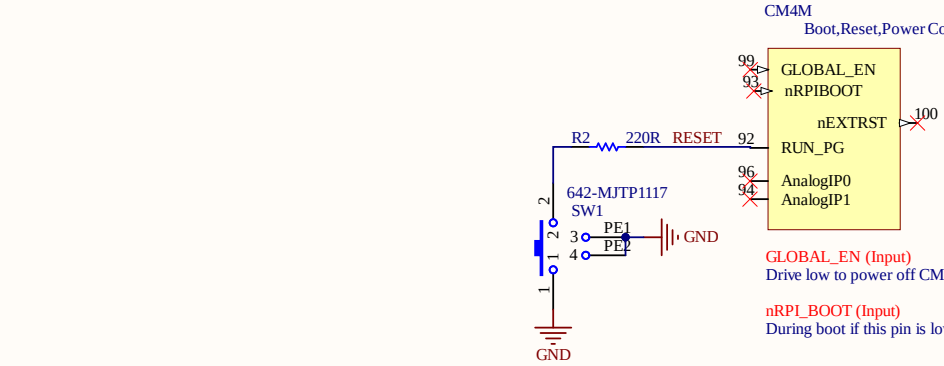


GLOBAL_EN (Input)
Drive low to power off CM4. Internally pulled up with a 100K to +5V

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

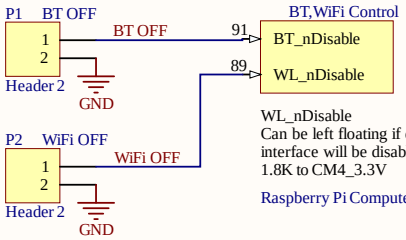
Bidirectional pin. Internally pulled up to +3.3V via 10K

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

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

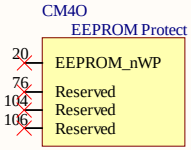
Analog IP0,IP1
Analog input of the MAX7704. Typically connected to CC pin of Type C power connector
Raspberry Pi Compute Module 4

CM4K
BT_nDisable
Can be left floating if driven low the Bluetooth interface will be disabled. Internal pulled up via 1.8K to CM4_3.3V



WL_nDisable
Can be left floating if driven low the wireless interface will be disabled. Internal pulled up via 1.8K to CM4_3.3V

Raspberry Pi Compute Module 4



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

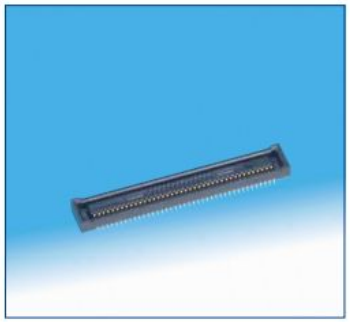
Raspberry Pi Compute Module 4

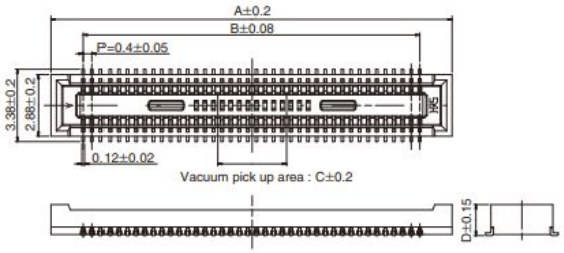
Title *			*Q-Wave Systems Co.,Ltd*
Size: A4	Number:*	Revision:*	*65/2 Moo 1 Beung*
Date: 11/20/2020	Time: 11:34:28 AM	Sheet * of *	*Sriracha Chonburi*
File: G:\My Drive_HW_Product\QWA62-SeaBOX-PoE\BT WiFi Power Reset Control.SchDoc			*Thailand*

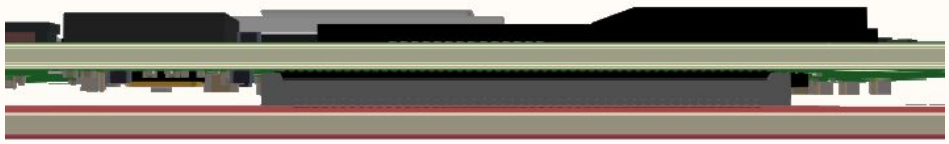
Q-WAVE SYSTEMS

1.5mm with mating connector (clearance under CM4 0mm) : DF40C-100DS-0.4v

DF40C-100DS-0.4V

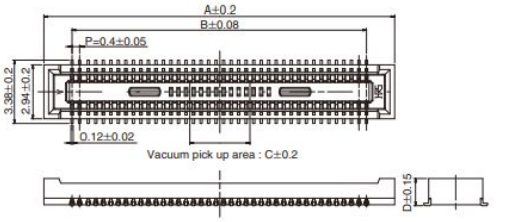


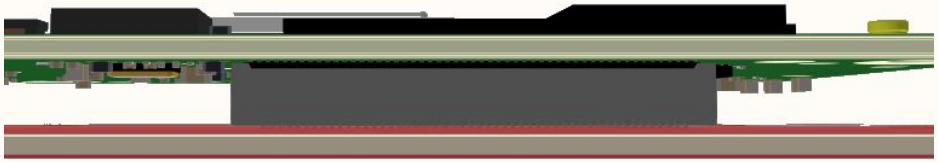




3.0mm with mating connector (clearance under CM4 1.5mm): DF40HC(3.0)-100DS-0.4v

DF40HC(3.0)-100DS-0.4V





Title *			*Q-Wave Systems Co.,Ltd* *65/2 Moo 1 Beung* *Sriracha Chonburi* *Thailand*
Size: A4	Number:*	Revision:*	
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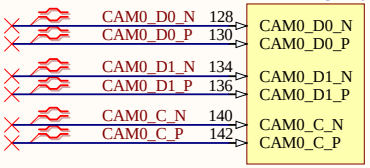
File: G:\My Drive_HW_Product\QWA62-SeaBOX-PoE\Connector.SchDoc			

Q-WAVE SYSTEMS

CM4D

CAM0



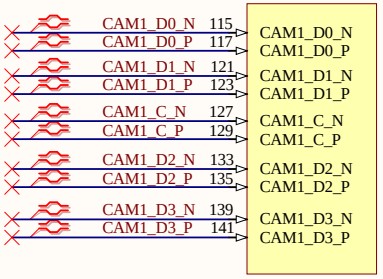
The CM4 supports two camera ports; CAM0 (2 lanes) and CAM1 (4 lanes).

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

CM4T

CAM_GPIO

CM4_3.3V signalling,Typically used to Shutdown the camera to reduce power

Raspberry Pi Compute Module 4

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Size: A4	Number:*	Revision:*	
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File: G:\My Drive_HW_Product\QWA62-SeaBOX-PoE\CSI.SchDoc			

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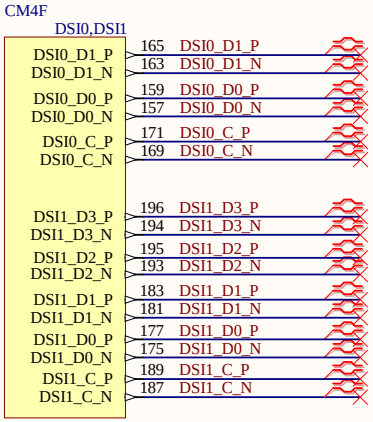

The CM4 supports two display ports; DISP0 (2 lanes) and DISP1 (4 lanes). Each lane supports a maximum of data rate per lane of 1Gbit/s.

Raspberry Pi Compute Module 4

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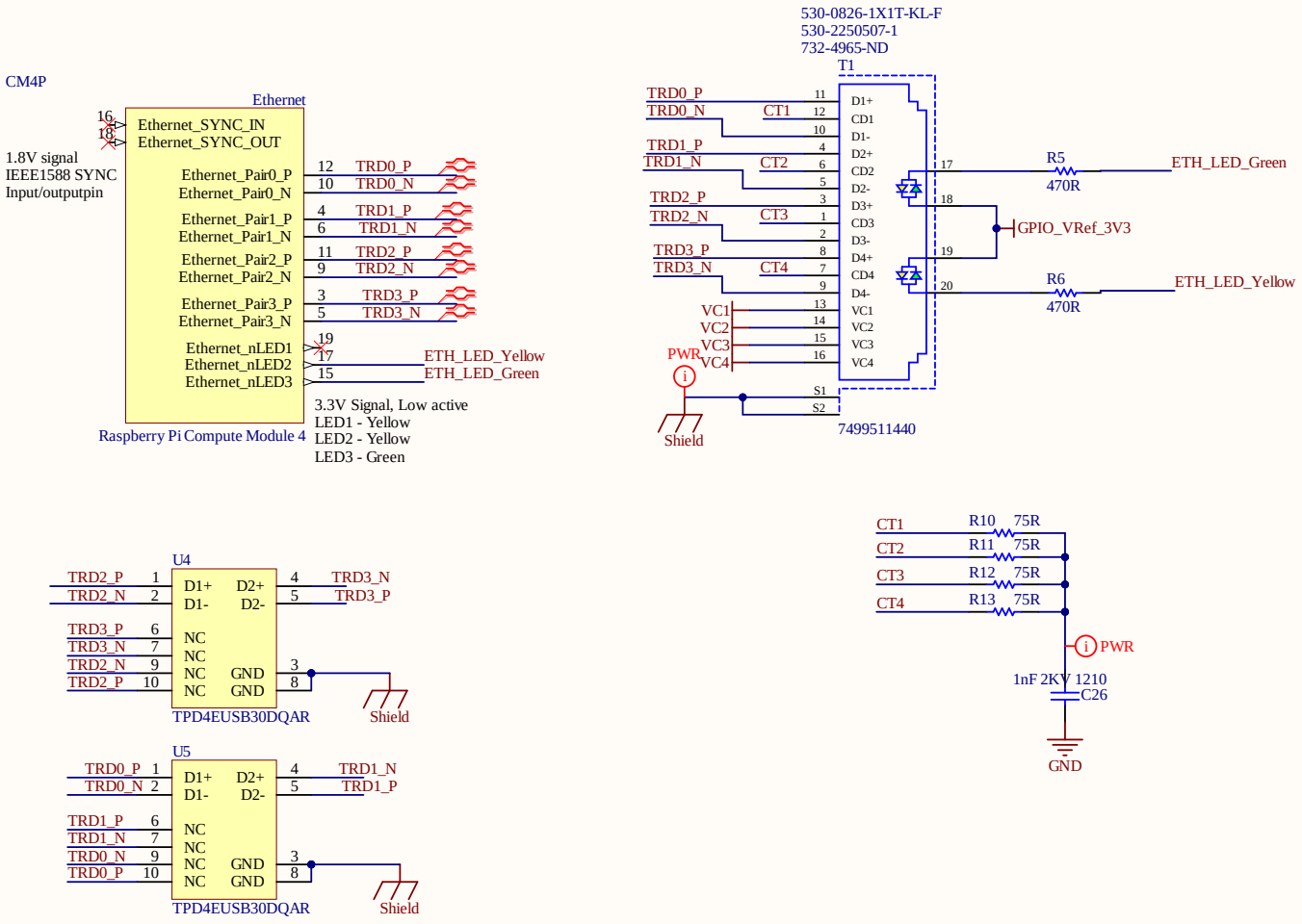
Q-WAVE SYSTEMS


CM4P
Ethernet
16
18
Ethernet_SYNC_IN
Ethernet_SYNC_OUT
1.8V signal
IEEE1588 SYNC
Input/outputpin
Ethernet_Pair0_P
Ethernet_Pair0_N
Ethernet_Pair1_P
Ethernet_Pair1_N
Ethernet_Pair2_P
Ethernet_Pair2_N
Ethernet_Pair3_P
Ethernet_Pair3_N
Ethernet_nLED1
Ethernet_nLED2
Ethernet_nLED3
12 TRD0_P
10 TRD0_N
4 TRD1_P
6 TRD1_N
11 TRD2_P
9 TRD2_N
3 TRD3_P
5 TRD3_N
19
17 ETH_LED_Yellow
15 ETH_LED_Green
3.3V Signal, Low active
LED1 - Yellow
LED2 - Yellow
LED3 - Green
Raspberry Pi Compute Module 4
530-0826-1X1T-KL-F
530-2250507-1
732-4965-ND
T1
TRD0_P
TRD0_N
CT1
TRD1_P
TRD1_N
CT2
TRD2_P
TRD2_N
CT3
TRD3_P
TRD3_N
CT4
VC1
VC2
VC3
VC4
PWR
Shield
D1+
CD1
D1-
D2+
CD2
D2-
D3+
CD3
D3-
D4+
CD4
D4-
S1
S2
7499511440
R5
470R
ETH_LED_Green
GPIO_VRef_3V3
R6
470R
ETH_LED_Yellow
U4
TRD2_P 1
TRD2_N 2
TRD3_P 6
TRD3_N 7
TRD2_N 9
TRD2_P 10
D1+
D1-
D2+
D2-
NC
GND
4 TRD3_N
5 TRD3_P
3
8
TPD4EUSB30DQAR
Shield
U5
TRD0_P 1
TRD0_N 2
TRD1_P 6
TRD1_N 7
TRD0_N 9
TRD0_P 10
4 TRD1_N
5 TRD1_P
TPD4EUSB30DQAR
Shield
CT1
CT2
CT3
CT4
R10 75R
R11 75R
R12 75R
R13 75R
PWR
1nF 2KV 1210
C26
GND
Title *
Size: A4
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Revision:*
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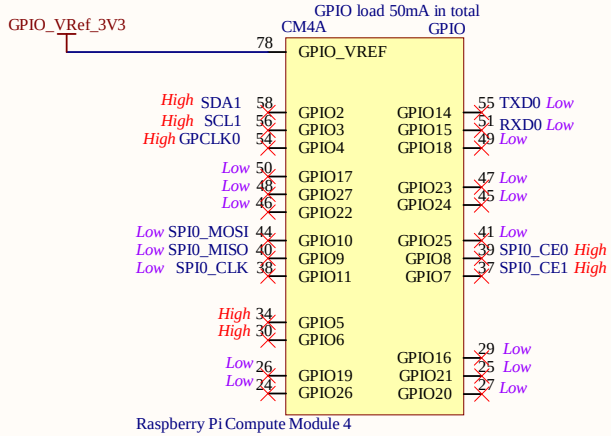
File: G:\My Drive_HW_Product\QWA62-SeaBOX-PoE\Ethernet.SchDoc
Q-Wave Systems Co.,Ltd
65/2 Moo 1 Beung
Sriracha Chonburi
Thailand
Q-WAVE SYSTEMS

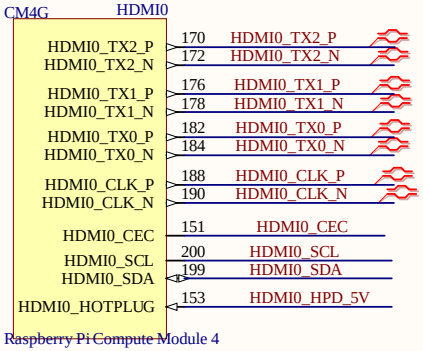
GPIO_VREF Must be connected to CM4_3.3V (pins 84 and 86) for 3.3V GPIO or

CM4_1.8V (pins 88 and 90) for 1.8V GPIO. This pin cannot be floating or connected to ground



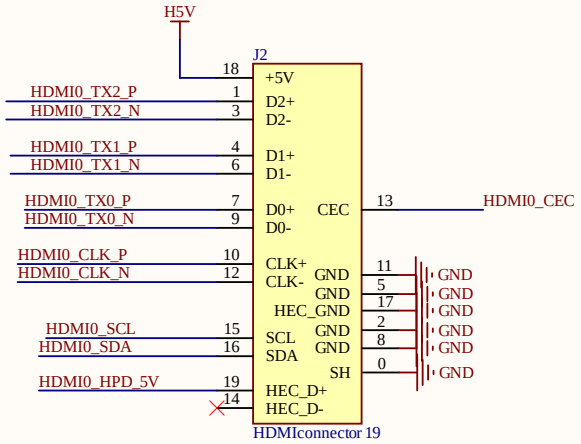
Title *			Q-Wave Systems Co.,Ltd 65/2 Moo 1 Beung Sriracha Chonburi Thailand
Size: A4	Number:*	Revision:*	
Date: 11/20/2020	Time: 11:34:29 AM	Sheet * of *	
File: G:\My Drive_HW_Product\QWA62-SeaBOX-PoE\GPIO.SchDoc			

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

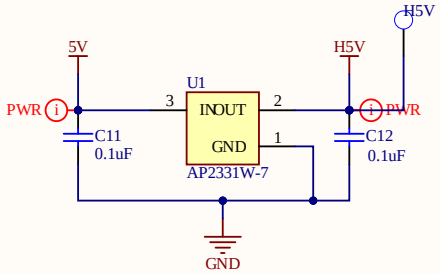


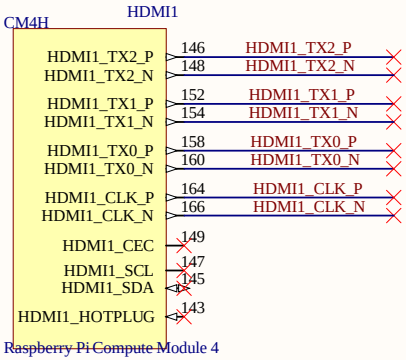
HDMI0_HOTPLUG
Input HDMI1 Hotplug Internally pulled down with a 100K. 5V tolerant.

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



Current Limit 200mA





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

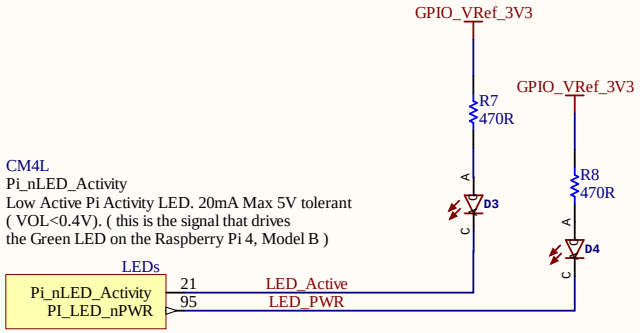
HDMI signals should be routed as 100Ω differential pairs, each signal within a pair should ideally be matched to better

than 0.15mm. Pairs don't typically need any extra matching as they only have to be matched to 25mm.

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

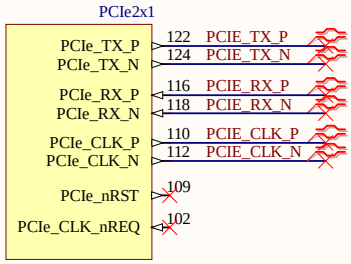
Title *			*Q-Wave Systems Co.,Ltd*
Size: A4	Number:*	Revision:*	*65/2 Moo 1 Beung*
Date: 11/20/2020	Time: 11:34:29 AM	Sheet * of *	*Sriracha Chonburi*
File: G:\My Drive_HW_Product\QWA62-SeaBOX-PoE\HDMI2.0.SchDoc			*Thailand*

Q-WAVE SYSTEMS



Title *			*Q-Wave Systems Co.,Ltd* *65/2 Moo 1 Beung* *Sriracha Chonburi* *Thailand*
Size: A4	Number:*	Revision:*	
Date: 11/20/2020	Time: 11:34:29 AM	Sheet * of *	
File: G:\My Drive_HW_Product\QWA62-SeaBOX-PoE\LEDs.SchDoc			

CM4I



The CM4 has an internal PCIe 2.0 x1 host controller

Raspberry Pi Compute Module 4

Title *			*Q-Wave Systems Co.,Ltd* *65/2 Moo 1 Beung* *Sriracha Chonburi* *Thailand*
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Date: 11/20/2020	Time: 11:34:29 AM	Sheet * of *	
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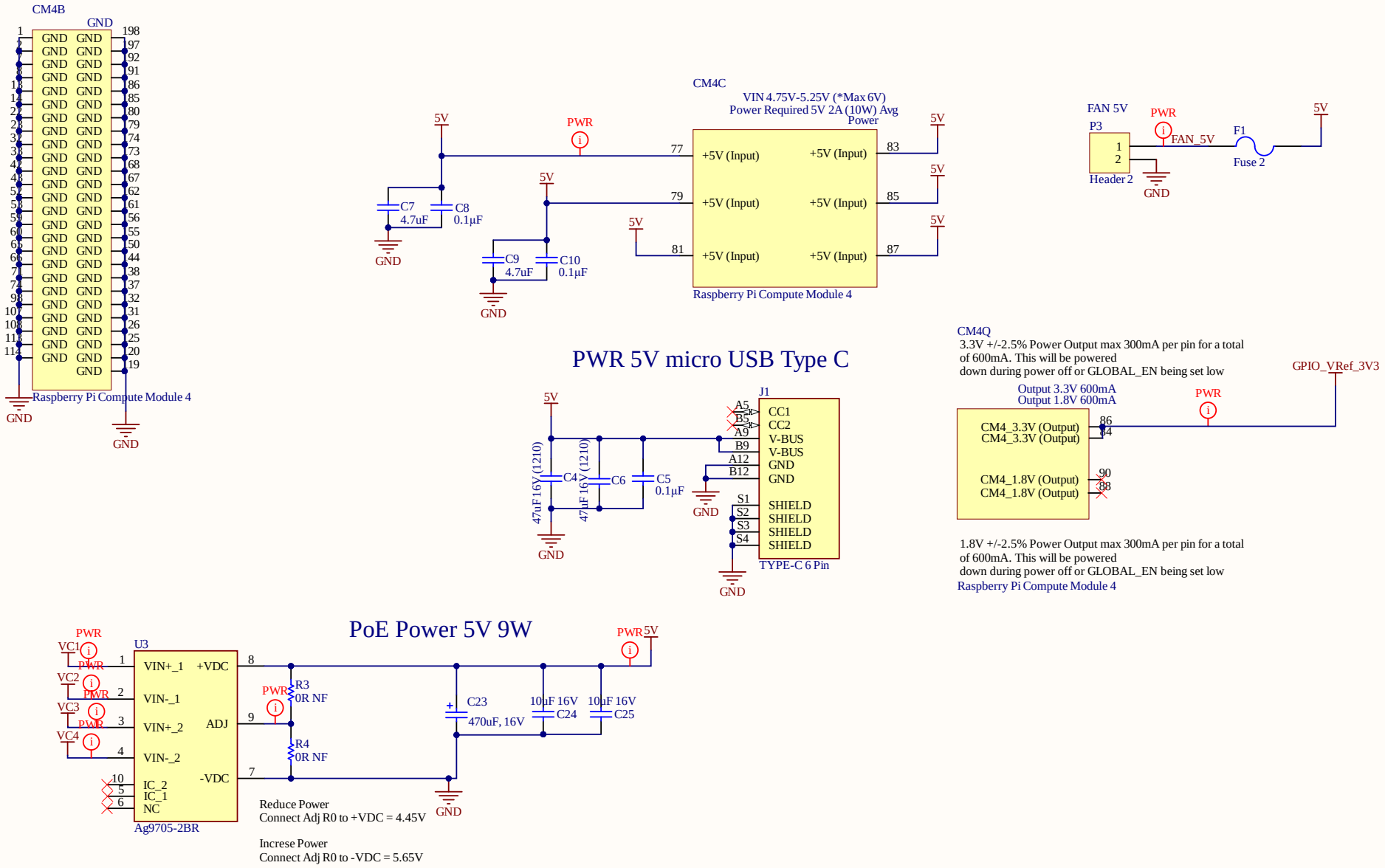
Q-WAVE SYSTEMS



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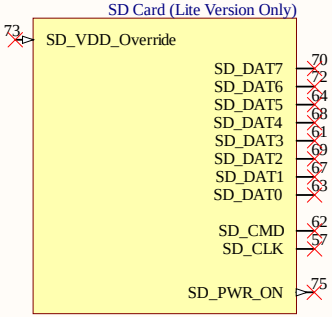
File: G:\My Drive_HW_Product\QWA62-SeaBOX-PoE\Power.SchDoc			

Q-WAVE SYSTEMS

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

Title *			*Q-Wave Systems Co.,Ltd* *65/2 Moo 1 Beung* *Sriracha Chonburi* *Thailand*
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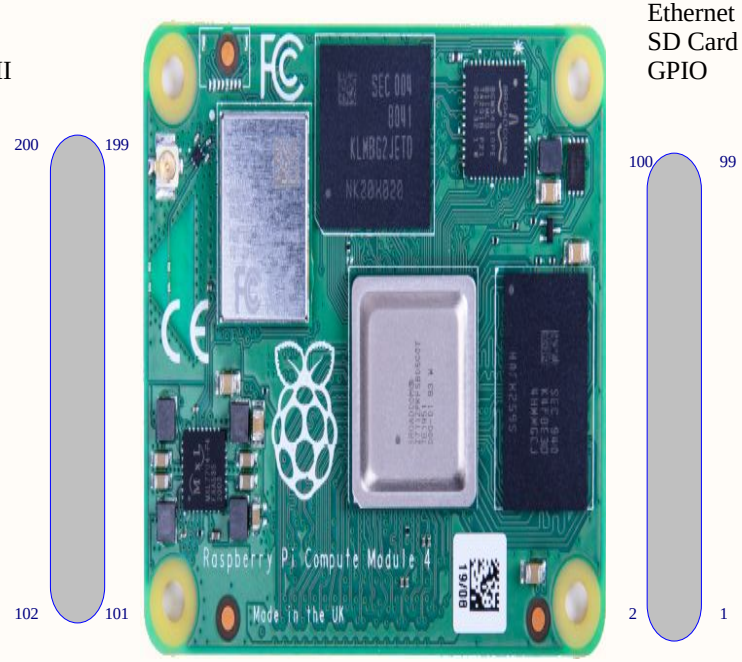
Right Pin 101-200
HIgh Speed

PCIe
CSI
DSI
HDMI
USB

Right Pin 1-100
Low Speed

Power
Ethernet
SD Card
GPIO



Logo1

Breadboard 350pin

QWAVE Logo

The CM4 is a compact 40 × 55mm module. The Module is 4.7mm deep, but when connected the height will be 5.078 or
6.578 mm depending on the stacking height chosen.
1. 4 × M2.5 Mounting holes (inset 3.5mm from module edge)
2. PCB thickness 1.2mm ± 10%
3. BCM2711 SOC height including solder balls 2.378 ± 0.11mm
4. Stacking height either:
a. 1.5mm with mating connector (clearance under CM4 0mm) : DF40C-100DS-0.4v
b. 3.0mm with mating connector (clearance under CM4 1.5mm): DF40HC(3.0)-100DS-0.4v

Title *			Q-Wave Systems Co.,Ltd 65/2 Moo 1 Beung Sriracha Chonburi Thailand
Size: A4	Number:*	Revision:*	
Date: 11/20/2020	Time: 11:34:29 AM	Sheet * of *	
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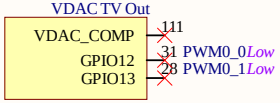
CM4U

VDAC TV Out



Video DAC output (TV OUT)
Can be use following pins for PWM signal
PWM0_0 = GPIO12
PWM0_1 =GPIO13

Raspberry Pi Compute Module 4

Title *			*Q-Wave Systems Co.,Ltd* *65/2 Moo 1 Beung* *Sriracha Chonburi* *Thailand*
Size: A4	Number:*	Revision:*	
Date: 11/20/2020	Time: 11:34:29 AM	Sheet * of *	
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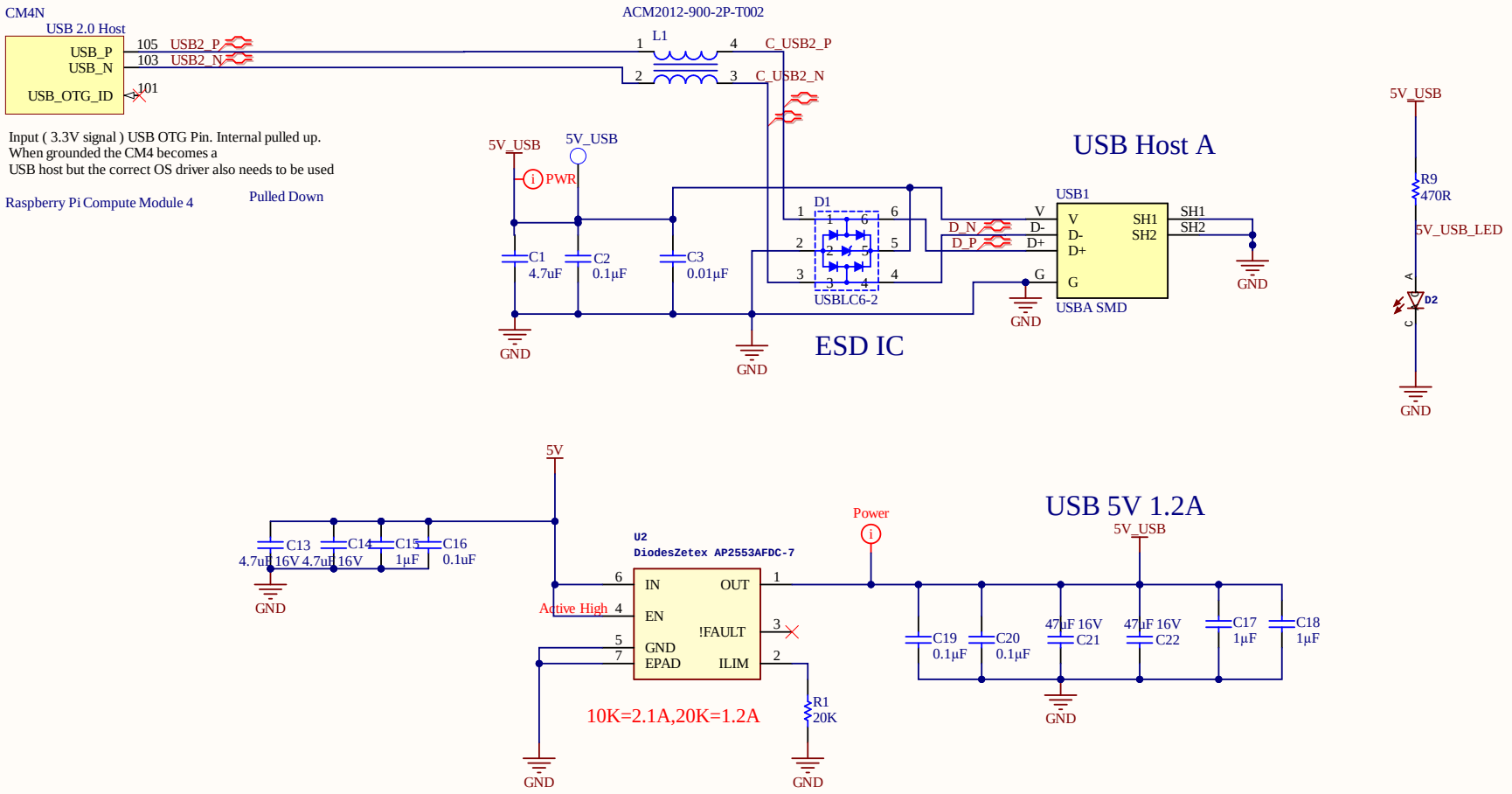
Q-WAVE SYSTEMS



Title *			Q-Wave Systems Co.,Ltd 65/2 Moo 1 Beung Sriracha Chonburi Thailand
Size: A4	Number:*	Revision:*	
Date: 11/20/2020	Time: 11:34:29 AM	Sheet * of *	
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