Product Spec

Motherboard

RB-Q370SC V1.0

Prepared by： Peter Date： 2021/06/11

Shenzhen RealBom Intelligent Co., LTD
CONTROLLED FILE

Revision History			
Revision	**Date**	**Description**	**Author**
V1.0	2021/06/11	First release	Peter

RB-Q370SC

REALBOM

Features

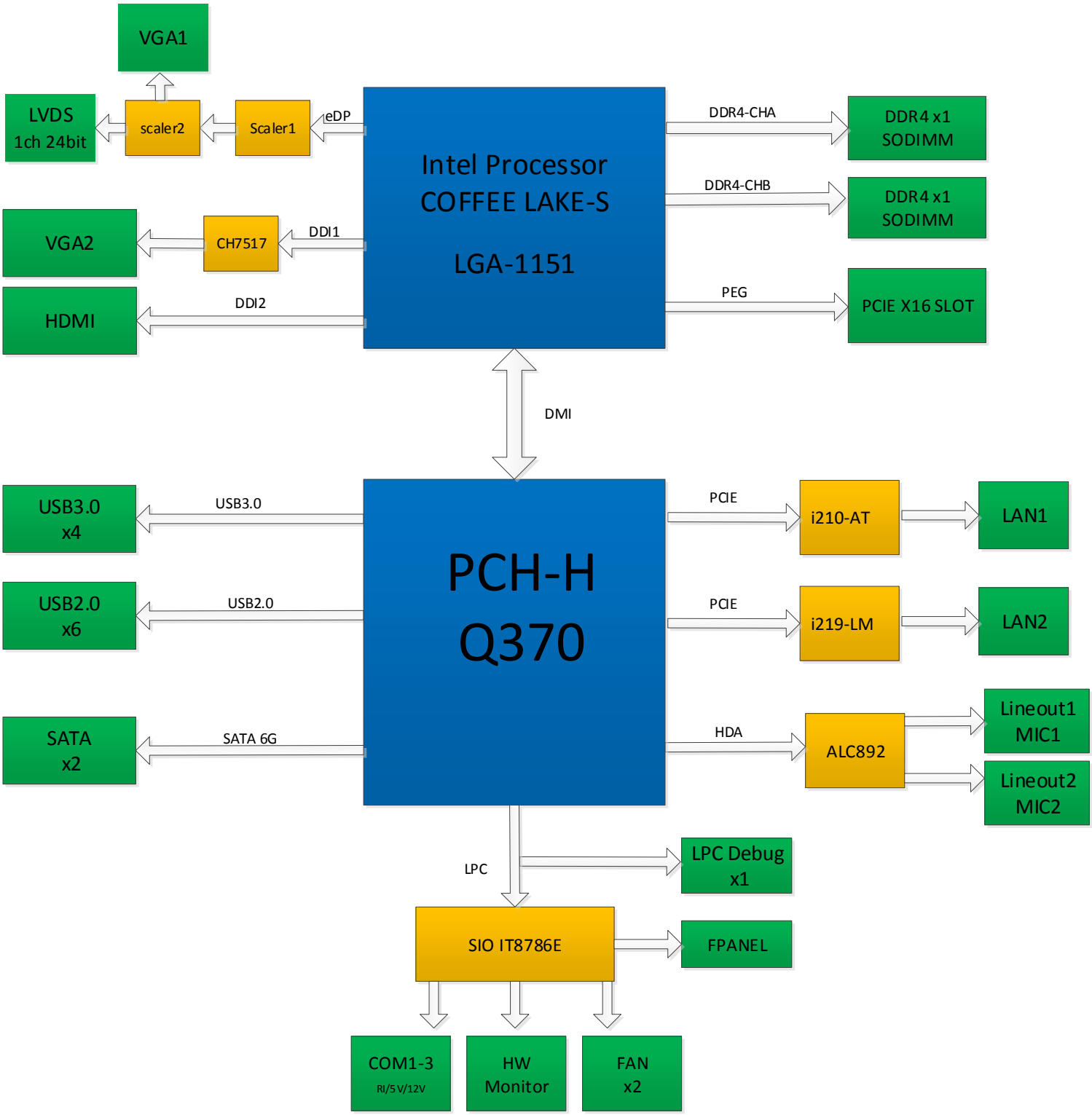
*Intel Coffee lake-S ,Chipset Q370,TDP 65W CPU
*Support Two channel DDR4 SODIMM
*Support displays LVDS/VGA1+VGA2+HDMI
*Support 2x 10/100/1000M LAN adapter
*Support 4 x USB3.1 +6xUSB2.0
*Support 3 x COMs
*Support 2 x SATA
*Support win10/Fedora
*Support AMT/TXT Technology

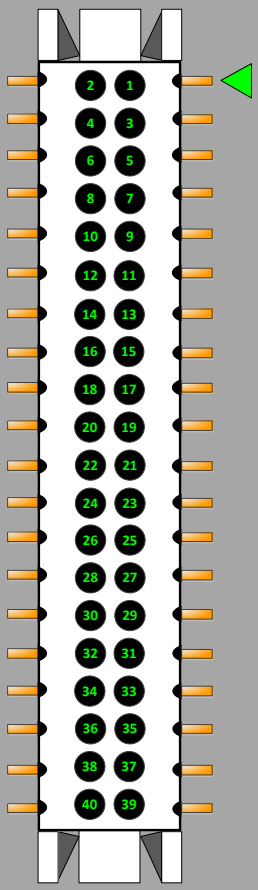
Application Industry

Lottery industry

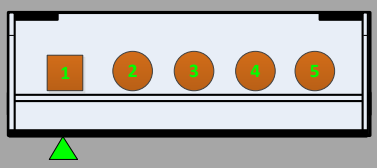
Specifications

CPU	CPU	Intel Coffee lake-S LGA1151 8th/9th gen CPU, TDP 65W, G5400/i7-8700/i5-8500
	Instruction Set	64bit
CHIPSET	PCH	Q370
Memory	Type	DDR4 SODIMM
	Channel	2
	Memory Size	64GB
Audio	ALC892 HD Audio	X2 LINEOUT1+MIC1 , LINEOUT2+MIC2
Ethernet	LAN	X2 10/100/1000M LAN,1*i210-AT,1*i219-LM
Internal Connector	LVDS	X1 LVDS CONN(1CH 24BIT)
	SATA	X2 SATA (support DOM Power supply)
	USB2.0	X5 USB2.0 heder
	AUDIO	X1 LINEOUT2+MIC2 Header
	COM	X1 RS232 (support Pin9 0V/5V/12V jump select)
	PCIE slot	X1 PCI16X Slot
	FPANEL	X1 PWRON/RESET/PWRLED/HDDLED
	FAN	X1 CPUFAN+X1 SYSFAN
	SSD	X1 M.2 NVME(PCIEX4) SSD
	GPIO	X1 GPIO wafer
I/O	VGA	X2 VGA1+VGA2 (VGA1 clone LVDS)
	HDMI	X1 Port
	USB	X4 USB3.1 Port + X1 USB2.0 Port
	COM	X2 RS232 (support Pin9 0V/5V/12V jump select)
	RJ45	X2 Port
	AUDIO	X1 LINEOUT1+MIC1 Port
BIOS	Vender	AMI
	ACPI	Supported
Power	POWER Brick	ATX4P+ATX20P
Dimensions	PCB	177mm*175mm
Requirements Environment	Operation	-10℃~+60℃, 10%~95% RTH
	Storage	-40℃~+85℃, 10%~95% RTH

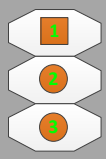

VGA1
LVDS
1ch 24bit
scaler2
Scaler1
eDP
Intel Processor
COFFEE LAKE-S
LGA-1151
DDR4-CHA
DDR4 x1
SODIMM
DDR4-CHB
DDR4 x1
SODIMM
VGA2
CH7517
DDI1
HDMI
DDI2
PEG
PCIE X16 SLOT
DMI
USB3.0
x4
USB3.0
PCH-H
Q370
PCIE
i210-AT
LAN1
USB2.0
x6
USB2.0
PCIE
i219-LM
LAN2
SATA
x2
SATA 6G
HDA
ALC892
Lineout1
MIC1
Lineout2
MIC2
LPC
LPC Debug
x1
SIO IT8786E
FPANEL
COM1-3
RI/5 V/12V
HW
Monitor
FAN
x2

LVDS	LVDS
PIN Define	
Type	2x20 PH=0.15mm

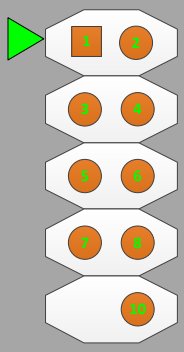
1	LCD_VDD	2	LCD_VDD
3	GND	4	GND
5	LCD_VDD	6	LCD_VDD
7	LVDS_D0-	8	NA
9	LVDS_D0+	10	NA
11	GND	12	GND
13	LVDS_D1-	14	NA
15	LVDS_D1+	16	NA
17	GND	18	GND
19	LVDS_D2-	20	NA
21	LVDS_D2+	22	NA
23	GND	24	GND
25	LVDS_CLK1-	26	NA
27	LVDS_CLK1+	28	NA
29	GND	30	GND
31	NA	32	NA
33	GND	34	GND
35	LVDS_D3-	36	NA
37	LVDS_D3+	38	NA
39	GND	40	NA

IVCN	LVDS Backlight Power and control
PIN Define	
Type	1X5 Header Box, PH=2.54mm

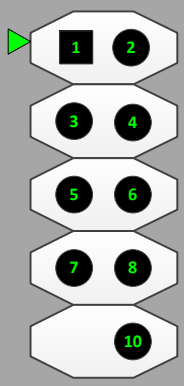
1	+V12S
2	GND
3	BKLT_ON
4	BKLT_PWM
5	+V5S

JLV	LVDS Power SELECT
PIN Define	
Type	1X3 Header, PH=2.0mm
Memo	Default Setting: JLV (1-2)

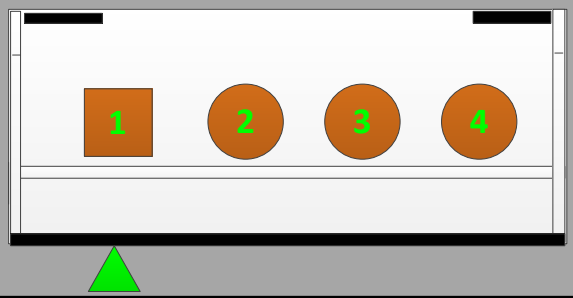
1-2	LCD_VDD =3.3V
2-3	LCD_VDD =5V

F_PANEL	LED and SYSTEM function header
PIN Define	
Type	2X5 DuPont Header PH=2.5mm

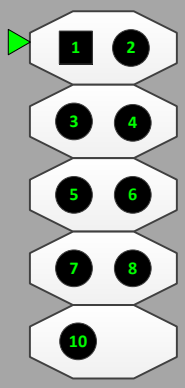
1	PWR_ON+	2	HDD_LED+
3	PWR_ON-	4	HDD_LED-
5	SYS_RESET+	6	PWR_LED+
7	SYS_RESET-	8	PWR_LED-
9		10	GND

JUSB1/2	USB2.0 Header
PIN Define	
Type	2x5 DuPont Header,PIN9 NC, PH=2.5mm

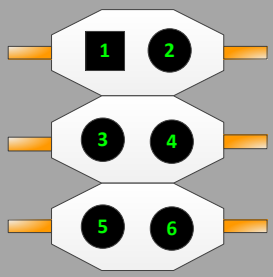
1	VBUS	2	VBUS
3	D0-	4	D1-
5	D0+	6	D1+
7	GND	8	GND
9	NC	10	GND

JUSB3	USB2.0 wafer
PIN Define	
Type	1X4 Wafer, PH=2.5mm

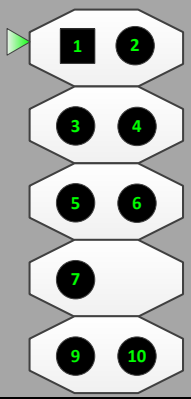
1	VBUS
2	D-
3	D+
4	GND

COM3	COM header RS232
PIN Define	
Type	2X5 Header PH=2.5 mm

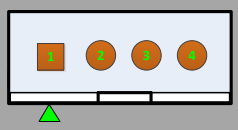
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI_MUX	10	NC

JC1/2/3	COM1-3 Pin power select
PIN Define	
Type	2x3 DuPont Header, PH=2.0mm
Memo	Default setting:1-2

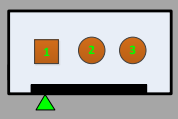
1	RI	2	COM1.PIN9
3	5V	4	COM1.PIN9
5	12V	6	COM1.PIN9

F_AUDIO	AUDIO Header
PIN Define	
Type	2x5 DuPont Header,PH=2.5mm

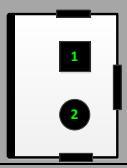
1	MIC2_L	2	AGND
3	MIC2_R	4	3.3V
5	LINE2_R	6	MIC2_DET
7	AGND	8	NC
9	LINE2_L	10	LINE2_DET

FAN	CPU FAN
PIN Define	
Type	1X4 DuPont Header，PH=2.54mm

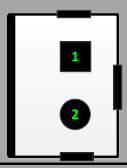
1	FAN_CTL
2	FAN_TAC
3	+V12S
4	GND

SYS_FAN	System Fan Power and sense
PIN Define	
Type	1X3 DuPont Header，PH=2.54mm

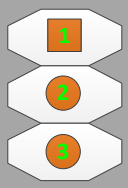
1	GND
2	+V12S
3	FAN_TAC

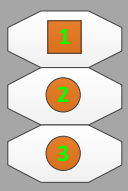
SATAPWR1/2	SATA Power
PIN Define	
Type	1X2 WAFER，PH=2.0mm

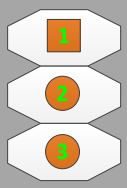
1	5V
2	GND

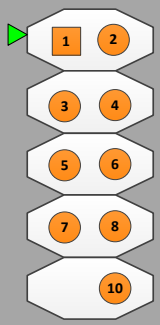
J1	GPIO WAFER
PIN Define	
Type	1X2 WAFER，PH=2.0mm

1	GND
2	GPIO

JCOMS	CLEAR CMOS header
PIN Define	 <table><tr><td>1-2</td><td>Normal</td></tr><tr><td>2-3</td><td>Clear cmos</td></tr></table>
Type	1X3 DuPont Header， PH=2.5mm
Memo	Default Setting： JCmos(1-2)

JME	ME fucktion header
PIN Define	 <table><tr><td>1-2</td><td>Normal</td></tr><tr><td>2-3</td><td>Override ME</td></tr></table>
Type	1X3 DuPont Header， PH=2.5mm
Memo	Default Setting： N/A

JVGA1	VGA2 CH7517 FW UPDATE header(DEBUG OPTION)
PIN Define	 <table><tr><td>1</td><td>SPC</td></tr><tr><td>2</td><td>SPD</td></tr><tr><td>3</td><td>GND</td></tr></table>
Type	1X3 DuPont Header， PH=2.0mm

DEBUG	LPC DEBUG
PIN Define	 <table><tr><td>1</td><td>LAD3</td><td>2</td><td>25M_CLK</td></tr><tr><td>3</td><td>LAD2</td><td>4</td><td>LFRAME#</td></tr><tr><td>5</td><td>LAD1</td><td>6</td><td>LESET#</td></tr><tr><td>7</td><td>LAD0</td><td>8</td><td>GND</td></tr><tr><td>9</td><td>NC</td><td>10</td><td>+3.3V</td></tr></table>
Type	2x5 DuPont Header,PIN9 NC, PH=2.0mm
Memo	For Debug only