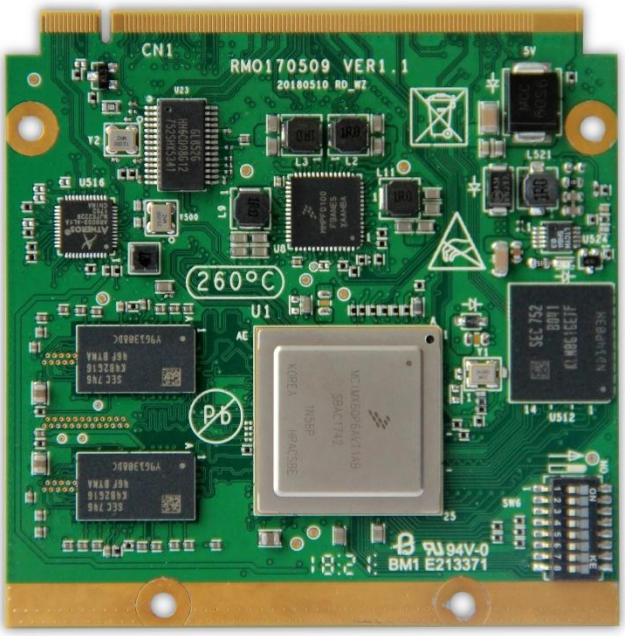
深 圳 金 亚 太 科 技 有 限 公 司

Shenzhen Geniatech Co.,Ltd.

SPECIFICATION

MODEL:SOM-iMX6Q,D,S-Q7



Confirmation

REVISION HISTORY					
VERSION	**DATE**	**BOARD ID**	**PAGE**	**DESCRIPTION**	**AUTHOR**
V1.0	2017/07/17	rmo170509_ver1.1	13	specification	

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CONTENT

1. GENERAL DESCRIPTION

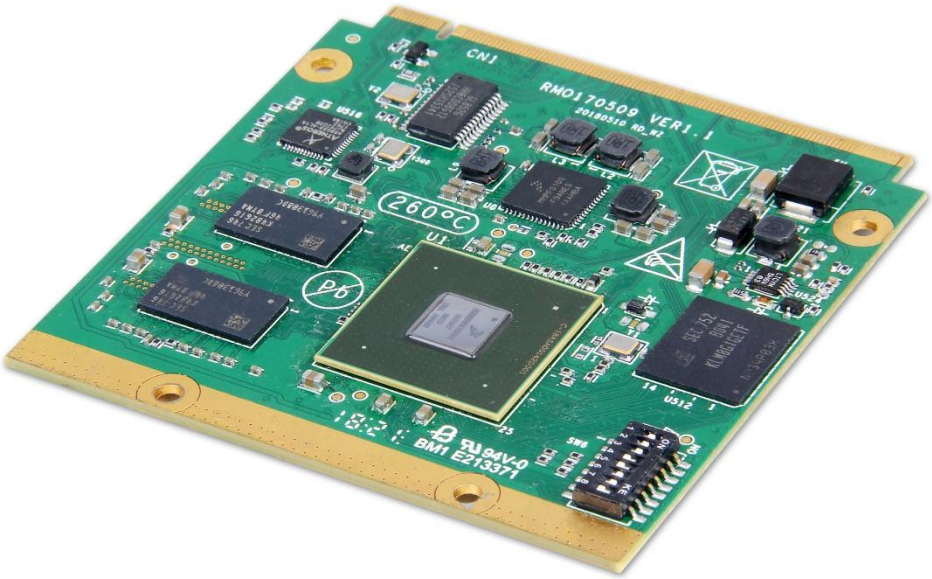
SOM-iMX6Q(D,S)-Q7 is a Qseven module with 70mm x 70mm, Qseven Rev.2.0 specification and equips with NXP i.MX 6Quad(6Dual,6Solo)processor. The SOM-iMX6Q(D,S)-Q7 provides a choice of computing performance ranging from economic single-core to high-performance quad-core power in combination with a high graphics performance and low power consumption available over a wide temperature range.

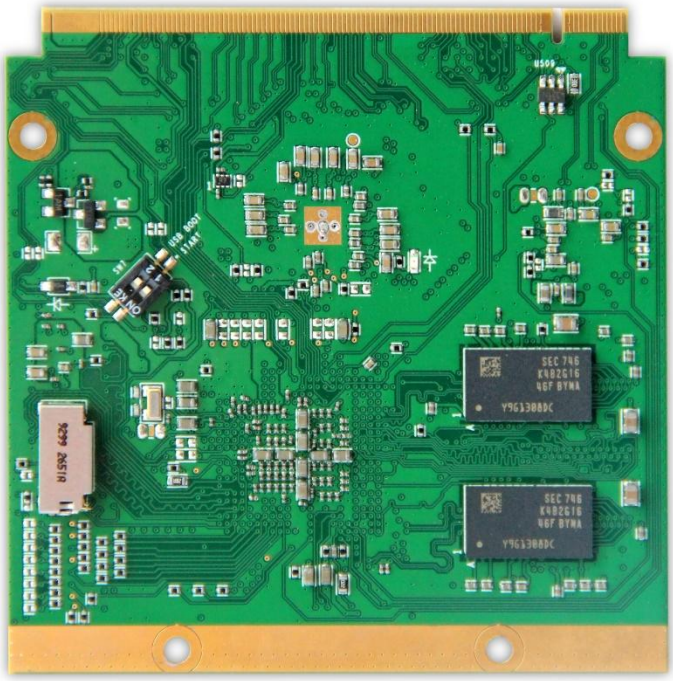
For the display specifications, SOM-iMX6Q(D,S)-Q7 supports HDMI 1.4 and LVDS serial ports: One port up to 170 Mpixels/sec or two ports up to 85 MP/sec each. For the network connection, SOM-iMX6Q(D,S)-Q7 equips AR8033-AL1A for Gigabit Ethernet connection.

The SOM-iMX6Q(D,S)-Q7 deploys five USB2.0 (shared with USB OTG client x 1) , and one SATA II, 3.0 Gbps. Moreover, SOM-iMX6Q(D,S)-Q7 accommodates user-friendly expansion interfaces of PCI-e, SDIO, CAN Bus, I2C, SPI, UART and GPIOs. This model is ideal for applications of Test & Measurement, Entertainment, Industrial Automation. Geniatech also provides the corresponding Qseven® Rev.2.0 carrier board: CBD-Q7D0 in the finished boxed product for evaluating this ARM solution.

2.PRODUCT PICTURES

Below pictures are for reference only:



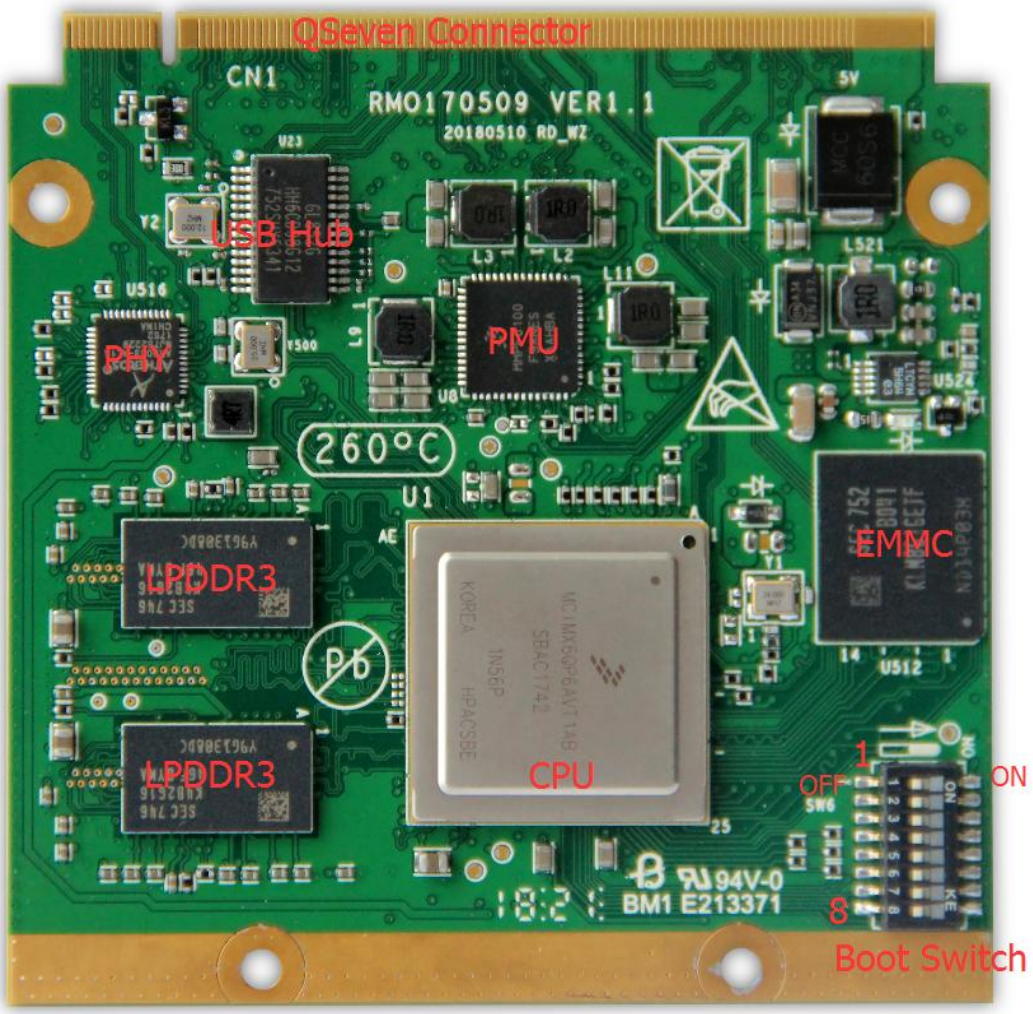


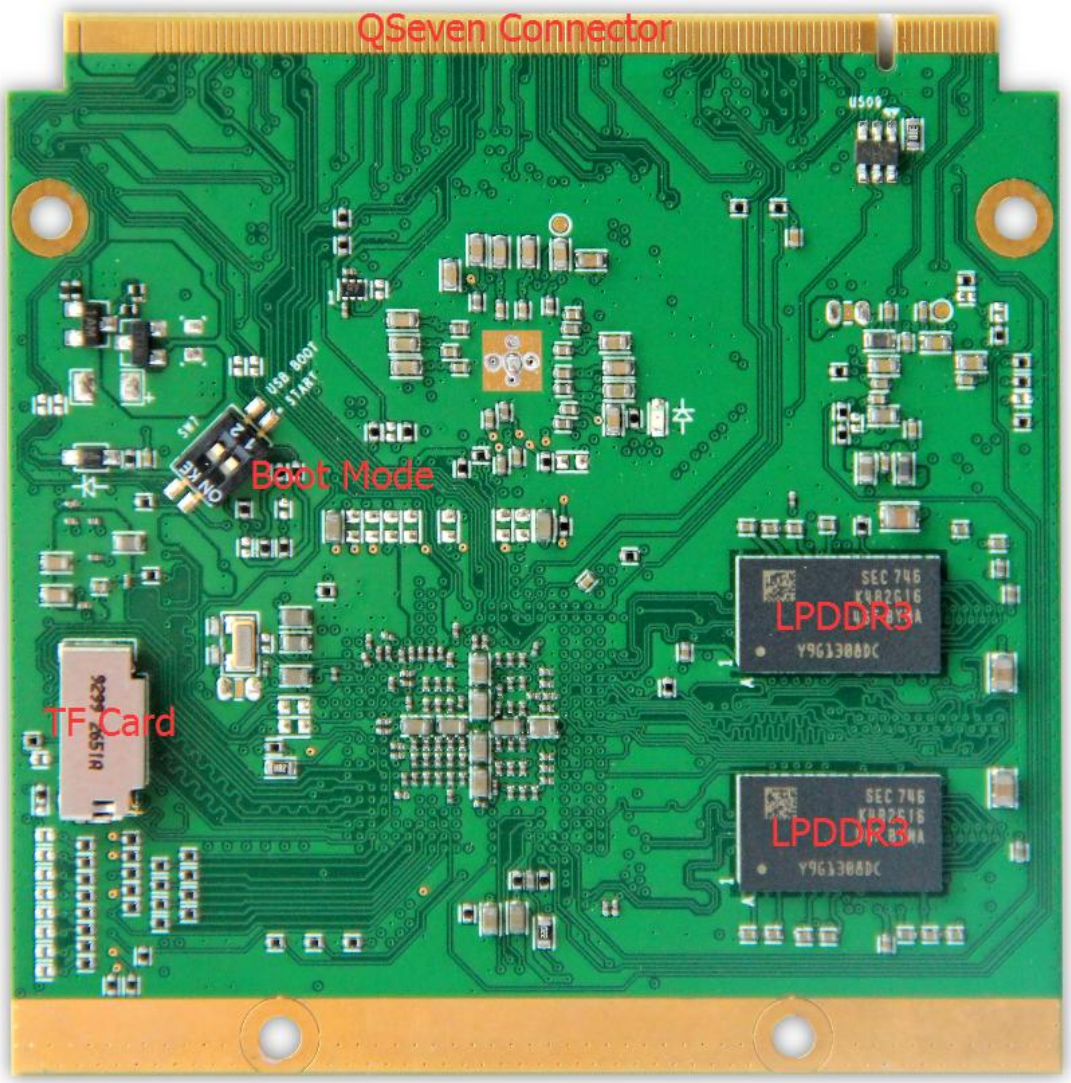
3.FEATURES

Chipset	NXP iMX6Q,D,S	
Market area	Global	
OSD Language	English/Chinese(multi language OSD)	
Processor	Processor	i.MX 6Quad: Quad ARM Cortex-A9 core, up to 1.2 GHz i.MX 6Dual: Dual ARM Cortex-A9 core, up to 1.2 GHz i.MX 6Solo: Single ARM Cortex-A9 core, up to 1 GHz
	Memory	LPDDR3 1066MHz, 1GB for 6Quad/Dual LPDDR3 800MHz, 1GB for 6Solo 8bit SDIO
	EMMC FLASH	8GB（16G/32G Optional）
Network	Ethernet	Gigabit Ethernet (10/100/1000 Mbps)

Display	HDMI 1.4 LVDS (one port up to 165 Mpixels/s or two ports up to 85 Mpixels/s)
SATA	SATA II, 3.0 Gbps for 6Quad/Dual only
USB	USB 2.0 x 4 USB OTG x1
Audio	Audio MUX (AUDMUX)
PCI Express	PCI Express Gen 2.0 (x1 lane)
Interface	UART x2 SPI x1 I2C x3 GPIO x8 CAN x1
Dimensions	70 mm * 70 mm
Adapter	DC input voltage 5V

4.Extension GPIO definition





6.1 Boot Mode (SW7)

SOM-iMX6Q(D,S)-Q7 has 2 Connectors that allow you to configure your system to suit your application. The following table below shows the function of Boot Mode Selection:

BOOT MODE	Function
01	Serial downloader
10	Boot from board settings(depending on SW6)

6.2 Boot Switch(SW6)

To boot from eMMC, perform the following operations:

Change the board boot switch to eMMC 4-bit mode and make (SW6) 11100110 (from

1-8 bit). Or change (SW6) 11100110(from 1-8 bit) for 8-bit boot mode.

The following table lists the boot switch settings for different boot methods.

Mode	Setting
eMMC 4-bit boot	(SW6) 11100110 (from 1-8 bit)
eMMC 8-bit boot	(SW6) 11010110 (from 1-8 bit)
SD2 4-bit boot	(SW6) 10010010 (from 1-8 bit)
SD3 4-bit boot	(SW6) 01010010 (from 1-8 bit)
SATA boot	(SW6) 00000100 (from 1-8 bit)

6.3 Qseven Connector

There are 115 edge fingers on the top and bottom side of the SOM-iMX6Q(D,S)-Q7 module that mate with the MXM connector. The following table lists the pin assignments of Qseven Spec for all 230 edge fingers. Signals in grey are not available on the SOM-iMX6Q(D,S)-Q7 module. Signals in the brackets with Bold font is the new definition of SOM-iMX6Q(D,S)-Q7 module.

Pin	Signal	Pin	Signal
1	GND	**2**	GND
3	GBE_MDI3-	**4**	GBE_MDI2-
5	GBE_MDI3+	**6**	GBE_MDI2+
7	GBE_LINK100#	**8**	GBE_LINK1000#
9	GBE_MDI1-	**10**	GBE_MDI0-
11	GBE_MDI1+	**12**	GBE_MDI0+
13	GBE_LINK#	**14**	GBE_ACT#
15	GBE_CTREF	**16**	SUS_S5# **(GPIO_19)**
17	WAKE#	**18**	SUS_S3#
19	SUS_STAT#	**20**	PWRBTN#
21	SLP_BTN#	**22**	LID_BTN#
23	GND	**24**	GND
	KEY		KEY
25	GND	**26**	PWGIN
27	BATLOW#	**28**	RSTBTN#
29	SATA0_TX+	**30**	SATA1_TX+ **(UART3_RX)**
31	SATA0_TX-	**32**	SATA1_TX- **(UART3_TX)**
33	SATA_ACT#	**34**	GND
35	SATA0_RX+	**36**	SATA1_RX+ **(UART3_CTS)**
37	SATA0_RX-	**38**	SATA1_RX- **(UART3_RTS)**
39	GND	**40**	GND
41	BIOS_DISABLE# / BOOT_ALT#	**42**	SDIO_CLK# **(SD3_CLK)**

43	SDIO_CD# **(SD3_CD)**	**44**	SDIO_LED **(WIFI_32K)**
45	SDIO_CMD **(SD3_CMD)**	**46**	SDIO_WP **(SD3_WP)**
47	SDIO_PWR#	**48**	SDIO_DAT1 **(SD3_DATA1)**
49	SDIO_DAT0 **(SD3_DATA0)**	**50**	SDIO_DAT3 **(SD3_DATA3)**
51	SDIO_DAT2 **(SD3_DATA2)**	**52**	SDIO_DAT5 **(SD3_DATA5)**
53	SDIO_DAT4 **(SD3_DATA4)**	**54**	SDIO_DAT7 **(SD3_DATA7)**
55	SDIO_DAT6 **(SD3_DATA6)**	**56**	USB_OTG_PEN
57	GND	**58**	GND
59	HDA_SYNC **(AUD4_TXFS / I2S_LRCLK)**	**60**	SMB_CLK **(UART2_RX)**
61	HDA_RST# **(AUD_MCLK / I2S_MCLK)**	**62**	SMB_DAT **(UART2_TX)**
63	HDA_BITCLK **(AUD4_TXC / I2S_BCLK)**	**64**	SMB_ALERT#
65	HDA_SDI **(AUD4_TXD / I2S_DAC)**	**66**	I2C_CLK **(I2C3_SCL)**
67	HDA_SDO **(AUD4_RXD / I2S_ADC)**	**68**	I2C_DAT **(I2C3_SDA)**
69	THRM#	**70**	WDTRIG#
71	THRMTRIP#	**72**	WDOUT
73	GND	**74**	GND
75	USB_P7-	**76**	USB_P6-
77	USB_P7+	**78**	USB_P6+
79	USB_6_7_OC#	**80**	USB_4_5_OC#
81	USB_P5-	**82**	USB_P4-
83	USB_P5+	**84**	USB_P4+
85	USB_2_3_OC#	**86**	USB_0_1_OC#
87	USB_P3-	**88**	USB_P2-
89	USB_P3+	**90**	USB_P2+
91	USB_VBUS	**92**	USB_ID
93	USB_P1-	**94**	USB_P0-
95	USB_P1+	**96**	USB_P0+
97	GND	**98**	GND
99	LVDS_A0+	**100**	LVDS_B0+
101	LVDS_A0-	**102**	LVDS_B0-
103	LVDS_A1+	**104**	LVDS_B1+
105	LVDS_A1-	**106**	LVDS_B1-
107	LVDS_A2+	**108**	LVDS_B2+

Continue the previous table:

Pin	Signal	Pin	Signal
109	LVDS_A2-	**110**	LVDS_B2-
111	LVDS_PPEN	**112**	LVDS_BLEN
113	LVDS_A3+	**114**	LVDS_B3+
115	LVDS_A3-	**116**	LVDS_B3-
117	GND	**118**	GND
119	LVDS_A_CLK+	**120**	LVDS_B_CLK+
121	LVDS_A_CLK-	**122**	LVDS_B_CLK-
123	LVDS_BLT_CTRL	**124**	GP_1-WIRE_BUS
125	LVDS_DID_DAT	**126**	LVDS_BLC_DAT
127	LVDS_DID_CLK	**128**	LVDS_BLC_CLK **(HDMI_CEC)**
129	CAN0_TX	**130**	CAN0_RX
131	HDMI_TMDS_CLK+	**132**	USB_SSTX1-
133	HDMI_TMDS_CLK-	**134**	USB_SSTX1+
135	GND	**136**	GND
137	HDMI_TMDS_LINE1+	**138**	DP_AUX+
139	HDMI_TMDS_LINE1-	**140**	DP_AUX-
141	GND	**142**	GND
143	HDMI_TMDS_LINE0+	**144**	USB_SSRX1-
145	HDMI_TMDS_LINE0-	**146**	USB_SSRX1+
147	GND	**148**	GND
149	HDMI_TMDS_LINE2+	**150**	HDMI_CTRL_DAT
151	HDMI_TMDS_LINE2-	**152**	HDMI_CTRL_CLK
153	HDMI_HPD#	**154**	DP_HPD#
155	PCIE_CLK_REF+	**156**	PCIE_WAKE#
157	PCIE_CLK_REF-	**158**	PCIE_RST#
159	GND	**160**	GND
161	PCIE3_TX+	**162**	PCIE3_RX+

Continue the previous table:

Pin	Signal	Pin	Signal
163	PCIE3_TX-	164	PCIE3_RX-
165	GND	166	GND
167	PCIE2_TX+	168	PCIE2_RX+
169	PCIE2_TX-	170	PCIE2_RX-
171	UART1_TX	172	UART1_RTS#
173	PCIE1_TX+	174	PCIE1_RX+
175	PCIE1_TX-	176	PCIE1_RX-
177	UART1_RX	178	UART1_CTS#
179	PCIE0_TX+	180	PCIE0_RX+
181	PCIE0_TX-	182	PCIE0_RX-
183	GND	184	GND
185	GPIO0	186	GPIO1
187	GPIO2	188	GPIO3
189	GPIO4	190	GPIO5
191	GPIO6	192	GPIO7
193	VCC_RTC	194	SPKR
195	FAN_TACHOIN / GP_TIMER_IN	196	GP_PWM_OUT1
197	GND	198	GND
199	SPI_MOSI	200	SPI_CS0#
201	SPI_MISO	202	SPI_CS1#
203	SPI_SCK	204	MFG_NC4
205	VCC_5V_SB	206	VCC_5V_SB
207	MFG_NC0 **(BOOT_MODE0)**	208	MFG_NC2
209	MFG_NC1 **(BOOT_MODE1)**	210	MFG_NC3
211	NC	212	NC
213	NC	214	NC
215	NC	216	NC
217	NC	218	NC

Continue the previous table:

Pin	Signal	Pin	Signal
219	VCC	**220**	VCC
221	VCC	**222**	VCC
223	VCC	**224**	VCC
225	VCC	**226**	VCC
227	VCC	**228**	VCC
229	VCC	**230**	VCC

5.Precautions for use

1. Relative humidity: 10% ~ 90% .
2. Storage temperature: -10 ~ 125℃
3. Operation temperature: 0 °C ~ 70 °C or -40°C ~ 85 °C
4. Do not squeeze、distort or disassemble the board.
5. Keep the board away from static electricity .
6. Keep the board away from water and other liquid.
7. Clean the board with soft and clean dry cloth when it’s dirty.
8. Don’t use long connect wires which may affect performance and image quality.