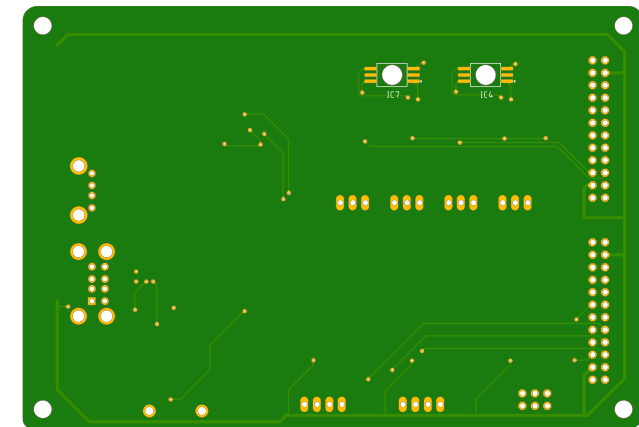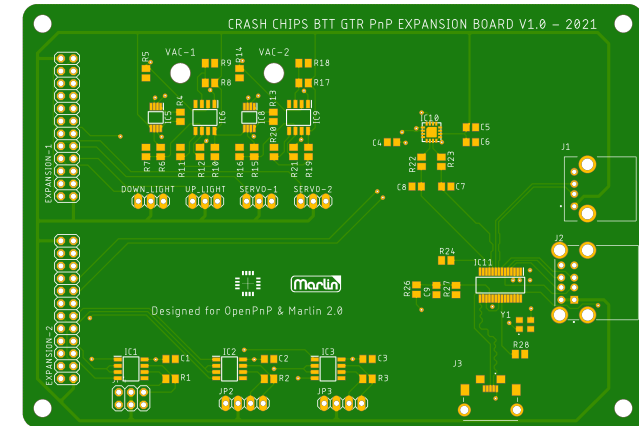CRASH CHIPS BTT GTR PnP EXPANSION BOARD V1.0 - 2021

Expansion Header, See PnP-Interface for Interfacting this board to the BTT GTR 1.0

Board Layout

EXPANSION-1
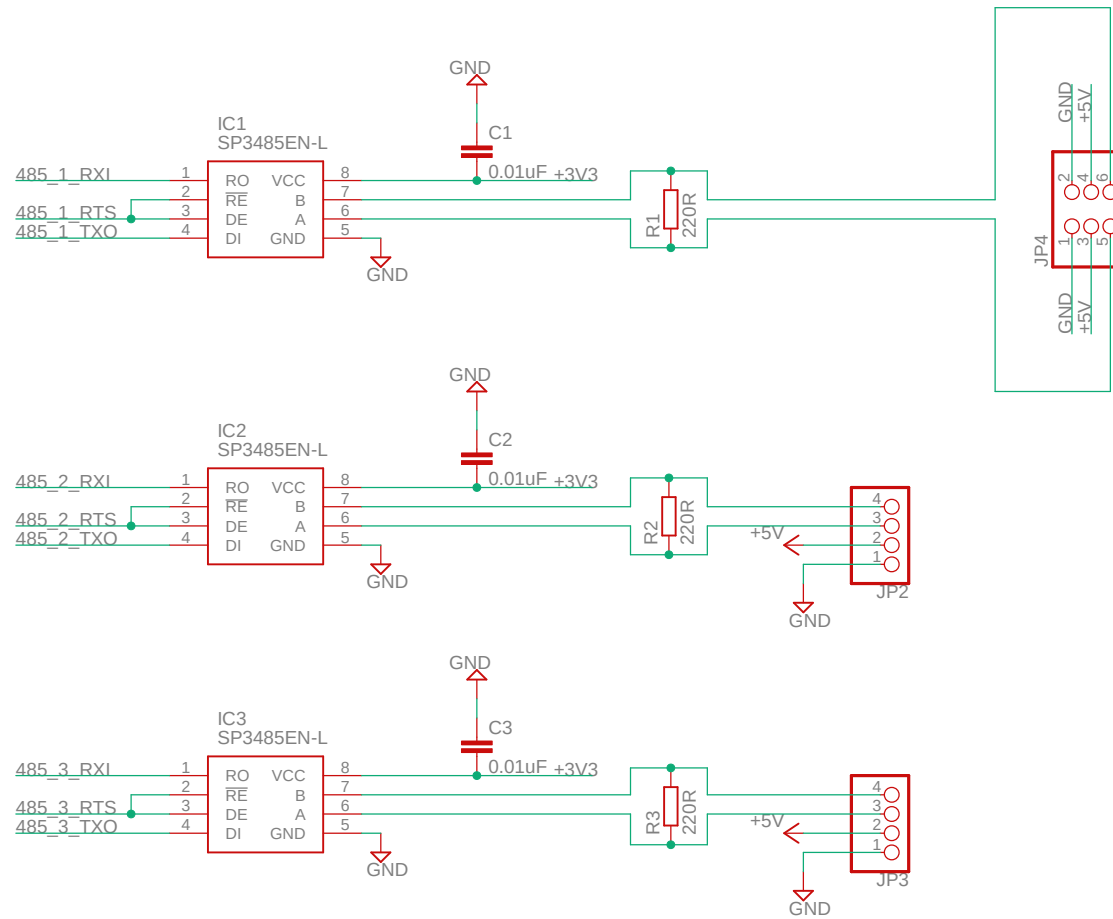
+5V	1	2	+12V
+3V3	3	4	GND
VAC_SIG_1	5	6	VAC_SIG_2
UP_LIGHT_SIG	7	8	DOWN_LIGHT_SIG
SERVO_1_SIG	9	10	SERVO_2_SIG
	11	12	
	13	14	
	15	16	
	17	18	
GND	19	20	GND
GND	21	22	+3V3
+12V	23	24	+5V

EXPANSION-2

+5V	1	2	+12V
+3V3	3	4	GND
485_1_RXI	5	6	485_3_RXI
485_1_RTS	7	8	485_3_RTS
485_1_TXO	9	10	485_3_TXO
485_2_RXI	11	12	485_2_RTS
485_2_TXO	13	14	
MCU_UART_TX	15	16	
MCU_UART_RX	17	18	
GND	19	20	GND
GND	21	22	+3V3
+12V	23	24	+5V

EXPANSION HEADER

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GND

IC1
SP3485EN-L

485_1_RXI — 1 RO VCC 8
2 RE B 7
485_1_RTS — 3 DE A 6
485_1_TXO — 4 DI GND 5

C1
0.01uF +3V3

GND

R1 220R

JP4

GND
+5V
2 4 6
1 3 5

GND
+5V

GND

IC2
SP3485EN-L

485_2_RXI — 1 RO VCC 8
2 RE B 7
485_2_RTS — 3 DE A 6
485_2_TXO — 4 DI GND 5

C2
0.01uF +3V3

GND

R2 220R

+5V

4
3
2
1
JP2

GND

GND

IC3
SP3485EN-L

485_3_RXI — 1 RO VCC 8
2 RE B 7
485_3_RTS — 3 DE A 6
485_3_TXO — 4 DI GND 5

C3
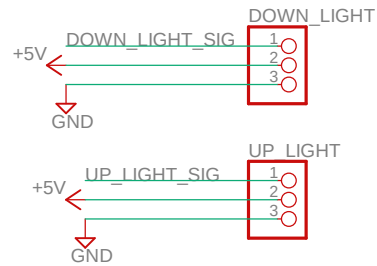0.01uF +3V3

GND

R3 220R

+5V

4
3
2
1
JP3

GND

RS-485 EXPANSION

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VISION CAMERA LIGHTS

DOWN_LIGHT
DOWN_LIGHT_SIG
+5V
GND
1
2
3

UP_LIGHT
UP_LIGHT_SIG
+5V
GND
1
2
3

SERVOS

SERVO-1
SERVO_1_SIG
+5V
GND
1
2
3

SERVO-2
SERVO_2_SIG
+5V
GND
1
2
3

USB HUB

J1
UJ2-AH-4-TH
GND
MH1
MH2
MH1
MH2
1   +5V
2   AUX-DM
3   AUX-DP
4   GND

Y1
ABM8-12.000MHZ-B2-T
CRYSTAL-2
GND
3   CRYSTAL_2
2   GND_1
GND_2   CRYSTAL_1
4   GND
1   CRYSTAL_1
GND
CRYSTAL-1

IC11
XR22404CG28TR-F
GND   1   GND   TEST4   28
CRYSTAL-2   2   XTALOUT   TEST#/SDA   27
CRYSTAL-1   3   XTALIN   OVC#   26   +3V3
CAM-2-DM   4   DM4   PWR#   25
CAM-2-DP   5   DP4   LED2   24
CAM-1-DM   6   DM3   LED1/SCL   23
CAM-1-DP   7   DP3   LED_CTL/CHRGEN 22   R28   10k   GND
AUX-DM   8   DM2   VCC33   21   +3V3
AUX-DP   9   DP2   VCC5   20
MCU-DM   10   DM1   BUS_PWR#   19   GND
MCU-DP   11   DP1   VBUS_SENSE 18   VBUS-SENSE
                    12   TEST2   EXT_RST#   17   +3V3
GND   R24   13   TEST3   UP_DP   16   HOST-DP
              14   REXT   UP_DM   15   HOST-DM
2.7K 1%

HOST-5V
R26
10k
4.7uF
C9
R27
100k
GND
VBUS-SENSE

J3
UJ2-MIBH-4-MSMT-TR
HOST-5V   1   MH2
HOST-DM   2   1   MH2   MP1
HOST-DP   3   2   MP1   MP2
              4   3   MP2   MP3
GND   5   4   MP3   MP4
              5   MH1   MP4   GND
              MH1

J2
UJ2-ADH-1-TH
1   1   +5V
2   3   CAM-1-DM
3   3   CAM-1-DP
4   4   GND
5   5   +5V
6   6   CAM-2-DM
7   7   CAM-2-DP
8   8   GND
SHIELD   S1*4

MICROCONTROLLER UART

+5V
100nF   4.7uF
GND   C5   C6

3V3OUT
100nF
GND   C4

IC10
FT230XQ
MCU_UART_RX 15   TXD   CBUS3   14
                    16   RTS   CBUS0   12
3V3OUT   1   VCCIO   CBUS1   11
MCU_UART_TX 2   RXD   GND   13   GND
GND   3   GND   VCC   10   +5V
                    4   CTS   RESET   9
                    5   CBUS2   3V3OUT 8   3V3OUT
                    6   USBDP   USBDM   7

R22   27R
C8   47pF
MCU-DP
GND
C7   47pF
MCU-DM
R23   27R

AUXILIARY SYSTEMS

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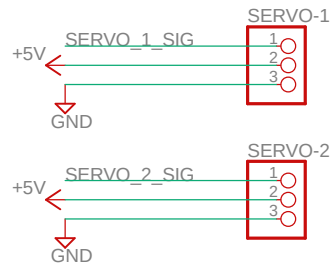
VACCUUM SIGNAL

TITLE: PnP-Expansion-V1
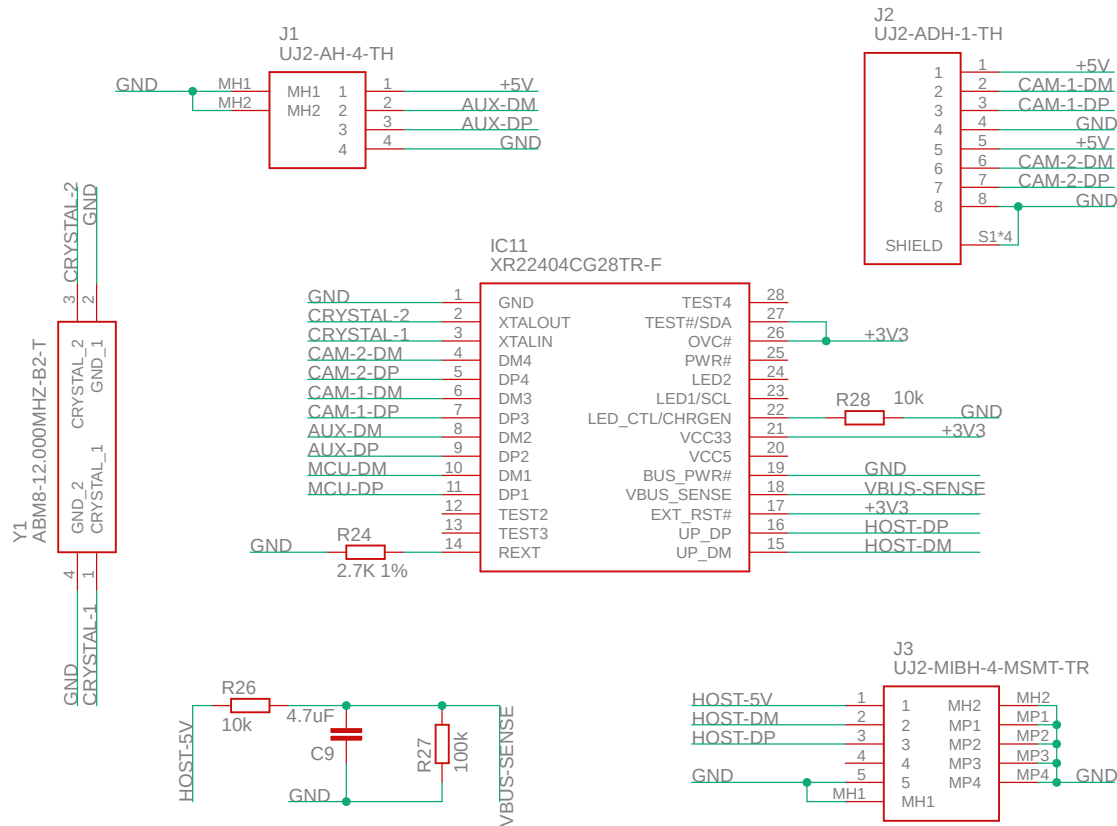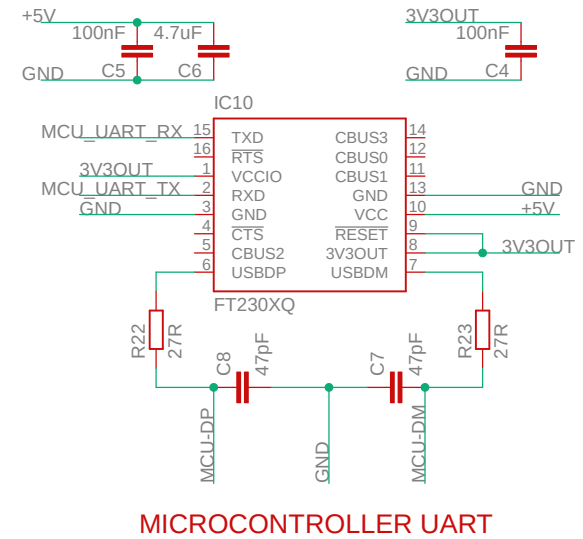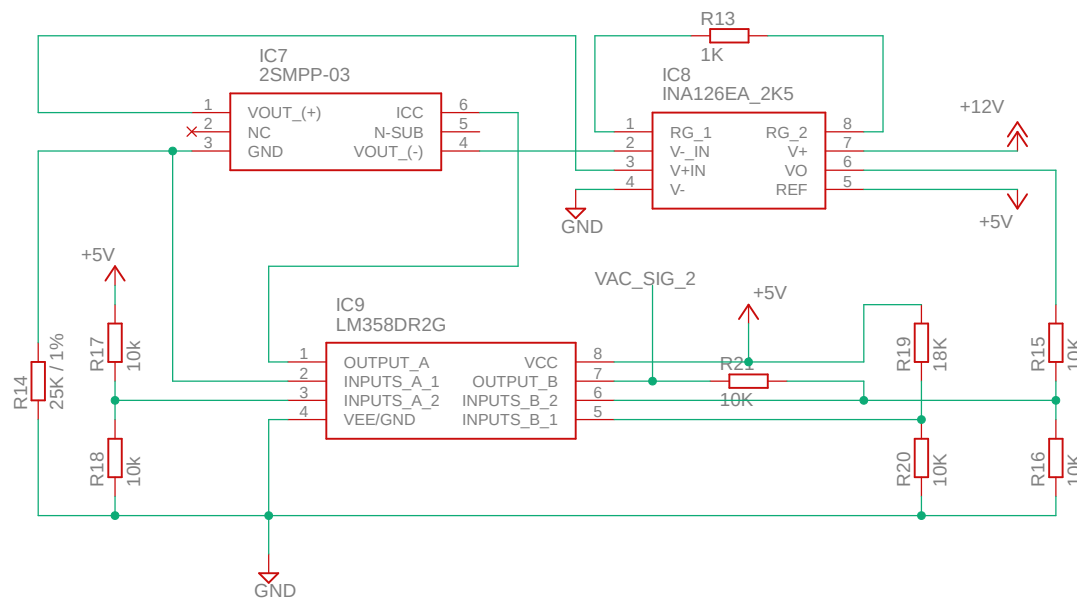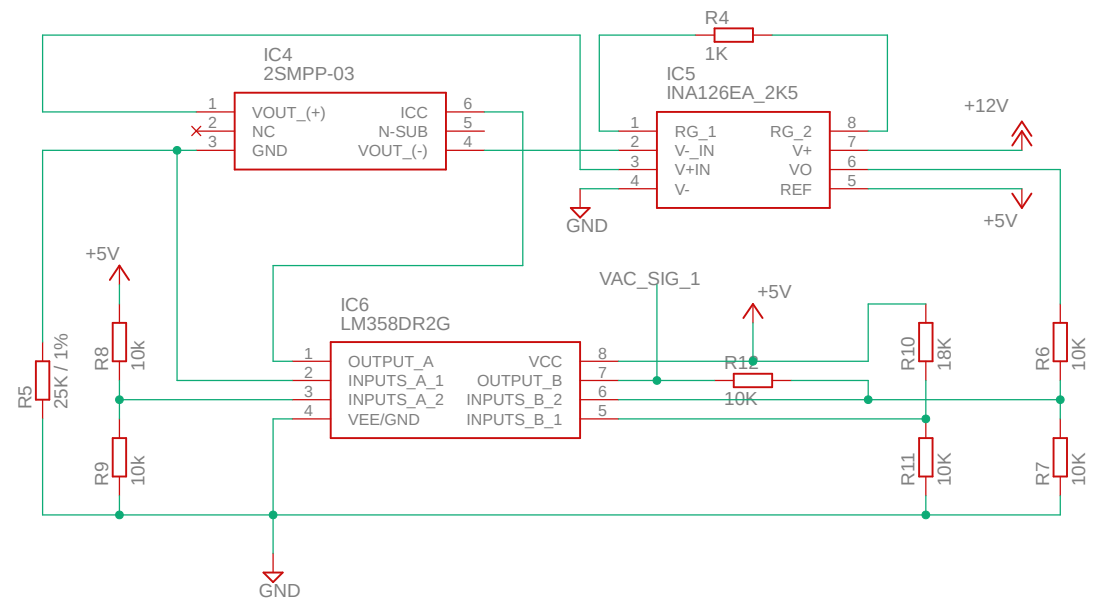
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