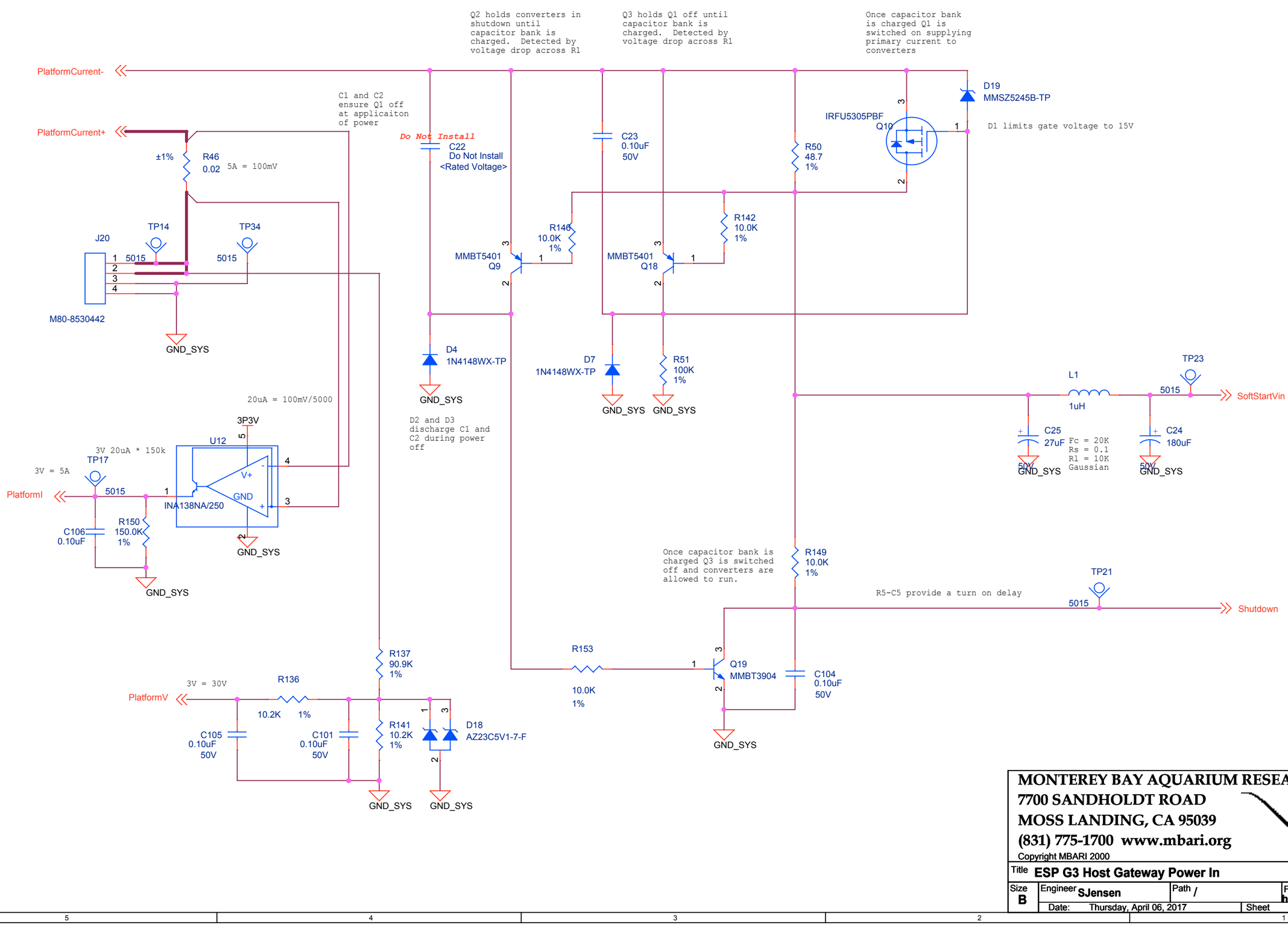

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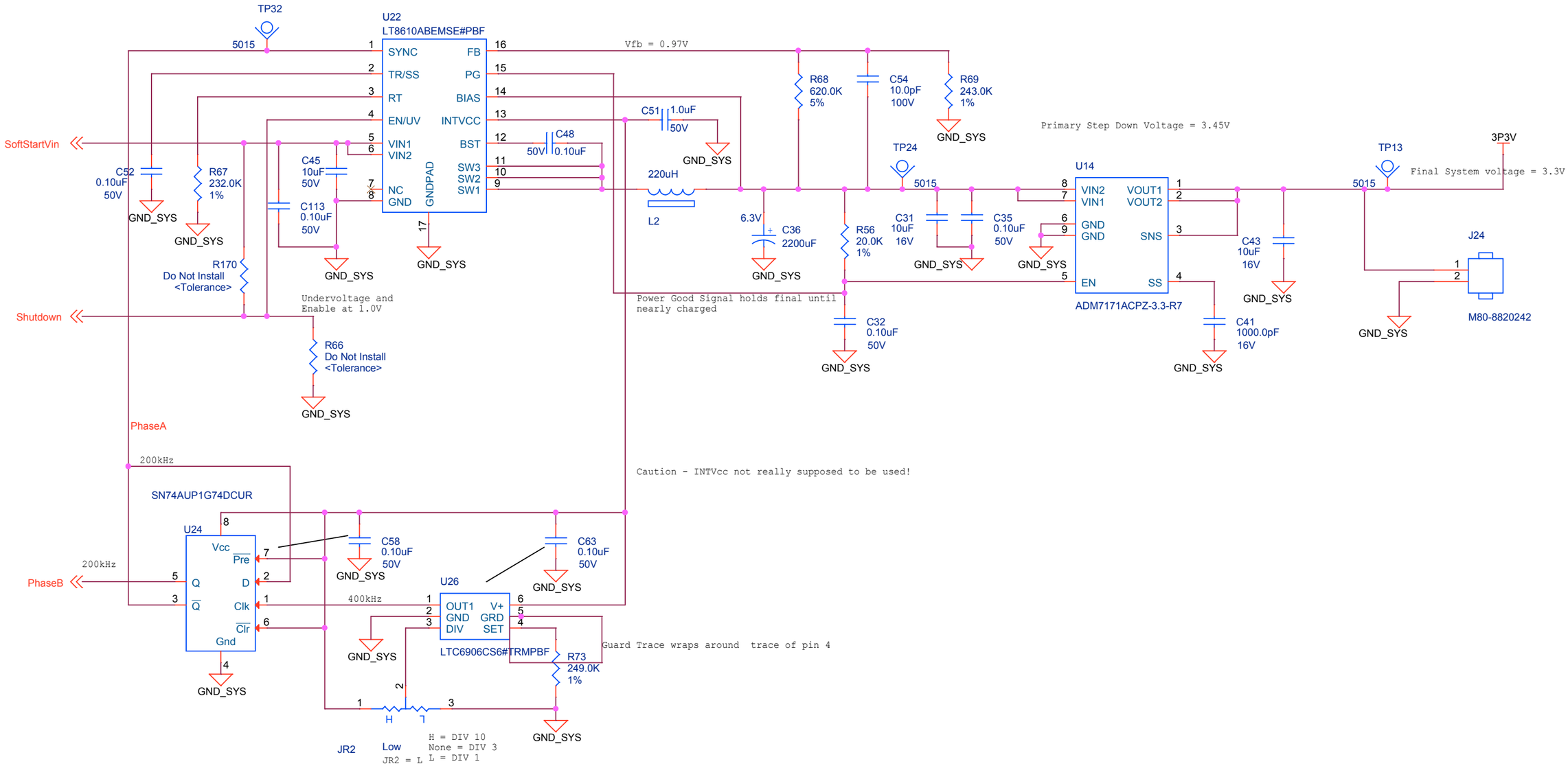
Title: ESP G3 Host Gateway Power In				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 1 of 28	



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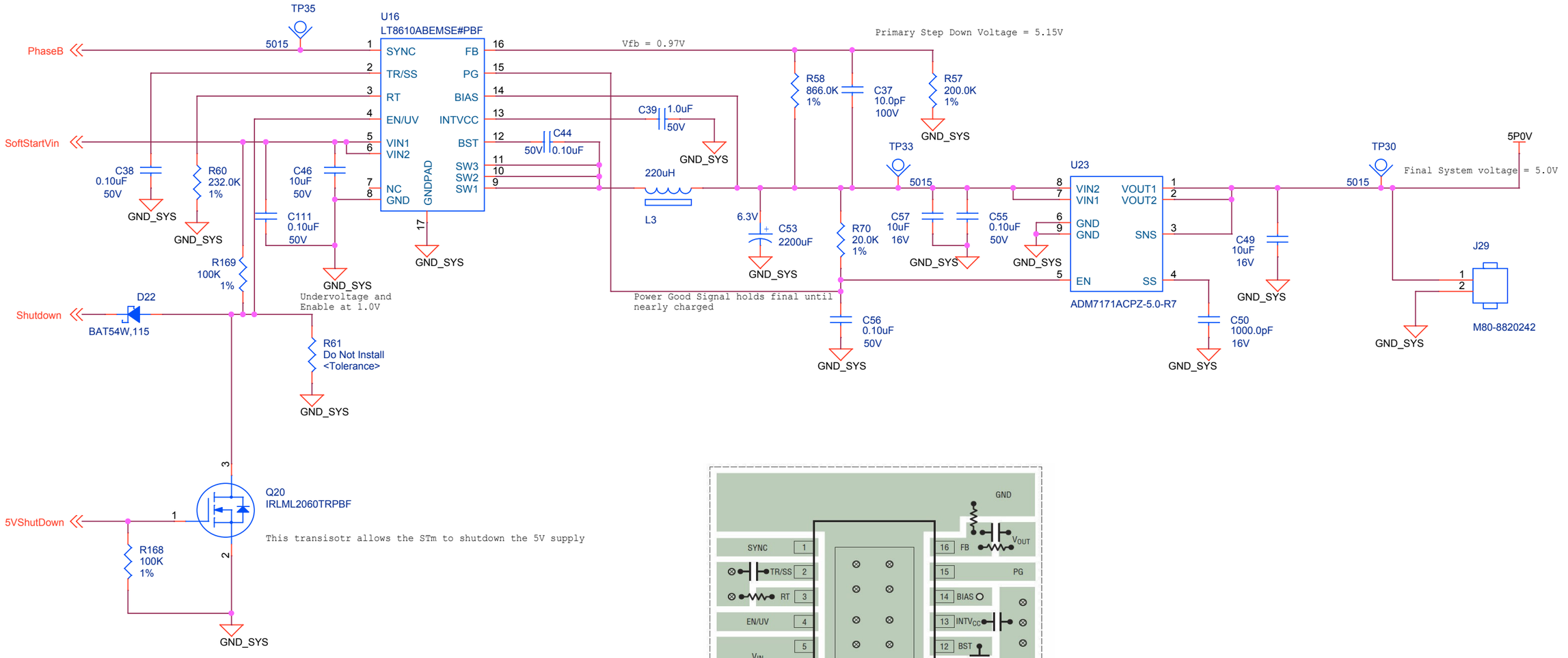
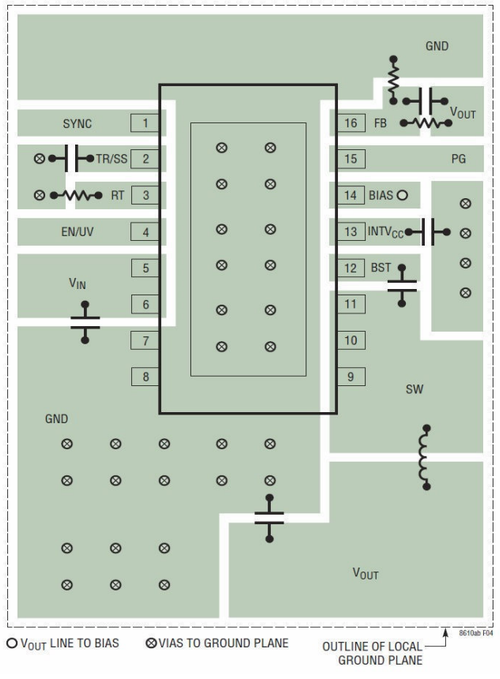
Title: ESP G3 Host Gateway 3.3V Power Supply				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017	Sheet 2 of 28		





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Title: ESP G3 Host Gateway 5.0V Power supply				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017	Sheet: 3 of 28		

BUFFER8_GPIO1
BUFFER7_GPIO1
BUFFER6_GPIO1

Required to pull low so that OS knows that it is operating with this board

R186 100K 1%
R83 100K 1%
R84 100K 1%
R176 100K 1%
R175 100K 1%

D9 LTST-C150TBKT Blue
R188 270 5%
R71 10K 5%

3P3V
U31 SN74LVC1G08DCKR
LightSense
ACTIVE_LED

BUFFER3_PWR
BUFFER4_PWR
BUFFER5_PWR

HS_USB_POWER_ON
UART_INT
BUS_READ
HS_USB_OVERCURRENT
BUS_WRITE
ENET_CS
UART_CS
BA[0:15]

J33
LPC3141 OEM Board

GND2 GND4 GND6 GND8 GND10 GND12 GND14 GND16 GND18 GND20 GND22 GND24 GND26 GND28 GND30 GND32 GND34 GND36 GND38 GND40 GND42 GND44 GND46 GND48 GND50 GND52 GND54 GND56 AIN3 GND60 GND62 GND64 GND66 GND68 GND70 GND72 GND74 GND76 GND78 GND80 GND82 GND84 GND86 GND88 GND90 GND92 GND94 GND96 GND98 GND100 GND102 GND104 GND106 I2SRX_BCK1 I2SRX_WS1 I2SRX_DATA1 GND114 I2STX_BCK1 I2STX_WS1 I2STX_DATA1 I2C-SDA1 I2C-SCL1 GPIO11 GPIO12 GPIO13 GPIO14 GPIO15 GPIO16 GPIO17 GPIO18 GPIO20 GPIO19 CLK_256FS SYSCLK NAND_RYBN3 NAND_RBYN1 NAND_NCS2 B_N_STCS1 B_N_STCS0 BBLS0 B_N_OE N_ABUF_EN GND166 BA15 BA14 BA13 BA12 BA11 BA10 BA9 BA8 BA7 BA6 BA5 BA4 BA3 BA2 BA1 BA0 GND200

GND1 USB_VBUS-3 USB_VBUS5 USB_DM USB_DP USB_ID NC13 CHARGE_VNTC PWR_CTRL HIGH_LOW_CC VBAT_SENSE VBAT23 VBAT25 VIN27 VIN29 VIO_3V3 VDIG_1V8 UOS_VBAT N_RESET_IN JTAG_DBGEN JTAG_TCK JTAG_TRST JTAG_TMS JTAG_TDI JTAG_TDO GND51 ADC_VREFP AIN0 AIN1 AIN2 GND61 MIC_IN GND65 TL_IN TR_IN LL_IN LR_IN GND75 HP_OUTL HP_OUTR GND81 UART_TXD UART_RXD SPI_CS_IN UART_CTS_SPI_CS_OUT1 UART_RTS_SPI_CS_OUT2 SPI_SCK SPI_MISO SPI_MOSI GPIO0_BOOT0 GPIO1_BOOT1 GPIO2_BOOT2 GPIO3 I2SRX_BCK0 I2SRX_WS0 I2SRX_DATA0 I2STX_CLK0 I2STX_BCK0 I2STX_WS0 I2STX_DATA0 I2C-SDA0 I2C-SCL0 GPIO5_MCI_CLK GPIO6_MCI_CMD GPIO4 GPIO7_MCI_DAT0 GPIO8_MCI_DAT1 GPIO9_MCI_DAT2 GPIO10_MCI_DAT3 PWM_OUT PSU_PLAY PSU_STOP RTC_INT RTC_CLK OTP NAND_RYBN2 NAND_NCS3 NAND_NCS1 CLOCK_OUT BBLS1 B_N_WE N_DBUF_EN VDD_EXT165 BD15 BD14 BD13 BD12 BD11 BD10 BD9 BD8 BD7 BD6 BD5 BD4 BD3 BD2 BD1 BD0 VDD_EXT199

U44
SN74LVC1G57DCKR
IN1 IN2 GND VCC IN0 Y
3P3V
GND_SYS

3P3V
DBUF_EN
BD15 BD14 BD13 BD12 BD11 BD10 BD9 BD8 BD7 BD6 BD5 BD4 BD3 BD2 BD1 BD0

GND_SYS
5P0V

R171 10K 5%
R172 10K 5%
R173 10K 5%
R174 10K 5%
R184 22 5%
R194 22 5%

VDD_SODIMM
VDIG_1P8V

HS_USB_HOST_POWER
HS_USB_DM_DIFF_90_OHM
HS_USB_DP_DIFF_90_OHM
HS_USB_ID

N_RESET_IN
JTAG_DBGEN
JTAG_TCK
JTAG_TRST
JTAG_TMS
JTAG_TDI
JTAG_TDO

CONSOLE_TX
CONSOLE_RX

ENET_PME
ENET_RESET
BOOT2
BOOT1
BOOT0

CoreSCK
CoreSDA

BD[0:15]
RTC_INT_N
SD_CARD_D3
SD_CARD_D2
SD_CARD_D1
SD_CARD_D0
SD_CARD_CMD
SD_CARD_CLK
SD_CARD_ON
SD_CARD_NDETECT
ENET_INT
RTC_SPI_SCK
RTC_SPI_MISO
RTC_SPI_MOSI
RTC_SPI_CS

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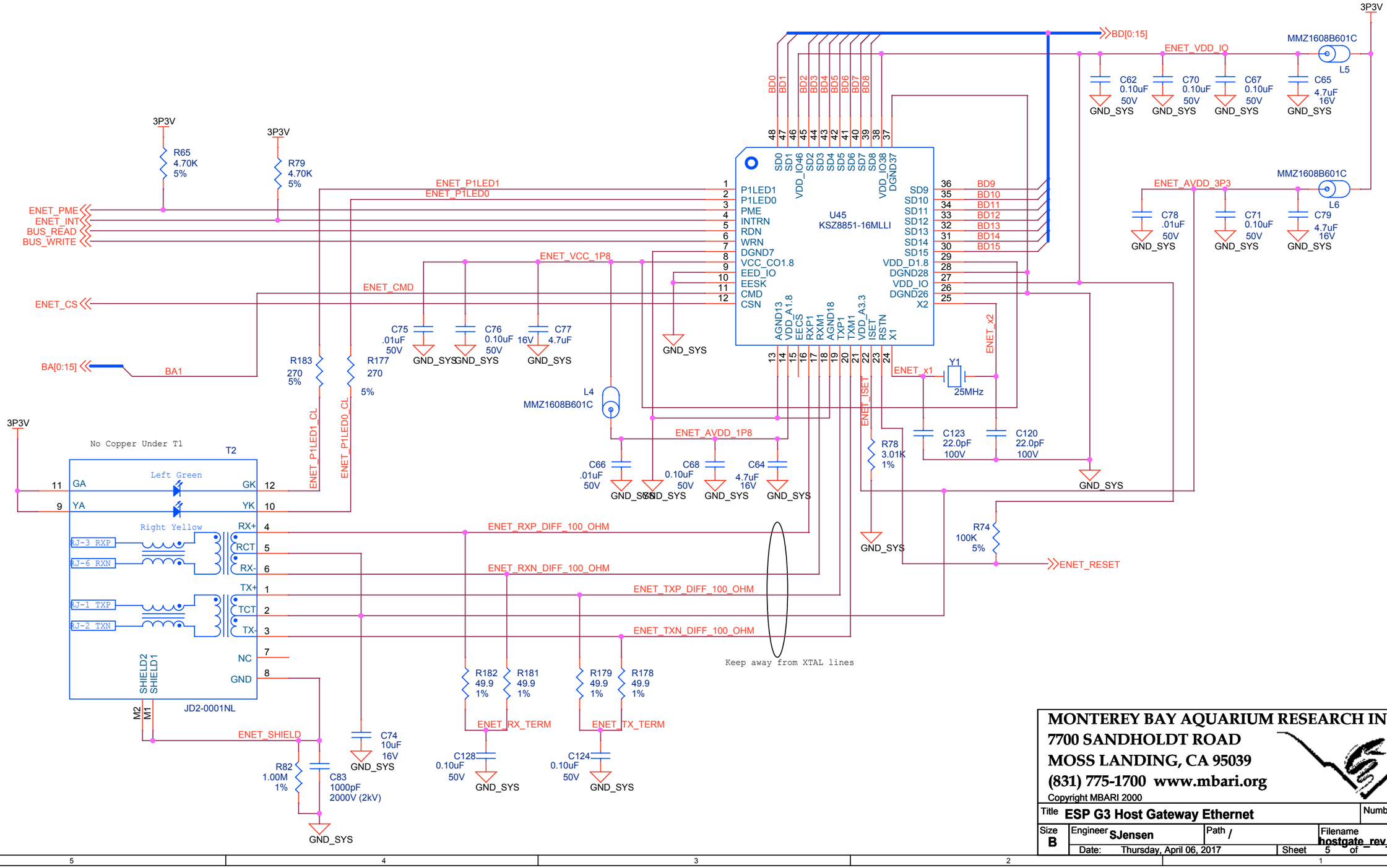
Title: ESP G3 Host Gateway LPC3141 Socket			Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj
	Date: Thursday, April 06, 2017	Sheet 4 of 28	Rev: 1.0.0



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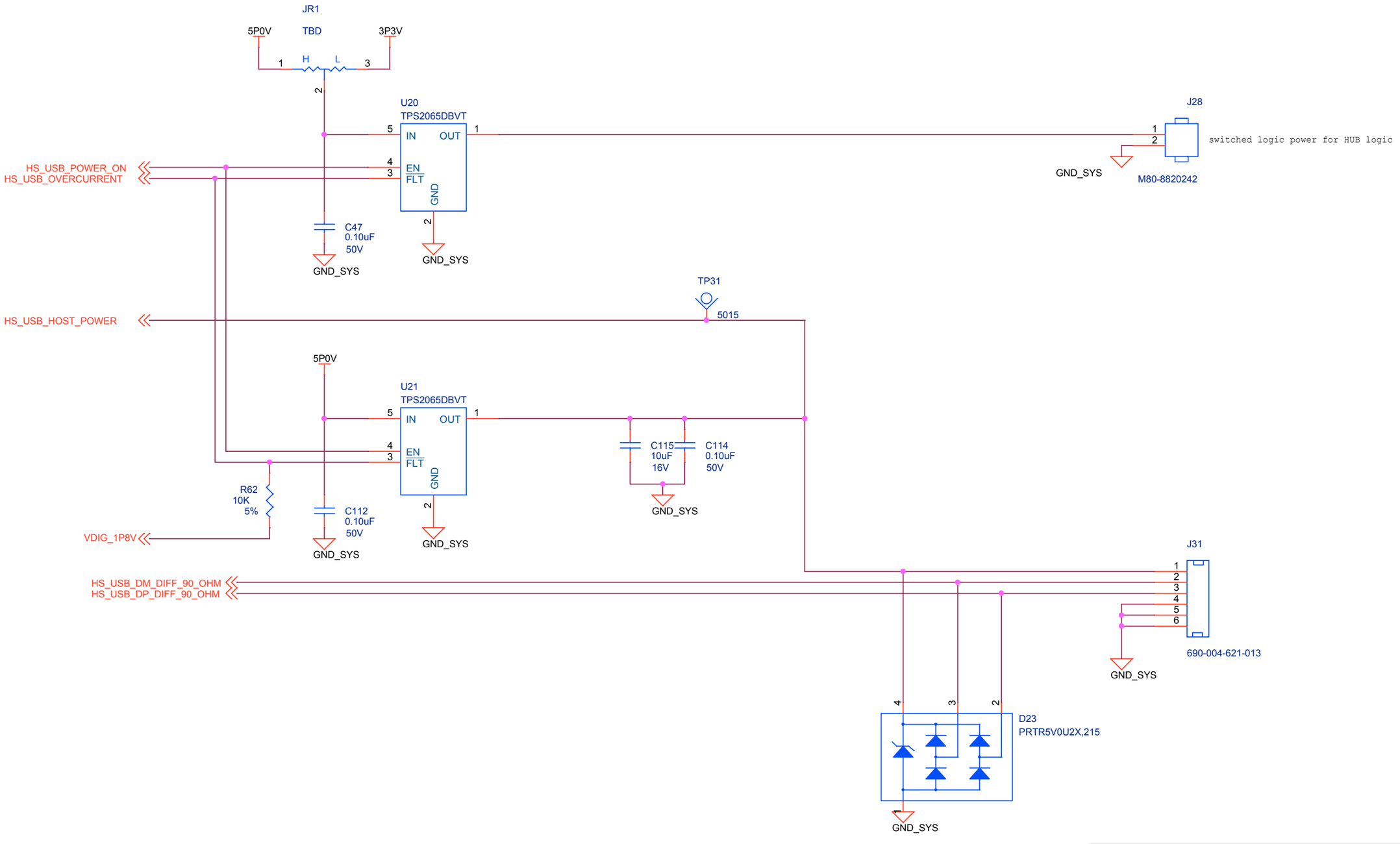
Title: ESP G3 Host Gateway Ethernet				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 5 of 28	



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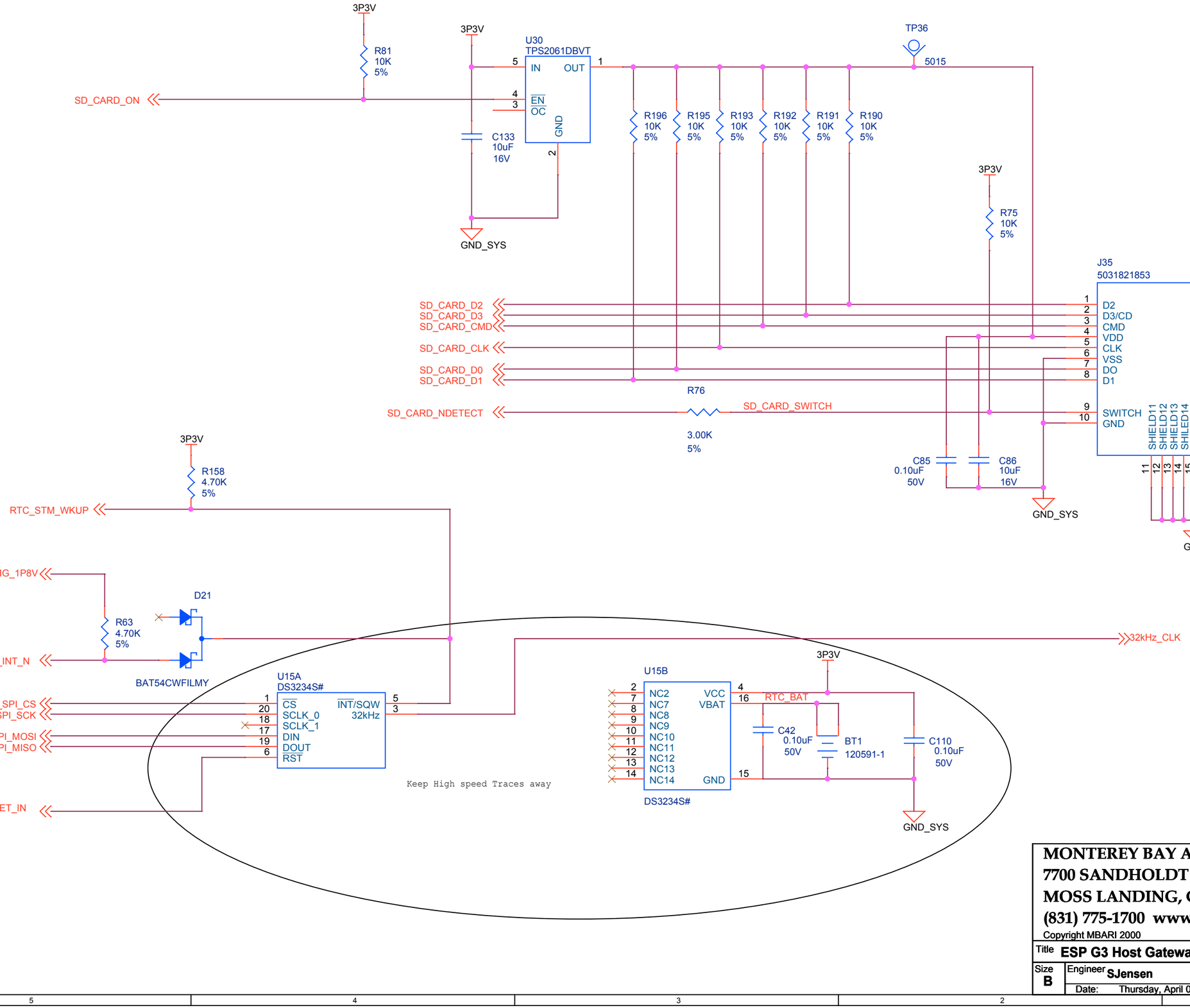
Title: ESP G3 Host Gateway USB			Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj
	Date: Thursday, April 06, 2017	Sheet 6 of 28	Rev: 1.0.0



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Title: **ESP G3 Host Gateway RTC and SD**				Number: **<Doc>**
Size: **B**	Engineer: **SJensen**	Path: **/**	Filename: **hostgate_rev_1.opj**	Rev: **1.0.0**
	Date: Thursday, April 06, 2017	Sheet 7 of 28		

Console and CD is an isloated system from the instrument

3P3V
U1
ADUM1201ARZ-RL7
CON3P3V
CD_CTS
CD_RTS
CD_TX
CD_RX
CD_LCTS
CD_LRTS
CONGND
GND_SYS

3P3V
U6
ADUM1402ARWZ-RL
CON3P3V
CONSOLE_TX
CONSOLE_RX
CONSOLE_LTX
CD_LTX
CONSOLE_LRX
CD_LRX
ADuM1402xRW
CONGND
GND_SYS

CON3P3V
C88
0.10uF
50V
CONGND

U5
ADM3315EACPZ
NC7 NC3 NC8 NC12 NC13 NC17 NC18 NC22 GNDP GND VCC
7 3 8 12 13 17 18 22 33 27 31

T1IN 4
T2IN 5
T3IN 6
R1OUT 9
R2OUT 10
R3OUT 11
SD 23
EN 1

T1OUT 21 CD_232_RTS
T2OUT 20 CONSOLE_232_TX
T3OUT 19 CD_232_TX
R1IN 16 CONSOLE_232_RX
R2IN 15 CD_232_RX
R3IN 14 CD_232_CTS

C1+ C1- C3- C3+ C2+ C2- V- V+
2 24 26 28 30 32 25 29

CONSOLE_C1+ 0.10uF 50V
C92
CONSOLE_C1-
CONSOLE_C3- 0.10uF 50V
C6
CONSOLE_C3+ 0.10uF 50V
C5
CONSOLE_C2+ 0.10uF 50V
CONSOLE_C2-
C7 0.10uF 50V
CONSOLE_V-
C89 0.10uF 50V
CONSOLE_V+
CONGND CONGND

J15
Console
TX O
RX I
GND
M80-8820342

Command/Data
J19
RTS O
TX O
RX I
CTS I
GND
M80-8530642
CONGND

Power supply set up for 10-24V
PlatformCurrent-

A possible alternat is a Wurth 750311559

C19
2.2uF
50V
GND_SYS

R131
10K
5%

U40
VIN
SW
EN
GND
RFB
LT8300HS5#TRMPBF

CONSOLE_ENABLE
CONSOLE_SWITCH
CONSOLE_FEEDBACK

R130
200 5%
C96
47.0pF
100V

R116
140.0K
1%

C17
0.10uF
50V
GND_SYS

T1
750311559

D1
SBR2A30P1-7
CONSOLE_AC

R45
100
1%

C18
10uF
16V

C21
4700.0pF
16V

TP1
5015
CONGND

CON3P3V
TP2
5015

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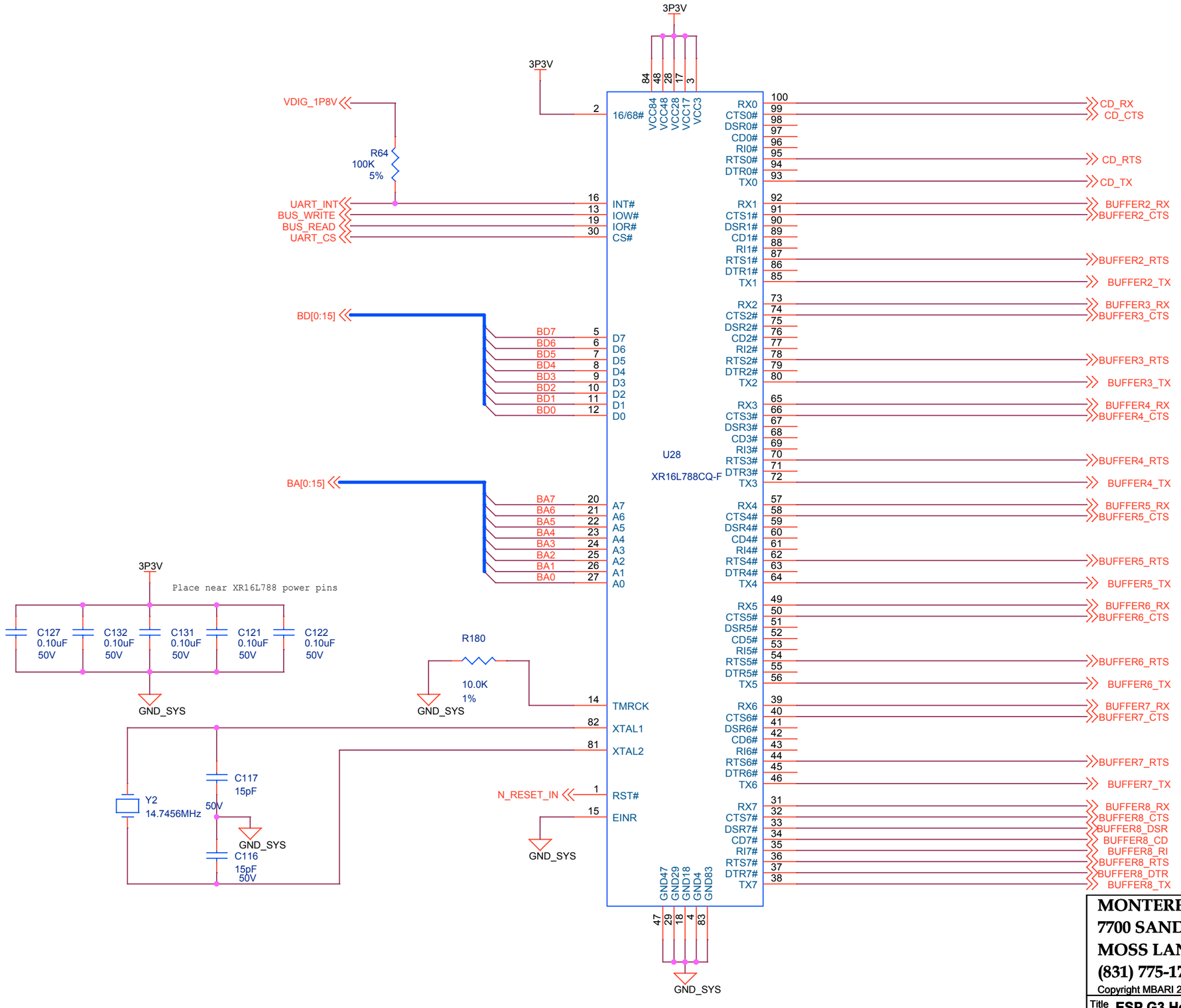
Title: ESP G3 Host Gateway Isolated Communications			Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj
	Date: Thursday, April 06, 2017	Sheet 8 of 28	Rev: 1.0.0



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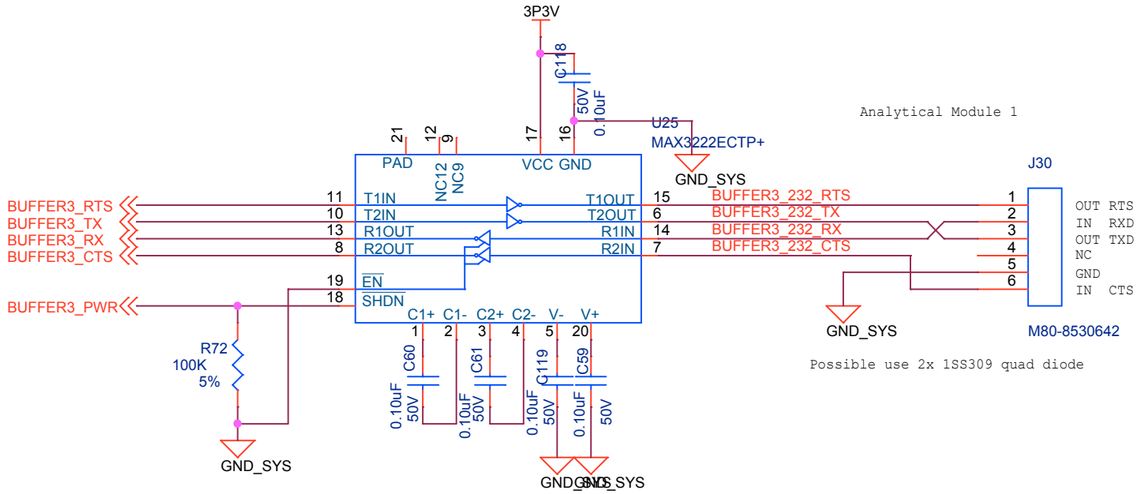
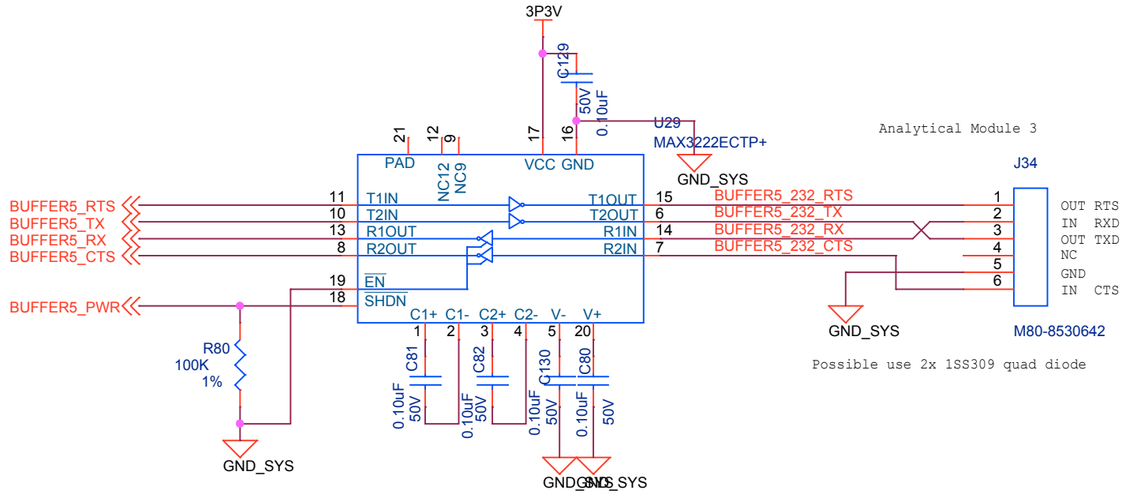
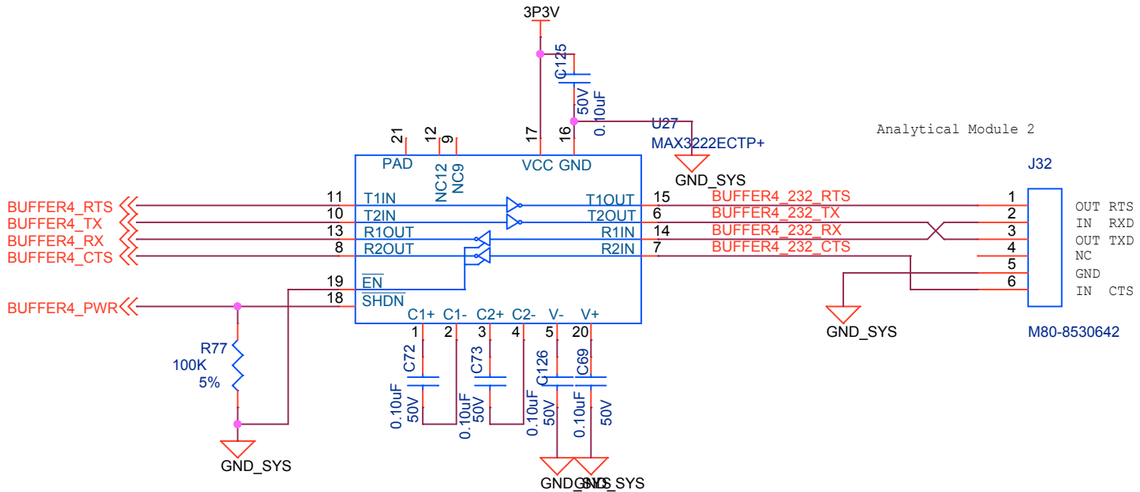
Title: ESP G3 Host Gateway Octal UART			Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj
	Date: Thursday, April 06, 2017	Sheet 9 of 28	Rev: 1.0.0







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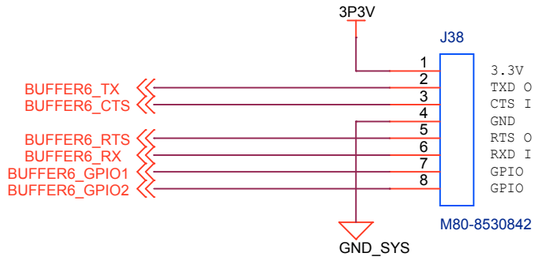
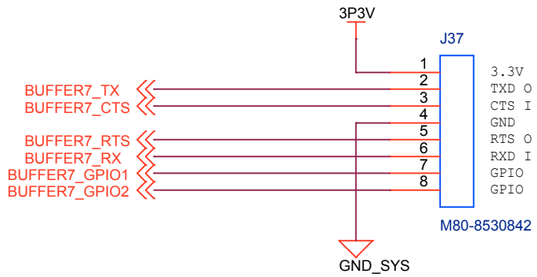
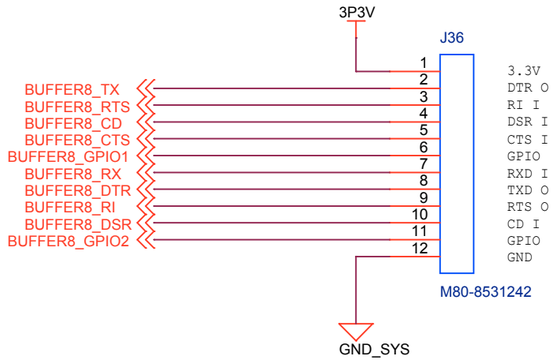
Title: ESP G3 Host Gateway AM RS232 Buffers				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017	Sheet: 10 of 28		







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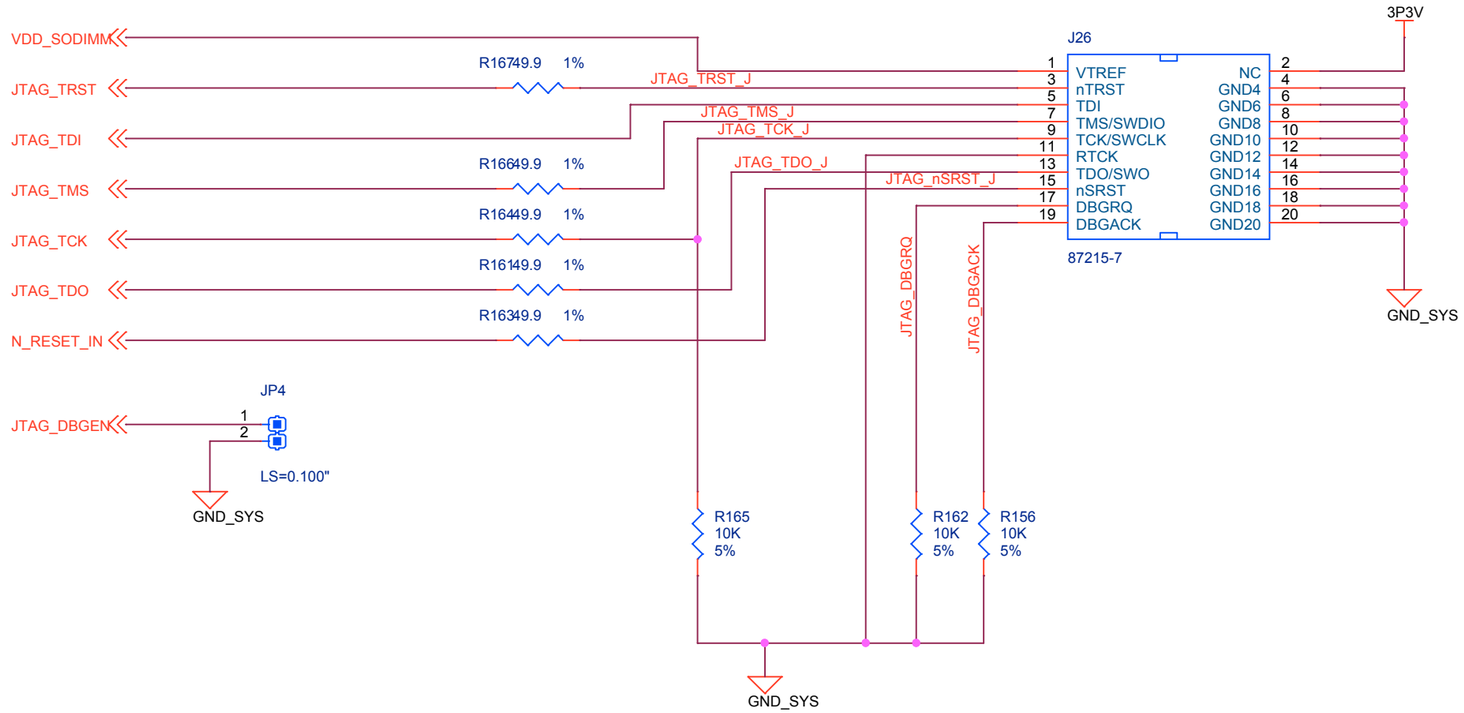
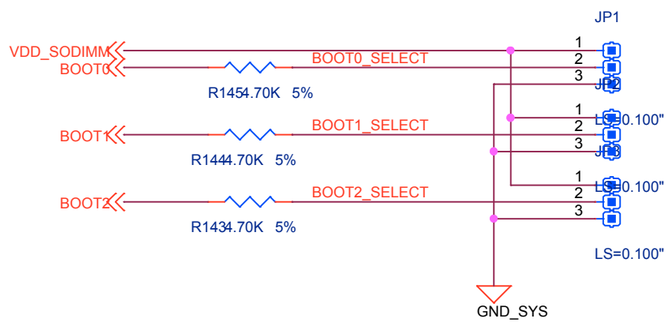
Title: ESP G3 Host Gateway Off-Board Channels				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Monday, April 03, 2017		Sheet 11 of 28	





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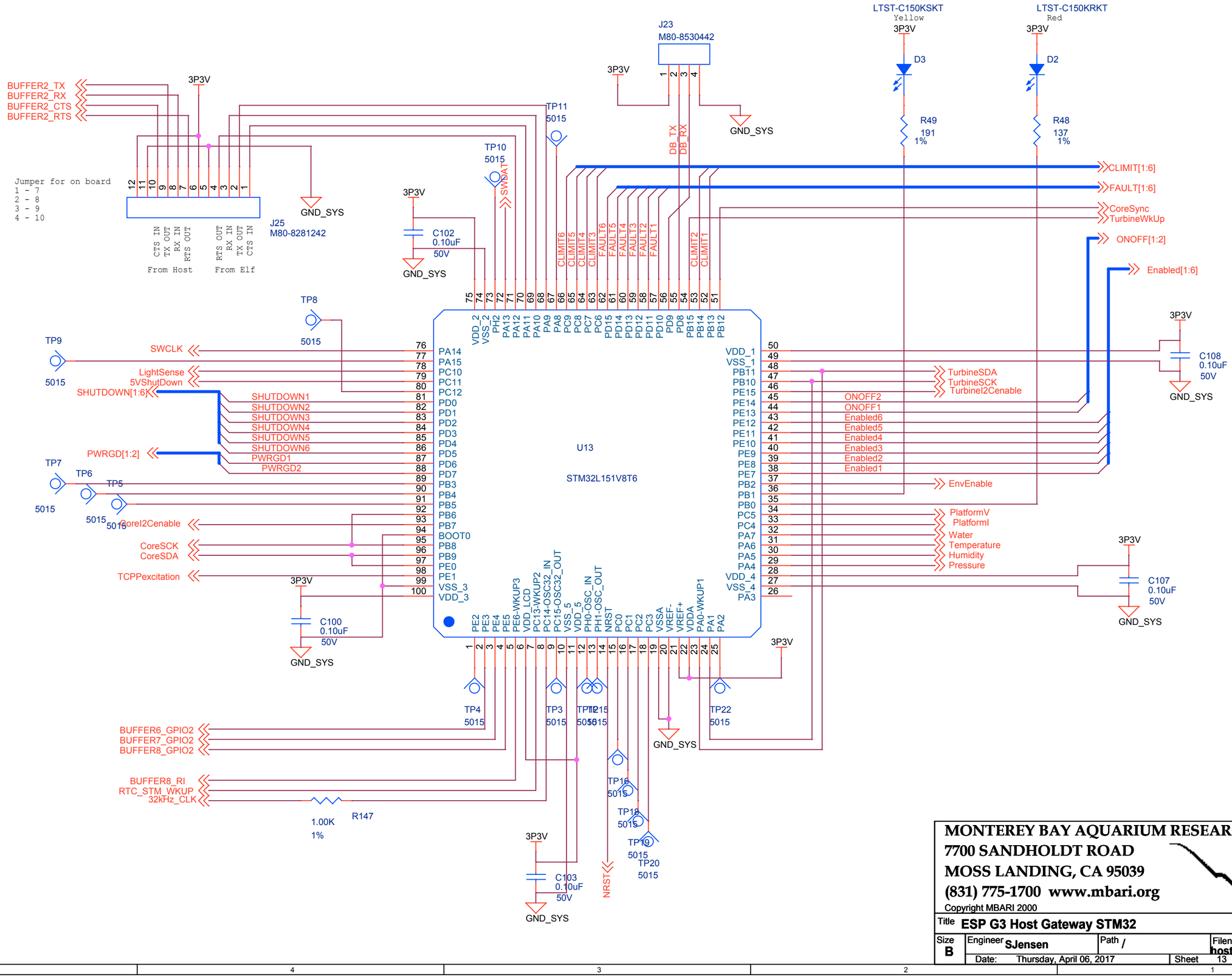
Title: ESP G3 Host Gateway JTAG and Stuff				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 12 of 28	



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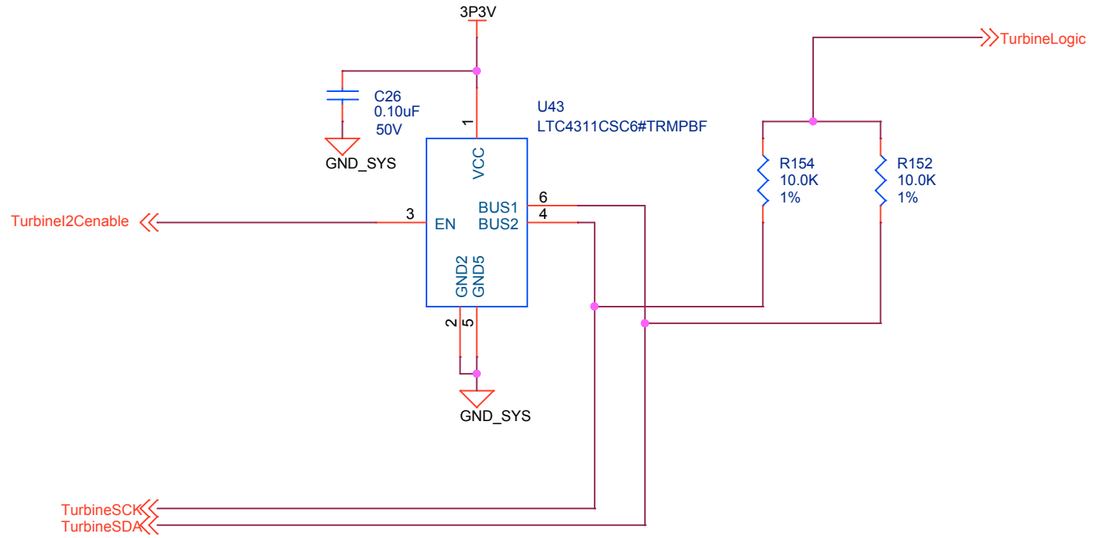
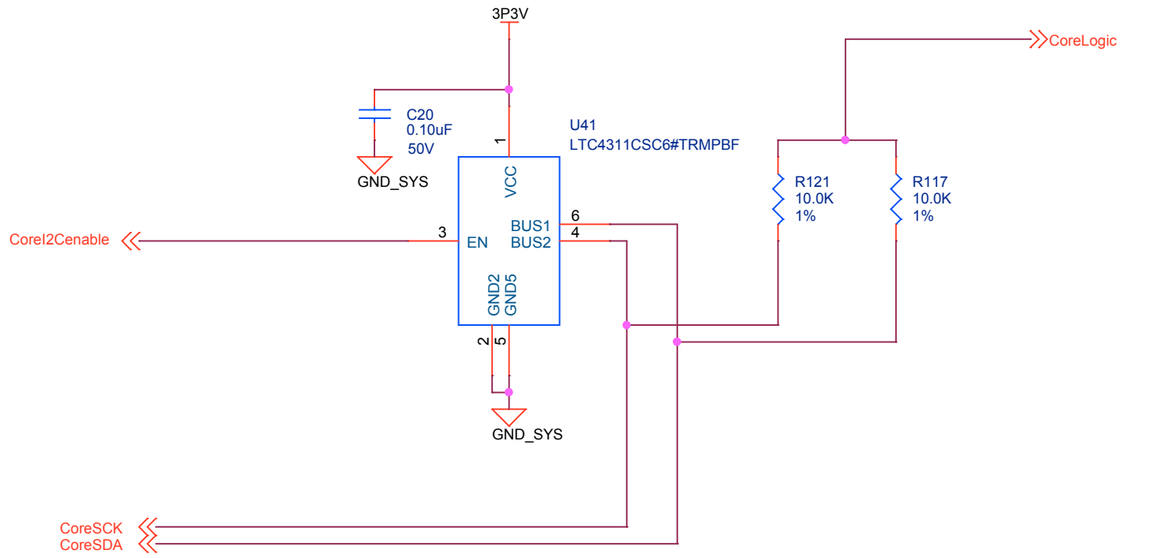
Title **ESP G3 Host Gateway STM32**			Number **<Doc>**
Size **B**	Engineer **SJensen**	Path **/**	Filename **hostgate_rev_1.opj**
	Date: Thursday, April 06, 2017	Sheet 13 of 28	Rev **1.0.0**





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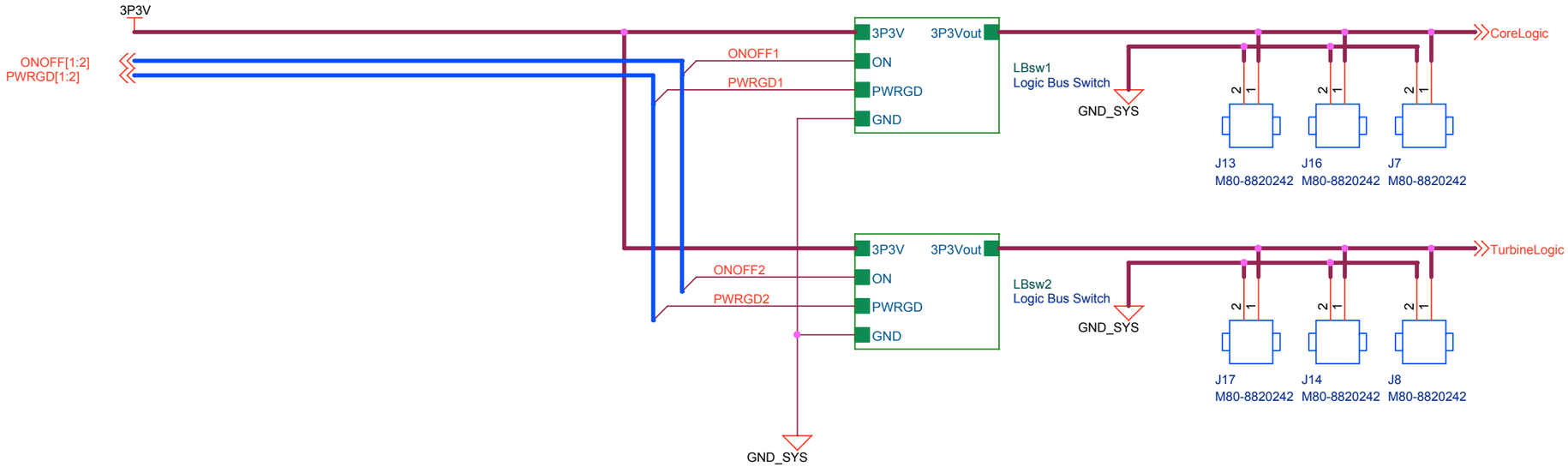
Title: ESP G3 Host Gateway I2C Bus Terminators				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 14 of 28	



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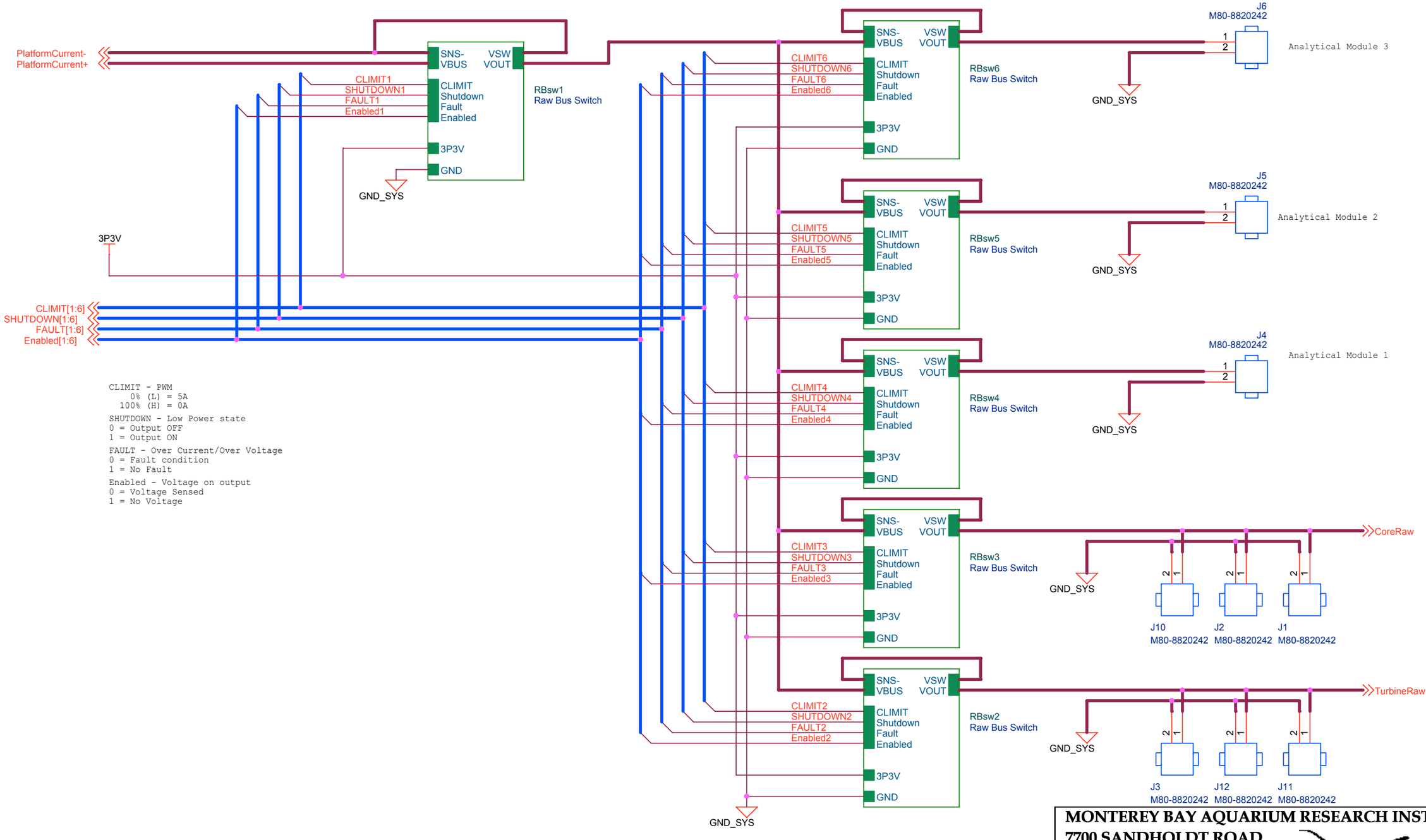
Title: ESP G3 Host Gateway 3.3V Distribution				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Tuesday, April 04, 2017		Sheet 15 of 28	



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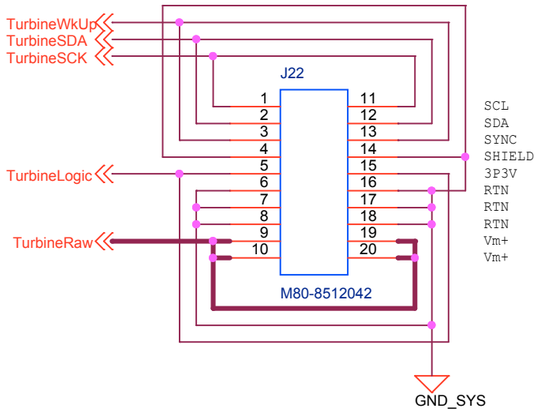
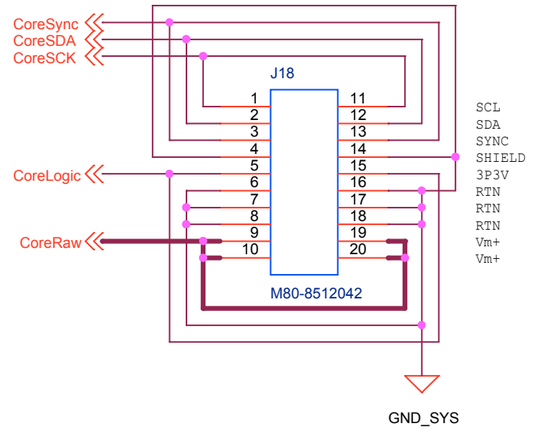
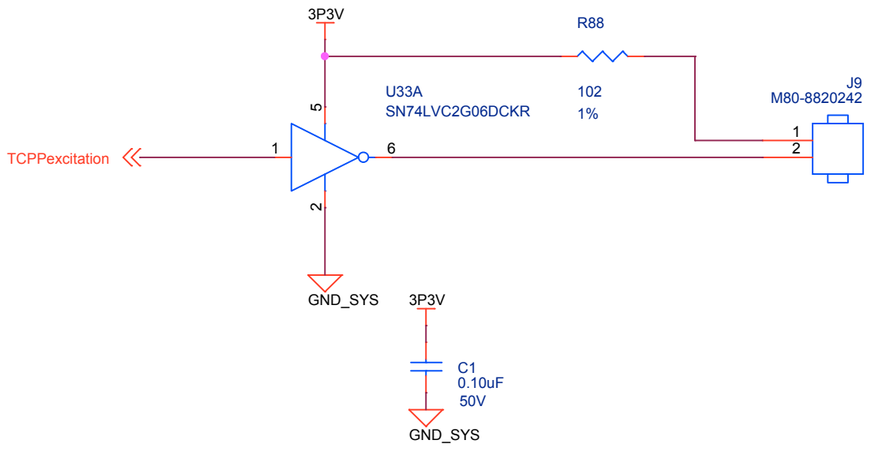
Title: ESP G3 Host Gateway Raw Voltage Distribution			Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj
	Date: Tuesday, April 04, 2017	Sheet 16 of 28	Rev: 1.0.0

Turbine Elf Bus

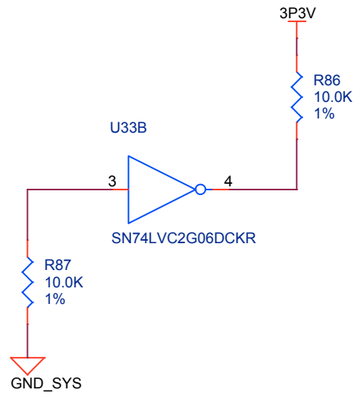


Core Elf Bus





Turbine Cartridge Processing Position excitation
VSMB10940



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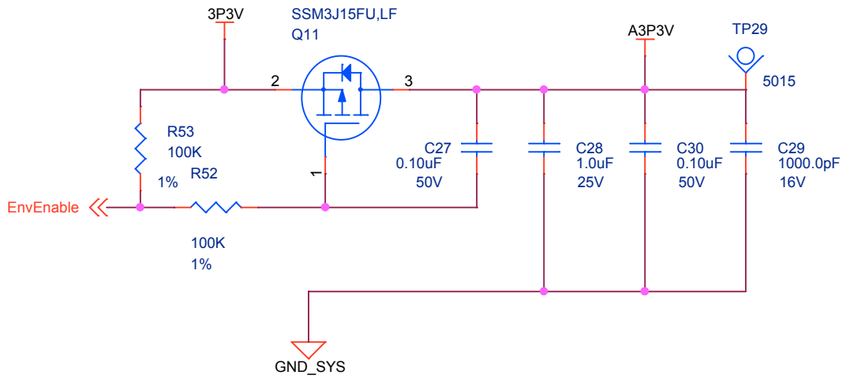
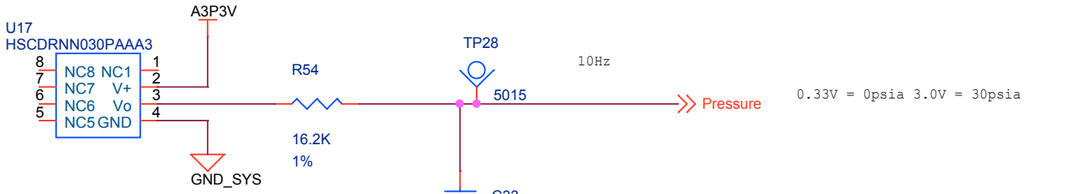
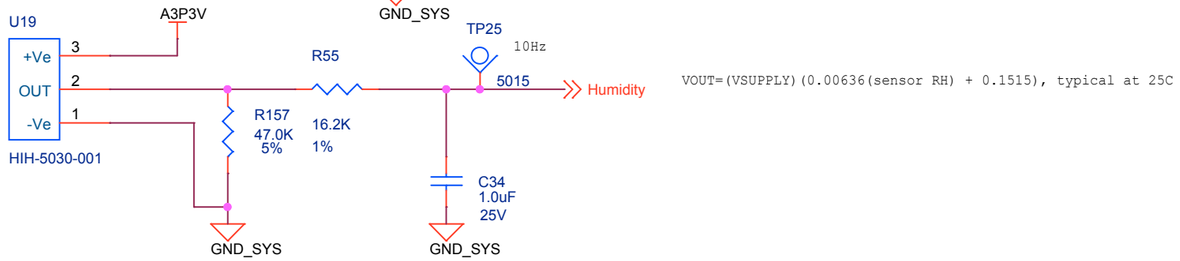
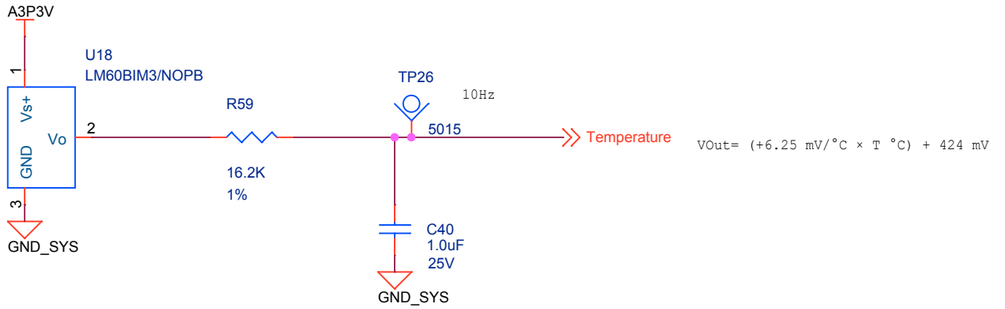
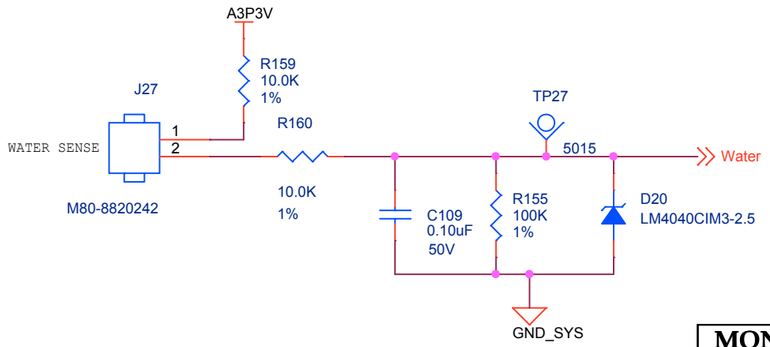
Title: ESP G3 Host Gateway Elf Bus Connectors				Number: <Doc>	
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj		Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 17 of 28		











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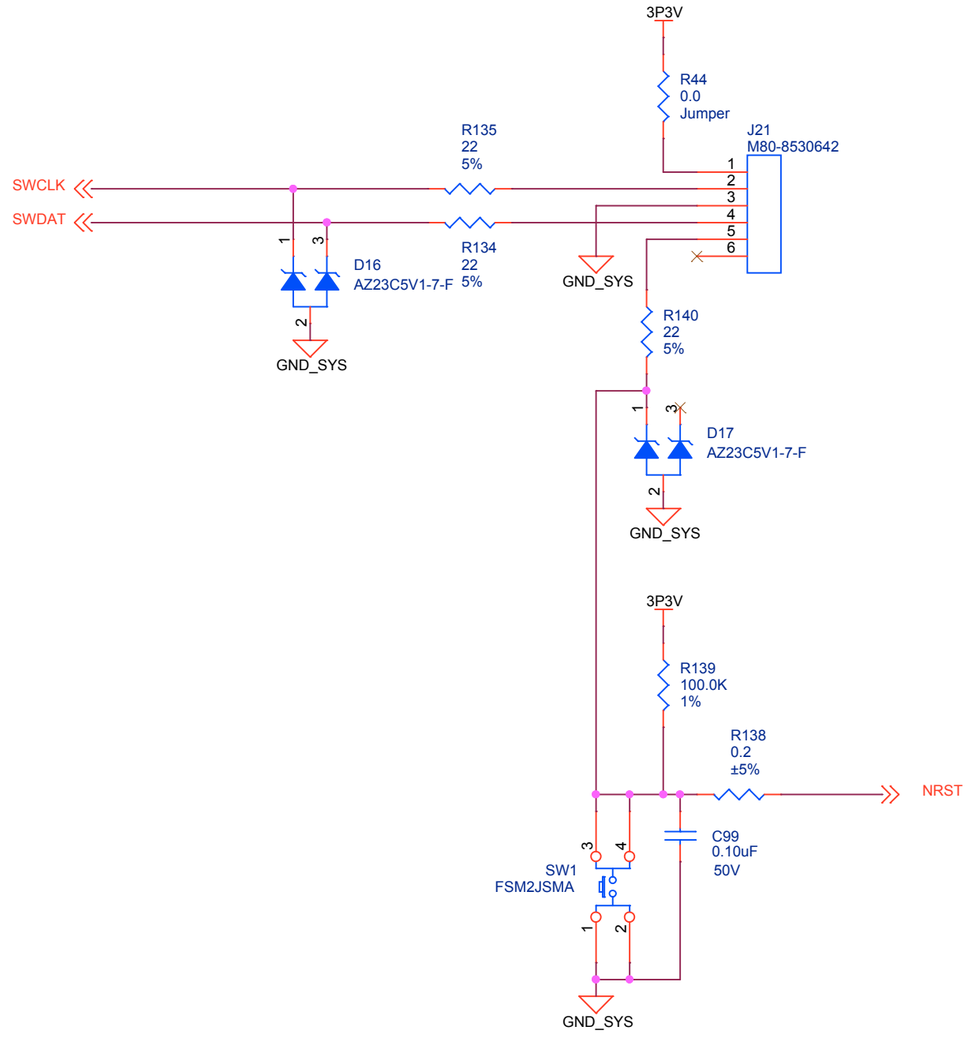
Title: ESP G3 Host Gateway Environmental Sensors				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 18 of 28	



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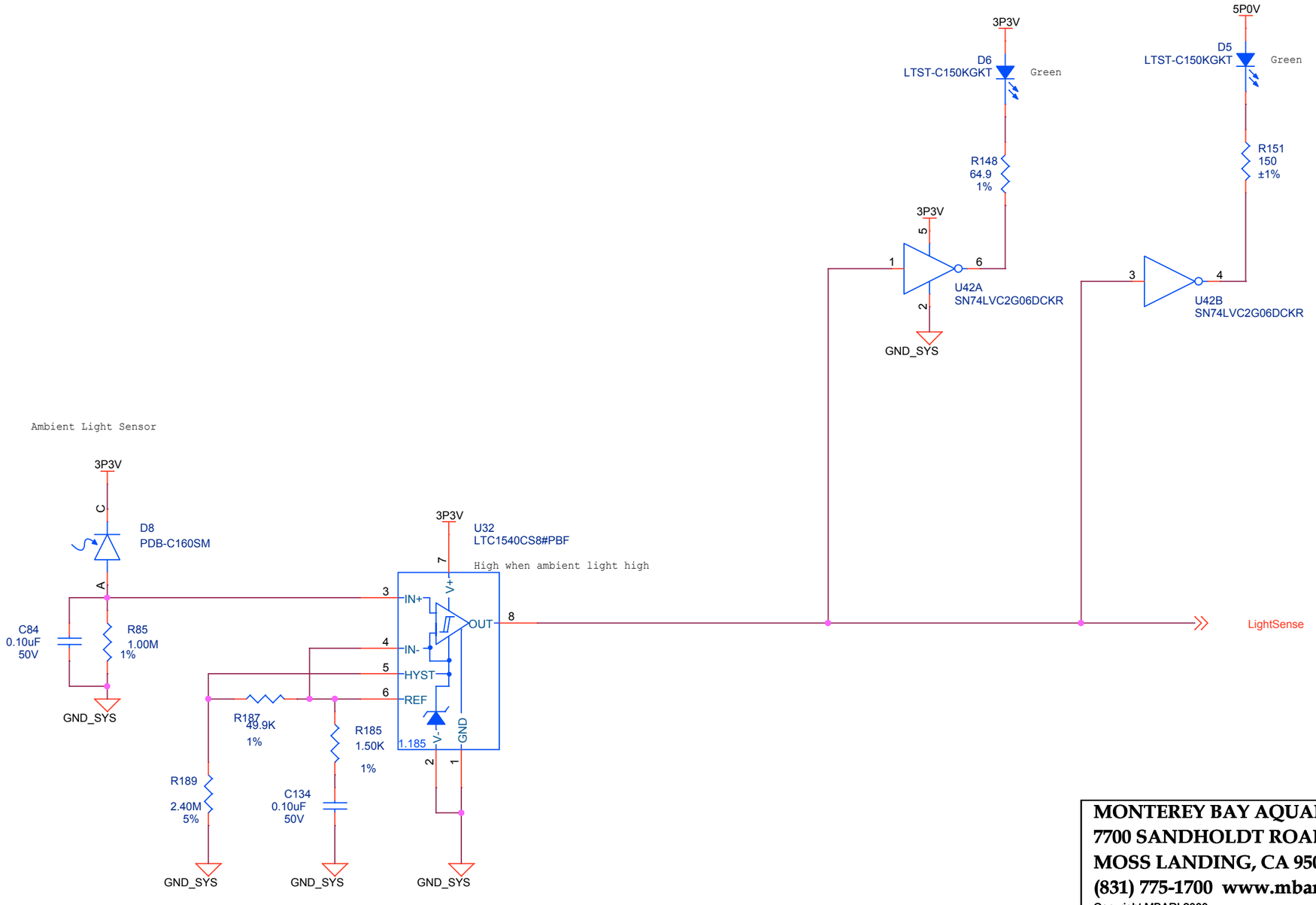
Title: ESP G3 Host Gateway SWD interface				Number: <Doc>
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017	Sheet 19 of 28		



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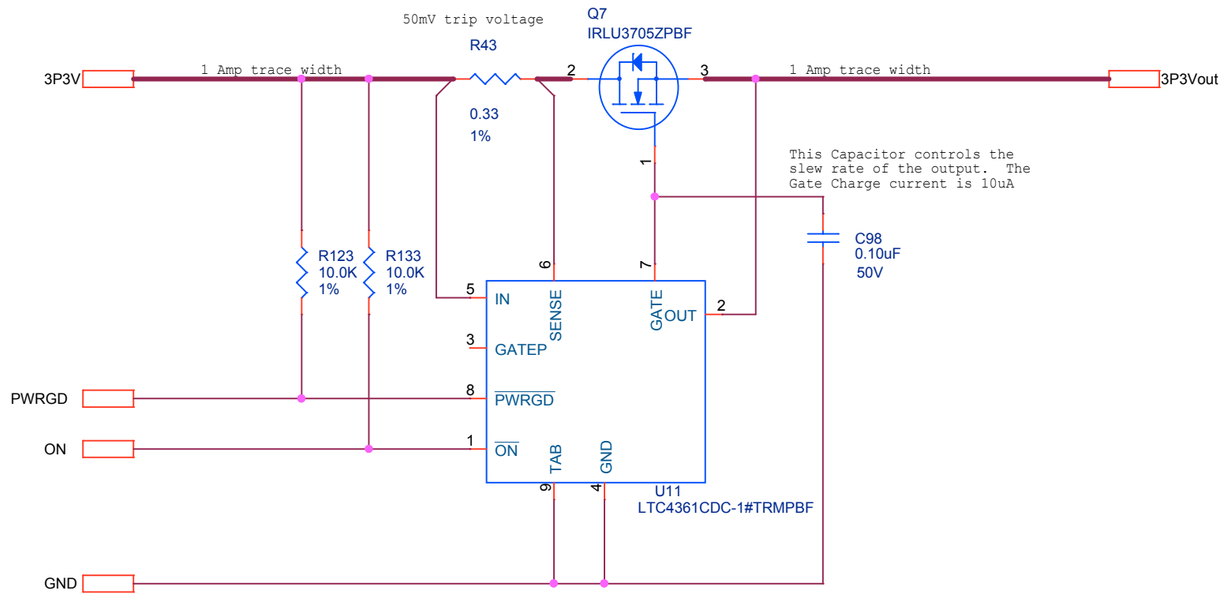
Title: ESP G3 Host Gateway Indicators				Number: <Doc>	
Size: B	Engineer: SJensen	Path: /	Filename: hostgate_rev_1.opj		Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 20 of 28		



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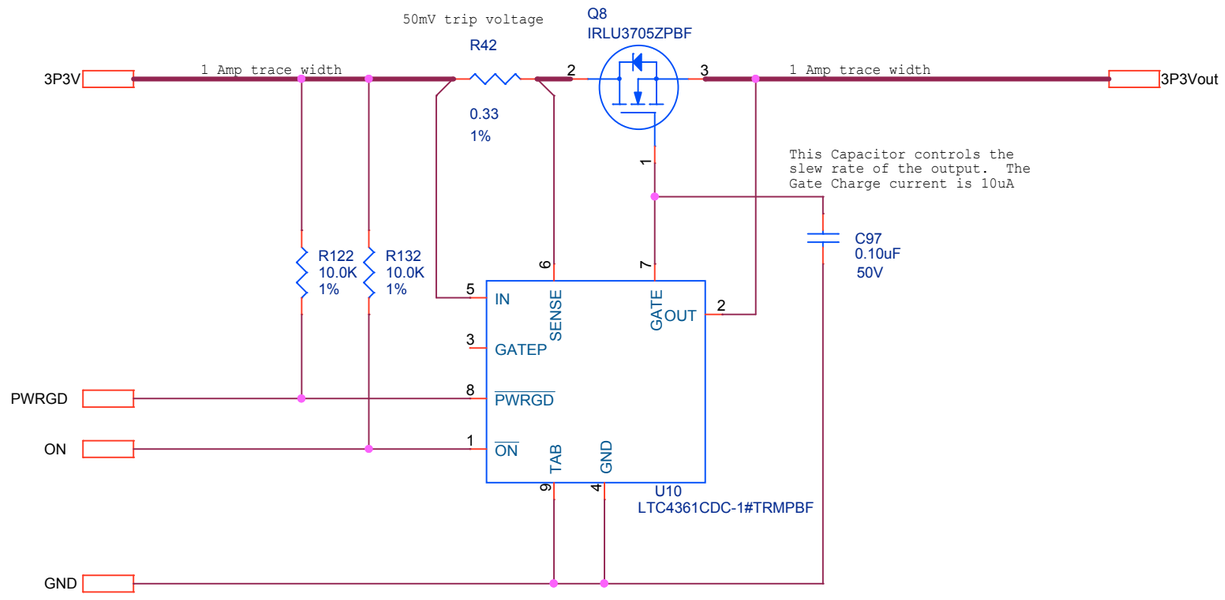
Title: ESP G3 Host Gateway 3.3V Switch				Number: <Doc>
Size: B	Engineer: SJensen	Path: /LBsw1	Filename: hostgate_rev_1.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 1 of 28	



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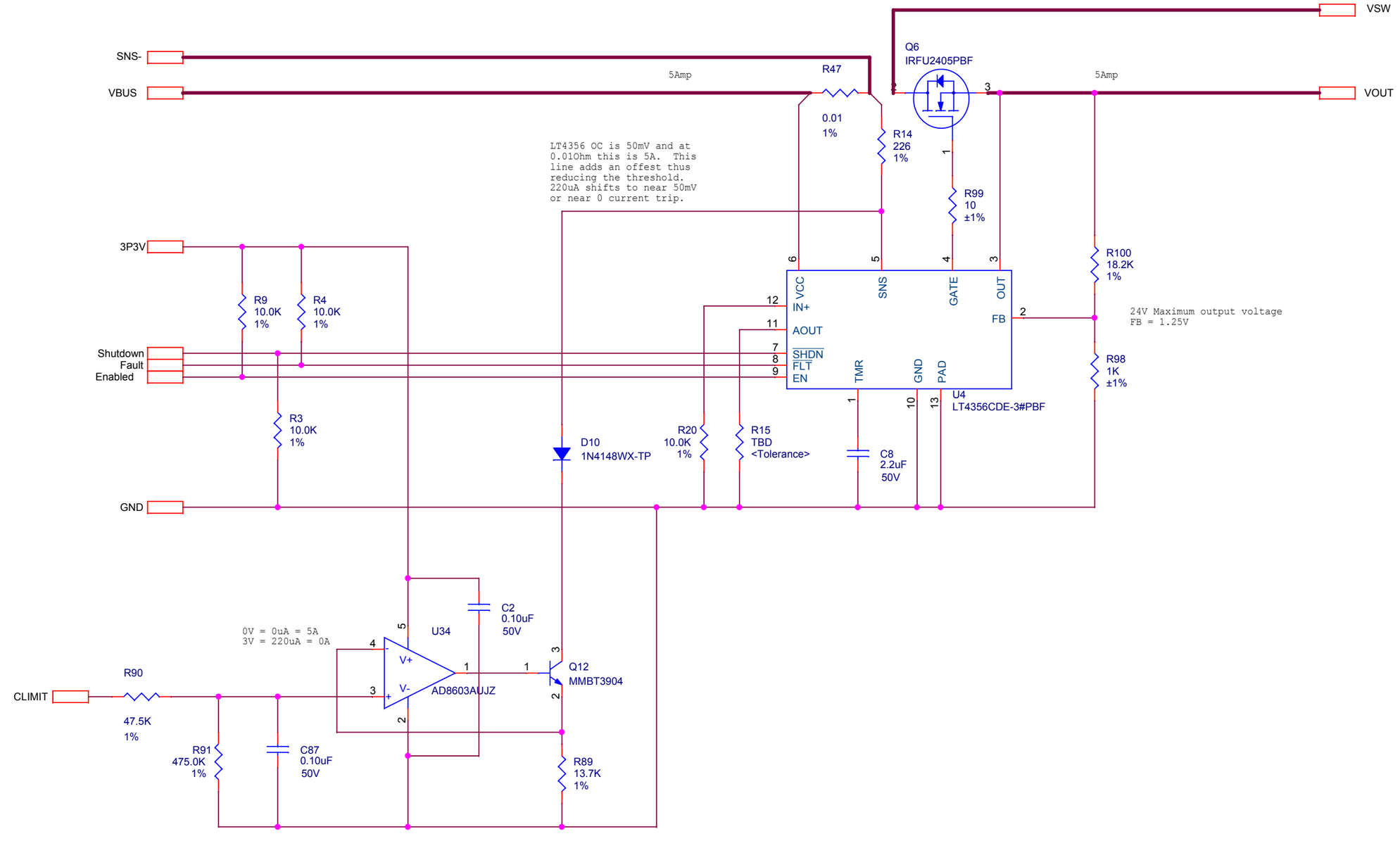
Title: ESP G3 Host Gateway 3.3V Switch				Number: <Doc>
Size: B	Engineer: SJensen	Path: /LBsw2	Filename: hostgate.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 2 of 28	



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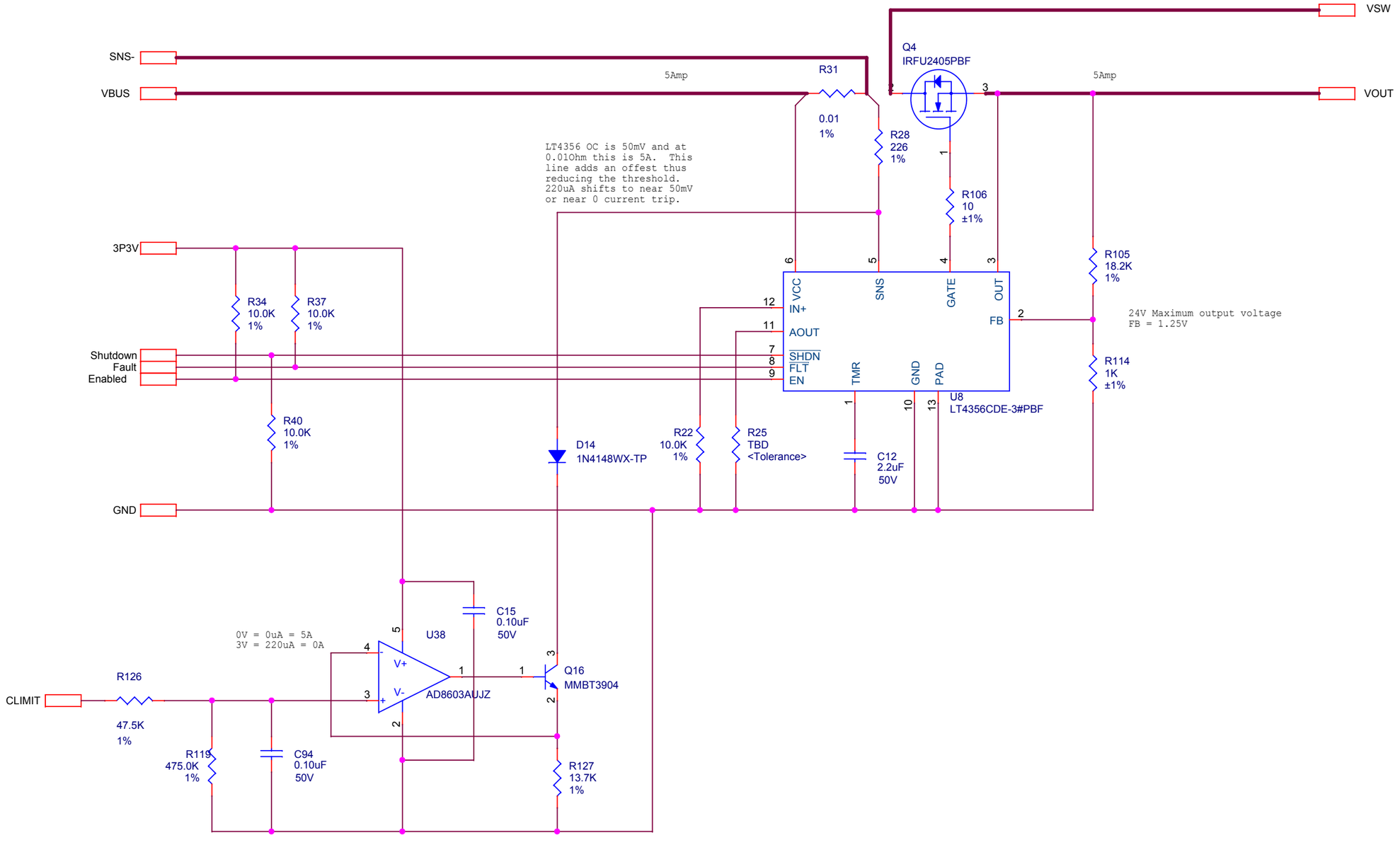
Title: ESP G3 Host Gateway Raw Voltage Switch				Number: <Doc>	
Size: B	Engineer: SJensen	Path: /RBsw1	Filename: hostgate_rev_1.opj		Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 23 of 28		



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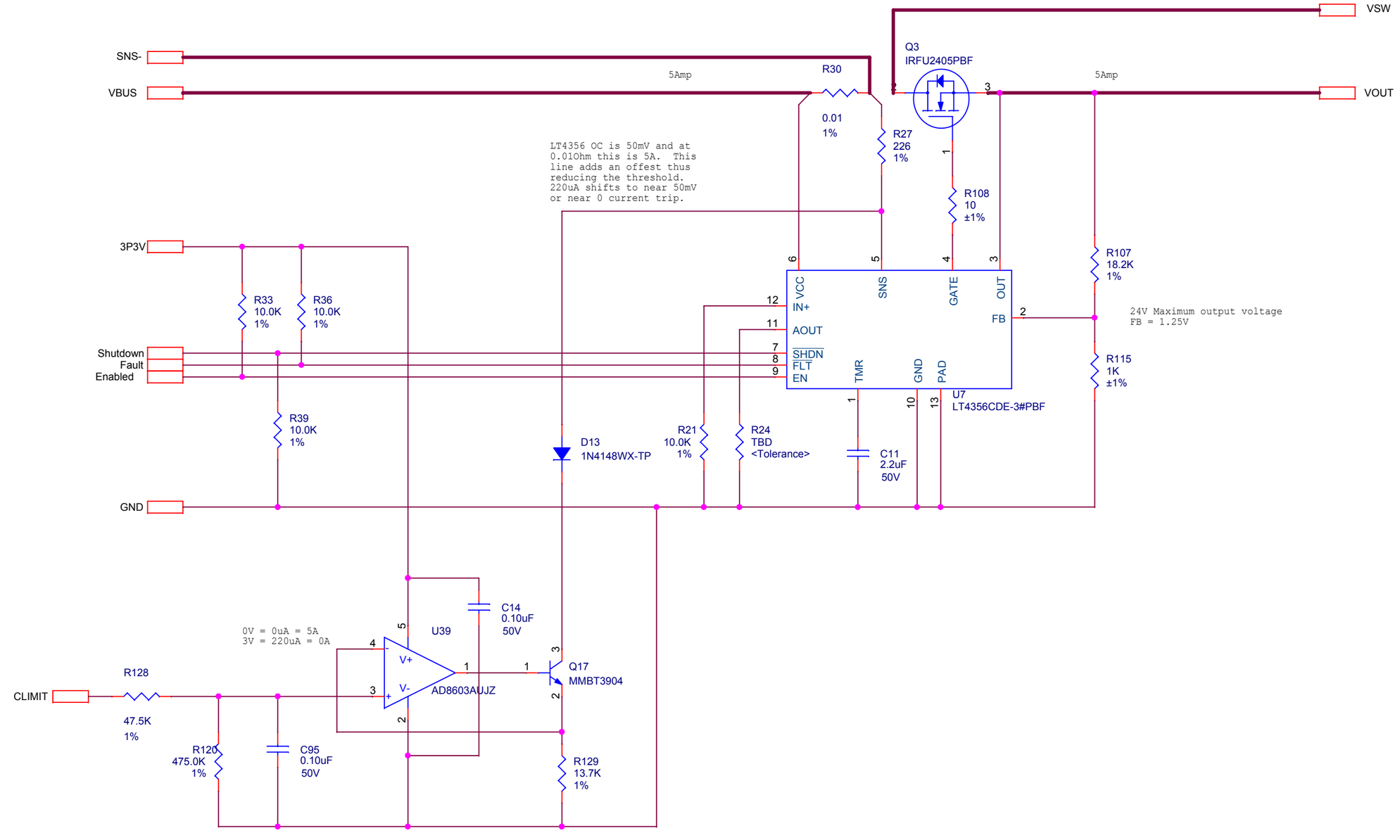
Title: ESP G3 Host Gateway Raw Voltage Switch				Number: <Doc>	
Size: B	Engineer: SJensen	Path: /RBsw2	Filename: hostgate.opj		Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 24 of 28		



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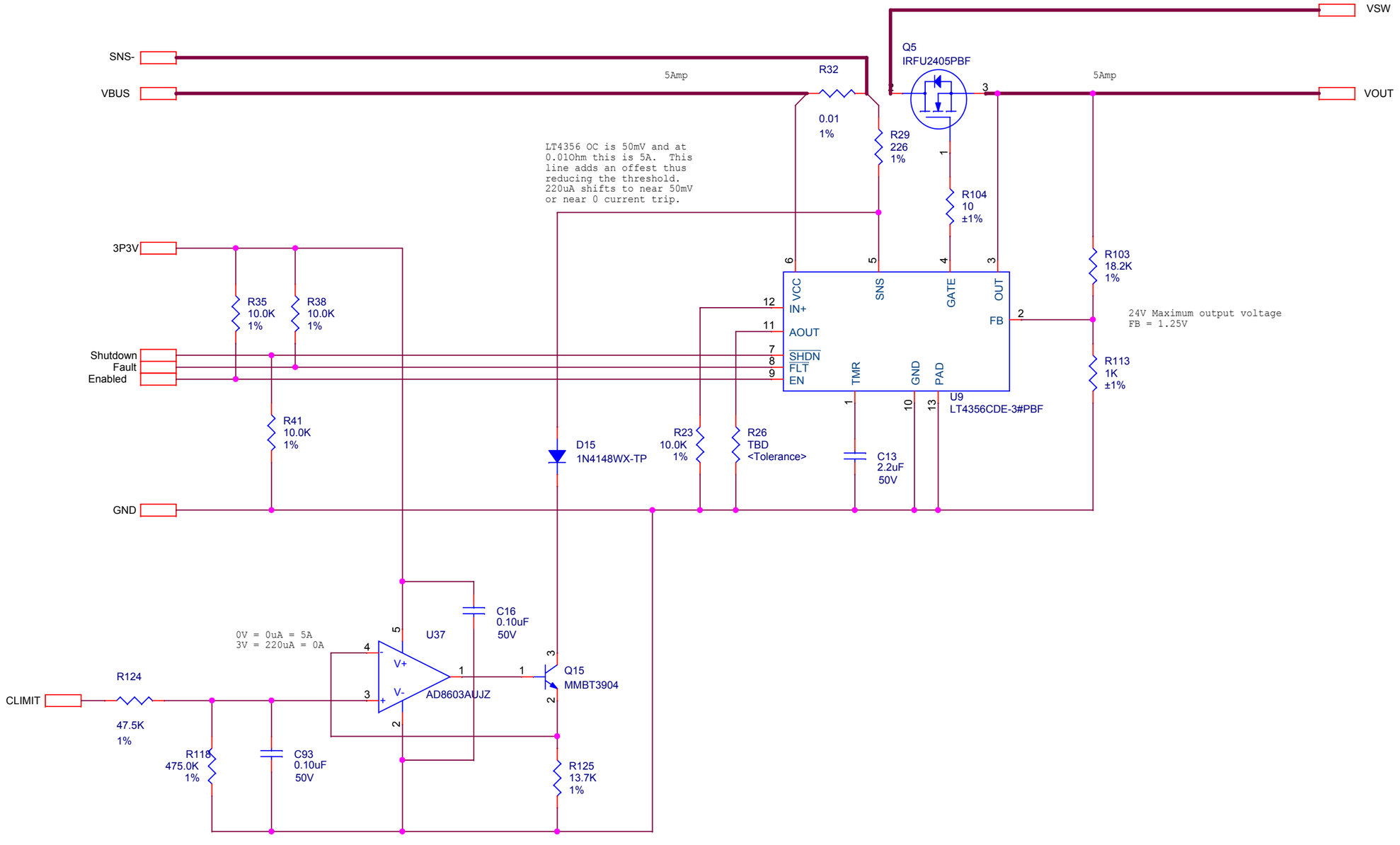
Title: ESP G3 Host Gateway Raw Voltage Switch				Number: <Doc>
Size: B	Engineer: SJensen	Path: /RBsw3	Filename: hostgate.opj	Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 25 of 28	



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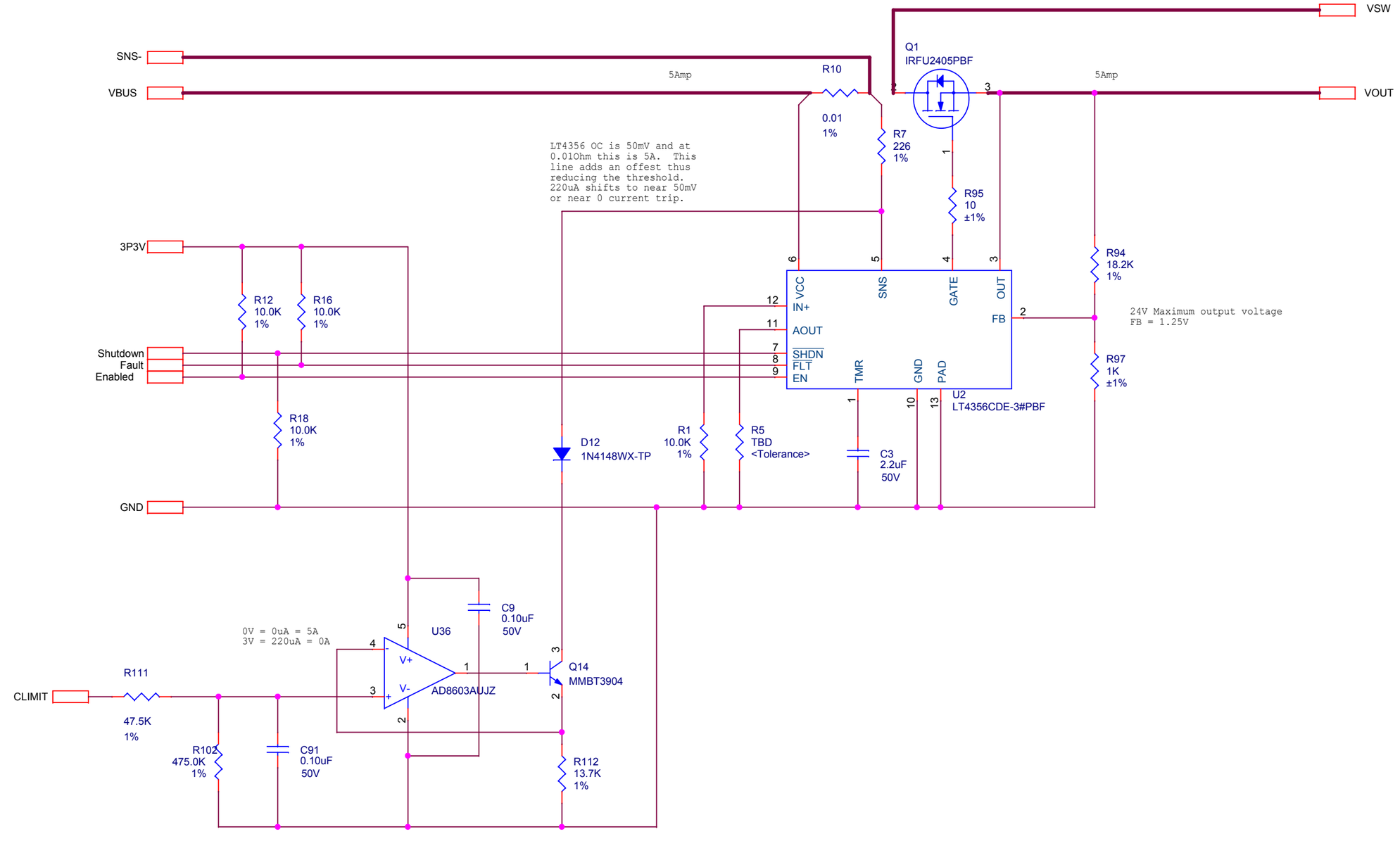
Title: ESP G3 Host Gateway Raw Voltage Switch				Number: <Doc>	
Size: B	Engineer: SJensen	Path: /RBsw4	Filename: hostgate.opj		Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 26 of 28		



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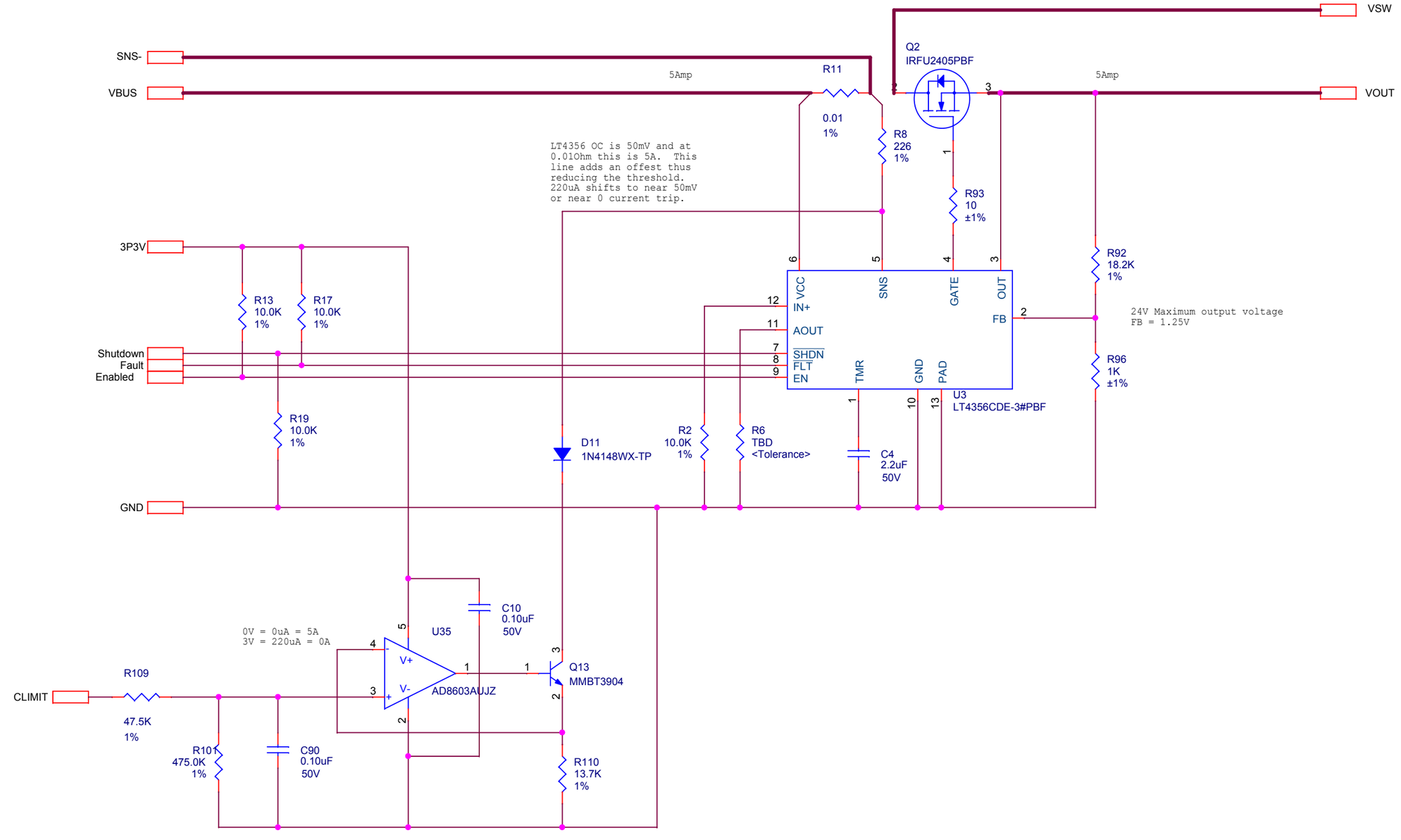
Title: ESP G3 Host Gateway Raw Voltage Switch				Number: <Doc>	
Size: B	Engineer: SJensen	Path: /RBsw5	Filename: hostgate.opj		Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 27 of 28		



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Title: ESP G3 Host Gateway Raw Voltage Switch				Number: <Doc>	
Size: B	Engineer: SJensen	Path: /RBsw6	Filename: hostgate.opj		Rev: 1.0.0
	Date: Thursday, April 06, 2017		Sheet 28 of 28		