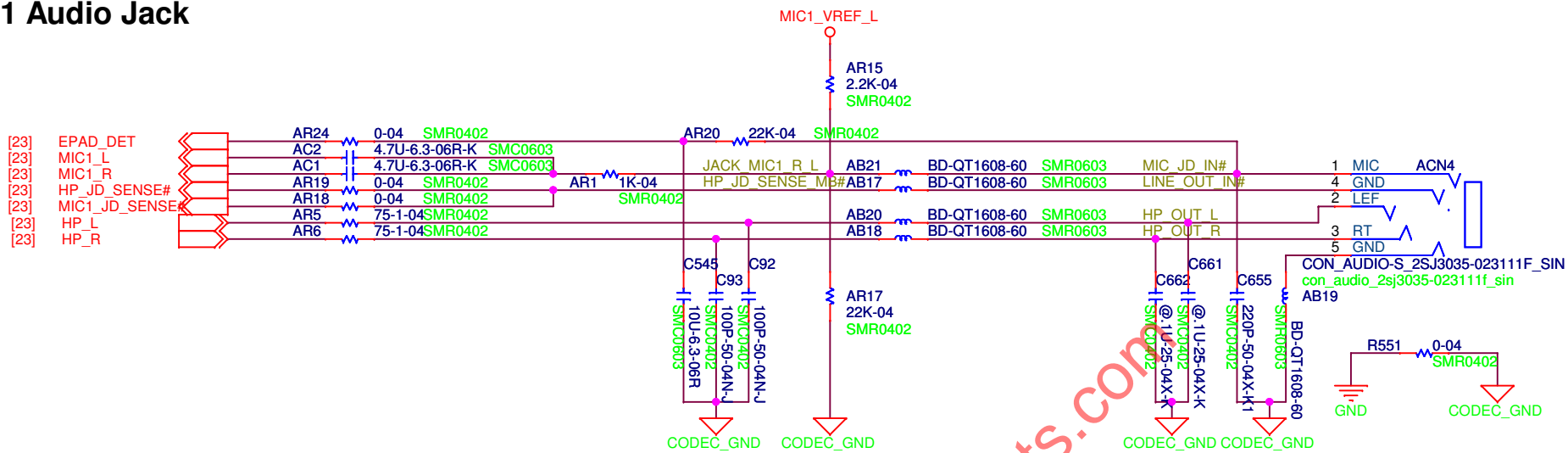
Date:	Tuesday, February 16, 2016	Sheet	22	of	36
-------	----------------------------	-------	----	----	----



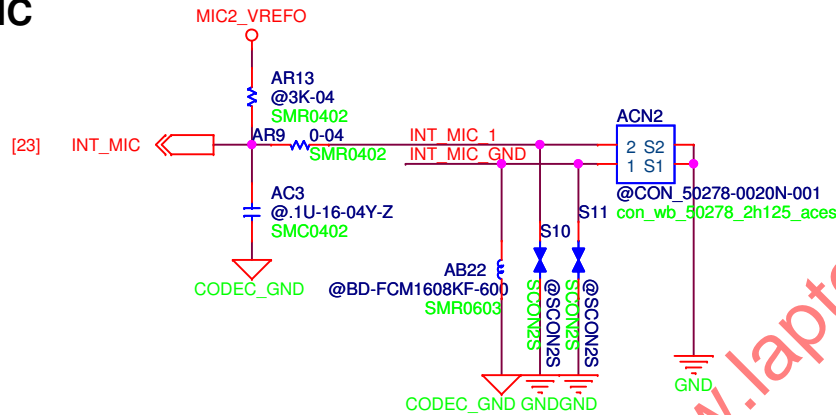
# CODEC ALC269Q



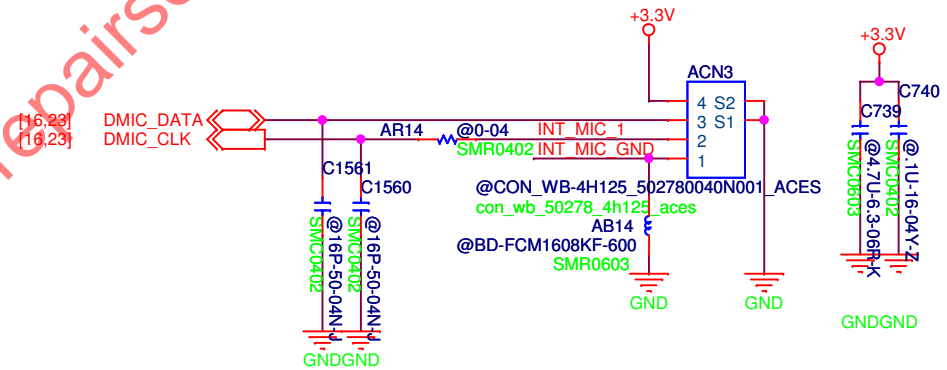
## 2 IN 1 Audio Jack



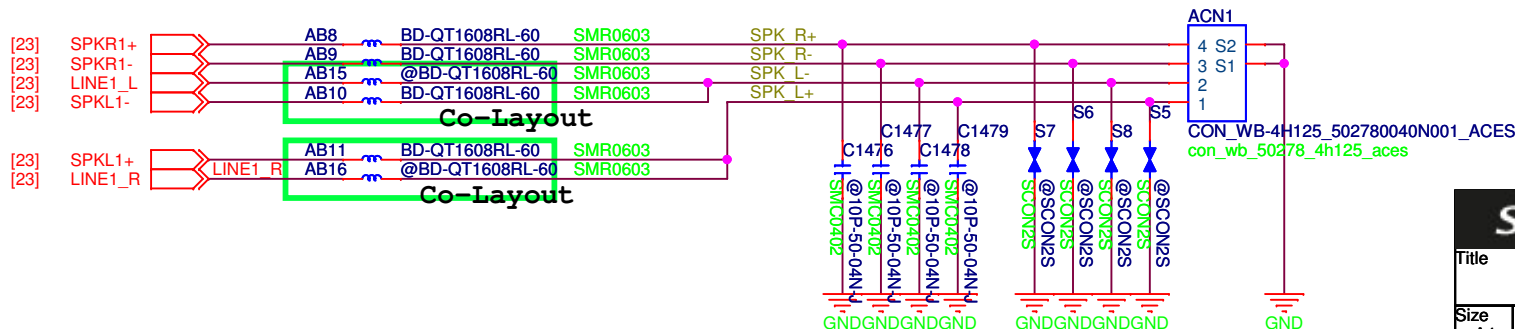
## INT\_MIC



## Digital Mic

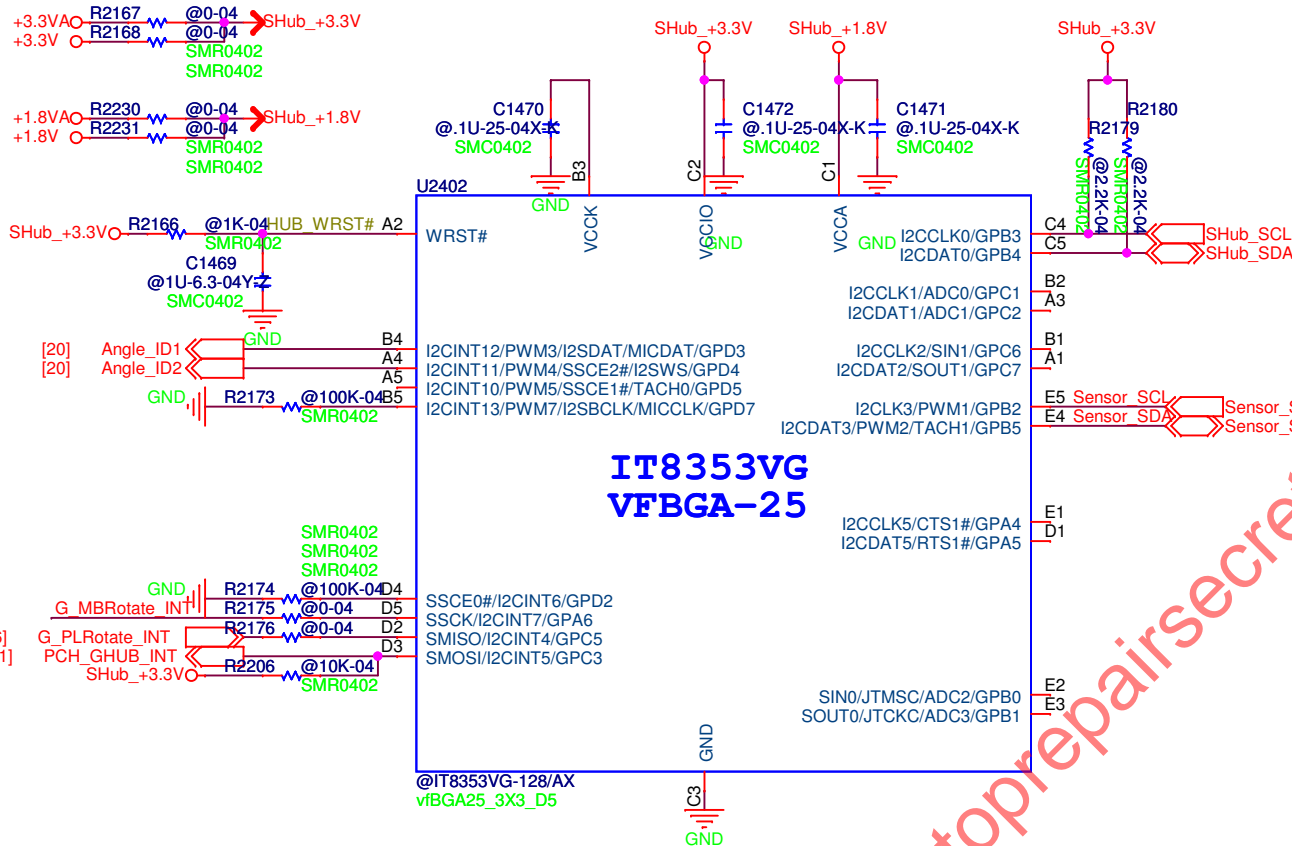


## INT\_SPEAKER

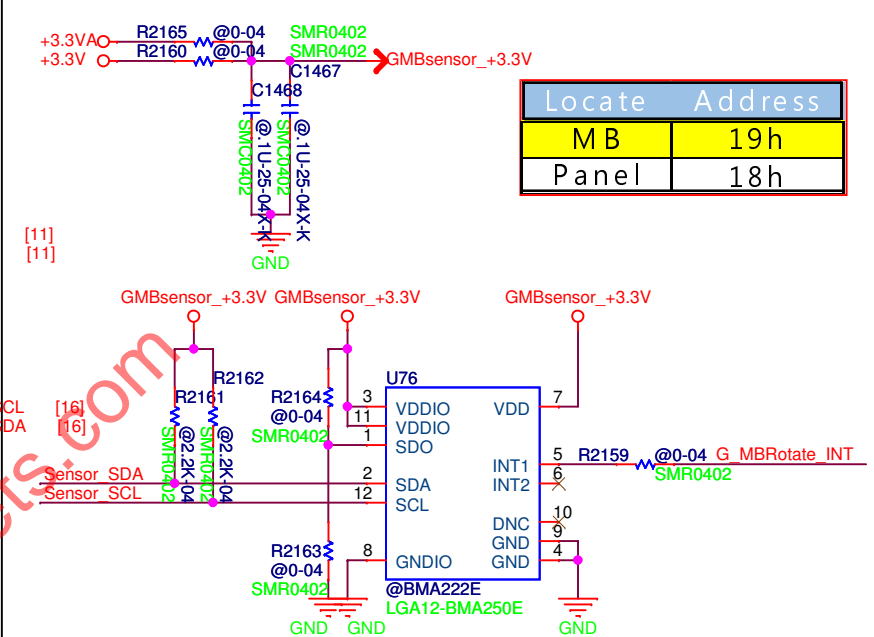




## SENSOR HUB

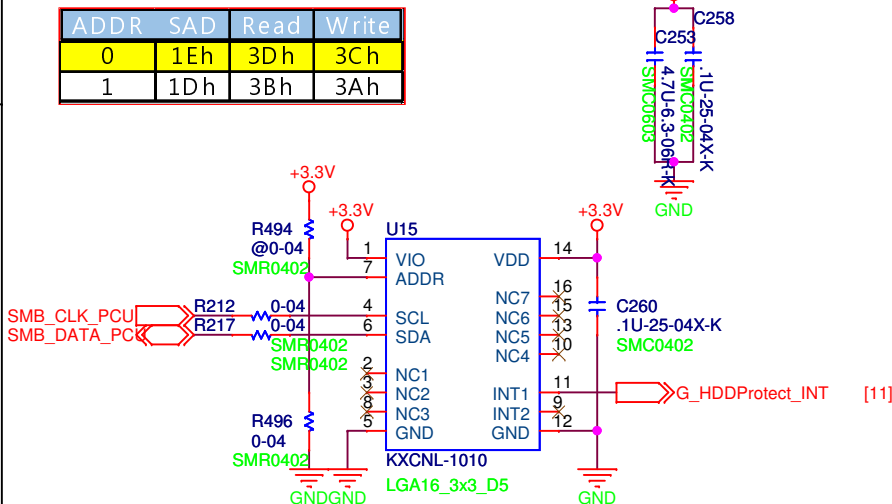


## G SENSOR For Rotate



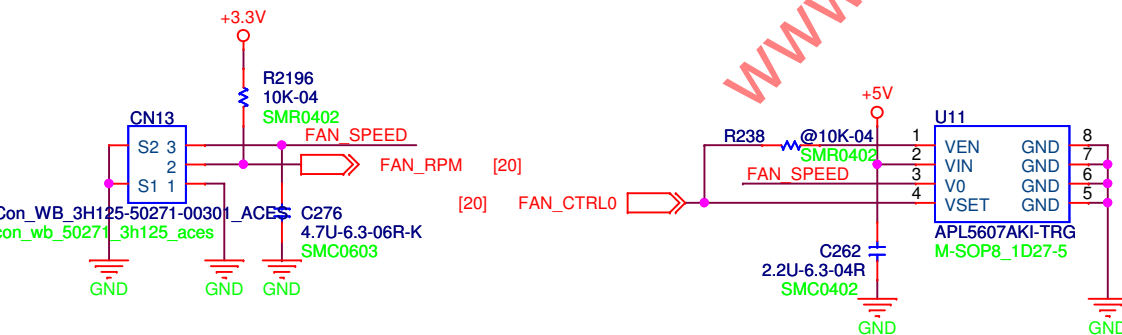
Locate	Address
MB	19h
Panel	18h

## G SENSOR For HDD Protect



ADDR	SAD	Read	Write
0	1Eh	3Dh	3Ch
1	1Dh	3Bh	3Ah

## FAN CONTROLLER



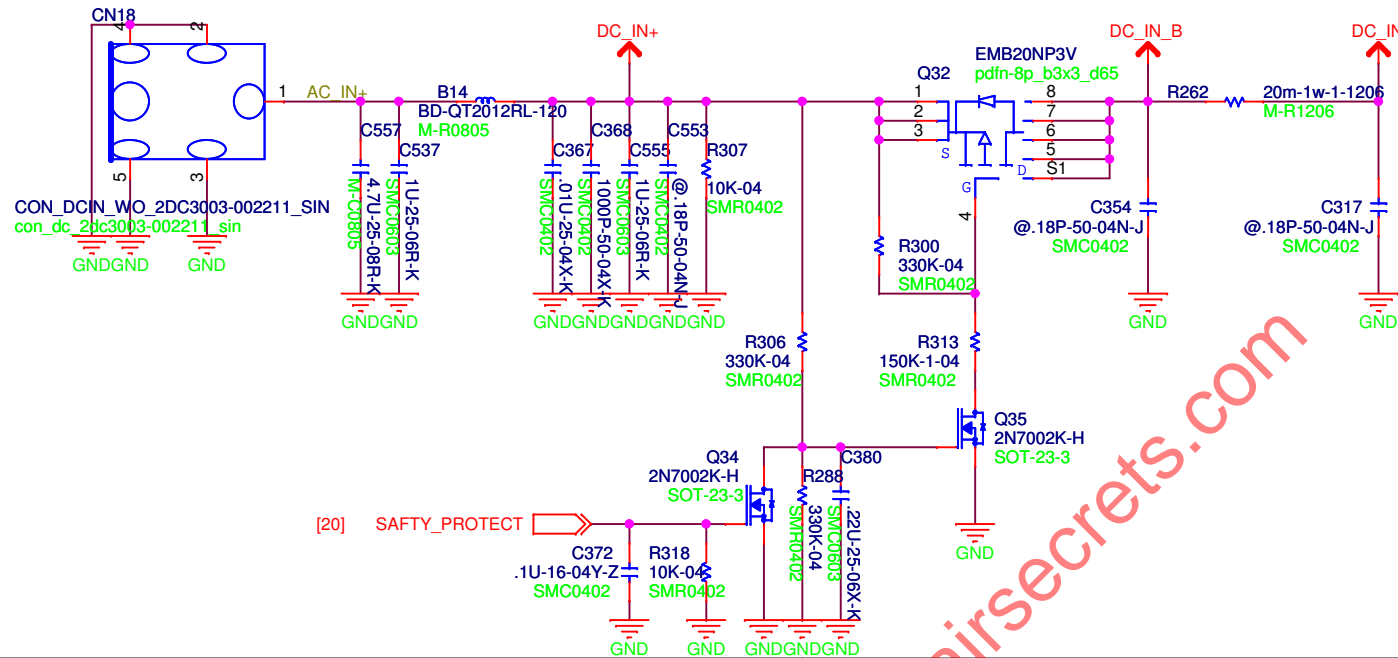
**Shuttle** www.shuttle.com

Title: **Braswell**

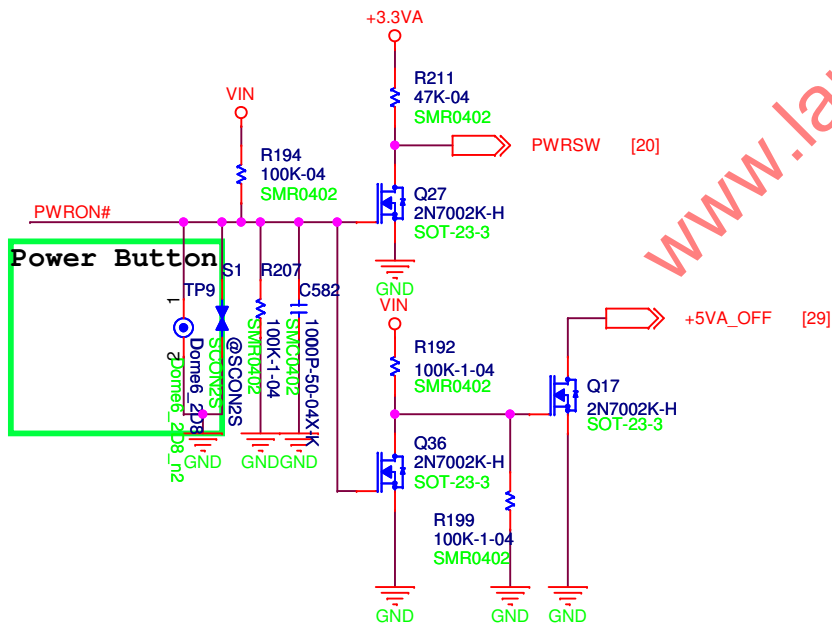
Size: A4 Document Number: **Sensor Hub/G-sensor/ Fan** Rev: 1.1

Date: Tuesday, February 16, 2016 Sheet: 25 of 36

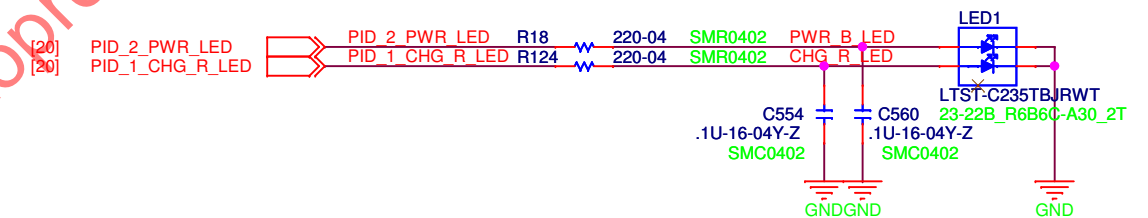
## DC IN



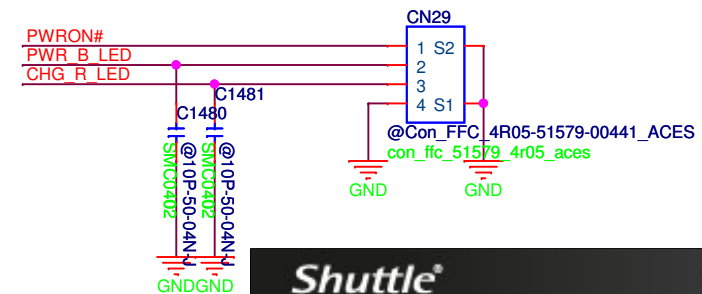
## PWR SW



## Charge LED



## Power Board

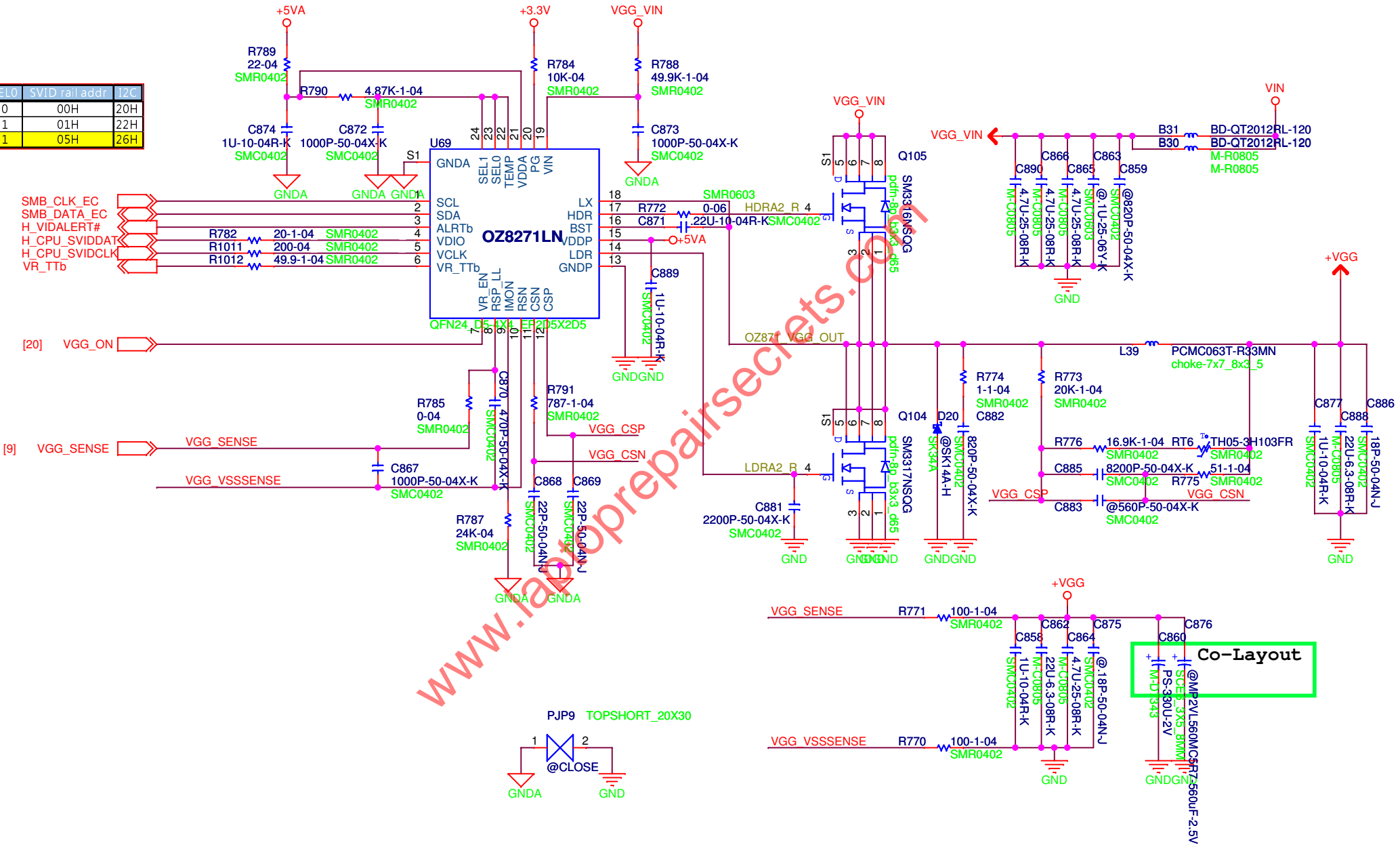




VGG POWER

SEL1	SEL0	SVID rail addr	I2C
0	0	00H	20H
0	1	01H	22H
1	1	05H	26H

- [20,27] SMB\_CLK\_EC
- [20,27] SMB\_DATA\_EC
- [9,27] H\_VIDALERT#
- [9,27] H\_CPU\_SVIDDAT
- [9,27] H\_CPU\_SVIDCLK
- [9,27,32] VR\_TTB



Shuttle

www.shuttle.com

Title

Braswell

Size A4

Document Number

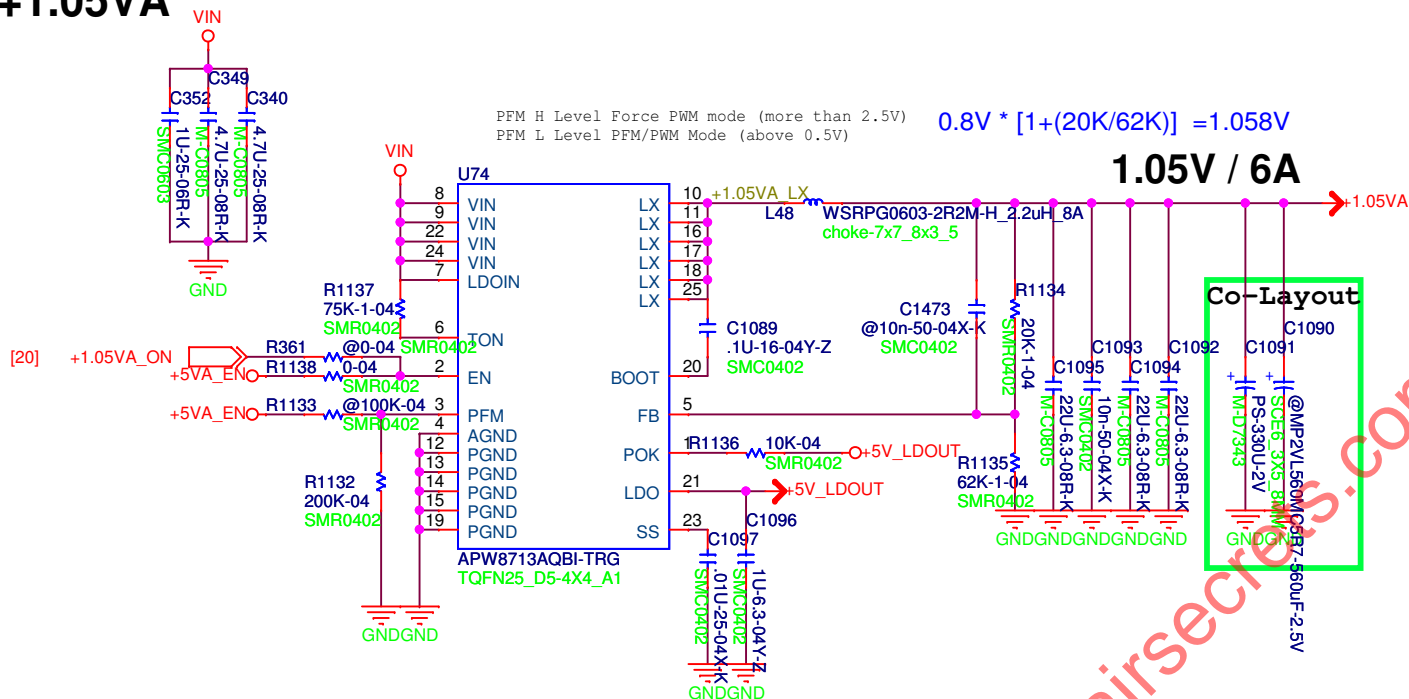
Rev 1.1

+VGG CORE (OZ8271)

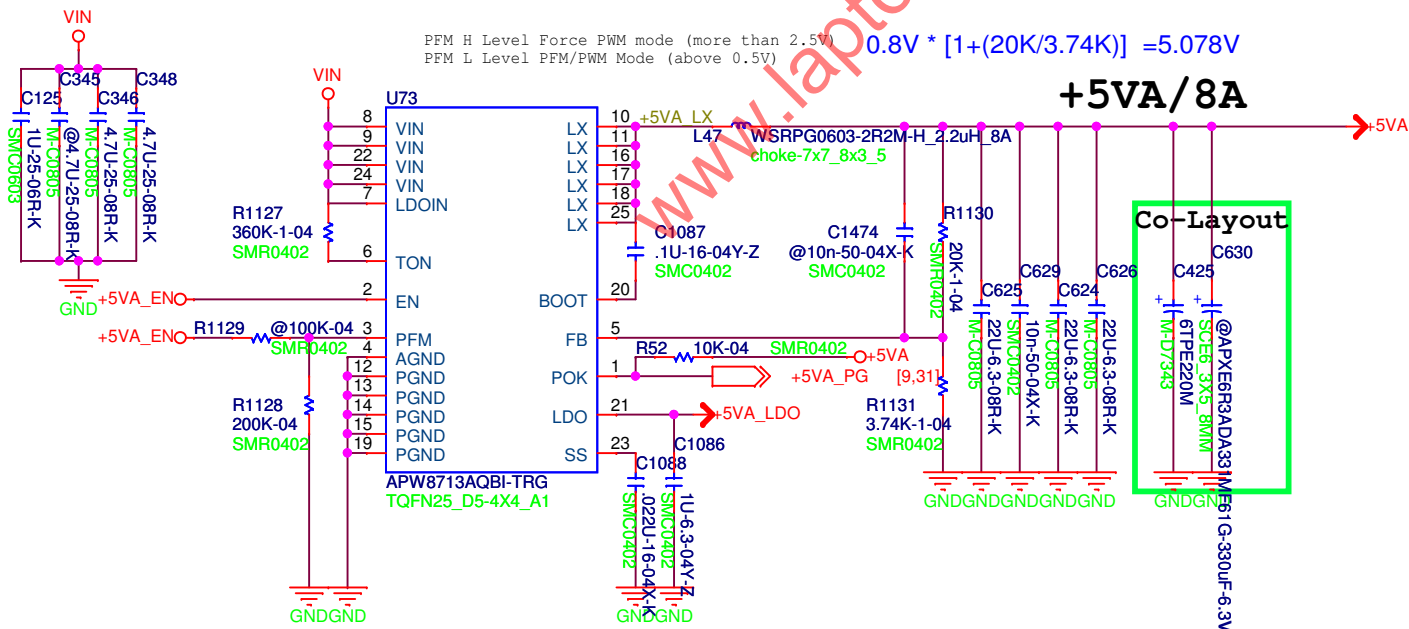
Date: Tuesday, February 16, 2016

Sheet 28 of 36

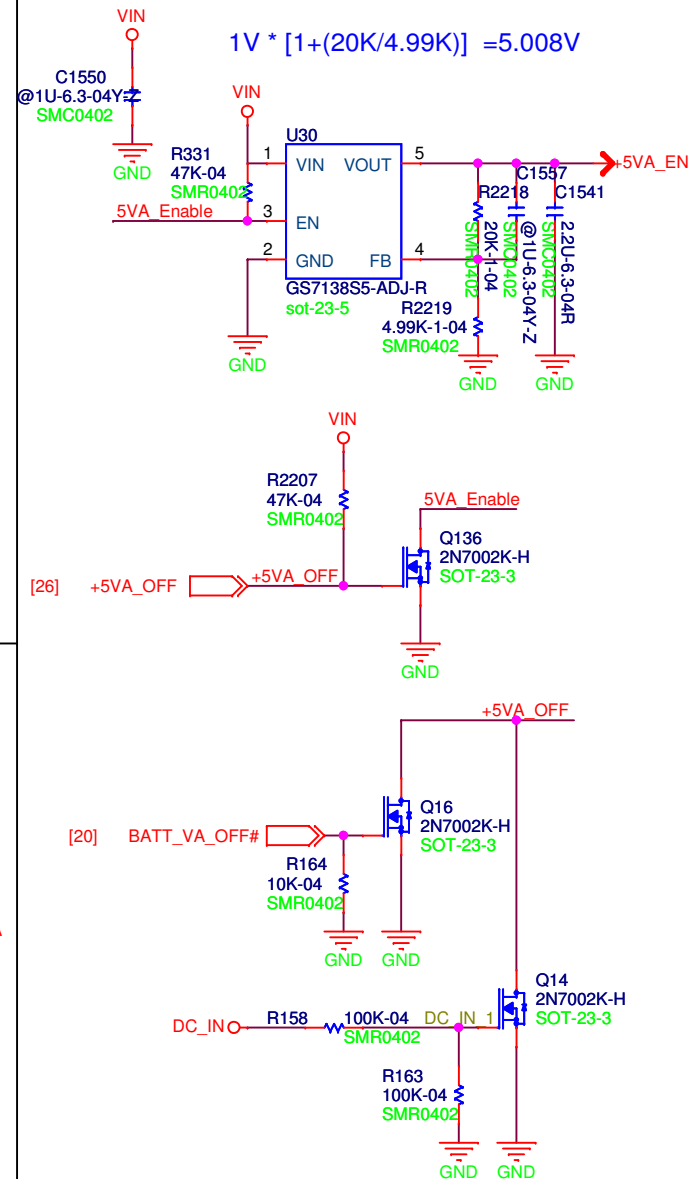
## +1.05VA



## +5VA



## Power Save Function

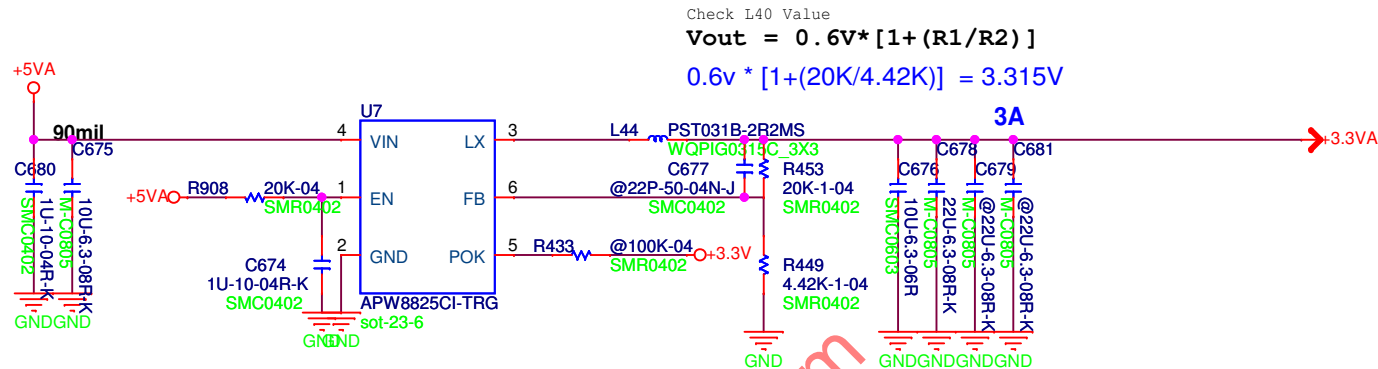


Shuttle®

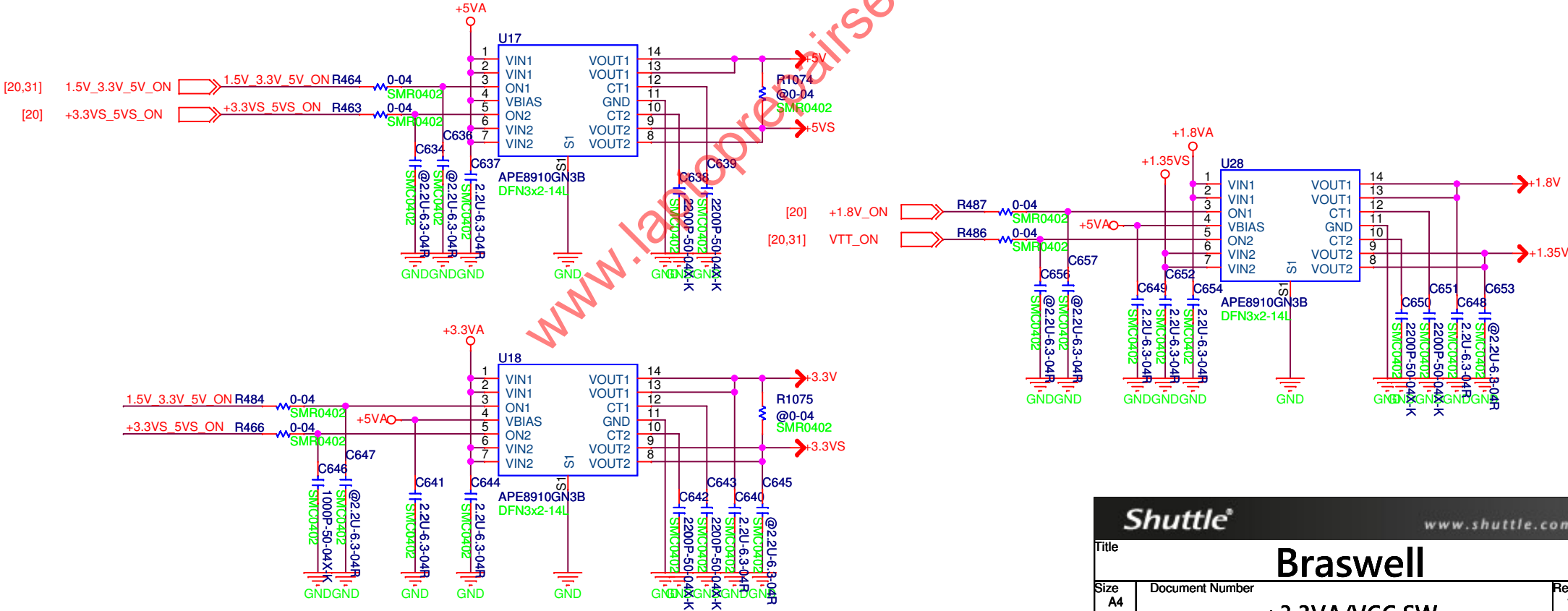
www.shuttle.com

Title			Braswell	
Size	Document Number	+1.05VA/+5VA		Rev
A4				1.1
Date	Thursday, June 16, 2016	Sheet	29	of 36

# 3.3VA Step Down Convert



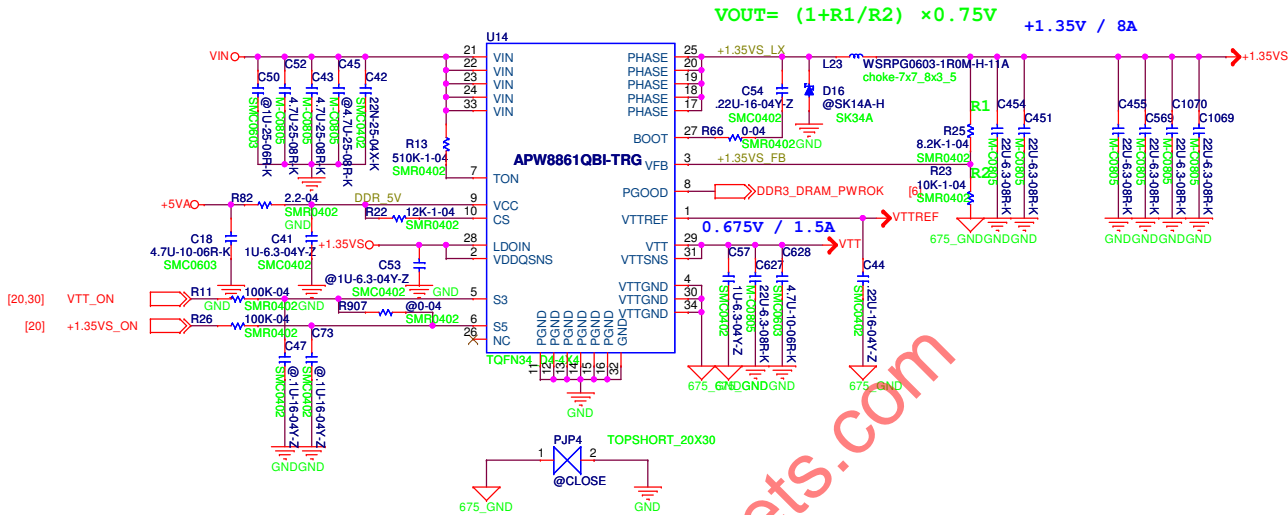
# VCC Switch



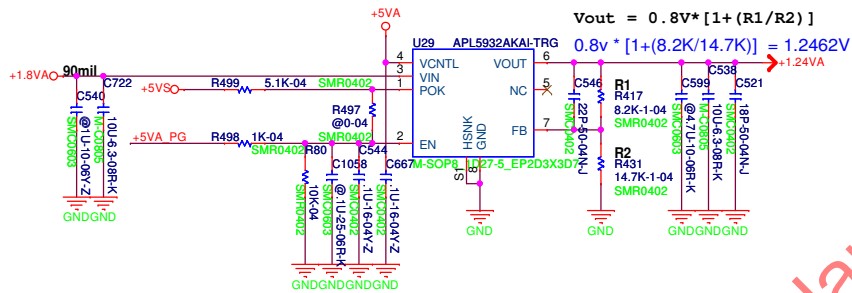


DRAM POWER

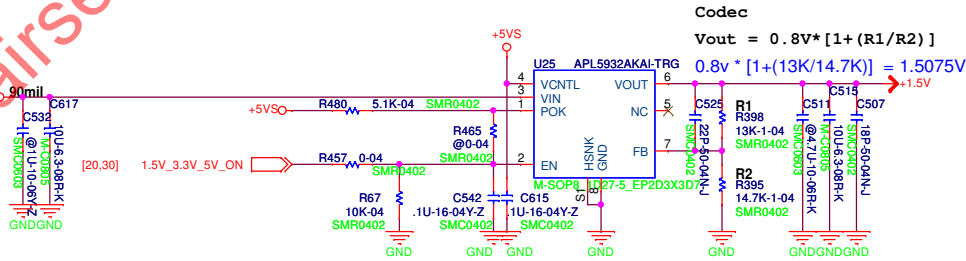
State	EN1	EN2	VDDQ	VTTREF	VTT
S0	High	High	ON	ON	ON
S3	Low	High	ON	ON	OFF(High-Z)
S4/S5	Low	Low	OFF	OFF	OFF



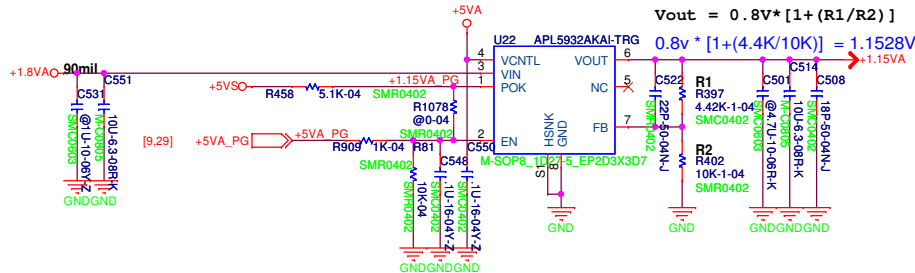
1.24VA LDO



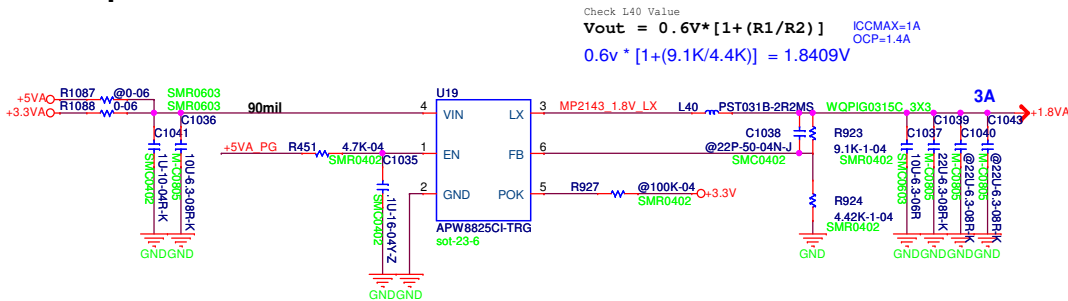
1.5V LDO



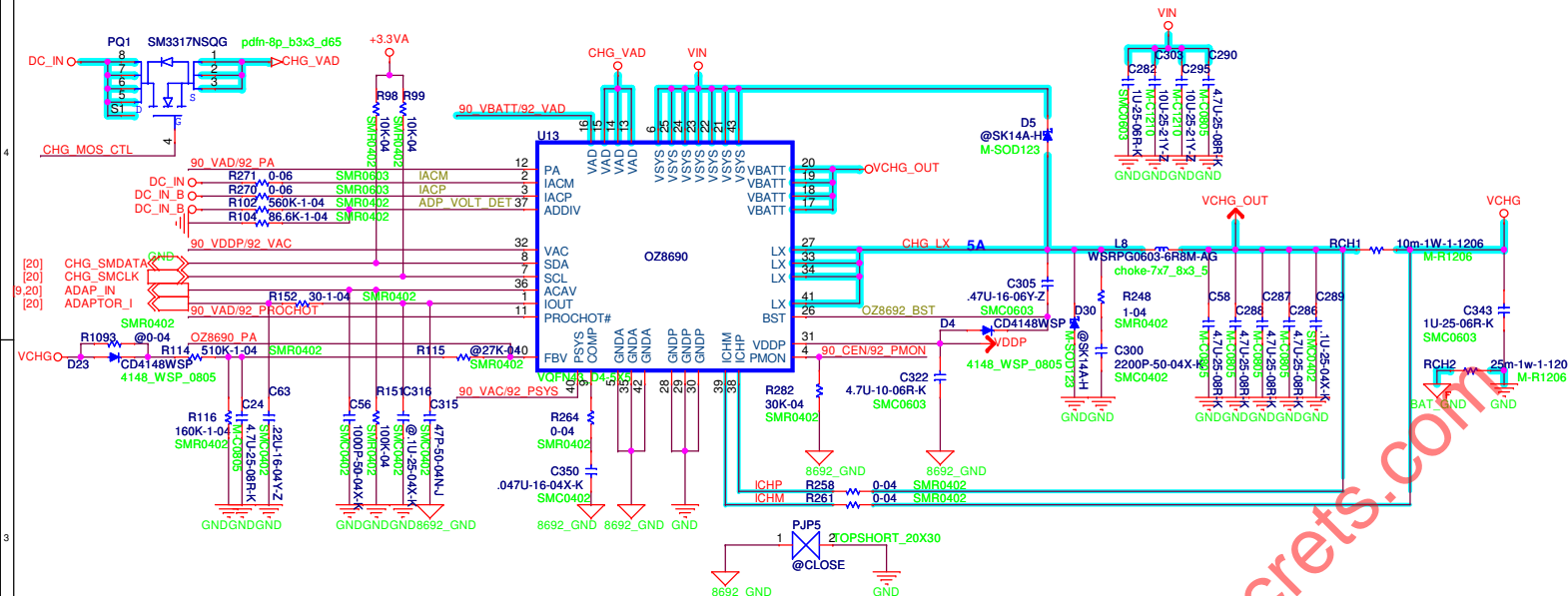
1.15VA LDO



1.8VA Step Down Convert

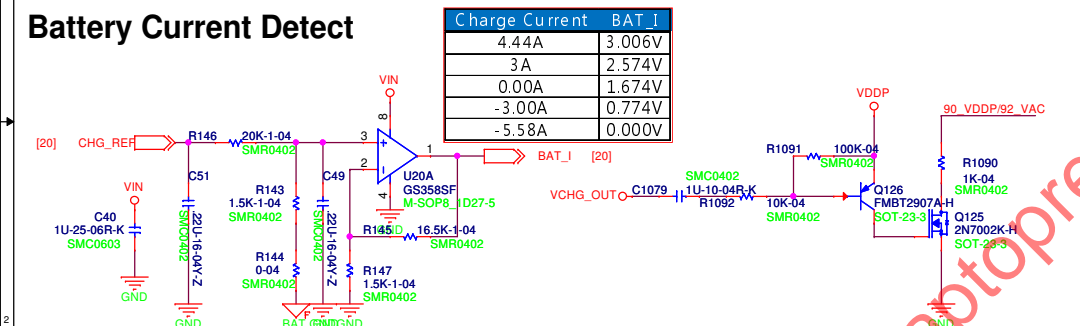


## CHARGER

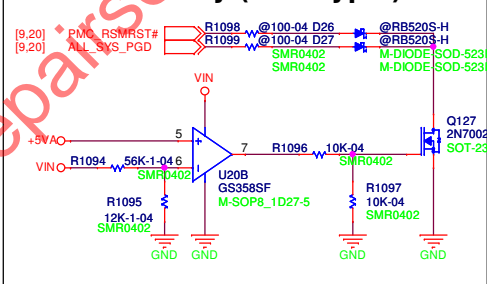


## Battery Current Detect

Charge Current	BAT_I
4.44A	3.006V
3A	2.574V
0.00A	1.674V
-3.00A	0.774V
-5.58A	0.000V

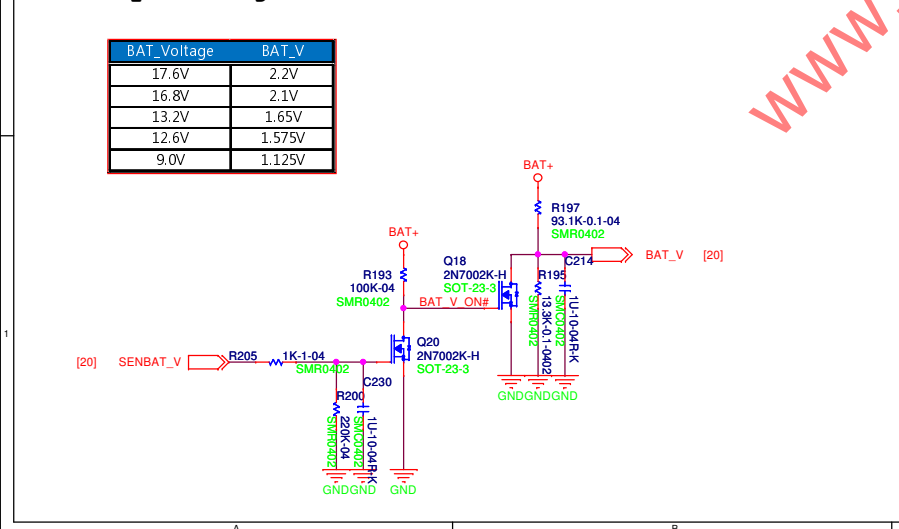


**For No Battery ( AIO type )**

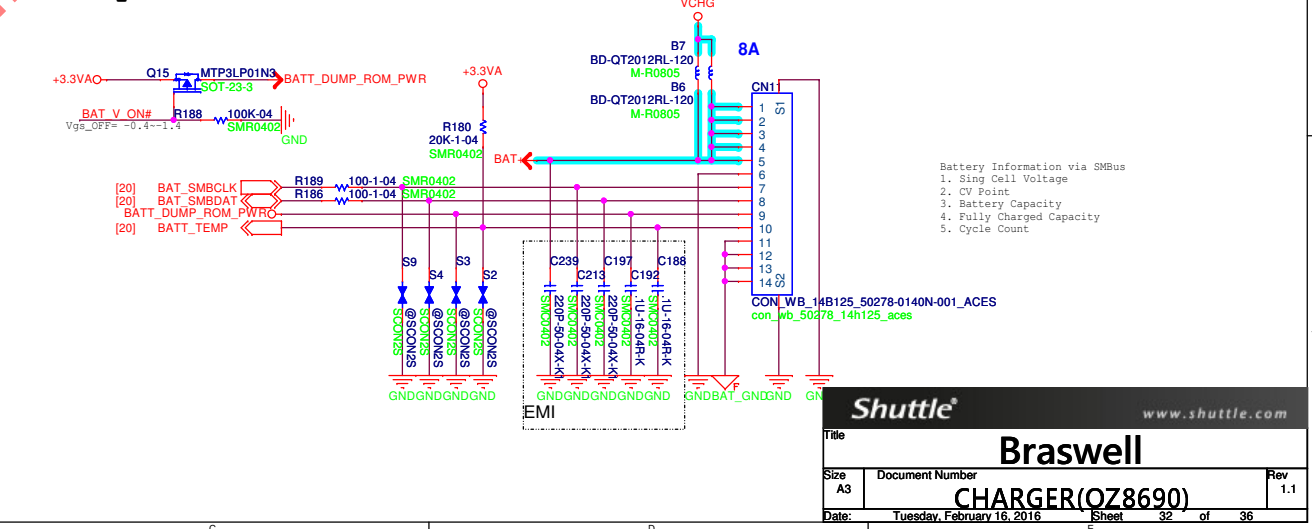


## Battery Voltage Detect

BAT_Voltage	BAT_V
17.6V	2.2V
16.8V	2.1V
13.2V	1.65V
12.6V	1.575V
9.0V	1.125V



## Battery Connector

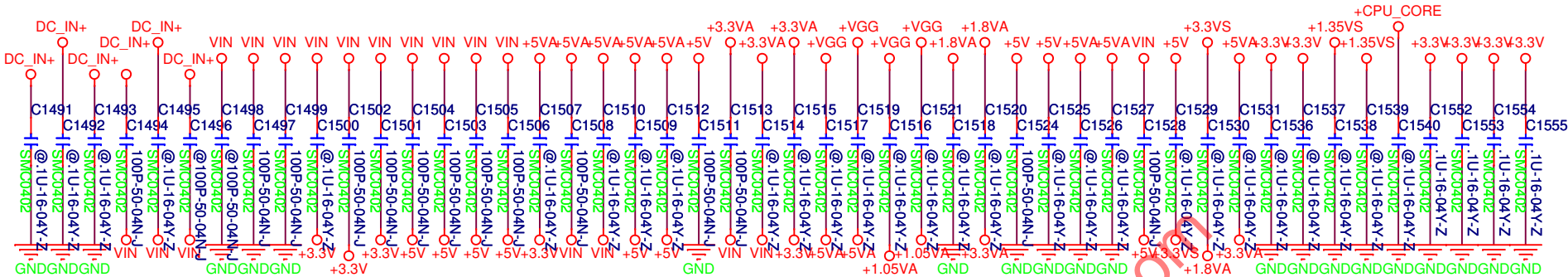




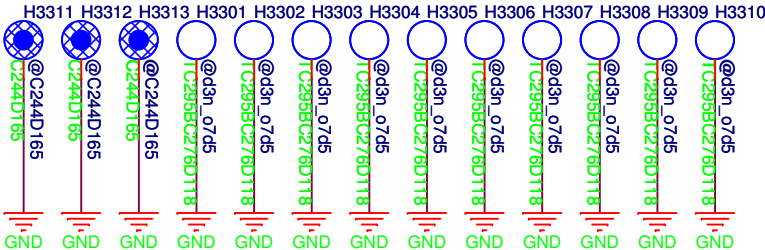



HIGH-SPEED CAP

Discharge Resistor



Screw Hole





Title			Braswell	
Size	Document Number			Rev
	HIGH-SPEED CAP			1.1
Date:	Tuesday, February 16, 2016			Sheet 34 of 36



www.laptoprepairsecrets.com