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	REVISION HISTORY		
REV	DESCRIPTION	DATE	ENG
1	Initial design - https://geppetto.gumstix.com/#!/design/8869/	2020-10-17	ACS
2	Fixed USB-UART power supply and debug mux. Populated the BMP388 chip. Set up BMM150 for I2C. Added orientation arrow.	2020-11-30	ACS

2) STM32H753
3) ST Micro STM32H753IIT6 (1)
4) ST Micro STM32H753IIT6 (1)
5) Infineon FM25V02A FRAM (2)
6) InvenSense ICM-42605 IMU (3)
7) InvenSense ICM-20602 IMU (4)
8) BOSCH BMI088 IMU (5)
9) Bosch BMM150 Magnetometer (6)
10) BMP388 & MS5611 Barometer (7)
11) Discrete RGB LED (16)
12) 3.3V 1500mA Buck
13) USB Type-C PD (5V)
14) 3-Port USB Client Hub
15) USB to UART
16) USB to UART
17) Raspberry Pi CM4
18) Raspberry Pi CM4
19) HART-HART Bridge
20) Octal Servo
21) RPi CSI Vertical Connector
22) RPi CSI Vertical Connector
23) JST GH 6-pin (GPS) Header
24) JST GH 6-pin (Power) Header
25) TI TPS2121 Power Source Muxer
26) JST GH 4-pin (CAN) Header
27) JST GH 5-pin (RC) Header
28) Google Coral G313-06329-00 Accelerator
29) NXP TJA1051TK/3 CAN Transceiver
30) Pushbutton
31) SD Card
32) USB 2-Port Switch

RPi CM4 + Pixhawk FMUv6

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Title:	RPi CM4 + Pixhawk FMUv6
Board:	900000001531
11/30/20 12:05 PM	
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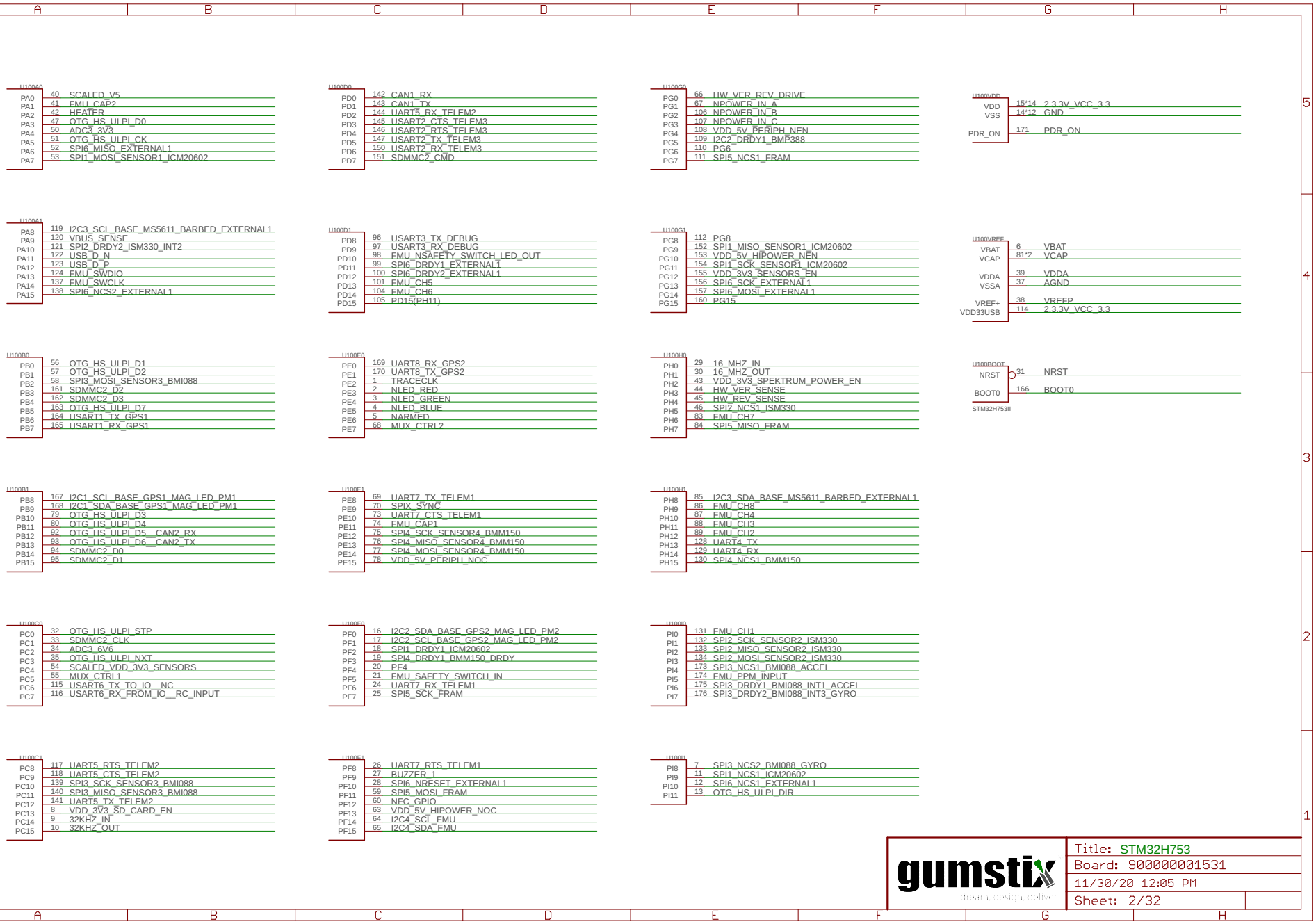
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PA4 50 ADC3_3V3
PA5 51 OTG_HS_ULPI_CK
PA6 52 SPI6_MISO_EXTERNAL1
PA7 53 SPI1_MOSI_SENSOR1_ICM20602
U100D0
PD0 142 CAN1_RX
PD1 143 CAN1_TX
PD2 144 UART5_RX_TELEM2
PD3 145 USART2_CTS_TELEM3
PD4 146 USART2_RTS_TELEM3
PD5 147 USART2_TX_TELEM3
PD6 150 USART2_RX_TELEM3
PD7 151 SDMMC2_CMD
U100G0
PG0 66 HW_VER_REV_DRIVE
PG1 67 NPOWER_IN_A
PG2 106 NPOWER_IN_B
PG3 107 NPOWER_IN_C
PG4 108 VDD_5V_PERIPH_NEN
PG5 109 I2C2_DRDY1_BMP388
PG6 110 PG6
PG7 111 SPI5_NCS1_FRAM
U100VDD
VDD 15*14 2.3.3V_VCC_3.3
VSS 14*12 GND
PDR_ON 171 PDR_ON
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PA8 119 I2C3_SCL_BASE_MS5611_BARBED_EXTERNAL1
PA9 120 VBUS_SENSE
PA10 121 SPI2_DRDY2_ISM330_INT2
PA11 122 USB_D_N
PA12 123 USB_D_P
PA13 124 FMU_SWDIO
PA14 137 FMU_SWCLK
PA15 138 SPI6_NCS2_EXTERNAL1
U100D1
PD8 96 USART3_TX_DEBUG
PD9 97 USART3_RX_DEBUG
PD10 98 FMU_NSAFETY_SWITCH_LED_OUT
PD11 99 SPI6_DRDY1_EXTERNAL1
PD12 100 SPI6_DRDY2_EXTERNAL1
PD13 101 FMU_CH5
PD14 104 FMU_CH6
PD15 105 PD15(PH11)
U100G1
PG8 112 PG8
PG9 152 SPI1_MISO_SENSOR1_ICM20602
PG10 153 VDD_5V_HIPOWER_NEN
PG11 154 SPI1_SCK_SENSOR1_ICM20602
PG12 155 VDD_3V3_SENSORS_EN
PG13 156 SPI6_SCK_EXTERNAL1
PG14 157 SPI6_MOSI_EXTERNAL1
PG15 160 PG15
U100VREF
VBAT 6 VBAT
VCAP 81*2 VCAP
VDDA 39 VDDA
VSSA 37 AGND
VREF+ 38 VREFP
VDD33USB 114 2.3.3V_VCC_3.3
U100B0
PB0 56 OTG_HS_ULPI_D1
PB1 57 OTG_HS_ULPI_D2
PB2 58 SPI3_MOSI_SENSOR3_BMI088
PB3 161 SDMMC2_D2
PB4 162 SDMMC2_D3
PB5 163 OTG_HS_ULPI_D7
PB6 164 USART1_TX_GPS1
PB7 165 USART1_RX_GPS1
U100E0
PE0 169 UART8_RX_GPS2
PE1 170 UART8_TX_GPS2
PE2 1 TRACECLK
PE3 2 NLED_RED
PE4 3 NLED_GREEN
PE5 4 NLED_BLUE
PE6 5 NARMED
PE7 68 MUX_CTRL2
U100H0
PH0 29 16_MHZ_IN
PH1 30 16_MHZ_OUT
PH2 43 VDD_3V3_SPEKTRUM_POWER_EN
PH3 44 HW_VER_SENSE
PH4 45 HW_REV_SENSE
PH5 46 SPI2_NCS1_ISM330
PH6 83 FMU_CH7
PH7 84 SPI5_MISO_FRAM
U100BOOT
NRST 31 NRST
BOOT0 166 BOOT0
STM32H753II
U100B1
PB8 167 I2C1_SCL_BASE_GPS1_MAG_LED_PM1
PB9 168 I2C1_SDA_BASE_GPS1_MAG_LED_PM1
PB10 79 OTG_HS_ULPI_D3
PB11 80 OTG_HS_ULPI_D4
PB12 92 OTG_HS_ULPI_D5__CAN2_RX
PB13 93 OTG_HS_ULPI_D6__CAN2_TX
PB14 94 SDMMC2_D0
PB15 95 SDMMC2_D1
U100E1
PE8 69 UART7_TX_TELEM1
PE9 70 SPIX_SYNC
PE10 73 UART7_CTS_TELEM1
PE11 74 FMU_CAP1
PE12 75 SPI4_SCK_SENSOR4_BMM150
PE13 76 SPI4_MISO_SENSOR4_BMM150
PE14 77 SPI4_MOSI_SENSOR4_BMM150
PE15 78 VDD_5V_PERIPH_NOC
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PH8 85 I2C3_SDA_BASE_MS5611_BARBED_EXTERNAL1
PH9 86 FMU_CH8
PH10 87 FMU_CH4
PH11 88 FMU_CH3
PH12 89 FMU_CH2
PH13 128 UART4_TX
PH14 129 UART4_RX
PH15 130 SPI4_NCS1_BMM150
U100C0
PC0 32 OTG_HS_ULPI_STP
PC1 33 SDMMC2_CLK
PC2 34 ADC3_6V6
PC3 35 OTG_HS_ULPI_NXT
PC4 54 SCALED_VDD_3V3_SENSORS
PC5 55 MUX_CTRL1
PC6 115 USART6_TX_TO_IO__NC
PC7 116 USART6_RX_FROM_IO__RC_INPUT
U100F0
PF0 16 I2C2_SDA_BASE_GPS2_MAG_LED_PM2
PF1 17 I2C2_SCL_BASE_GPS2_MAG_LED_PM2
PF2 18 SPI1_DRDY1_ICM20602
PF3 19 SPI4_DRDY1_BMM150_DRDY
PF4 20 PF4
PF5 21 FMU_SAFETY_SWITCH_IN
PF6 24 UART7_RX_TELEM1
PF7 25 SPI5_SCK_FRAM
U100I0
PI0 131 FMU_CH1
PI1 132 SPI2_SCK_SENSOR2_ISM330
PI2 133 SPI2_MISO_SENSOR2_ISM330
PI3 134 SPI2_MOSI_SENSOR2_ISM330
PI4 173 SPI3_NCS1_BMI088_ACCEL
PI5 174 FMU_PPM_INPUT
PI6 175 SPI3_DRDY1_BMI088_INT1_ACCEL
PI7 176 SPI3_DRDY2_BMI088_INT3_GYRO
U100C1
PC8 117 UART5_RTS_TELEM2
PC9 118 UART5_CTS_TELEM2
PC10 139 SPI3_SCK_SENSOR3_BMI088
PC11 140 SPI3_MISO_SENSOR3_BMI088
PC12 141 UART5_TX_TELEM2
PC13 8 VDD_3V3_SD_CARD_EN
PC14 9 32KHZ_IN
PC15 10 32KHZ_OUT
U100F1
PF8 26 UART7_RTS_TELEM1
PF9 27 BUZZER_1
PF10 28 SPI6_NRESET_EXTERNAL1
PF11 59 SPI5_MOSI_FRAM
PF12 60 NFC_GPIO
PF13 63 VDD_5V_HIPOWER_NOC
PF14 64 I2C4_SCL_FMU
PF15 65 I2C4_SDA_FMU
U100I1
PI8 7 SPI3_NCS2_BMI088_GYRO
PI9 11 SPI1_NCS1_ICM20602
PI10 12 SPI6_NCS1_EXTERNAL1
PI11 13 OTG_HS_ULPI_DIR
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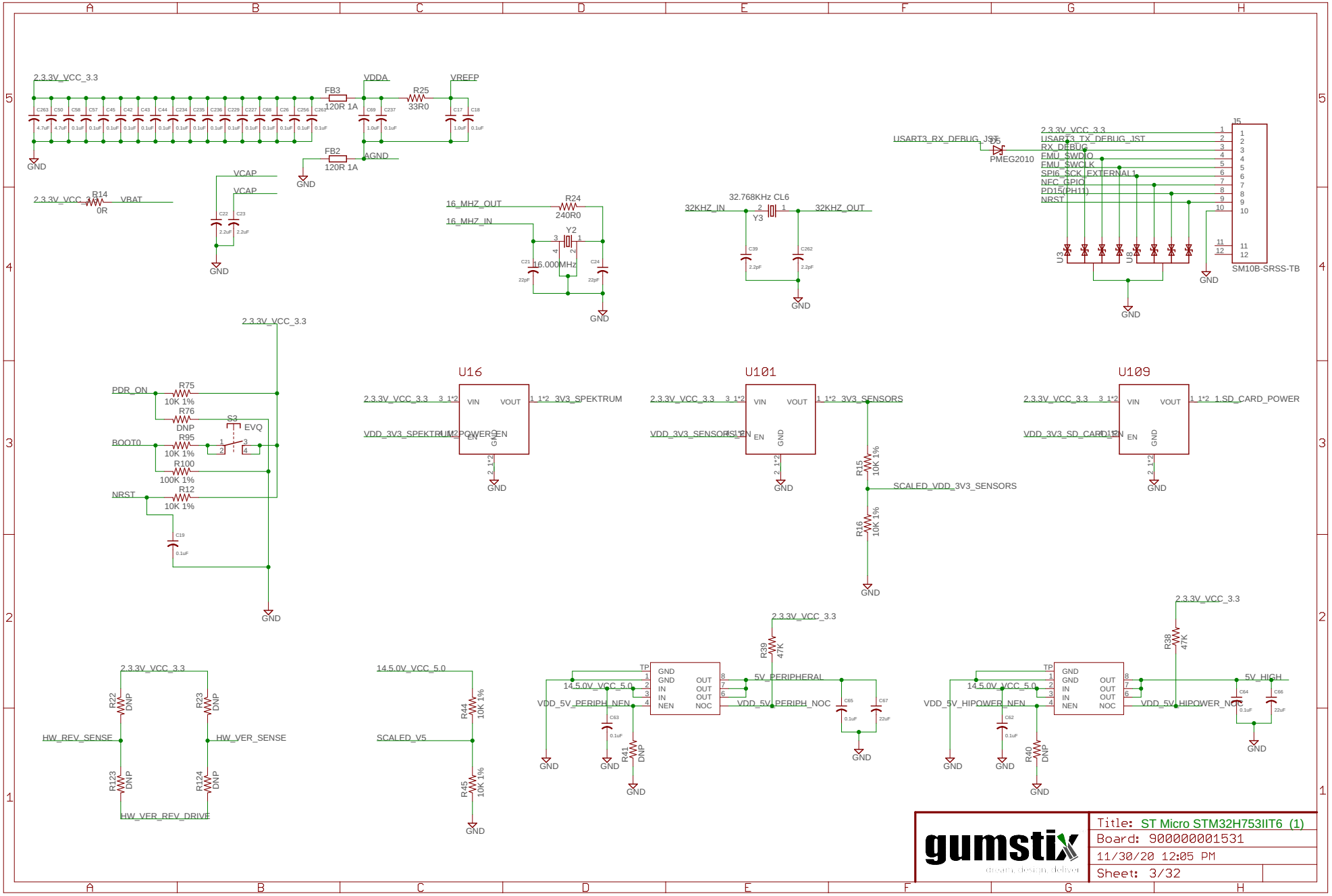
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120R 1A
VDDA
R25
33R0
VREFP
FB2
120R 1A
AGND
GND
VCAP
VCAP
R14
0R
VBAT
16_MHZ_OUT
16_MHZ_IN
R24
240R0
Y2
16.000MHz
32.768KHz CL6
32KHZ_IN
32KHZ_OUT
Y3
USART3_RX_DEBUG_JST
D5
PMEG2010
USART3_TX_DEBUG_JST
RX_DEBUG
FMU_SWDIO
FMU_SWCLK
SPI6_SCK_EXTERNAL1
NFC_GPIO
PD15(PH11)
NRST
J5
SM10B-SRSS-TB
PDR_ON
R75
10K 1%
R76
DNP
S3
EVQ
BOOT0
R95
10K 1%
R100
100K 1%
NRST
R12
10K 1%
U16
VIN
VOUT
EN
3V3_SPEKTRUM
VDD_3V3_SPEKTRUM_POWER_EN
U101
3V3_SENSORS
VDD_3V3_SENSORS_EN
R15
10K 1%
R16
10K 1%
SCALED_VDD_3V3_SENSORS
U109
SD_CARD_POWER
VDD_3V3_SD_CARD_EN
R22
DNP
R23
DNP
R123
DNP
R124
DNP
HW_REV_SENSE
HW_VER_SENSE
HW_VER_REV_DRIVE
14.5.0V_VCC_5.0
R44
10K 1%
R45
10K 1%
SCALED_V5
R39
47K
5V_PERIPHERAL
VDD_5V_PERIPH_NEN
VDD_5V_PERIPH_NOC
R41
DNP
R38
47K
5V_HIGH
VDD_5V_HIPOWER_NEN
VDD_5V_HIPOWER_NOC
R40
DNP
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Board: 900000001531
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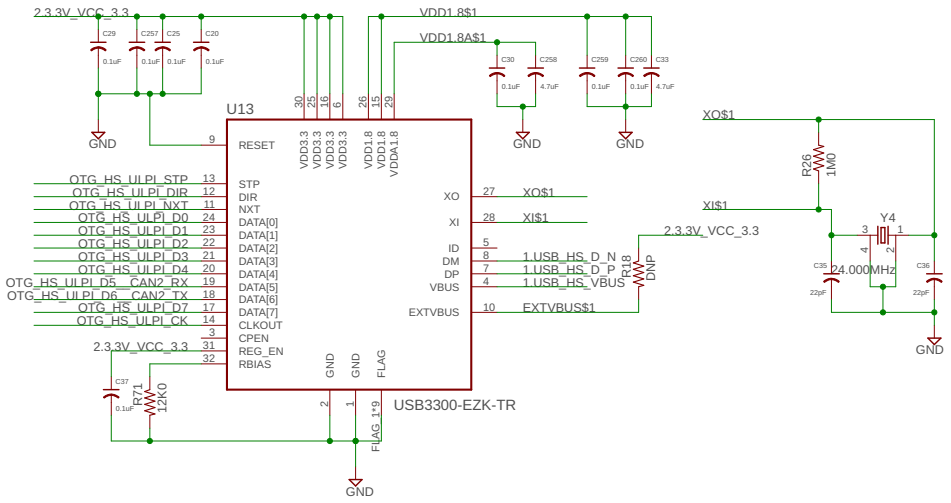

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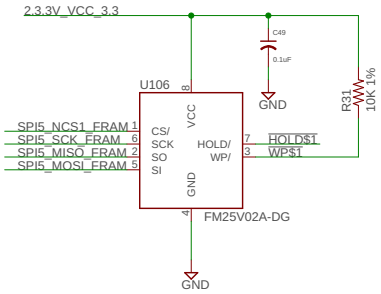

Title:	Infineon FM25V02A FRAM (2)
Board:	900000001531
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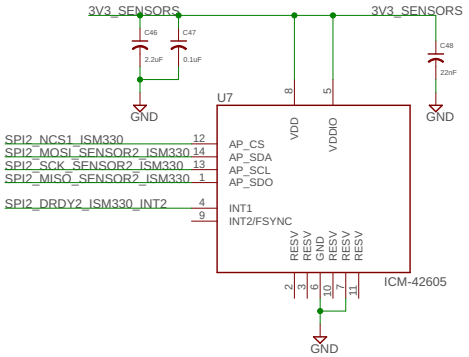

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Title: InvenSense ICM-42605 IMU (3)
Board: 900000001531
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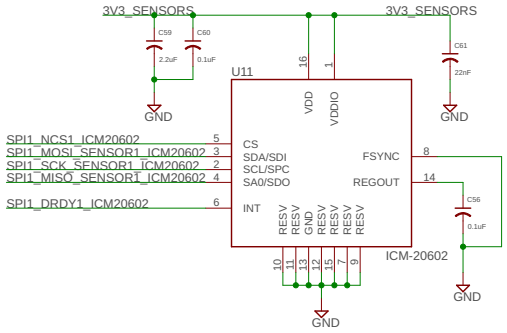

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Title: InvenSense ICM-20602 IMU (4)
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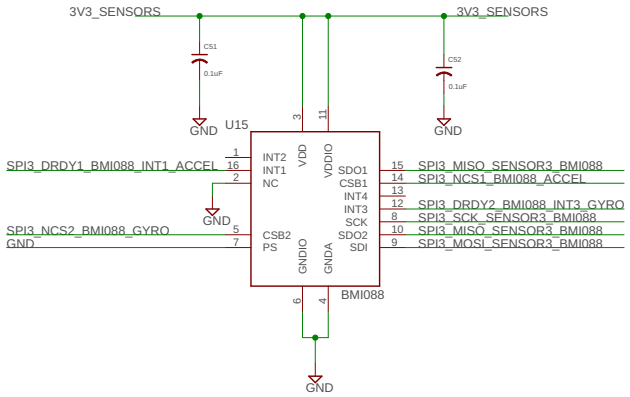

gumstix	Title: BOSCH BMI088 IMU (5)
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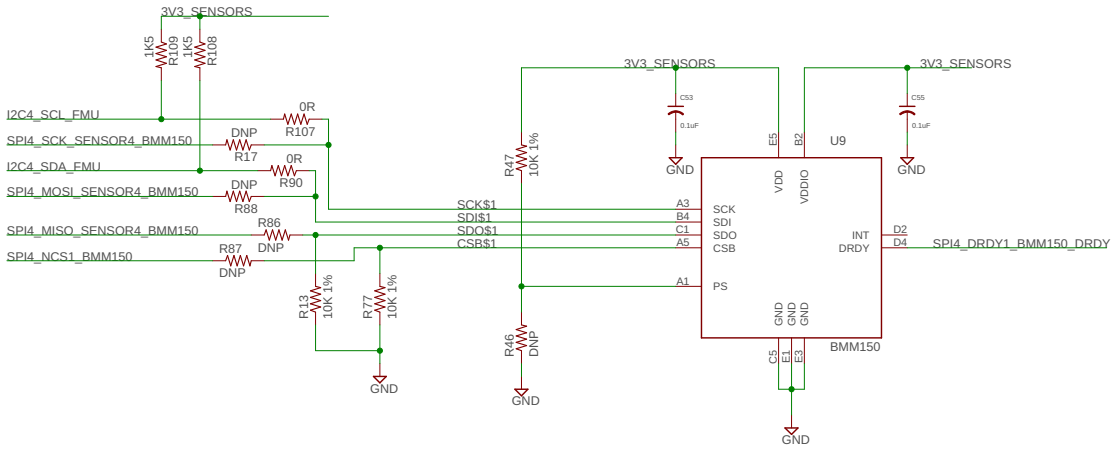

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Title:	Bosch BMM150 Magnetometer (6)
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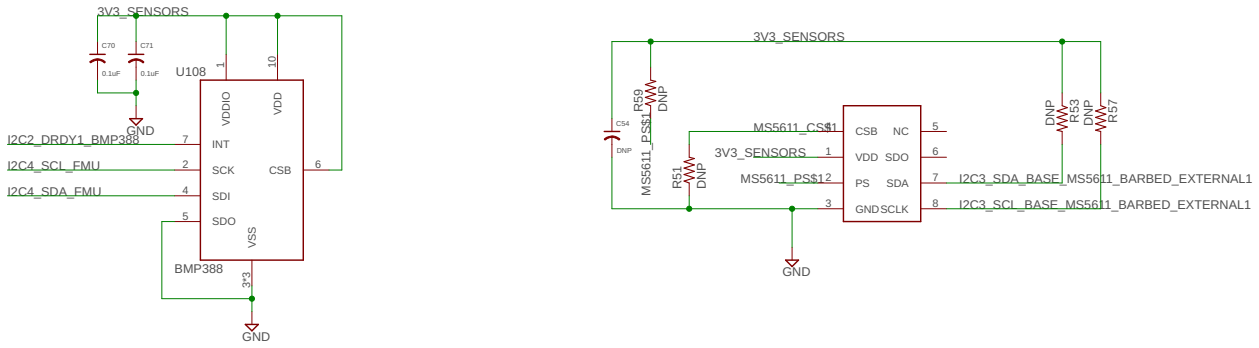

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Title:	BMP388 & MS5611 Barometer (7)
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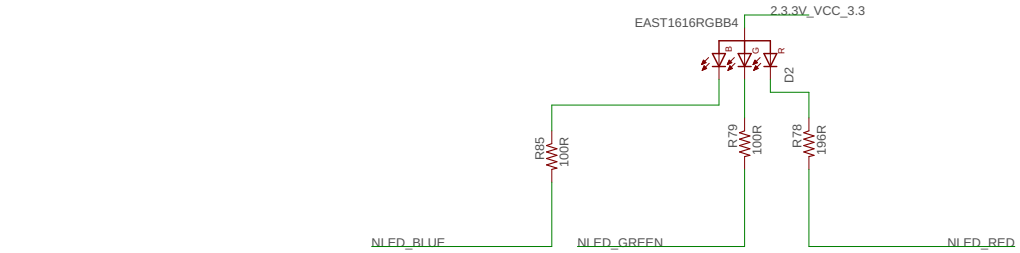

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Title: Discrete RGB LED (16)
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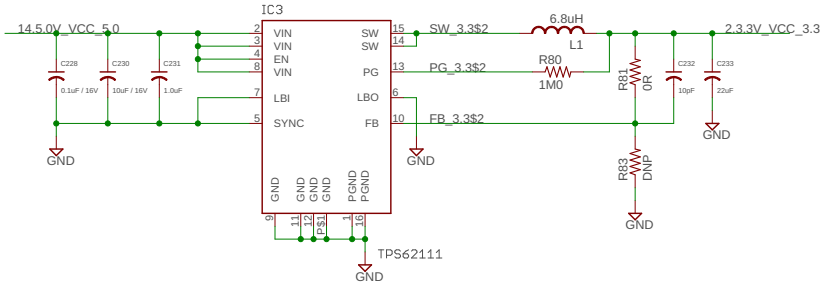

gumstix	Title: 3.3V 1500mA Buck
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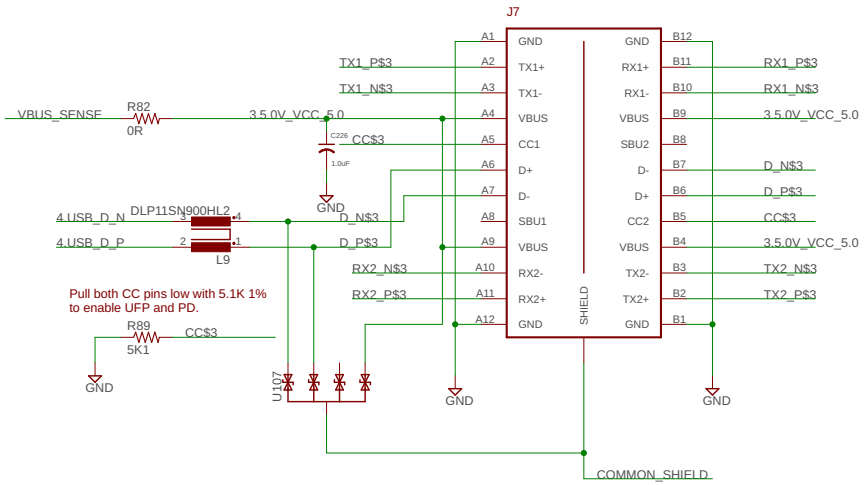

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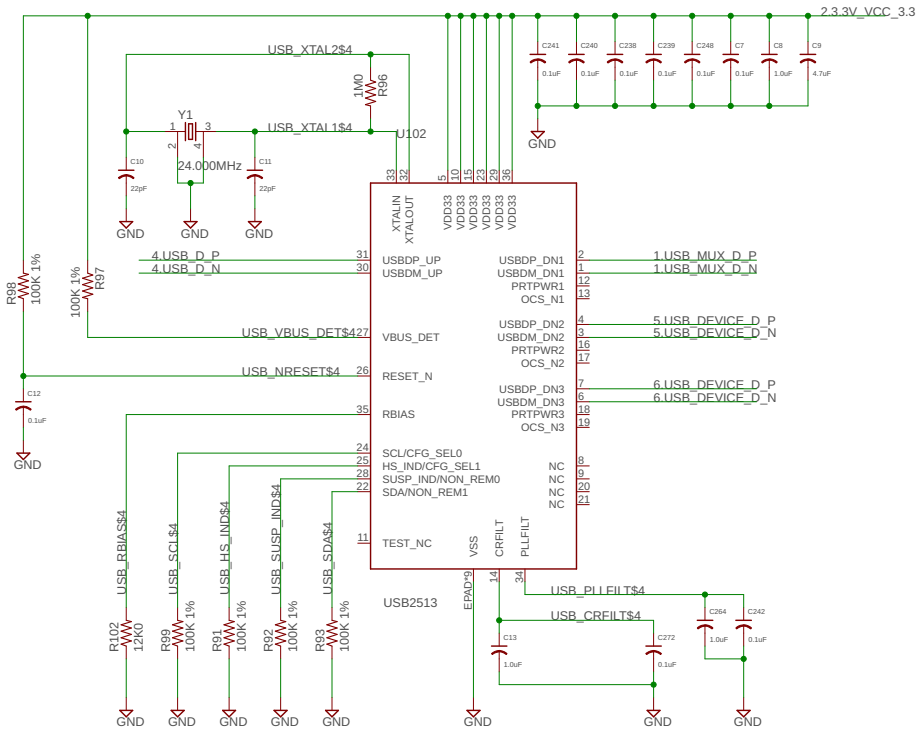

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Title: 3-Port USB Client Hub	
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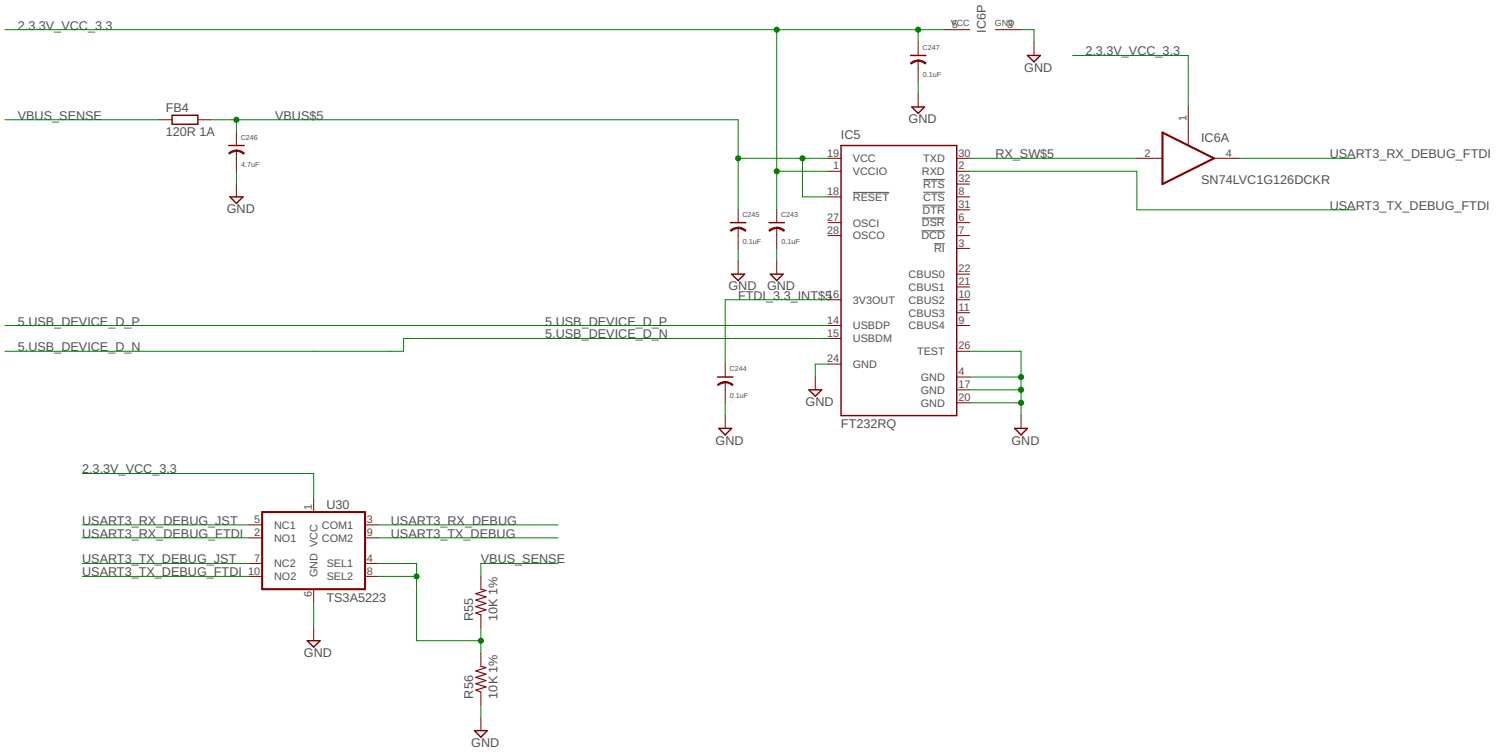

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Title:	USB to UART
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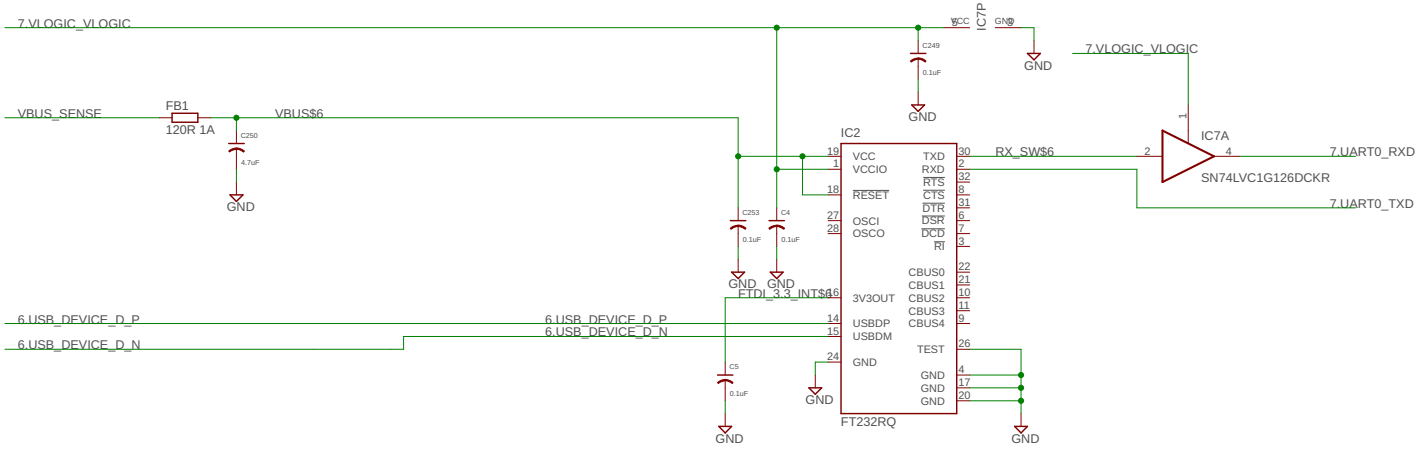

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Title:	USB to UART
Board:	900000001531
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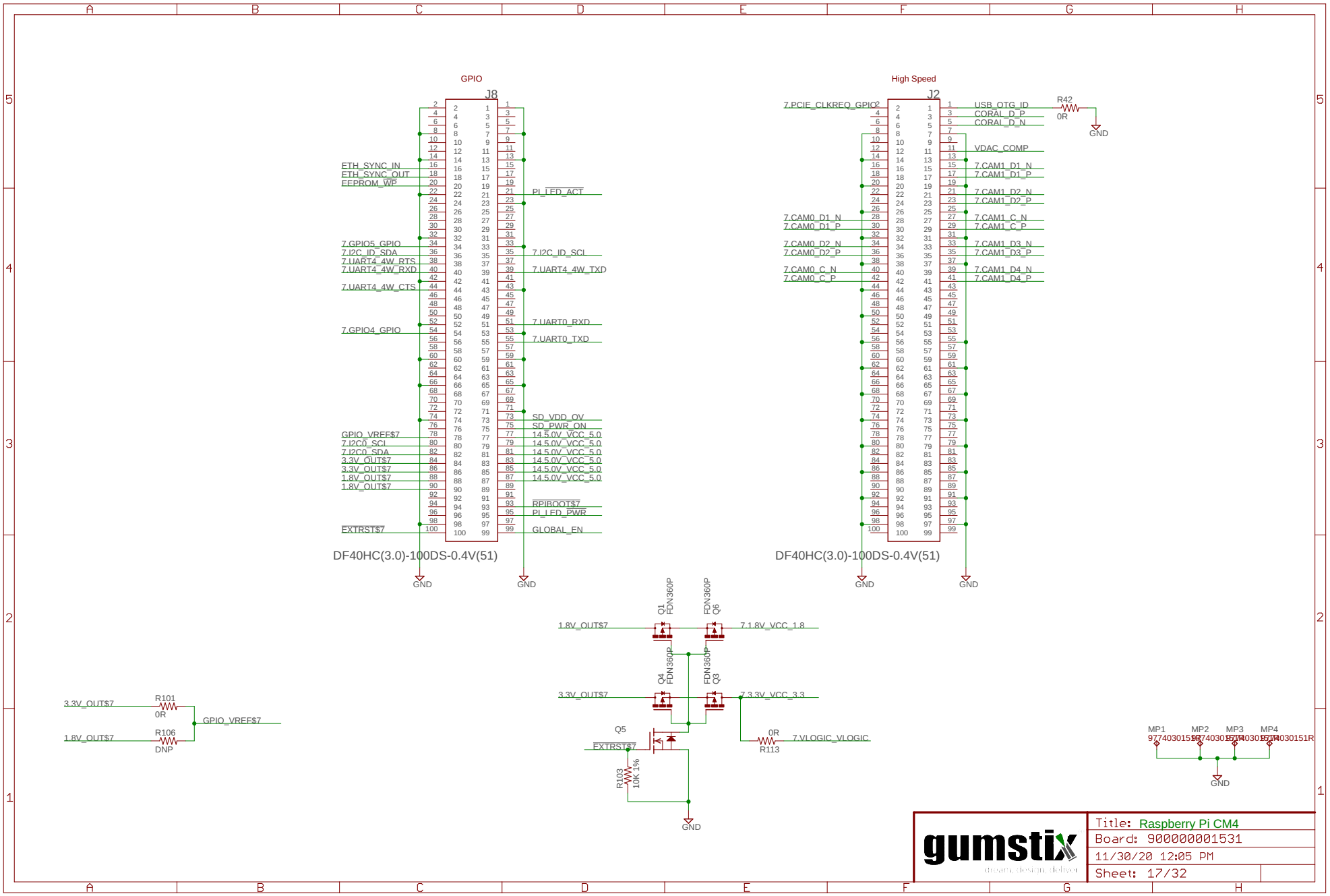
GPIO
J8
ETH_SYNC_IN
ETH_SYNC_OUT
EEPROM_WP
PI_LED_ACT
7.GPIO5_GPIO
7.I2C_ID_SDA
7.UART4_4W_RTS
7.UART4_4W_RXD
7.I2C_ID_SCL
7.UART4_4W_TXD
7.UART4_4W_CTS
7.UART0_RXD
7.GPIO4_GPIO
7.UART0_TXD
SD_VDD_OV
SD_PWR_ON
GPIO_VREF$7
7.I2C0_SCL
7.I2C0_SDA
3.3V_OUT$7
3.3V_OUT$7
1.8V_OUT$7
1.8V_OUT$7
14.5.0V_VCC_5.0
14.5.0V_VCC_5.0
14.5.0V_VCC_5.0
14.5.0V_VCC_5.0
14.5.0V_VCC_5.0
14.5.0V_VCC_5.0
RPIBOOT$7
PI_LED_PWR
EXTRST$7
GLOBAL_EN
DF40HC(3.0)-100DS-0.4V(51)
GND
GND
High Speed
J2
7.PCIE_CLKREQ_GPIO2
USB_OTG_ID
CORAI_D_P
CORAI_D_N
R42
0R
GND
VDAC_COMP
7.CAM1_D1_N
7.CAM1_D1_P
7.CAM1_D2_N
7.CAM1_D2_P
7.CAM0_D1_N
7.CAM0_D1_P
7.CAM1_C_N
7.CAM1_C_P
7.CAM0_D2_N
7.CAM0_D2_P
7.CAM1_D3_N
7.CAM1_D3_P
7.CAM0_C_N
7.CAM0_C_P
7.CAM1_D4_N
7.CAM1_D4_P
DF40HC(3.0)-100DS-0.4V(51)
GND
GND
Q1
FDN360P
Q6
FDN360P
1.8V_OUT$7
7.1.8V_VCC_1.8
Q4
FDN360P
Q3
FDN360P
3.3V_OUT$7
7.3.3V_VCC_3.3
Q5
EXTRST$7
R103
10K 1%
0R
R113
7.VLOGIC_VLOGIC
GND
3.3V_OUT$7
R101
0R
1.8V_OUT$7
R106
DNP
GPIO_VREF$7
MP1
MP2
MP3
MP4
GND
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Title: Raspberry Pi CM4
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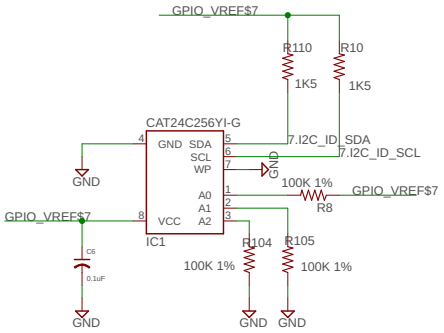

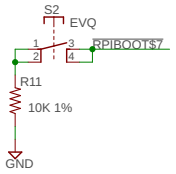

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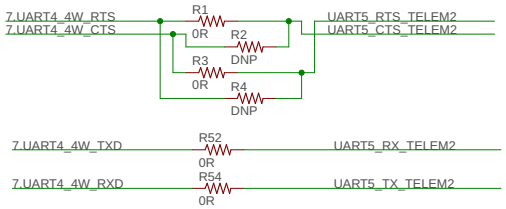

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Title:	HART-HART Bridge
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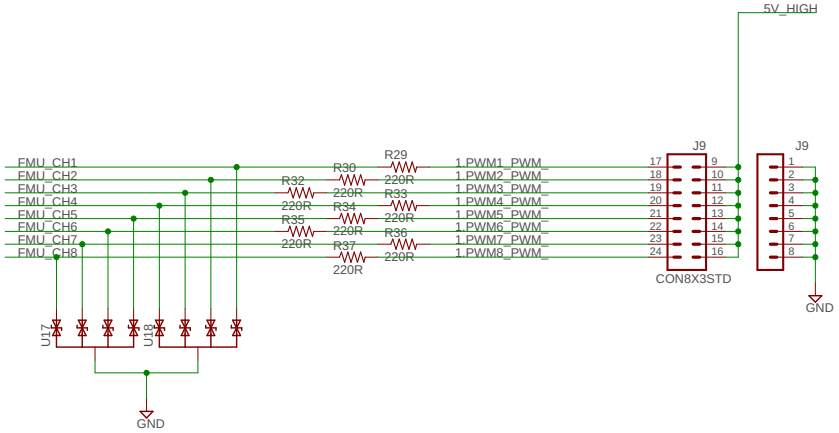
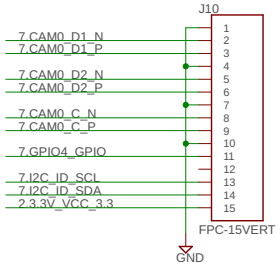
Sheet:	19/32



Title:	Octal Servo
Board:	900000001531
	11/30/20 12:05 PM
Sheet:	20/32



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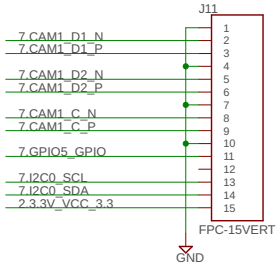
Title: RPi CSI Vertical Connector
Board: 900000001531
11/30/20 12:05 PM
Sheet: 21/32



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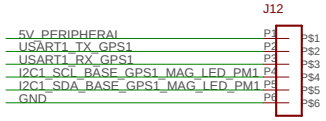
Title: RPi CSI Vertical Connector
Board: 900000001531
11/30/20 12:05 PM
Sheet: 22/32



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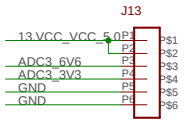
Title: JST GH 6-pin (GPS) Header
Board: 900000001531
11/30/20 12:05 PM
Sheet: 23/32



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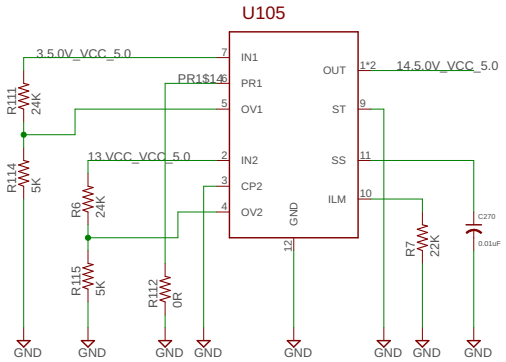
Title: JST GH 6-pin (Power) Header
Board: 900000001531
11/30/20 12:05 PM
Sheet: 24/32



Title:	TI TPS2121 Power Source Muxer
Board:	900000001531
	11/30/20 12:05 PM
Sheet:	25/32

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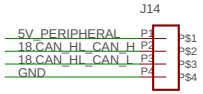

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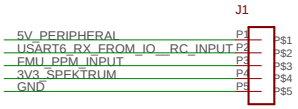
Title:	JST GH 4-pin (CAN) Header
Board:	900000001531
	11/30/20 12:05 PM
Sheet:	26/32



gumstix
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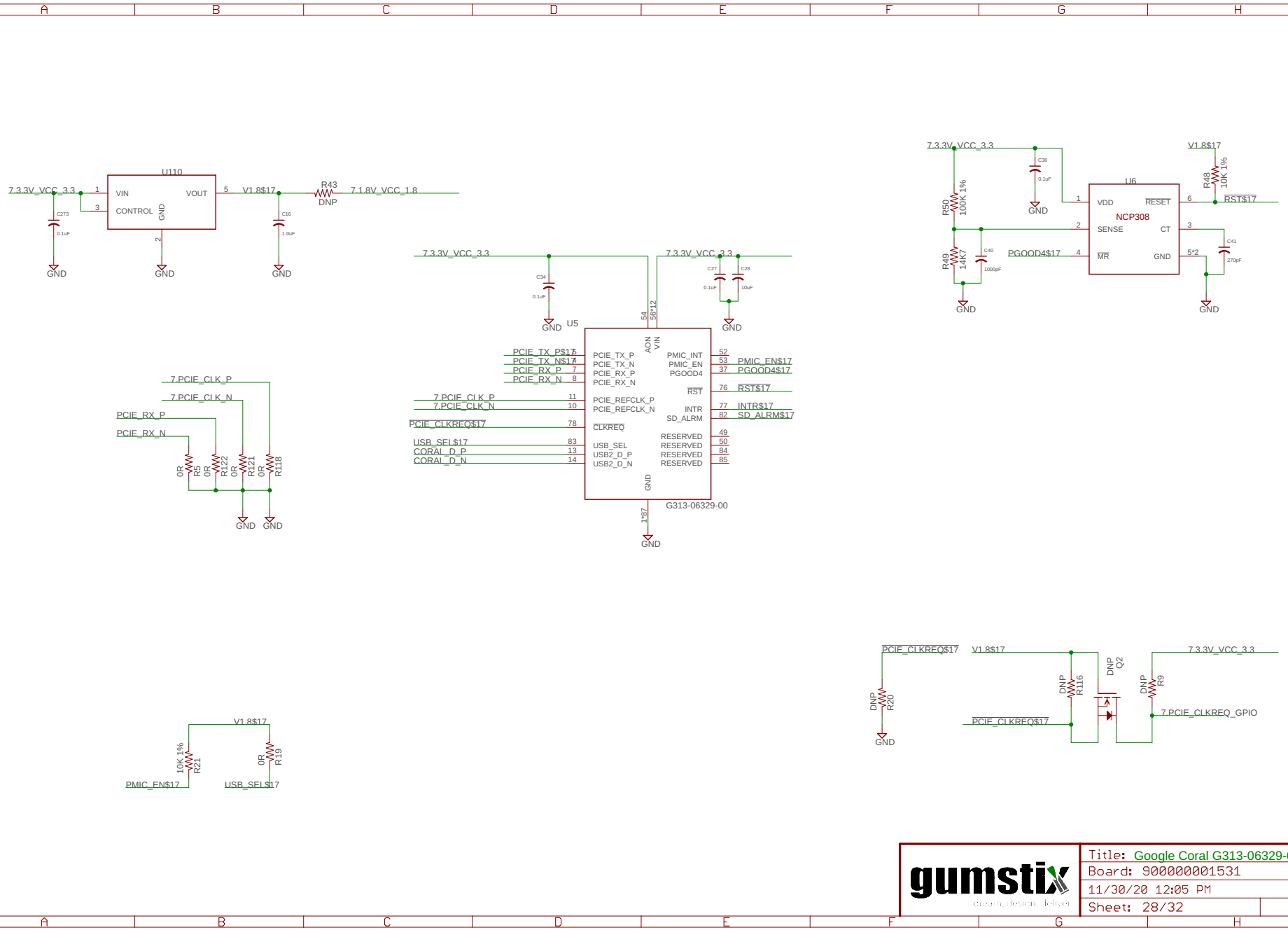
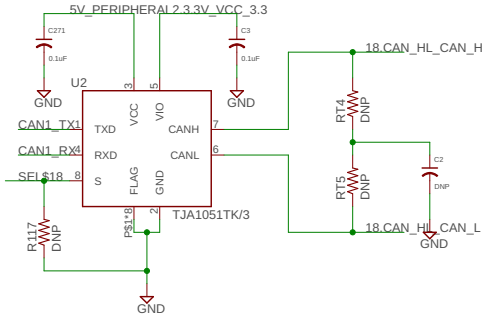
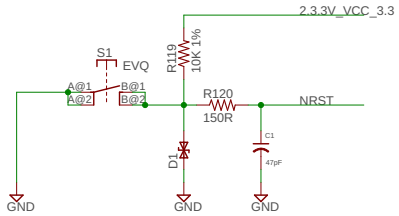
Title:	JST GH 5-pin (RC) Header
Board:	900000001531
11/30/20 12:05 PM	
Sheet:	27/32



Title:	Google Coral G313-06329-00 Accelerator
Board:	900000001531
	11/30/20 12:05 PM
Sheet:	28/32



gumstix	Title: NXP TJA1051TK/3 CAN Transceiver
	Board: 900000001531
	11/30/20 12:05 PM
	Sheet: 29/32



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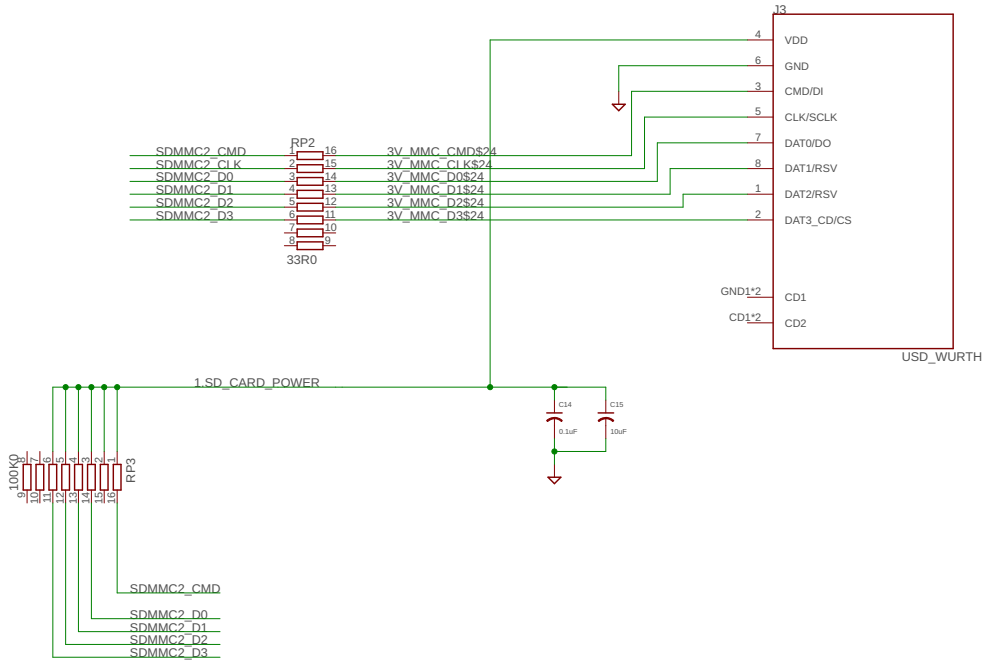
Title:	Pushbutton
Board:	900000001531
	11/30/20 12:05 PM
Sheet:	30/32



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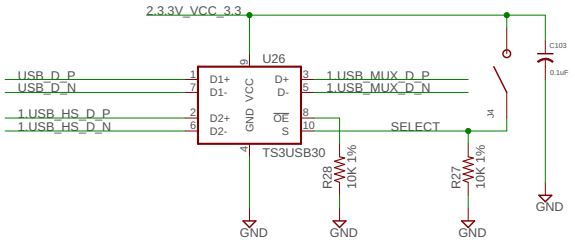
Title:	SD Card
Board:	900000001531
	11/30/20 12:05 PM
Sheet:	31/32



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Title: USB 2-Port Switch
Board: 900000001531
11/30/20 12:05 PM
Sheet: 32/32