

Mini ITX form factor base board for Q7 module

IQ7-DB-MITX

Quick Installation Guide

Version 1.0

Aug. 09, 2011

Package Contents

IQ7-DB-MITX package includes the following items:

- 1 x IQ7-DB-MITX Base Board for Q7 Module
- 1 x QIG (Quick Installation Guide)



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Specifications

- CPU Module Interface: Supports Q7 Modules
- Display Interface:
 - VGA DB15 connector (by SDVO to VGA Transmitter: Chrontel CH7021A)
 - 1 x SDVO FPC Connector (Optional, share with VGA)
 - 18/24-bit single-channel LVDS connector
- Ethernet:
 - LAN1 shared with PCIe Mini card slot (Select by switch: SW3)
 - LAN2 shared with PCIe x1 slot (PCIe x1 Interface) (Select by switch: SW3)
- I/O Interface:
 - 2 x SATA/SATA II (SATA1, SATA2) with 5V/12V power output (SATA signal from Q7 CPU board) (Not support by IQ7-US15W)
 - 1 x SATA (SATA3) with 5V/12V power output (SATA signal from IDE to SATA bridge JMicron JM20330, IDE signal from Q7 CPU board through FFC Cable to Base Board FPC connector)
 - 6 x USB 2.0 (4 on rear side, 2 by pin-header)
 - 1 x Client USB
 - 1 x IDE (Signal from Q7 CPU board, through FFC Cable to Base Board FPC connector)
 - 4 x RS-232 (1 on rear side, 3 by pin-header)
 - 1 x CF type II (Signal from Q7 CPU board, through FFC Cable to Base Board FPC connector)
 - 1 x SD slot (No supports boot)
 - 1 x LPT
 - 2 x PS2 KB & MS connector
- Expansions:
 - 1 x PCIe Mini card slot shared with LAN1 (select by switch: SW3)
 - 1 x PCIe x1 slot shared with LAN2 (select by switch: SW3)
- Super I/O: SMSC SCH3114I-NU
- Audio: Realtek ALC883 for 7.1 channels HD audio
 - 1 x MIC-in, Line out connector

- Digital I/O:
8-bit digital I/O, 4-bit input, 4-bit output by SMSC SCH3114I-NU
- Power Supply: ATX Power, ATX/AT Mode support
- Operating Humidity: 5% ~ 95%, non-condensing
- Operating Temperature: 0 ~ 60°C(32 ~ 140°F)
- Dimension: 170 mm x 170 mm
- Weight: GW: 700g, NW: 350g

Ordering Information

IQ7-DB-MITX-R10: Mini ITX form factor base board for Q7 modules

19800-000051-RS: Dual Ports RS-232 cable with bracket

19800-000047-RS: Single Port RS-232 cable with bracket

32400-029000-RS: 15cm 1.8" IDE HDD FFC cable from Q7 Module to Base Board

32400-029002-RS: 5cm 1.8" IDE HDD FFC cable from Q7 Module to Base Board

Table of Jumper setting

LABEL	FUNCTION
SW1	Reset Button
SW2	Power Button
SW3	LAN1/LAN2/PCle Mini Card/PClex1 slot selection
SW4	SDVO/CRT/SATA3 setting selection
SW5	ATX/AT selection
JP8	ATX/AT mode selection
JP3	CF Voltage selection
JP4	CF Master/Slave selection
J_VLVDS1	LVDS1 Voltage Selection
JP6	Clear CMOS selection

SW3: LAN1/LAN2/PCle Mini Card/PClex1 slot selection	
SW3	Description
1-On & 2-Off	PCle x1 slot enabled & LAN2 disabled
1-Off & 2-On	LAN2 enabled & PCle x1 slot disabled
3-On & 4-Off	LAN1 enabled & PCle Mini card disabled
3-Off & 4-On	PCle Mini enabled & LAN1 disabled

SW4: SDVO/CRT/SATA3 setting selection	
SW4	Description
1-On & 2-Off	SDVO enabled & VGA disabled
1-Off & 2-On	VGA enabled & SDVO disabled
3-On	SATA3 as master
3-Off	SATA3 as slave
4-On	SATA3 disable
4-Off	SATA3 enabled

※ The SATA3, IDE and CF connectors can not all be used at the same time. Users can only choose one from the following combinations for mass storage devices:

- * SATA3 only
- * IDE + CF (U42 JM20330 chip must be removed)

SW5: ATX/AT selection	
SW5	Description
1-On	AT mode
1-Off	ATX mode

JP8: ATX/AT Mode selection	
JP8	Description
1-2	ATX Mode (default)
3-4	AT Mode
5-6	NO Function

※ SW5 & JP8: Set both of the jumpers at the same time to select AT or ATX power mode.

JP3 : CF Voltage Selection	
JP3	DESCRIPTION
1-2	+5V LVDS (default)
2-3	+3.3V LVDS

JP4 : CF Master/Slave selection	
JP4	DESCRIPTION
Short 1-2	Slave (default)
Short 2-3	Master

J_VLVDS1 : LVDS1 Voltage Selection	
J_VLVDS1	DESCRIPTION
1-2	+3.3V LVDS (default)
2-3	+5V LVDS

JP6: Clear CMOS selection	
JP6	Description
1-2	Normal (default)
2-3	Clear CMOS

Table of Connectors

LABEL	FUNCTION
CON1	VGA 15-pin Female Connector
CN9	PS/2 MOUSE & KEYBOARD Connectors
COM1	External Serial Port DB-9 Connector
S_ATA1, 2 ,3	Serial ATA Connectors
COM2,COM3, COM4	Internal Serial Port 10-pin Connectors
PWR1	ATX Power Input Connector
DIO1	Digital I/O Connector
F_PANEL1	Speaker, PWR & RST Buttons and Indicators
LPT1	Parallel Port Connector
USB5	Internal USB 2 Ports Connector
AUDIO1	Audio Connector
INVERTER1	LVDS Power Supply
FAN2	Fan Connector
CN17, CN21, CN23	SATA HDD Power Output Connectors
SDVO1	SDVO Connector (Option)
CN30	IDE Connectors
CN7	LVDS Connector
CF1	CF Card slot
J4	CPLD Programming Connector
CN3	Client USB Connector (Type AB)
CN8	SD Connector
BAT1	+3.3V Battery Connector
LAN_USB1 LAN_USB2	RJ45 LAN & USB Ports Connectors
CN2	PCIe Mini Card Connector
CN22	Debug Port Connector (Option)
CN6	IDE HDD FPC connector
J1	Q7 connector
PCIE1	PCI Express x1 slot

CON1 : VGA15-pin Female Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	NC	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

CN9: (Purple)6-pin Mini-DIN Keyboard Connector (Green) 6-pin Mini-DIN Mouse Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Keyboard Data	7	Mouse Data
2	NC	8	NC
3	GND	9	GND
4	VCC (+5V)	10	VCC (+5V)
5	Keyboard Clock	11	Mouse Clock
6	NC	12	NC

COM1 : External Serial Port Connector (RS-232)		
PIN NO.	DESCRIPTION	
1	DATA CARRIER DETECT	(DCD#)
2	RECEIVE DATA	(RXD)
3	TRANSMIT DATA	(TXD)
4	DATA TERMINAL READY	(DTR#)
5	GND	
6	DATA SET READY	(DSR#)
7	REQUEST TO SEND	(RTS#)
8	CLEAR TO SEND	(CTS#)
9	RING INDICATOR	(RI#)

S_ATA1, 2, 3: Serial ATA Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	5	RX-
2	TX+	6	RX+
3	TX-	7	GND
4	GND	8	N/C

COM2, 3, 4 : Internal Serial Port Connectors (RS-232)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD#)	6	DATA SET READY (DSR#)
2	RECEIVE DATA (RXD)	7	REQUEST TO SEND (RTS#)
3	TRANSMIT DATA (TXD)	8	CLEAR TO SEND (CTS#)
4	DATA TERMINAL READY (DTR#)	9	RING INDICATOR (RI#)
5	GND	10	N/C

PWR1: ATX Power Input Connector			
Pin	Description	Pin	Description
1	+3.3Vdc	11	+3.3Vdc
2	+3.3Vdc	12	NC(-12Vdc)
3	GND	13	GND
4	+5Vdc	14	PS-ON
5	GND	15	GND
6	+5Vdc	16	GND
7	GND	17	GND
8	PWR-OK	18	NC(-5Vdc)
9	+5VSB	19	+5Vdc
10	+12Vdc	20	+5Vdc

DIO1 : Digital Input / Output Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+5V
3	Output 0	4	Output 1
5	Output 2	6	Output 3
7	Input 0	8	Input 1
9	Input 2	10	Input 3

F_PANEL1 : Speaker, PWR & RST Buttons and Indicators panel					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
Power LED	1	+5V	2	+5V	Speaker
	3	N/C	4	N/C	
	5	GND	6	N/C	
PWRBTN	7	PWRBTN+	8	Speaker	RESET
	9	PWRBTN-	10	N/C	
HDDLED	11	+5V	12	Reset-	
	13	HDLED-	14	GND	

LPT1 : Parallel Port Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	STROBE#	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED #
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT IN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	GROUND	24	GROUND
25	GROUND		

USB5: Internal 2 Ports USB Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC (+5V)	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	VCC (+5V)

AUDIO1: Audio Connector	
PIN NO.	DESCRIPTION
Line-out (Pink)	Connect this port to headphone or speaker
Microphone (Green)	Connect this port to microphone

INVERTER1 : 5-pin Header Inverter Connector	
PIN NO.	DESCRIPTION
1	LCD_BKLTCTL
2	GND
3	+12V
4	GND
5	BACKLIGHT ENABLE

FAN2: System Fan Connector	
PIN NO.	DESCRIPTION
1	Rotation Signal
2	+12V (PWM)
3	GND

CN17, CN21, CN23: SATA HDD Power Output Connectors	
PIN NO.	DESCRIPTION
1	+5V
2	GND
3	GND
5	+12V

SDVO1: SDVO Connector (Option)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SDVOC_CLK-
3	SDVOC_CLK+	4	GND
5	SDVOC_GREEN-	6	SDVOC_GREEN+
7	GND	8	SDVOB_CLK-
9	SDVOB_CLK+	10	GND
11	SDVOB_GREEN-	12	SDVOB_GREEN+
13	GND	14	SDVOC_INT+
15	SDVOC_INT+	16	GND
17	SDVOB_INT+	18	SDVOB_INT+
19	GND	20	SDVOC_BLUE-
21	SDVOC_BLUE+	22	GND
23	SDVOC_RED-	24	SDVOC_RED+
25	GND	26	SDVOB_BLUE-
27	SDVOB_BLUE+	28	GND
29	SDVOB_RED-	30	SDVOB_RED+
31	GND	32	SDVO1_STALL-
33	SDVO1_STALL+	34	GND
35	SDVO_TVCLKIN-	36	SDVO_TVCLKIN+
37	GND	38	SDVO_CLK
39	SDVO_DATA	40	PCIRST
41	+5VS	42	+5VS
43	+5VS	44	N/C
45	N/C	46	GND
47	GND		

CN30: IDE Interface Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GND	20	N/C
21	IDE DRQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IDE CHRDY	28	BALE – DEFAULT
29	IDE DACK#	30	GND
31	INTERRUPT	32	N/C
33	SA1	34	PDIAG#
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GND

CN7: LVDS Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	A_Y0	4	A_Y0#
5	A_Y1	6	A_Y1#
7	A_Y2	8	A_Y2#
9	A_CK	10	A_CK#
11	A_Y3	12	A_Y3#
13	GND	14	GND
15	B_Y0	16	B_Y0#
17	B_Y1	18	B_Y1#
19	B_Y2	20	B_Y2#
21	B_CK	22	B_CK#
23	B_Y3	24	B_Y3#
25	GND	26	GND
27	VCC_LCD	28	VCC_LCD
29	VCC_LCD	30	VCC_LCD

CF1 : CF Card Interface Slot			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	26	CD1#
2	D3	27	D11
3	D4	28	D12
4	D5	29	D13
5	D6	30	D14
6	D7	31	D15
7	CE#	32	CE2#
8	A10	33	VS1#
9	OE#	34	IOR#
10	A9	35	IOW#
11	A8	36	WE#
12	A7	37	IRQ
13	VCC	38	VCC (+5V)
14	A6	39	CSEL#
15	A5	40	VS2#
16	A4	41	RESET#
17	A3	42	WAIT#
18	A2	43	INPACK#
19	A1	44	REG#
20	A0	45	BVD2
21	D0	46	BVD1
22	D1	47	D8
23	D2	48	D9
24	IOCS16#	49	D10
25	CD2#	50	GND2

J4: CPLD Programming Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	CPLD_TCK	2	GND
3	CPLD_TDO	4	+3.3V
5	CPLD_TMS	6	NC
7	NC	8	NC
9	CPLD_TDI	10	GND

CN3: Client USB Connector (Type AB)	
PIN NO.	DESCRIPTION
1	+5V
2	USB-
3	USB+
4	USB_HC_SEL
5	GND

CN8: SD Connector	
PIN NO.	DESCRIPTION
1	SDIO_D3
2	SDIO_CMD
3	GND
4	VDD
5	SDIO_CLK
6	GND
7	SDIO_D0
8	SDIO_D1
9	SDIO_D2
10	GND
11	SDIO_CD#
12	SDIO_WP
13	GND
14	GND

BAT1 : +3.3V Battery Connector	
Pin No.	Description
1	BAT (+3.3V)
2	GND

LAN1_USB1 & LAN2_USB2: RJ-45 LAN Connector (For LAN)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDIA3-	5	MDIA1+
2	MDIA3+	6	MDIA2+-
3.	MDIA2-	7	MDIA0-
4.	MDIA1-	8	MDIA0+

LAN1_USB1 & LAN2_USB2: USB connector (For USB)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC (+5V)	5	VCC (+5V)
2	DATA-	6	DATA-
3	DATA+	7	DATA+
4	GND	8	GND

CN2: PCIe Mini Card Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PCIE_WAKE#	2	+3.3V
3	N/C	4	GND
5	N/C	6	+1.5V
7	CLKREQ#	8	LFRAME#
9	GND	10	LAD3
11	CLK-	12	LAD2
13	CLK+	14	LAD1
15	GND	16	LAD0
17	PCIRST#	18	GND
19	LPC	20	+3.3
21	GND	22	PCIRST#
23	PERN2	24	3VDual
25	PERP2	26	GND
27	GND	28	+1.5V
29	GND	30	SMBCLK
31	PETN2	32	SMBDATA
33	PETP2	34	GND
35	GND	36	USB-
37	N/C	38	USB+
39	N/C	40	GND
41	N/C	42	N/C
43	N/C	44	RF_LINK#
45	N/C	46	BLUELED#
47	N/C	48	+1.5V
49	N/C	50	GND
51	N/C	52	+3.3

CN22: Debug Port Connector (Option)	
PIN NO.	DESCRIPTION
1	+3.3V
2	80PORT_TDO
3	80PORT_TDI
4	NC
5	NC
6	80PORT_TMS
7	GND
9	80PORT_TCK

CN6: IDE HDD FPC connector	
Pin No.	Description
1	NC
2	NC
3	RST#
4	GND
5	IDE_D7
6	IDE_D8
7	IDE_D6
8	IDE_D9
9	IDE_D5
10	IDE_D10
11	IDE_D4
12	IDE_D11
13	IDE_D3
14	IDE_D12
15	IDE_D2
16	IDE_D13
17	IDE_D1
18	IDE_D14
19	IDE_D0
20	IDE_D15
21	GND
22	IDE_REQ
23	GND
24	IDE_LOW#
25	IDE_IOR#
26	GND
27	IDE_LORDY
28	GND
29	IDE_ACK#
30	IDE_IRQ
31	IDE_A1
32	IDE_PATADET
33	IDE_A0
34	IDE_A2
35	IDE_CS#1
36	IDE_CS#3
37	DASP
38	+3.3V
39	+3.3V
40	NC

J1: Q7 Edge finger connector			
Pin	Description	Pin	Description
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#
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+
31	SATA0_TX-	32	SATA1_TX-
33	SATA_ACT#	34	GND
35	SATA0_RX+	36	SATA1_RX+
37	SATA0_RX-	38	SATA1_RX-
39	GND	40	GND
41	BIOS_DISABLE#	42	SDIO_CLK#
43	SDIO_CD#	44	SDIO_LED
45	SDIO_CMD	46	SDIO_WP
47	SDIO_PWR#	48	SDIO_DAT1
49	SDIO_DAT0	50	SDIO_DAT3
51	SDIO_DAT2	52	SDIO_DAT5
53	SDIO_DAT4	54	SDIO_DAT7
55	SDIO_DAT6	56	RSVD
57	GND	58	GND
59	HDA_SYNC	60	SMB_CLK
61	HDA_RST#	62	SMB_DAT
63	HDA_BITCLK	64	SMB_ALERT#
65	HDA_SDI	66	I2C_CLK
67	HDA_SDO	68	I2C_DAT
69	THRM#	70	WDTRIG#

Pin	Description	Pin	Description
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_HOST_PRES#	92	USB_HC_SEL
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+
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	RSVD
125	LVDS_DID_DAT	126	LVDS_BLC_DAT
127	LVDS_DID_CLK	128	LVDS_BLC_CLK
129	RSVD	130	RSVD
131	SDVO_BCLK+	132	SDVO_INT+
133	SDVO_BCLK-	134	SDVO_INT-
135	GND	136	GND
137	SDVO_GREEN+	138	SDVO_FLDSTALL+
139	SDVO_GREEN-	140	SDVO_FLDSTALL-
141	GND	142	GND
143	SDVO_BLUE+	144	SDVO_TVCLKIN+
145	SDVO_BLUE-	146	SDVO_TVCLKIN-
139	SDVO_GREEN-	140	SDVO_FLDSTALL-
147	GND	148	GND

Pin	Description	Pin	Description
149	SDVO_RED+	150	SDVO_CTRL_DAT
151	SDVO_RED-	152	SDVO_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+
163	PCIE3_TX-	164	PCIE3_RX-
165	GND	166	GND
167	PCIE2_TX+	168	PCIE2_RX+
169	PCIE2_TX-	170	PCIE2_RX-
171	EXCD0_PERST#	172	EXCD1_PERST#
173	PCIE1_TX+	174	PCIE1_RX+
175	PCIE1_TX-	176	PCIE1_RX-
177	EXCD0_CPPE#	178	EXCD1_CPPE#
179	PCIE0_TX+	180	PCIE0_RX+
181	PCIE0_TX-	182	PCIE0_RX-
183	GND	184	GND
185	LPC_AD0	186	LPC_AD1
187	LPC_AD2	188	LPC_AD3
189	LPC_CLK	190	LPC_FRAME#
191	SERIRQ	192	LPC_LDRQ#
193	VCC_RTC	194	SPKR
195	FAN_TACHOIN	196	FAN_PWMOUT
197	GND	198	GND
199	RSVD	200	RSVD
201	RSVD	202	RSVD
203	RSVD	204	MFG_NC4
205	VCC_5V_SB	206	VCC_5V_SB
207	MFG_NC0	208	MFG_NC2
209	MFG_NC1	210	MFG_NC3
211	VCC	212	VCC
213	VCC	214	VCC
215	VCC	216	VCC
217	VCC	218	VCC
219	VCC	220	VCC
221	VCC	222	VCC
223	VCC	224	VCC
225	VCC	226	VCC
227	VCC	228	VCC
229	VCC	230	VCC

Board Layout: Jumper and Connector Locations



