

EPIC SBC supports 3rd generation Intel® Core™ i7/i5/i3 mobile processor, Dual HDMI/ DVI-I/ LVDS, Dual GbE, USB 3.0, PCIe Mini, SATA 6Gb/s and Audio

NANO-QM770

Quick Installation Guide

Version 1.0

May. 2, 2012

Package List

NANO-QM770 package includes the following items:

- 1 x NANO-QM770 Single Board Computer
- 1 x Audio cable
- 2 x SATA with 5Voutput cable kit
- 2 x RS-232 cable
- 1 x Power cable
- 1 x Mini Jumper Pack
- 1 x Utility CD (with manual)
- 1 x QIG (Quick Installation Guide)
- 1 x One Key Recovery CD



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Specifications

- CPU:
Socket G2 for Intel® 3rd generation 22nm mobile processor
- System chipset: Intel® QM77
- BIOS: UEFI BIOS
- System memory:
One 204-pin 1600/1333/1066MHz DDR3 SO-DIMM supported (system max. 8GB)
- Ethernet:
Intel® 82583V PCIe controller
Intel® 82579 PHY with Intel® AMT 8.0 support
- Super IO: Fintek F81866
- I/O Interface:
2 x RS-232
1 x RS-422/485
2 x SATA 6Gb/s with 5V power connector
2 x USB 2.0 (by pin header)
4 x USB 3.0 (on rear)
1 x 6-pin wafer for PS/2 KB/MB
- Expansion:
1 x Full-size PCIe Mini card slot w/ mSATA support
- Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- Display Output:
1 x DVI-I
Dual HDMI (1080p)
Dual-channel 24-bit LVDS, resolution up to 1600x1200
- Graphic Engine:
Intel® Gen 7 with DirectX 11, OGL 3.1, OCL 1.1
- Audio: Realtek ALC662 HD Audio Codec (Line-in, Line-out, Mic)
- Watchdog Timer:
Software programmable supports 1~255sec. System reset
- Power supply: 12V only, AT/ATX support
- Power Consumption:
12V@5.87A (Intel® Core™ i7-3610QE 2.30GHz with DDR3)

1333MHz 4GB memory)

12V@1.15A (1.6GHz Intel® Atom™ N2600 with 1GB 1066MHz DDR3 memory)

- Operation Temperature:
-10°C~60°C
- Operation Humidity: 5%~95% non-condensing
- Dimensions: 115mm x 165mm

Ordering Information

- NANO-QM770-R10 :
EPIC SBC supports Socket G2 for Intel® 22nm mobile processor with Dual HDMI/ DVI-I/ LVDS, Dual GbE, USB 3.0 PCIe Mini, SATA 6Gb/s and Audio
- 32001-008600-100-RS : Dual port USB cable
- 32100-043403-RS : ATX power cable
- 32205-003800-100-RS : RS-422/485 cable, 200mm
- CF-989A-RS-R12 : CPU cooler for mobile PGA989 up to 55W
- 32000-023800-RS : PS2 KB/MS cable
- TPM-IN01-R11 : 20-pin Infineon TPM module, software management tool, firmware V3.17

Jumpers setting and Connectors

LABEL	FUNCTION
J_CMOS1	CMOS state setting
J_ATXCTL1	Select ATX or AT mode
J_VLVDS1	LCD Voltage Selection
J_PID1	LVDS Panel Resolution Selection
MSATA_SW	PCIe Mini or mSATA Selection
CON1	DVI-I connector
USB_CON1、 USB_CON2	USB3.0 Connector
USB1	Internal USB 2.0 Connectors
KB_MS1	PS/2 Mouse & Keyboard Connector
LAN1、LAN2	RJ45 LAN Connector
COM1、 COM2、COM3	Internal Serial Port Connector
AUDIO1	Audio Source Connector
S_ATA1~2	Serial ATA Connectors
CN1,CN2	Serial ATA Power Connectors
CN4	PCIe Mini Card
INVERTER1	LVDS Panel Voltage Supply
LVDS1	LVDS Panel Connector
SYS_FAN1	Fan Connector
CPU_FAN1	Fan Connector
DIO1	Digital I/O Connector
F_PANEL1	PWR & RST Buttons and Indicators
PWR1	Power Supply DC12V Power IN
HDMI1,HDMI2	HDMI Connector
TPM1	TPM Connector
CN3	SMBus Connector

J_VLVDS1 : Set The Panel Voltage	
PIN NO.	DESCRIPTION
Short 1-2 (default)	+3.3V LVDS
Short 2-3	+5V LVDS

J_ATXCTL1 : Set ATX or AT mode	
PIN NO.	DESCRIPTION
Short 1-2 (default)	ATX Power Mode
Short 2-3	AT Power Mode

J_CMOS1 : Clear CMOS Setup	
PIN NO	DESCRIPTION
Short 1-2 (default)	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

MSATA_SW: PCIe Mini or mSATA Selection	
PIN NO	DESCRIPTION
Short 1-2 (default)	MINI PCIE
Open	MSATA

J_PID1 : LVDS Panel Resolution Selection	
PIN NO	DESCRIPTION
OPEN	640 X 480 (18bit)
1-2	800 X 600 (18bit)
3-4	1024 X 768 (18bit)
1-2 & 3-4	1024 X 768 (24bit)
5-6	1280 X 800 (24bit)
1-2 & 5-6	1280 X 1024 (48bit)
3-4 & 5-6	1366 X 768 (24bit)
1-2 & 3-4 & 5-6	1440 X 900 (48bit)
7-8	1400 X 1050 (48bit)
1-2 & 7-8	1600 X 900 (48bit)
3-4 & 7-8	1600 X 1200 (48bit)
1-2 & 3-4 & 7-8	1680 X 1050 (48bit)
5-6 & 7-8	1920 X 1080 (48bit)
1-2 & 5-6 & 7-8	1920 X 1200 (48bit)
3-4 & 5-6 & 7-8	2048 X 1536 (48bit)
1-2 & 3-4 & 5-6 & 7-8	LVDS disabled

KB_MS1: 6-pin Wafer KB&MS Connector	
PIN NO.	DESCRIPTION
1	VCC5_KBMS
2	MSDATA
3	MSCLK
4	KBDATA
5	KBCLK
6	KBGND

USB_CON1、USB_CON2:USB3.0 Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	VBUS	2	DATA1-
3	DATA1+	4	GND
5	SSRX1-	6	SSRX1+
7	GND	8	SSTX1-
9	SSTX1+	10	VBUS
11	DATA2-	12	DATA2+
13	GND	14	SSRX2-
15	SSRX2+	16	GND
17	SSTX2-	18	SSTX2+

USB1: Internal USB Connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	-DATA	4	+DATA
5	+DATA	6	-DATA
7	GND	8	VCC

CON1: DVI-I Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	TMDS DATA2-	2	TMDS Data 2+
3	GND	4	NC
5	NC	6	DDC CLOCK
7	DDC DATA	8	5VSYNC
9	TMDS DATA1-	10	TMDS DATA1+
11	GND	12	NC
13	NC	14	5V
15	GND	16	HPD
17	TMDS DATA0-	18	TMDS DATA0+
19	GND	20	NC
21	NC	22	GND
23	TMDS_CLOCK+	24	TMDS_CLOCK-
C1	BR	C2	BG
C3	BB	C4	5HSYNC
C5	GND		

LAN1 、 LAN2: RJ45 LAN Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDIA3-	5	MDIA1+
2	MDIA3+	6	MDIA2+-
3.	MDIA2-	7	MDIA0-
4.	MDIA1-	8	MDIA0+

COM1 、 COM2 : Internal Serial Port Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-NDCD2	6	-NCTS2
2	-NDSR2	7	-NDTR2
3	NSIN2	8	-XRI2
4	-NRTS2	9	GND
5	NSOUT2	10	GND

COM3 : Internal Serial Port Connector	
PIN NO.	DESCRIPTION
1	RXD485#
2	RXD485+
3	TXD485+
4	TXD485#

AUDIO1 : Audio Source Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LFRONT-R	2	LLINE-R
3	GND	4	GND
5	LFRONT-L	6	LLINE-L
7	GND	8	GND
9	LMIC1-CONN-R	10	LMIC1-CONN-L

S_ATA1, S_ATA2 : 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

CN1, CN2 : SATA Power Connector	
PIN	DESCRIPTION
1	+5V
2	Ground

CN3: SMBus Connector	
PIN	DESCRIPTION
1	GND
2	SMB_DATA
3	SMB_CLK
4	+V5S

INVERTER1: Panel Power Supply	
PIN NO.	DESCRIPTION
1	LCD_BKLTCTL
2	GROUND
3	+12V
4	GROUND
5	BACKLIGHT ENABLE

LVDS1: 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/VCC3	28	VCC/VCC3
29	VCC/VCC3	30	VCC/VCC3

SYS_FAN1: System Fan Connector	
PIN	DESCRIPTION
1	Rotation Signal
2	+12V
3	Ground

CPU_FAN1: CPU Fan Connector	
PIN	DESCRIPTION
1	GND
2	+12V
3	Rotation Signal
4	PWM Control Signal

DIO1 : Digital Input			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Ground	2	VCC
3	Output 3	4	Output 2
5	Output 1	6	Output 0
7	Input 3	8	Input 2
9	Input 1	10	Input 0

F_PANEL1 : External Switches and Indicators panel					
Function	PIN	DESCRIPTION	Function	DESCRIPTION	PIN
	1	NC			
PWR_BTN	2	GND	PWR_LED	LED_PWR	6
	3	PWR_BTN-		LED_PWR	7
				GND	8
HDD_LED	4	IDE_LED_PWR	RESET	EXTRST-	9
	5	SATA_LED#		GND	10

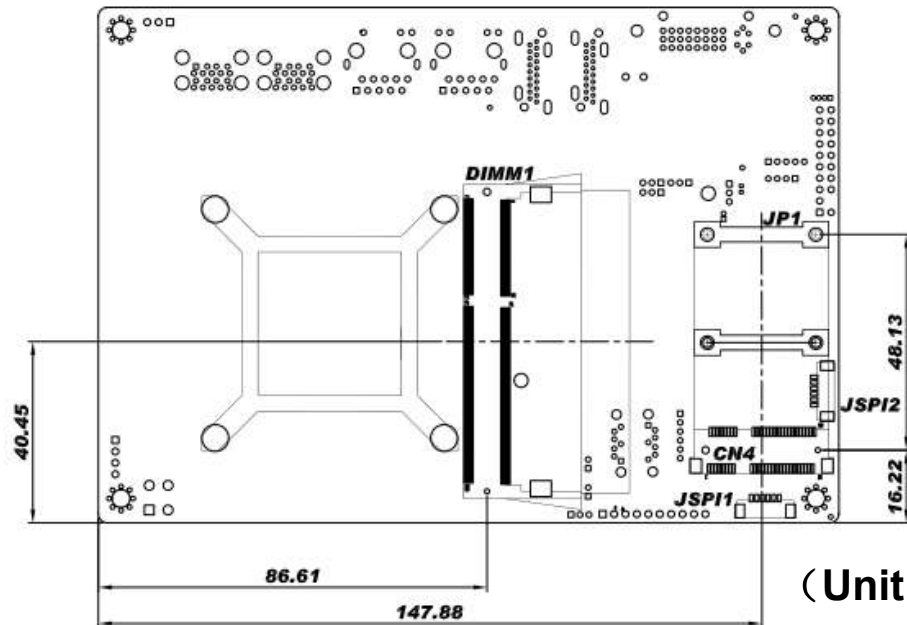
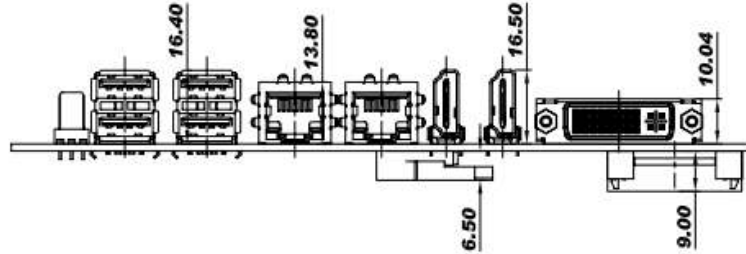
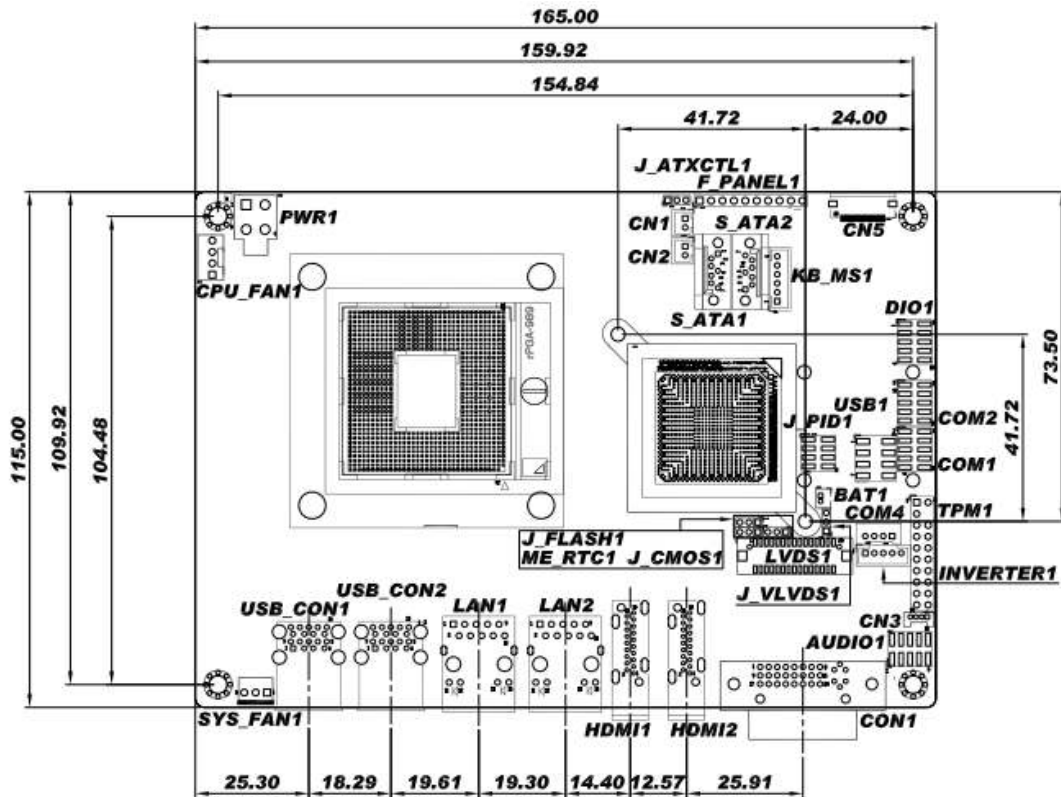
PWR1: Power Supply DC12V Power IN			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

HDMI1,HDMI2 : HDMI Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	HDMI_DATA2	13	N/C
2	GND	14	N/C
3	HDMI_DATA2#	15	HDMI_SCL
4	HDMI_DATA1	16	HDMI_SDA
5	GND	17	GND
6	HDMI_DATA1#	18	+5V
7	HDMI_DATA0	19	HDMI_HPD
8	GND	G1	HDMI_GND
9	HDMI_DATA0#	G2	HDMI_GND
10	HDMI_CLK	G3	HDMI_GND
11	GND	G4	HDMI_GND
12	HDMI_CLK#		

TPM1: TPM Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LCLK	2	GND
3	LFRAME#	4	KEY
5	LRERST#	6	+5V
7	LAD3	8	LAD2
9	+3V	10	LAD1
11	LAD0	12	GND
13	SCL	14	SDA
15	SB3V	16	SERIRQ
17	GND	18	GLKRUN#
19	LPCPD#	20	LDRQ#

CN4: PCIe Mini Card Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PCIE_WAKE#	2	VCC3
3	N/C	4	GND
5	N/C	6	1.5V
7	N/C	8	N/C
9	GND	10	N/C
11	PCIE_CLK#	12	N/C
13	PCIE_CLK	14	N/C
15	GND	16	N/C
17	N/C	18	GND
19	N/C	20	N/C
21	GND	22	PCIRST#
23	PCIE_RXN	24	VCC3
25	PCIE_RXP	26	GND
27	GND	28	1.5V
29	GND	30	SMBCLK
31	PCIE_TXN	32	SMBDATA
33	PCIE_TXP	34	GND
35	GND	36	USBD-
37	GND	38	USBD+
39	VCC3	40	GND
41	VCC3	42	N/C
43	GND	44	N/C
45	N/C	46	N/C
47	N/C	48	1.5V
49	N/C	50	GND
51	N/C	52	VCC3

Board Layout: Jumper and Connector Locations



(Unit: mm)