This is based on the official Raspberry Pi spec to be able to call an extension board a HAT.
https://github.com/raspberrypi/hats/blob/master/designguide.md

Mounting Holes

H1 3mm_Mounting_Hole   H2 3mm_Mounting_Hole
H3 3mm_Mounting_Hole   H4 3mm_Mounting_Hole

5V Powered HAT Protection

This is the recommended 5V rail protection for
a HAT with power going to the Pi.
See https://github.com/raspberrypi/hats/blob/master/designguide.md#back-powering-the-pi-via-the-j8-gpio-header
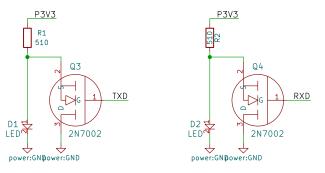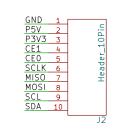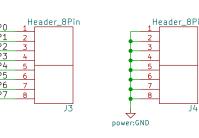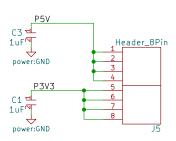
40-Pin HAT Connector

raspberrypi_hat:0X40HAT J1

Signal	Pin	BCM		Pin	Signal
P3V3	1	P3V3	P5V	2	P5V
SDA	3	BCM2	P5V	4	P5V
SCL	5	BCM3	GND	6	GND
P7	7	BCM4	BCM14	8	TXD
GND	9	GND	BCM15	10	RXD
P0	11	BCM17	BCM18	12	P1
P2	13	BCM27	GND	14	GND
P3	15	BCM22	BCM23	16	P4
P3V3	17	P3V3	BCM24	18	P5
MOSI	19	BCM10	GND	20	GND
MISO	21	BCM9	BCM25	22	P6
SCLK	23	BCM11	BCM8	24	CE0
GND	25	GND	BCM7	26	CE1
TXD_2	27	BCM0	BCM1	28	GND
	29	BCM5	GND	30	GND
	31	BCM6	BCM12	32	
	33	BCM13	GND	34	GND
	35	BCM19	BCM16	36	
	37	BCM26	BCM20	38	
GND	39	GND	BCM21	40	

P3V3
R1 510
Q3 2N7002
D1 LED
TXD
power:GND

P3V3
R2
Q4 2N7002
D2 LED
RXD
power:GND

Header_10Pin J2
GND 1
P5V 2
P3V3 3
CE1 4
CE0 5
SCLK 6
MISO 7
MOSI 8
SCL 9
SDA 10

Header_8Pin J3
P0 1
P1 2
P2 3
P3 4
P4 5
P5 6
P6 7
P7 8
power:GND

Header_8Pin J4
power:GND

P5V
C3 1uF
power:GND
P3V3
C1 1uF
power:GND
Header_8Pin J5

P3V3
R12 10k
BSS123
RXD
TXD
TXD_2 R6 10k
TXD
R4 10k
Q5
power:GND

MAX3485
Vcc 8
A 6
B 7
GND 5
RXD 2
1
TXD 4
3
U1
power:GND
P3V3
C2 1uF
power:GND
A
B

A R5 10k P3V3
R3 120
B R10 10k
power:GND

2Screw_Term
A 1
B 2
J7

RJ14 J6
GND 2 T2
A 3 R1
B 4 T1
GND 5 R2

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Title: Raspberry Pi HAT
Size: A3   Date:
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Rev: A
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