U$1 — RPI-CM4_NO_HOLES

Left side pins (1–99):

Pin	Signal		Name
1	GND		GND
3	TRD3_P	ETHERNET_PAIR3_P	
5	TRD3_N	ETHERNET_PAIR3_N	
7	GND	GND	
9	TRD2_N	ETHERNET_PAIR2_N	
11	TRD2_P	ETHERNET_PAIR2_P	
13	GND	GND	
15	ETH_LEDG	ETHERNET_NLED3	
17	ETH_LEDY	ETHERNET_NLED2	
19		ETHERNET_NLED1	
21	PI_NLED_ACTIVITY	PI_NLED_ACTIVITY	
23	GND	GND	
25	PCM_DOUT	GPIO21	
27	PCM_DIN	GPIO20	
29		GPIO16	
31	PWM-BL	GPIO12	
33	GND	GND	
35	RXD2	ID_SC	
37	SPI0_CE1	GPIO7	
39	SPI0_CE0	GPIO8	
41		GPIO25	
43	GND	GND	
45	PENIRQ	GPIO24	
47	SCL6	GPIO23	
49	PCM_CLK	GPIO18	
51	RXD0	GPIO15	
53	GND	GND	
55	TXD0	GPIO14	
57	SD_CLK	SD_CLK	
59	GND	GND	
61	SD_DAT3	SD_DAT3	
63	SD_DAT0	SD_DAT0	
65	GND	GND	
67	SD_DAT1	SD_DAT1	
69	SD_DAT2	SD_DAT2	
71	GND	GND	
73		SD_VDD_OVERRIDE	
75		SD_PWR_ON	
77	+5V	+5V	
79	+5V	+5V	
81	+5V	+5V	
83	+5V	+5V	
85	+5V	+5V	
87	+5V	+5V	
89		WL_NDISABLE	
91		BT_NDISABLE	
93	NRPIBOOT	NRPIBOOT	
95	PI_LED_NPWR	PI_LED_NPWR	
97		CAMERA_GPIO	
99		GLOBAL_EN	

Right side pins (2–100):

Name		Pin	Signal
GND		2	
ETHERNET_PAIR1_P		4	TRD1_P
ETHERNET_PAIR1_N		6	TRD1_N
GND		8	
ETHERNET_PAIR0_N		10	TRD0_N
ETHERNET_PAIR0_P		12	TRD0_P
GND		14	GND
ETHERNET_SYNC_IN		16	
ETHERNET_SYNC_OUT		18	
EEPROM_NWP		20	
GND		22	GND
GPIO26		24	MODEM_EN
GPIO19		26	PCM_FS
GPIO13		28	
GPIO6		30	LVDS_EN
GND		32	GND
GPIO5		34	RXD3
ID_SD		36	TXD2
GPIO11		38	SPI0_SCLK
GPIO9		40	SPI0_MISO
GND		42	GND
GPIO10		44	SPI0_MOSI
GPIO22		46	SDA6
GPIO23		48	
GPIO17		50	
GND		52	GND
GPIO4		54	TXD3
GPIO3		56	GPIO3
GPIO2		58	IRQ
GND		60	GND
SD_CMD		62	SD_CMD
SD_DAT5		64	RXD1
GND		66	GND
SD_DAT4		68	TXD1
SD_DAT7		70	
SD_DAT6		72	
GND		74	GND
RESERVED		76	
GPIO_VREF		78	+3V3
SCL0		80	SCL0
SDA0		82	SDA0
CM4_3.3V		84	+3V3
CM4_3.3V		86	+3V3
CM4_1.8V		88	+1V8
CM4_1.8V		90	+1V8
RUN_PG		92	PWR_BUTTON
ANALOGIP1		94	
ANALOGIP0		96	
GND		98	GND
NEXTRST		100	NEXTRST

U$1 — second connector (pins 101–200)

Left side (101–199):

Pin	Signal	Name
101	USB_ID	USB_OTG_ID
103	USB_N	USB_N
105	USB_P	USB_P
107	GND	GND
109	PCIE_NRST	PCIE_NRST
111		VDAC_COMP
113	GND	GND
115		CAM1_D0_N
117		CAM1_D0_P
119		GND
121		CAM1_D1_N
123		CAM1_D1_P
125	GND	GND
127		CAM1_C_N
129		CAM1_C_P
131	GND	GND
133		CAM1_D2_N
135		CAM1_D2_P
137	GND	GND
139		CAM1_D3_N
141		CAM1_D3_P
143	HDMI1_HOTPLUG	HDMI1_HOTPLUG
145	HDMI1_SDA	HDMI1_SDA
147	HDMI1_SCL	HDMI1_SCL
149	HDMI1_CEC	HDMI1_CEC
151	HDMI0_CEC	HDMI0_CEC
153	HDMI0_HOTPLUG	HDMI0_HOTPLUG
155	GND	GND
157		DSI0_D0_N
159		DSI0_D0_P
161	GND	GND
163		DSI0_D1_N
165		DSI0_D1_P
167	GND	GND
169		DSI0_C_N
171		DSI0_C_P
173	GND	GND
175	DA0_N	DSI1_D0_N
177	DA0_P	DSI1_D0_P
179	GND	GND
181	DA1_N	DSI1_D1_N
183	DA1_P	DSI1_D1_P
185	GND	GND
187	DAC_N	DSI1_C_N
189	DAC_P	DSI1_C_P
191		GND
193		DSI1_D2_N
195		DSI1_D2_P
197	GND	GND
199	HDMI0_SDA	HDMI0_SDA

Right side (102–200):

Name	Pin	Signal
PCIE_CLK_NREQ	102	PCIE_CLK_NREQ
RESERVED	104	
RESERVED	106	
GND	108	GND
PCIE_CLK_P	110	PCIE_CLK_P
PCIE_CLK_N	112	PCIE_CLK_N
GND	114	
PCIE_RX_P	116	PCIE_RX_P
PCIE_RX_N	118	PCIE_RX_N
GND	120	
PCIE_TX_P	122	PCIE_TX_P
PCIE_TX_N	124	PCIE_TX_N
GND	126	GND
CAM0_D0_N	128	
CAM0_D0_P	130	
GND	132	GND
CAM0_D1_N	134	
CAM0_D1_P	136	
GND	138	GND
CAM0_C_N	140	
CAM0_C_P	142	
GND	144	GND
HDMI1_TX2_P	146	HDMI1_DATA2_P
HDMI1_TX2_N	148	HDMI1_DATA2_N
GND	150	GND
HDMI1_TX1_P	152	HDMI1_DATA1_P
HDMI1_TX1_N	154	HDMI1_DATA1_N
GND	156	GND
HDMI1_TX0_P	158	HDMI1_DATA0_P
HDMI1_TX0_N	160	HDMI1_DATA0_N
GND	162	GND
HDMI1_CLK_P	164	HDMI1_CLOCK_P
HDMI1_CLK_N	166	HDMI1_CLOCK_N
GND	168	GND
HDMI_TX2_P	170	HDMI0_DATA2_P
HDMI_TX2_N	172	HDMI0_DATA2_N
GND	174	GND
HDMI0_TX1_P	176	HDMI0_DATA1_P
HDMI0_TX1_N	178	HDMI0_DATA1_N
GND	180	GND
HDMI0_TX0_P	182	HDMI0_DATA0_P
HDMI0_TX0_N	184	HDMI0_DATA0_N
GND	186	GND
HDMI0_CLK_P	188	HDMI0_CLOCK_P
HDMI0_CLK_N	190	HDMI0_CLOCK_N
GND	192	
DSI1_D3_N	194	
DSI1_D3_P	196	
GND	198	GND
HDMI0_SCL	200	HDMI0_SCL

RPI-CM4_NO_HOLES

LED section

LED red — LED1 — R6 1k — PI_LED_NPWR (from +3V3)

LED green — LED2 — R12 1k — PI_NLED_ACTIVITY (from +3V3)

LED orange — LED3 — R18 1k — LED_MODEM (from +3V3)

R23 1k — PWR_BUTTON
POWER_SWITCH — R20 1k — GPIO3

U3 — SN74LVC1G04DBVR

Pin		
5	+3V3	VCC — NC 1
2	PI_LED_NPWR	A — Y 4 — R21 1k — GPIO1
		GND 3 — GND

Switches / resistors

GND — S2 — NRPIBOOT
MOMENTARY-SWITCH-SPST-SMD-RIGHT-ANGLE

GND — R19 100k — PWM-BL

H5
SPECIAL_DRILL_0.1250
H6
SPECIAL_DRILL_0.1250
H7
SPECIAL_DRILL_0.1250
H8
SPECIAL_DRILL_0.1250

GND

CUBIE1

LVDS0P0	1	2	GND
LVDS0P1	3	4	LVDS0N0
LVDS0P2	5	6	LVDS0N1
LVDS0PC	7	8	LVDS0N2
GND	9	10	LVDS0NC
	11	12	
	13	14	
	15	16	
	17	18	
	19	20	GND
	21	22	
	23	24	
	25	26	
	27	28	
	29	30	
PWM-BL	31	32	
YP-TP	33	34	XP-TP
YN-TP	35	36	XN-TP
RXD0	37	38	GND
OUT+	39	40	
OUT-	41	42	GND
+5V	43	44	+3V3
TXD0	45	46	SPI0_MOSI
SPI0_SCLK	47	48	SPI0_MISO

S1

CUBIE2

+5V	1	2	SPI0_CF1
	3	4	
	5	6	SCL0
SDA0	7	8	
	9	10	
	11	12	
TXD3	13	14	RXD3
	15	16	
TXD2	17	18	RXD2
GND	19	20	GND
	21	22	
	23	24	POWER_SWITCH
GND	25	26	
	27	28	GPIO1
	29	30	
	31	32	
	33	34	
	35	36	
GND	37	38	
	39	40	
	41	42	
	43	44	
HPL	45	46	
HPR	47	48	

S2

GND

C1

J3
HR911130C

	1	9	TRD3_N
TRD0_P	2	10	GND
TRD0_N	3	11	+3V3
TRD1_P	4	12	
TRD2_P	5	13	
TRD2_N	6	14	+3V3
TRD1_N	7	15	GND
TRD3_P	8	16	GND

R2
470R

R1
470R
ETH_LEDY
ETH_LEDG

GND

100nF
C29

J4
A-MicroTF-1.85A

SD_DAT2	1	DATA2
SD_DAT3	2	CS
SD_CMD	3	DI
	4	VDD
SD_CLK	5	SCLK
GND	6	VSS
SD_DAT0	7	DO
SD_DAT1	8	DATA1
SD_DET	9	CDN

G4
G3
G4
G3
GND

G1
G2
G1
G2
GND

USB_CONNECTOR

+5V_USBHUB	1	1_1	2_1	2	USBHUB-D1_N
USBHUB-D1_P	3	3_1	4_1	4	GND
+5V_USBHUB	5	1_2	2_2	6	USBHUB-D2_N
USBHUB-D2_P	7	3_2	4_2	8	GND
GND	9	GND_0	GND_3	12	GND
GND	10	GND_1	GND_2	11	GND

5787745-1

IC2
USBLC6-2SC6

USBHUB-D1_N	1	I/O1_1	I/O1_2	6	USBHUB-D1_N
GND	2	GND	VBUS	5	+5V_USBHUB
USBHUB-D1_P	3	I/O2_1	I/O2_2	4	USBHUB-D1_P

IC1
USBLC6-2SC6

USBHUB-D2_P	1	I/O1_1	I/O1_2	6	USBHUB-D2_P
GND	2	GND	VBUS	5	+5V_USBHUB
USBHUB-D2_N	3	I/O2_1	I/O2_2	4	USBHUB-D2_N

+5V_USBHUB

100nF 100nF
C35   C36
GND   GND

J2
USB-C
TYPEC-304-ACP16

VBUS
D+   USBCON_P
D-   USBCON_N
CC1
CC2
SHLD GND
GND   GND

5k1 5k1
R10 R11
GND GND

R9
2K2

R4
2K2
GND

U4
FSUSB42MUX

USB_ID	2	SEL	VCC	1	+3V3
GND	10	OE			
USBH_P	7	HSD1+	D+	3	USB_P
USBCON_P	9	HSD2+			
USBH_N	6	HSD1-	D-	4	USB_N
USBCON_N	8	HSD2-			
			GND	5	GND

VD33 R31 XRST1
      100k
      100nF
      C61
      GND
GND

+3V2 +3V2

R29 R30
4K7 4K7

IC7
MIC2545A

PWR1	1	EN	OUT	8	+5V_USBHUB
OVC11	2	FLG	IN	7	+5V
	3	GND	OUT	6	+5V_USBHUB
	4	ILIM	IN	5	

R22
200
GND GND

100nF 100nF 100nF
C60   C8   C3
GND   GND   GND

X5
XOUT   XIN

20pF 20pF
C62   C63
GND   GND

FE2.1

OVC11
PWR1
VD33
+5V
XRST1
VBUSM
VD33_6
OVC15
PWR3
LED7
LED6
LED5
48 47 46 45 44 43 42 41 40 39 38 37
USBHUB_DP7
USBHUB_DM7
DP7
DM7
VSS_2

1	DRV	VD33_5	36	VD33
2	TESTJ	DP6	35	
3	LED1	DM6	34	
4	LED2	DP5	33	USBHUB_DP5
5	LED3	DM5	32	USBHUB_DM5
6	VD18_1	VD33_4	31	VD33
7	LED4	DPU	30	USBH_P
8	VDD5	DMU	29	USBH_N
9	VD33_O	VD18_2	28	VD18
10	VSS_1	REXT	27	
11	DM4	VD33_3	26	VD33
12	DP4	VD18_O	25	VD18

VD18
+5V
VD33

22uF
C59
GND GND

USBHUB_DM4
USBHUB_DP4

R14
2K7

C58
GND   GND

13 14 15 16 17 18 19 20 21 22 23 24
DM3 DP3 VD33_1 DM2 DP2 DM1 DP1 VD33_2 VD_PLL XIN XOUT VS_PLL
USBHUB_D3_N
USBHUB_D3_P
VD33
USBHUB_D2_N
USBHUB_D2_P
USBHUB_D1_N
USBHUB_D1_P
VD33
VD18
XIN
XOUT
GND

VD33
100nF 100nF 100nF 100nF
C67   C10   C11   C65
GND

VD18
100nF 100nF
C66   C68
GND

OUT_N ——[L3]—— OUT-
EXC3BP ✕ PAD1

C27
220pF
GND

OUT_P ——[L4]—— OUT+
EXC3BP ✕ PAD2

C28
220pF
GND

U5

PCM_CLK 16	>BCLK	VDD 7*2
PCM_FS 14	>LRCLK	OUTN 10	OUT_N
PCM_DOUT 1	DIN	OUTP 9	OUT_P
GND —R8 2	GAIN_SLOT	
0 4	SD_MODE	EP 17	GND
+5V —R3		GND 3*3	GND
0		

MAX98357AETE+

C21
10uF
GND

C22
100nF
GND

——[L1]—— +5V
EXC3BP

U1
SN65DSI83TRAPRQ1

Pin	Left signal	Net
+1V8	3	VCC_2
+1V8	14	VCC_3
+1V8	18	VCC_4
+1V8	32	VCC_5
+1V8	35	VCC_6
+1V8	40	VCC_7
+1V8	43	VCC_8
+1V8	48	VCC_9
+1V8	49	VCC_10
+1V8	55	VCC_11
+1V8	58	VCC_12
+1V8	63	VCC

31 VCORE

DA0_P 19 DA0P
DA0_N 20 DA0N
DA1_P 21 DA1P
DA1_N 22 DA1N
DA2_P 27 DA2P
DA2_N 28 DA2N
DA3_P 29 DA3P
DA3_N 30 DA3N

DAC_P 24 DACP
DAC_N 25 DACN

SCL0 15 SCL
SDA0 16 SDA
IRQ 33 IRQ
GND 64 ADDR

R5 4K7
17 REFCLK
EN 2 EN
34 RSVD1
1 RSVD2

Right side:
A_Y0P 46 LVDS0P0
A_Y0N 47 LVDS0N0
A_Y1P 44 LVDS0P1
A_Y1N 45 LVDS0N1
A_Y2P 41 LVDS0P2
A_Y2N 42 LVDS0N2
A_CLKP 38 LVDS0PC
A_CLKN 39 LVDS0NC
A_Y3P 36
A_Y3N 37

RSVD_2 4
RSVD_3 5
RSVD_4 6
RSVD_5 7
RSVD_6 8
RSVD_7 9
RSVD_9 11
RSVD_10 12
RSVD_11 13
RSVD_12 50
RSVD_13 51
RSVD_14 53
RSVD_15 54
RSVD_16 56
RSVD_17 57
RSVD_18 59
RSVD_19 60
RSVD_20 61
RSVD 62

GND_2 23 GND
GND_3 26 GND
GND 52 GND
PAD 65 GND

C2 1uF
GND

R13 4K7 +1V8
EN
Q1 SE2102E
LVDS_EN
GND

R5 4K7
GND

+1V8
C6 100nF C9 100nF C14 100nF C15 100nF C16 100nF C17 100nF C18 100nF C19 100nF C20 100nF
GND

+3V3

C4　　　C5
100nF　　100nF

+3V3	1	VCC	DCLK	16	SPI0_SCLK
+3V3	7	VBAT	/CS	15	SPI0_CE0
+3V3	9	VREF	DIN	14	SPI0_MOSI
+3V3	10	IOVDD	DOUT	12	SPI0_MISO
			BUSY	13	
XP-TP	2	XP	/PENIRQ	11	PENIRQ
YP-TP	3	YP	AUX	8	
XN-TP	4	XN			
YN-TP	5	YN	GND	6	GND

U2
XPT2046

+3V3_PCIE

10uF C30 10uF C31 10uF C34
GND GND GND

P1

| 1 | | 2 | +3V3_PCIE |
GND 3 | | 4 | +3V3_PCIE
GND 5 | | 6 | +3V3_PCIE
USBHUB-D3_P 7 | | 8 | MODEM_EN
USBHUB-D3_N 9 | | 10 | LED_MODEM
GND 11 | |

21 | 20 | 20
23 | 22 | 22
GND 25 | 24 | 24
27 | 26 | 26 SJ3 1 — 2 +3V3
29 | 28 | 28
31 | 30 | 30 UIM-RESET
GND 33 | 32 | 32 UIM-CLK
35 | 34 | 34 UIM-DATA
37 | 36 | 36 UIM-PWR
GND 39 | 38 | 38 PWR_ON
PCIE_RX_N 41 | 40 | 40
PCIE_RX_P 43 | 42 | 42
GND 45 | 44 | 44
PCIE_TX_N 47 | 46 | 46
PCIE_TX_P 49 | 48 | 48
GND 51 | 50 | 50 PCIE_NRST
PCIE_CLK_N 53 | 52 | 52 PCIE_CLK_NREQ
PCIE_CLK_P 55 | 54 | 54
GND 57 | 56 | 56
59 | 58 | 58
61 | 60 | 60
63 | 62 | 62
NEXTRST SJ1 1 — 2 65 | 64 | 64
67 | 66 | 66 SIM_DETECT R7 390K +1V8
69 | 68 | 68
GND 71 | 70 | 70 +3V3_PCIE
GND 73 | 72 | 72 +3V3_PCIE
75 | 74 | 74 +3V3_PCIE
SHIELD P1*2 GND

MDT420B03001

C7 100nF

100pF C12   R16 100k   R17 22.1k   GND

SM8103
1 BS	LX 6
2 GND	IN 5
3 FB	EN 4
+5V L5 +3V3_PCIE

GND

10uF C23   10uF C13
GND GND

UIM-PWR
R15 10k

J5 GND

SIMCARD
SIM_DETECT CD CD
UIM-PWR C1 C1
UIM-RESET C2 C2
UIM-CLK C3 C3
GND C5 C5
C6 C6
UIM-DATA C7 C7
GND GND@1*4

ATK-NSIM135A002

PAD4 +5V
10uF C32 10uF C33
GND GND

PAD5 GND

33pF C25 33pF C24 100nF C26
GND GND GND

HOTPLUGDETECT/HEAC-	19	HDMI0_HOTPLUG	
+5VPOWER	18	+5V	
DDC/CECGROUND	17	GND	
SDA	16	HDMI0_SDA	
SCL	15	HDMI0_SCL	
UTILITY/HEAC+	14		
CEC	13	HDMI0_CEC	
TMDSCLOCK-	12	HDMI0_CLOCK_N	
TMDSCLOCKSHIELD	11	GND	
TMDSCLOCK+	10	HDMI0_CLOCK_P	
TMDSDATA0-	9	HDMI0_DATA0_N	
TMDSDATA0SHIELD	8	GND	
TMDSDATA0+	7	HDMI0_DATA0_P	
TMDSDATA1-	6	HDMI0_DATA1_N	
TMDSDATA1SHIELD	5	GND	
TMDSDATA1+	4	HDMI0_DATA1_P	
TMDSDATA2-	3	HDMI0_DATA2_N	
TMDSDATA2SHIELD	2	GND	
TMDSDATA2+	1	HDMI0_DATA2_P	

J1G$1

GND   J1SHIELD