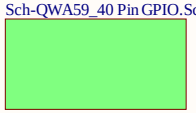
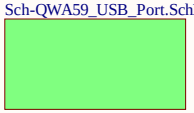
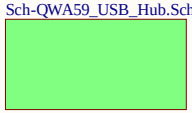
CAM1 Connector
Sch-QWA59_40 Pin GPIO.SchDoc



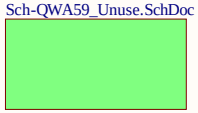
USB
Sch-QWA59_USB_Port.SchDoc



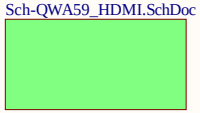
USB Hub
Sch-QWA59_USB_Hub.SchDoc



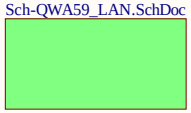
Unuse
Sch-QWA59_Unuse.SchDoc



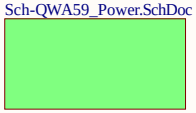
HDMI
Sch-QWA59_HDMI.SchDoc



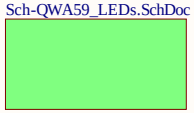
LAN
Sch-QWA59_LAN.SchDoc



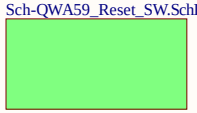
Power
Sch-QWA59_Power.SchDoc



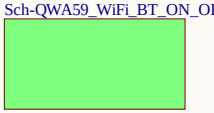
LEDs
Sch-QWA59_LEDs.SchDoc



Reset SW
Sch-QWA59_Reset_SW.SchDoc



WiFi BT ON OF
Sch-QWA59_WiFi_BT_ON_OFF.SchDoc



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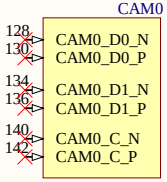
Size: A4	Number:1	Revision:	
Date: 11/5/2020	Time: 3:01:24 AM	Sheet 1 of 9	
File: G:\My Drive_HW_Product\QWA59-CatsPi-Dev-Board\Top_Level_QWA59.SchDoc			

Q-WAVE SYSTEMS

CM4D

CAM0



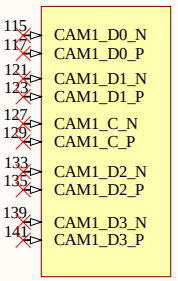
The CM4 supports two camera ports; CAM0 (2 lanes) and CAM1 (4 lanes).

Camera sensors supported by the official Raspberry Pi firmware are; the OmniVision OV5647, Sony IMX219 and Sony
IMX477, no security device is required on Compute Module devices to use these camera sensors.

Raspberry Pi Compute Module 4

CM4E

CAM1



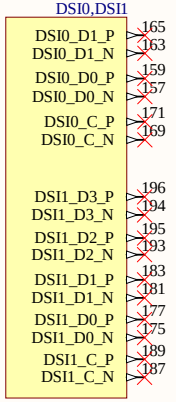
The CM4 supports two camera ports; CAM0 (2 lanes) and CAM1 (4 lanes).

Camera sensors supported by the official Raspberry Pi firmware are; the OmniVision OV5647, Sony IMX219 and Sony
IMX477, no security device is required on Compute Module devices to use these camera sensors.

Raspberry Pi Compute Module 4

CM4F

DSI0,DSI1

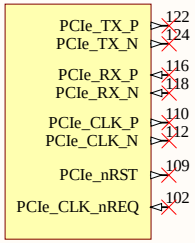


The CM4 supports two display ports; DISP0 (2 lanes) and DISP1 (4 lanes). Each lane supports a maximum of data rate per lane of 1Gbit/s.

Raspberry Pi Compute Module 4

CM4I

PCIe2x1



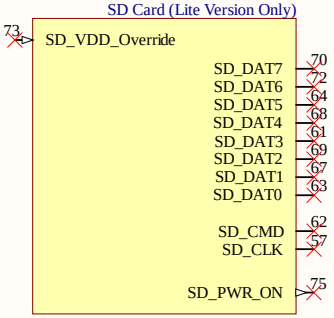
The CM4 has an internal PCIe 2.0 x1 host controller

Raspberry Pi Compute Module 4

CM4J

When SD_VDD_override is high, this signal is used to force 1.8v signalling on the SDIO interface. Typically this is used with eMMC memory

SD Card (Lite Version Only)



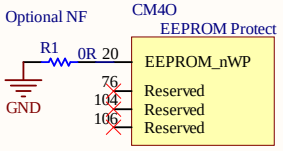
The SD_PWR_ON signal is used to enable an external power switch to turn on power to the SDCARD

Raspberry Pi Compute Module 4

Optional NF

CM4O

EEPROM Protect

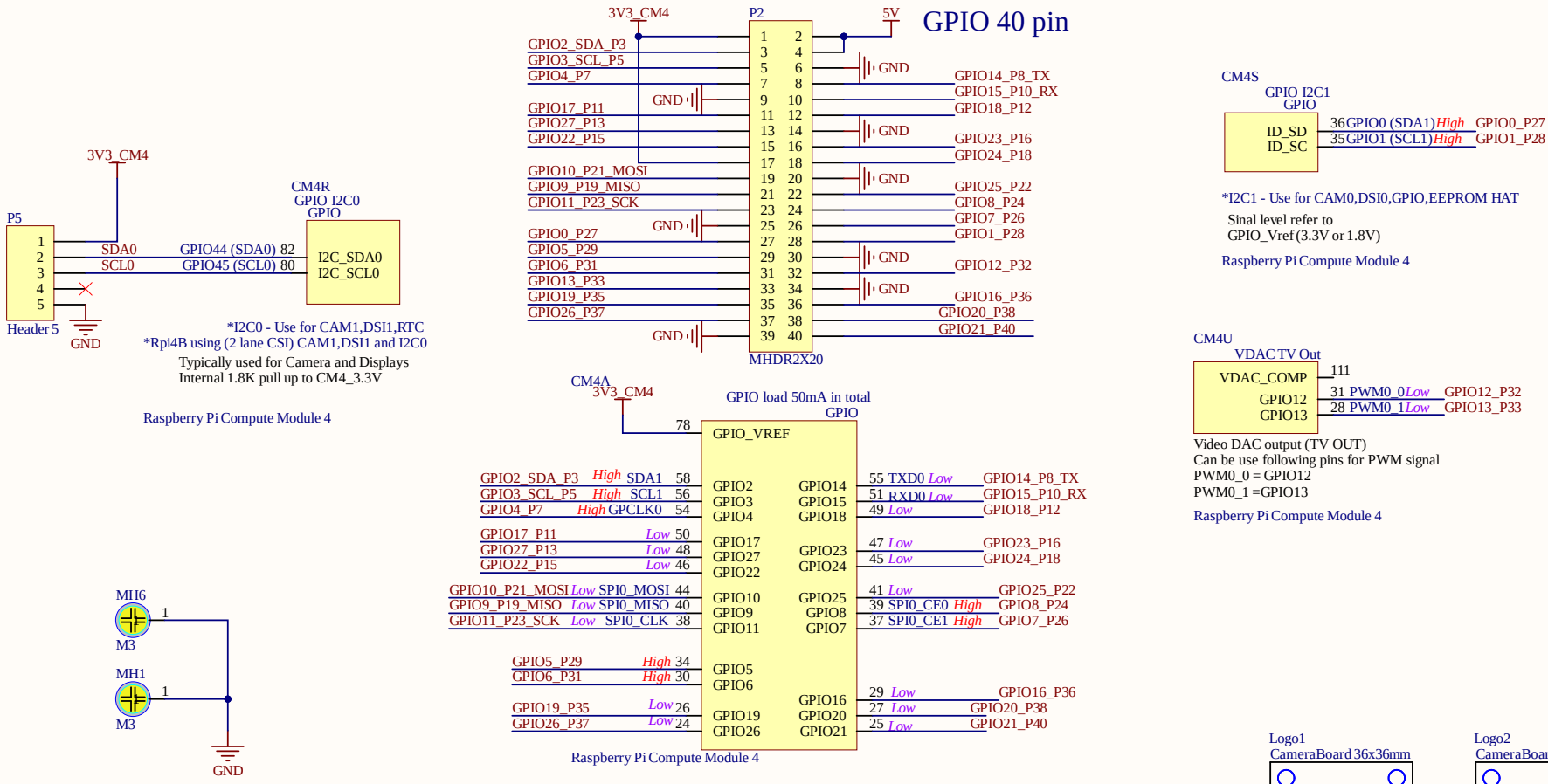


Leaving floating NB internally pulled up to CM4_3.3V via 100K (VIL<0.8V) but can be grounded to prevent writing to the on board EEPROM which stores the bootcode

Raspberry Pi Compute Module 4

Title *QWA38-CAM*			*Q-Wave Systems Co.,Ltd* *65/2 Moo 1 Beung* *Sriracha Chonburi* *Thailand*
Size: A4	Number:2	Revision:	
Date: 11/5/2020	Time: 3:01:24 AM	Sheet 2 of 9	
File: G:\My Drive_HW_Product\QWA59-CatsPi-Dev-Board\Sch-QWA59_Unuse.SchDoc			

Q-WAVE SYSTEMS



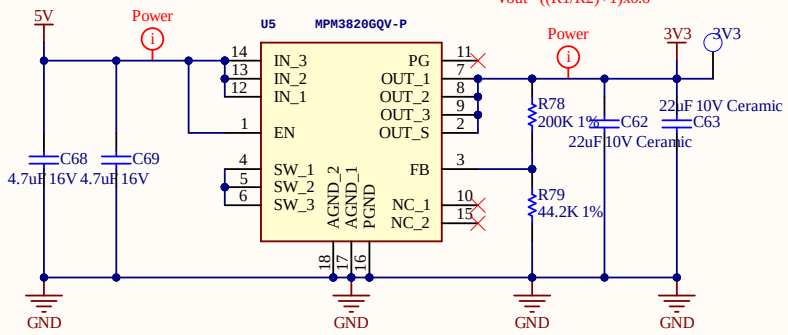
Title	*QWA38-CAM*		*Q-Wave Systems Co.,Ltd*
Size: A4	Number:2	Revision:	*65/2 Moo 1 Beung*
Date: 11/5/2020	Time: 3:01:24 AM	Sheet 2 of 9	*Sriracha Chonburi*
File: G:\My Drive_HW_Product\QWA59-CatsPi-Dev-Board\Sch-QWA59_40 Pin GPIO.SchDoc			*Thailand*

Q-WAVE SYSTEMS

Main CPU - Power Design

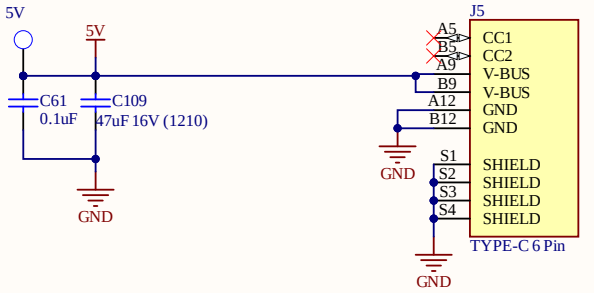
3.3V 2A

R1 range = 50k-200k
Vout= ((R1/R2)+1)x0.6

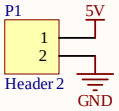


Click here : PCB Layout guildline p15 https://th.mouser.com/datasheet/2/277/MPM3820_r1.21-469212.pdf

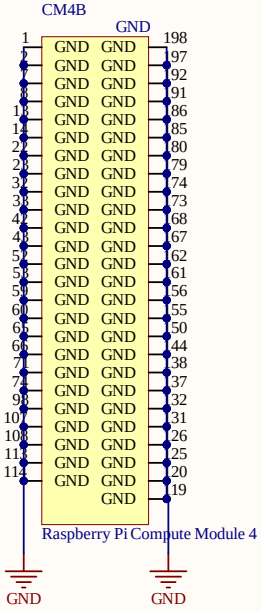
PWR 5V micro USB Type C



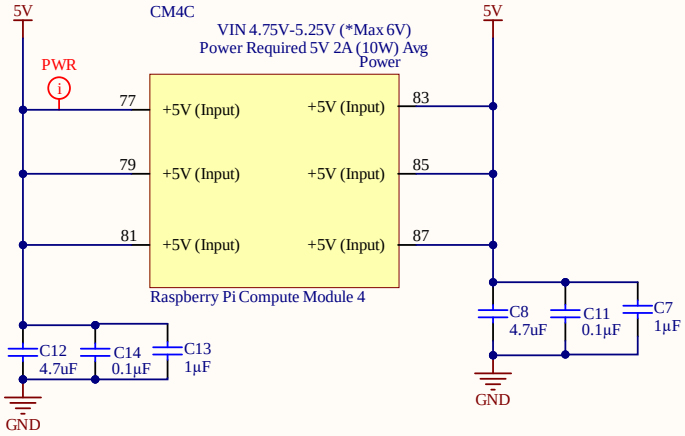
5V FAN



CM4B

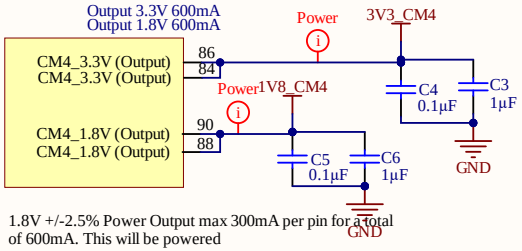


CM4C



CM4Q

3.3V +/-2.5% Power Output max 300mA per pin for a total of 600mA. This will be powered down during power off or GLOBAL_EN being set low

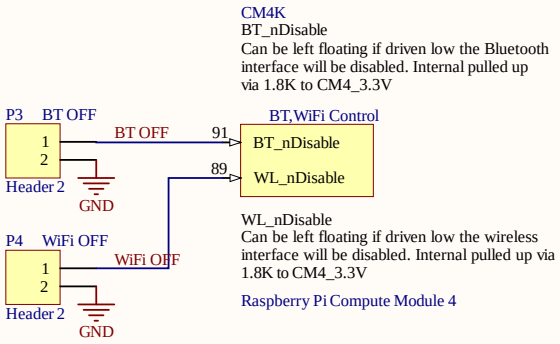


1.8V +/-2.5% Power Output max 300mA per pin for a total of 600mA. This will be powered down during power off or GLOBAL_EN being set low

Raspberry Pi Compute Module 4

Title	*QWA38-Power*		*Q-Wave Systems Co.,Ltd*
Size: A4	Number:2	Revision:	*65/2 Moo 1 Beung*
Date: 11/5/2020	Time: 3:01:24 AM	Sheet2 of 6	*Sriracha Chonburi*
File: G:\My Drive_HW_Product\QWA59-CatsPi-Dev-Board\Sch-QWA59_Power.SchDoc			*Thailand*

Q-WAVE SYSTEMS



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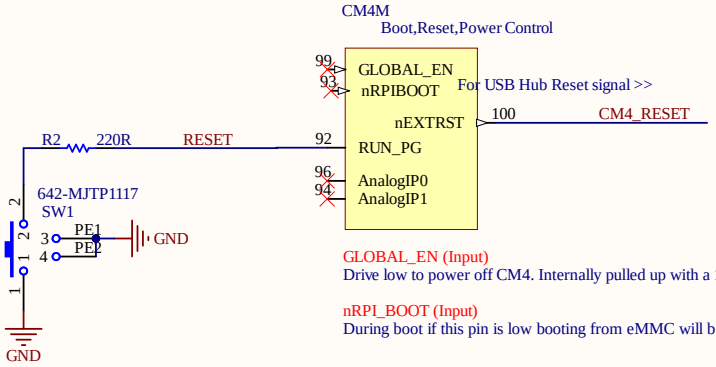


GLOBAL_EN (Input)
Drive low to power off CM4. Internally pulled up with a 100K to +5V

nRPI_BOOT (Input)
During boot if this pin is low booting from eMMC will be stopped and booting will be transferred to rpi boot which is via

nEXTRST (Output)
Driven low during reset
Driven high (CM4_3.3V) once CM4 CPU has started to boot

RUN_PG

Bidirectional pin. Internally pulled up to +3.3V via 10K

>Input
Can be driven low (via a 220R resistor) to Reset the CM4 CPU.

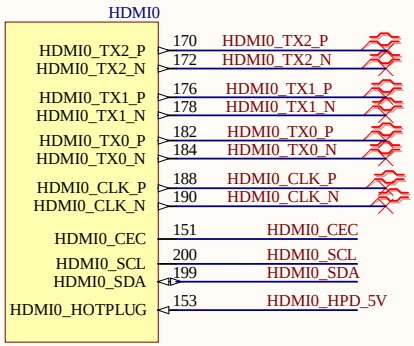
Ouput >
Output a high signals Power Good and CPU running.

Analog IP0,IP1
Analog input of the MAX7704. Typically connected to CC pin of Type C power connector
Raspberry Pi Compute Module 4

Title	***QWA38 I2C Cypto Chip***		*Q-Wave Systems Co.,Ltd* *65/2 Moo 1 Beung* *Sriracha Chonburi* *Thailand*
Size: A4	Number:4	Revision:	
Date: 11/5/2020	Time: 3:01:25 AM	Sheet4 of 9	
File: G:\My Drive_HW_Product\QWA59-CatsPi-Dev-Board\Sch-QWA59_Reset_SW.SchDoc			

Q-WAVE SYSTEMS

CM4G
CEC is also supported, an internal 27K pullup resistor is included in the CM4.

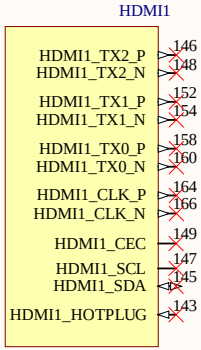


HDMI0_HOTPLUG
Input HDMI1 Hotplug Internally pulled down with a 100K. 5V tolerant.

HDMI0_SDA,SCL
Bidir HDMI1 SDA Internally pulled up with a 1.8K. 5V tolerant

Raspberry Pi Compute Module 4

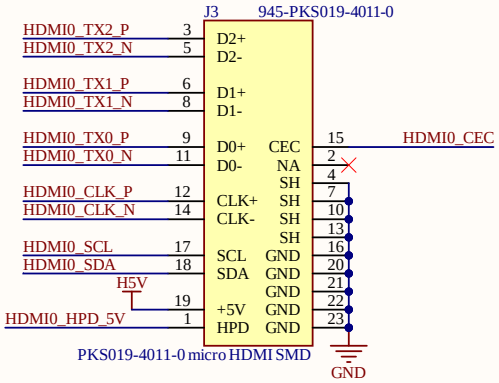
CM4H



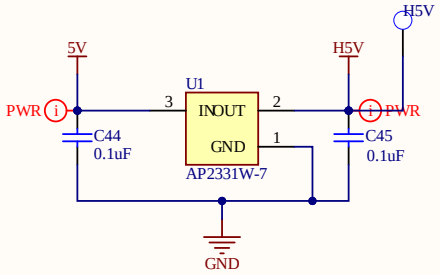
HDMI1_HOTPLUG
Input HDMI1 Hotplug Internally pulled down with a 100K. 5V tolerant.

HDMI1_SDA,SCL
Bidir HDMI1 SDA Internally pulled up with a 1.8K. 5V tolerant

Raspberry Pi Compute Module 4



Current Limit 200mA



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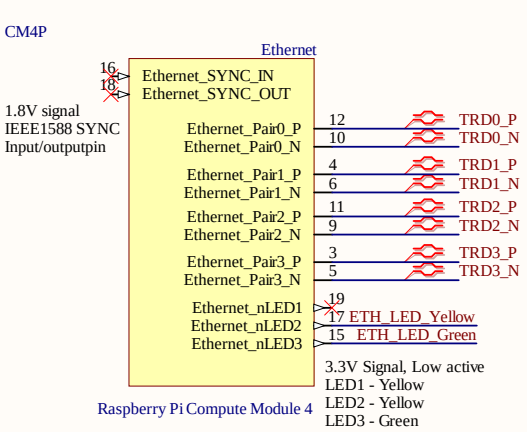
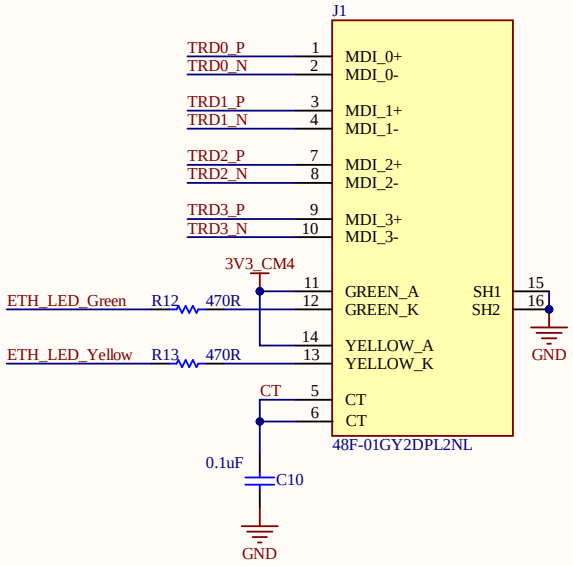
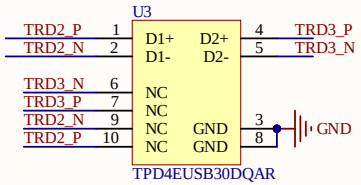
Q-Wave Systems Co.,Ltd
65/2 Moo 1 Beung
Sriracha Chonburi
Thailand

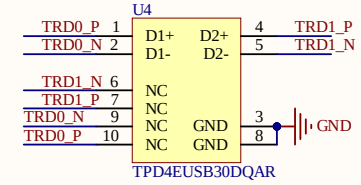
Q-WAVE SYSTEMS

1Gbps RJ45 Connector









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Size: A4	Number:*	Revision:*	
Date: 11/5/2020	Time: 3:01:25 AM	Sheet * of *	
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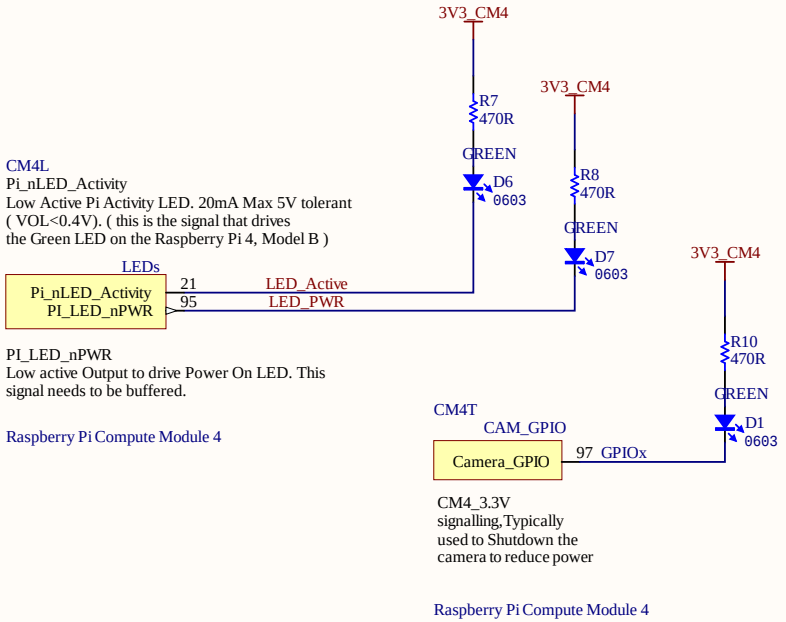
Q-WAVE SYSTEMS



Title *			*Q-Wave Systems Co.,Ltd* *65/2 Moo 1 Beung* *Sriracha Chonburi* *Thailand*
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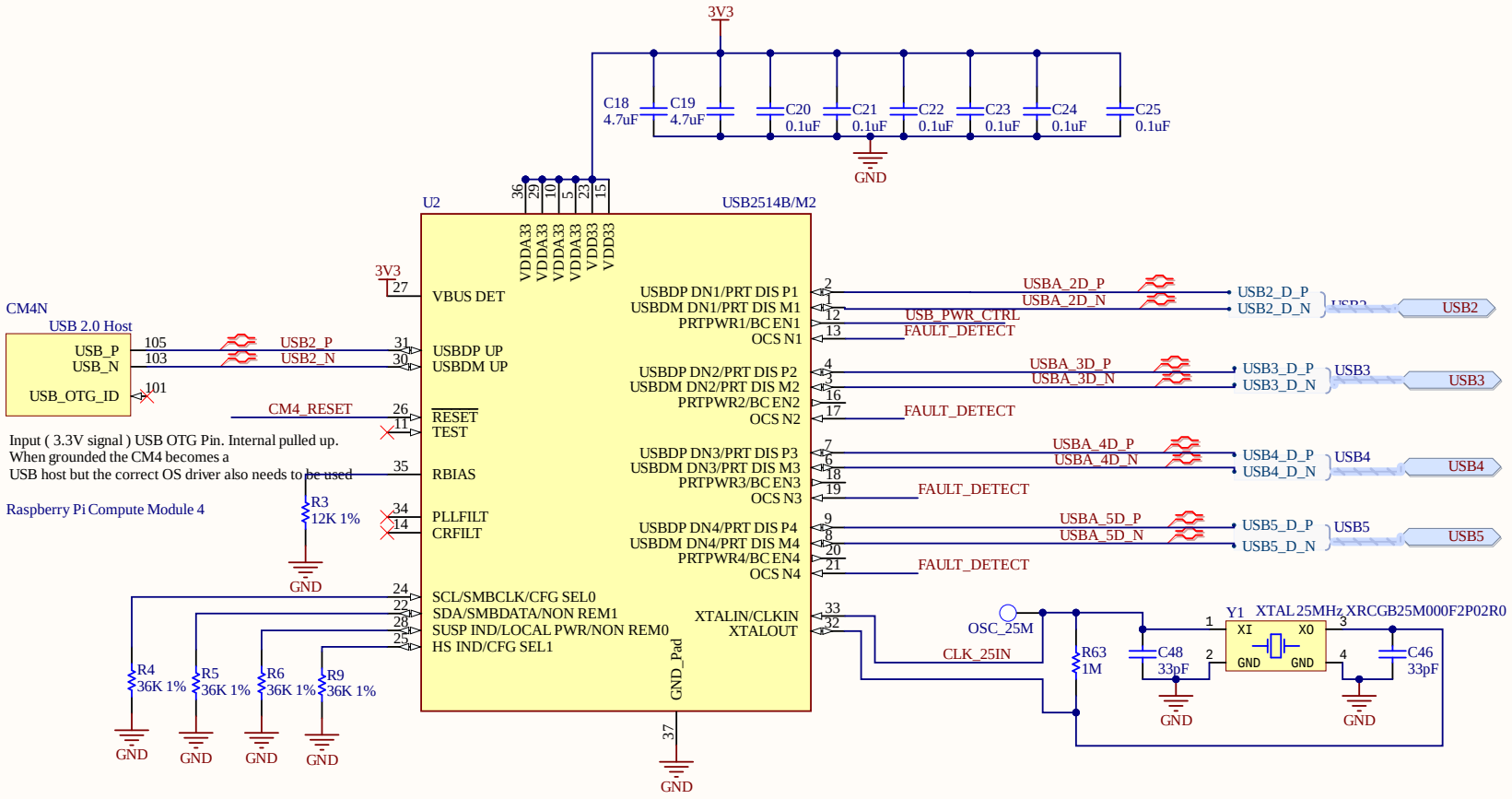

DIFF90

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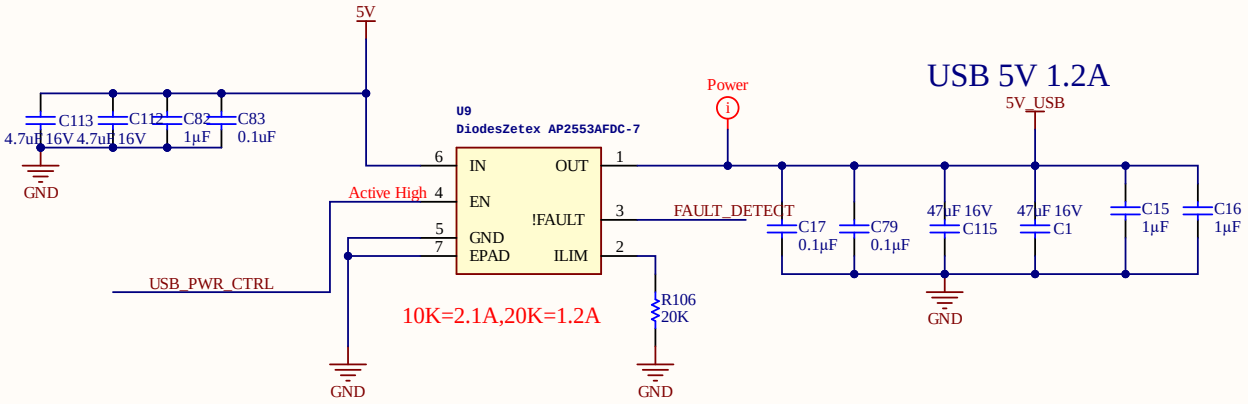
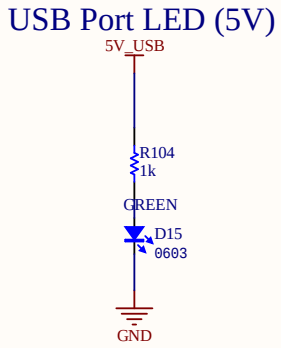
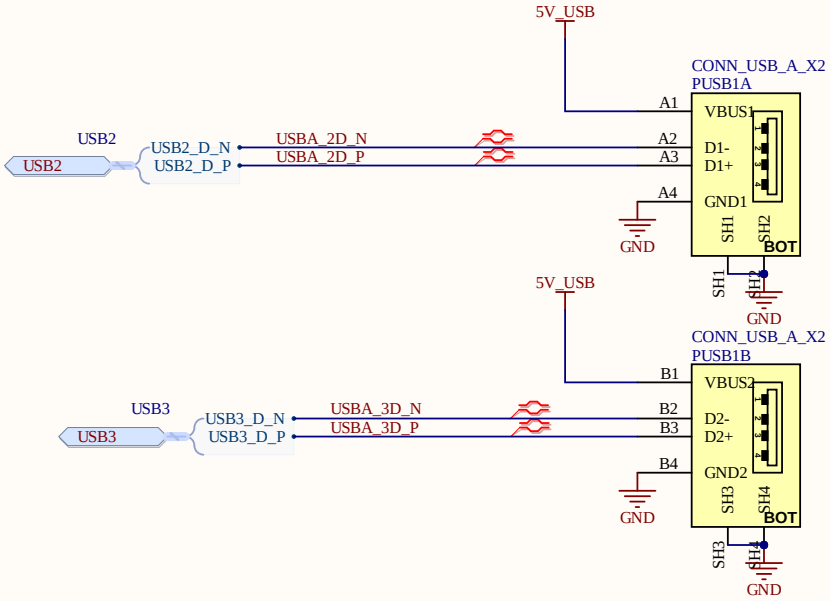
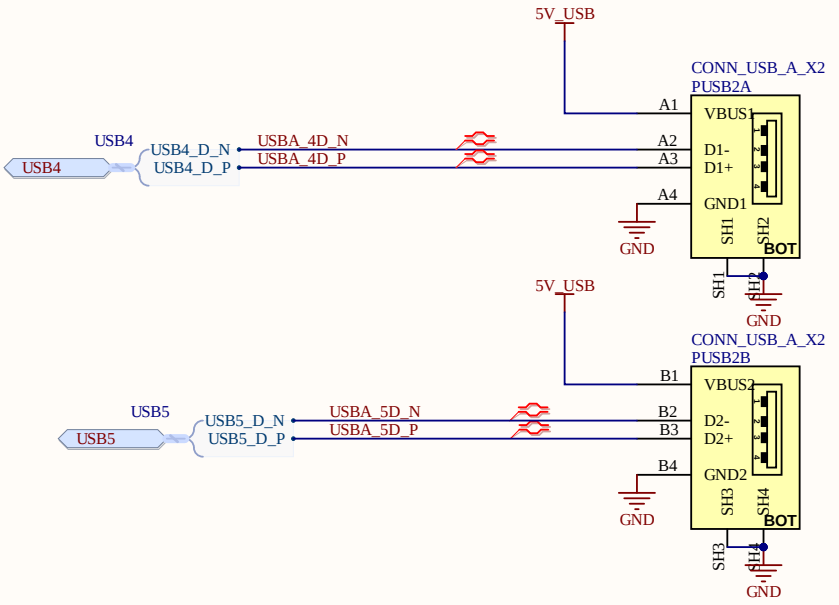
Q-WAVE SYSTEMS









Title	***QWA38 USB Hub***		*Q-Wave Systems Co.,Ltd*
Size: A4	Number:*	Revision:*	*65/2 Moo 1 Beung*
Date: 11/5/2020	Time: 3:01:25 AM	Sheet * of *	*Sriracha Chonburi*
File: G:\My Drive_HW_Product\QWA59-CatsPi-Dev-Board\Sch-QWA59_USB_Port.SchDoc			*Thailand*

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