

# **MITX-6770**

## **Technical Specification Manual**

Version: R0.04

## Revisions

Version	Description of Version	Date Completed
R0.04	Pre-release	4/17/2015

## Preface

This Technical Specification Manual (TSM) specifies the board layout, components, connectors, and the I/O connection ports, motherboards features.

### **Intended Audience**

The TSM is intended to provide detailed, technical information about the MITX-6770 and its components to the vendors, system integrators, and other engineers and technicians who need this level of information. It is specifically not intended for general audiences.

### **What This Document Contains**

Chapter	Description
1	Introduction
2	Product Description
3	Technical Reference

## 1. Introduction

### 1.1 Product introduction

The MITX-6770 is a Thin mini-ITX Intel Bay Trail platform based motherboard. It has a Intel Celeron Processor J1900 (2M Cache, up to 2.42 GHz) on board with two SO-DIMM slot support up to 8G of DDR3L RAM.

The I/O interfaces include: HDMI, VGA, optional LVDS or second HDMI add-on card headers, two Intel Gigabit Ethernet, Mic-in, Audio-out, 4x USB2.0(include one USB2.0 swap with 2nd RJ45 LAN), 1x USB3.0, 2x COM, 1x half size mini card slot with mSATA or mini-PCIE+ USB, 1x full/half size mini card slot with mSATA or USB and SIM.

## 2. Product Description

### 2.1 Specification

Table 1 summarizes the major features of the board.

**Table 1. Specification**

<b>Essentials</b>	
Platform Codename	Bay Trail
Form Factor	mini-ITX
Processor	Intel Celeron J1900 2.42 GHz
Chipset	SoC
BIOS	AMI
System Memory	2x 204-Pin DDR3L SO-DIMM, up to 8GB each(1.35V low voltage RAM)
Ethernet	2x RJ45 , Intel I211, GbE x2, POE ready pin header
Storage	1x SATA 3Gb/s + 1x mSATA or 2x mSATA
Expansion	1x mini-PCIe with USB + SIM ,1x PCIe x1 slot
Power	12V DC 2.5mm power jack
<b>Graphic</b>	
Graphic Controller	Intel HD Graphics
Display Interface	1x VGA, 1x HDMI, optional 1x HDMI or DP via optional add-on card
LCD Interface	1x dual/single channel 18/24-bit LVDS via optional add-on card
Display Resolution	VGA - 1920x 1200, HDMI - 1920x 1200, LVDS - 1920x 1200
Dual Display	Dual independent display
<b>I/O</b>	
Serial Port	2x RS-232 header, optional 4x RS-232 header via LPC header
Parallel Port	1x LPT
USB	1x USB2.0 socket, 1x USB3.0 socket, 3x USB2.0 header(include one USB2.0 swap with 2nd RJ45 LAN)
Audio	Realtek ALC892, Line-out and MIC-in jack, 7.1 audio header, speaker out header
<b>Advanced Technologies</b>	
Wake On LAN	Yes
Features and Options	Intel embedded processor, long product life cycle, dual COM Port, parallel port, POE ready, dual mSATA support
<b>Mechanical &amp; Environmental</b>	
Operating Temperature	0 ~ 60° C (32 ~ 140° F)
Storage Temperature	-40 ~ 85° C (-40 ~ 185° F)
Operating Humidity	5% ~ 95%, 40°C, non-condensing
Dimensions	170 x 170 mm (6.7" x 6.7")

## 2.2 Board Layout

Figure 1 shows the location of the major components on the top-side of the MITX-6772.

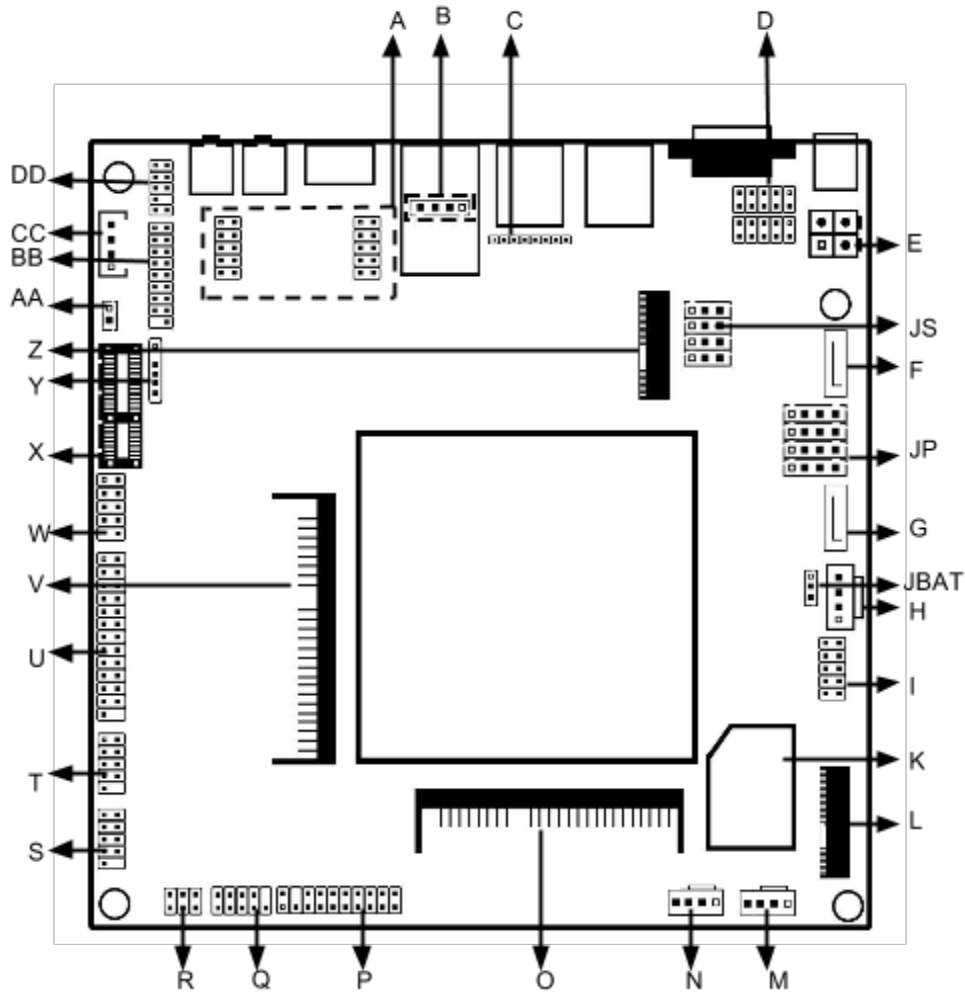


Table 2 lists the components identified in Figure 1

**Table 2. Components Show in Figure 1**

Item from Figure 1	Connector	Description
A	DDIO1, 2	Digital Display I/O add-on card header
B	USB2.0 header	USB1 header
C	POE1	Ethernet header for POE module
D	DDIO3, 4	Digital Display I/O header
E	AT1	Internal power connector
F	SATA1	SATA data connector
G	SATA0	SATA data connector
H	SATA_PW	SATA power connector
I	GPOI	General purpose IO

JBAT	JBAT	Clear CMOS jumper
JP	JP1-4	Half size miniPCIe/MSATA1/SATA1 jumper
JS	JS1-4	Full size MSATA/SATA jumper
K	SIM1	SIM Card socket
L	MPCIE-SATA1	PCI Express/USB/mSATA half-Mini card slot
M	SFAN1	4-wire system fan header
N	CFAN1	4-wire CPU fan header
O	DIMM1	SODIMM Socket
P	LPC1	LPC I/O Module header
Q	F_PANEL	Front panel header
R	JC1	COM Port Selection jumper
S	JCOM2	Serial Port 2 header
T	JCOM1	Serial Port 1 header
U	JLPT	Parallel port header
V	DIMM2	SODIMM Socket
W	USB1	USB 2.0 headers
X	PCIE1	PCI Express 1.0a x1 connector
Y	DMIC1	Digital microphone
Z	PCIE	mSATA /3G_ USB full mini card slot
AA	JME	Intel Management Engine
BB	F_Audio_IO2	7.1 channel audio header
CC	Speakers	Amplified 2.0 loudspeaker header
DD	F_Audio_IO1	Front panel audio header

## 2.3 Back Panel Connectors

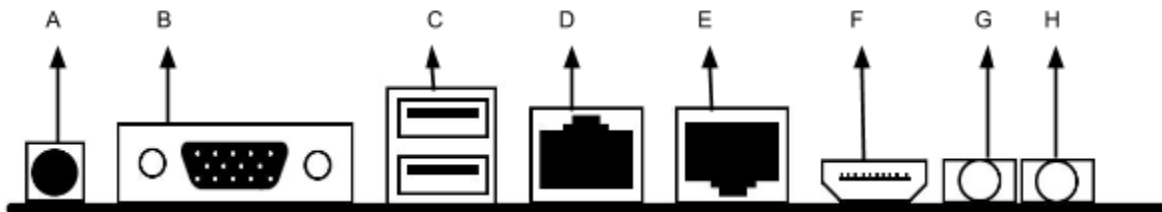


Figure 2. Back Panel Connectors

Table 3 lists the components identified in Figure 2

Table 3. Components Show in Figure 2

Item	Description
A	DC input jack
B	VGA connector
C	USB3.0 + 2.0 ports
D	LAN connector
E	LAN connector

F	HDMI connector
G	Analog line-out
H	Microphone in

## 2.4 Block Diagram

Figure 3 is a block diagram of the major functional areas of the board.

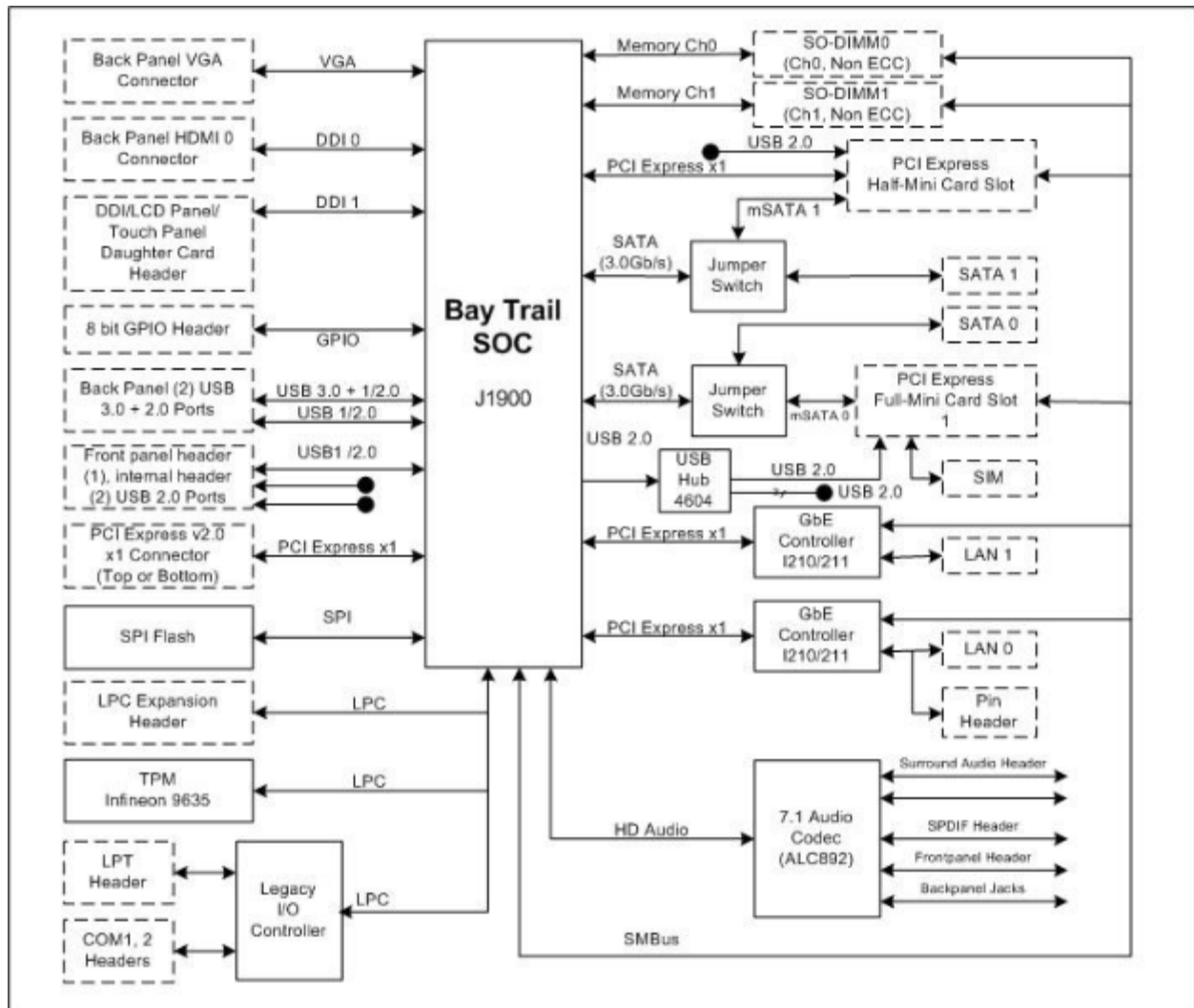


Figure 3. Block Diagram



### 3. Technical Reference

#### 3.1 Connectors and Headers (TOP)

Figure 4 shows the locations of the connectors and headers on the top-side of the board.

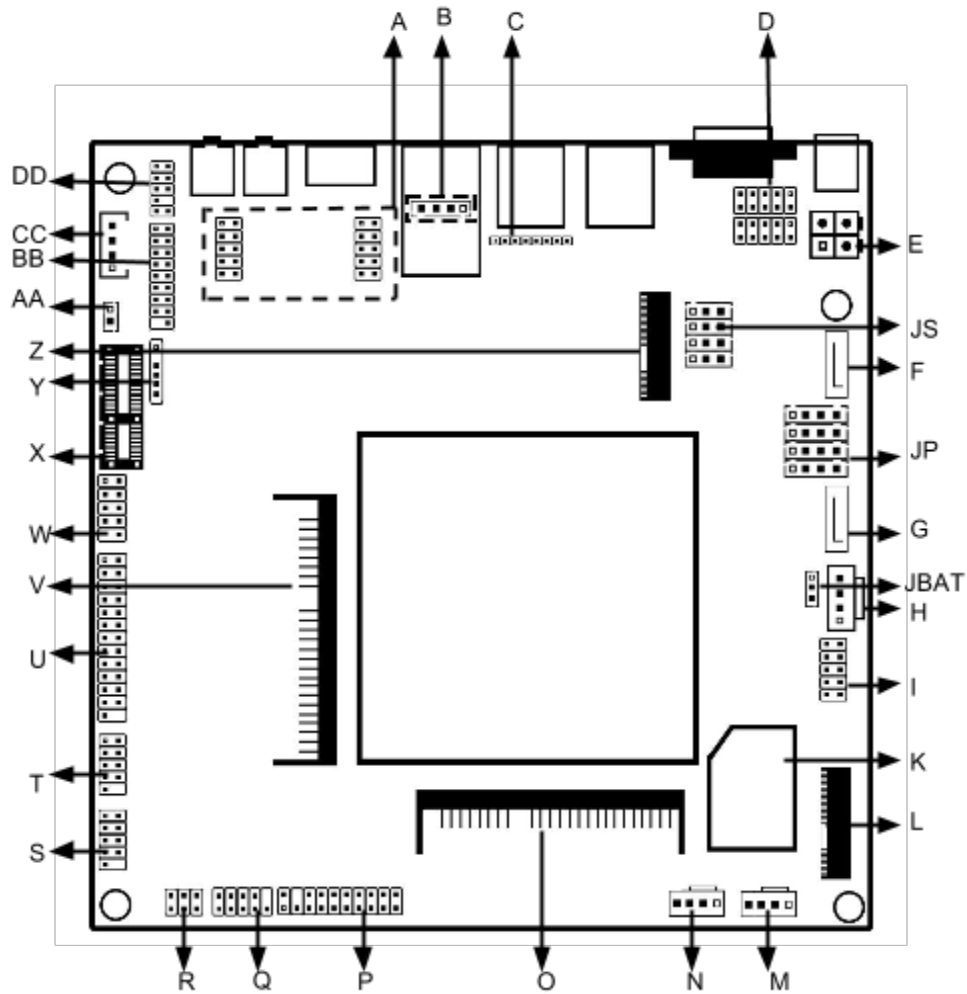


Figure 4. Connectors and Headers (top)

Table 4 - 22 lists the connectors and headers identified in Figure 4.

Table 4. DDIO1, 2 headers (Figure. 4. A)

Pin (DDIO1)	Signal Name
1	DDI1_TX0_DP
2	DDI1_AUX_DP
3	DDI1_TX0_DN
4	DDI1_AUX_DN

5	GND
6	GND
7	DDI1_TX1_DP
8	DDI1_HDMI_SCL
9	DDI1_TX1_DN
10	DDI1_HDMI_SDA

Pin (DDIO2)	Signal Name
1	DDI1_TX2_DP
2	DDI1_HPD
3	DDI1_TX2_DN
4	12V
5	GND
6	SMB_CLK
7	DDI1_TX3_DP
8	SMB_DATA
9	DDI1_TX3_DN
10	VCC

**Table 5. USB port header (Figure. 4. B, overridden by 2nd RJ45 LAN port)**

Pin	Signal Name
1	VCC-5VSB
2	D-
3	D+
4	GND

**Table 6. POE Ethernet port header (Figure. 4. C)**

Pin	Signal Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	MDI2+
6	MDI2-
7	MDI3+
8	MDI3-

**Table 7. DDIO3, 4 headers (Figure. 4. D)**

Pin (DDIO3)	Signal Name
1	DDI1_VDDEN
2	3.3V
3	DDI1_BKLTEN
4	3.3V
5	GND
6	NC
7	DDI1_BKLTCTL

8	12V
9	GND
10	12V

Pin (DDIO4)	Signal Name
1	PCIE_RXN_LAN2
2	CLK_DP_LAN2
3	PCIE_RXP_LAN2
4	CLK_DN_LAN2
5	GND
6	5V
7	PCIE_TXN_LAN2
8	PCIE_RST_N
9	PCIE_TXP_LAN2
10	PCIE_WAKE_N

**Table 8. Internal power connector (Figure. 4. E)**

Pin	Signal Name
1	GND
2	GND
3	Power (12V DC)
4	Power (12V DC)

**Table 9. SATA data connector1 (Figure. 4. F)**

Pin	Signal Name
1	GND
2	SATA_TXP
3	SATA_TXN
4	GND
5	SATA_RXN
6	SATA_RXP
7	GND
8	GND
9	GND

**Table 10. SATA data connector0 (Figure. 4. G)**

Pin	Signal Name
1	GND
2	SATA_TXP
3	SATA_TXN
4	GND
5	SATA_RXN
6	SATA_RXP
7	GND
8	GND
9	GND

**Table 11. SATA power connector (Figure. 4. H)**

Pin	Signal Name
1	12V
2	GND
3	GND
4	5V

**Table 12. GPIO headers (Figure. 4. I)**

Pin	Signal Name
1	GPIO_S522
2	GPIO_S523
3	GPIO_S524
4	GPIO_S525
5	GPIO_S526
6	GPIO_S527
7	GPIO_S528
8	GPIO_S529
9	GND
10	3.3V

**Table 13. mSATA and CMOS jumper (Figure. 4. JS,JP,JBAT)**

	Description	Pin	Description	Pin	Description	Pin
JS	Enable MSATA1	JS1 1,2 Close	Enable SATA1	JS1 2,3 Close		
		JS2 1,2 Close		JS2 2,3 Close		
		JS3 1,2 Close		JS3 2,3 Close		
		JS4 1,2 Close		JS4 2,3 Close		
JP	Enable MPCIE	JP1 1,2 Close	Enable MSATA0	JP1 2,3 Close	Enable SATA0	JP1 3,4 Close
		JP2 1,2 Close		JP2 2,3 Close		JP2 3,4 Close
		JP3 1,2 Close		JP3 2,3 Close		JP3 3,4 Close
		JP4 1,2 Close		JP4 2,3 Close		JP4 3,4 Close
JBAT	NORMAL	JBAT 1,2 Close	Clear CMOS	JBAT 2,3 Close		

**Table 14. SIM card (Figure. 4. K)**

Pin	Signal Name
1	VCC
2	RESET
3	CLK
4	GND
5	VPP
6	IO

**Table 15. PCI Express Half-Mini card slot (Figure. 4. L)**

Pin	M-PCIE	M-SATA
1	WAKE#	
2	+3.3 V aux	
3	Reserved	
4	GND	
5	Reserved	
6	1.5 V	
7	CLKREQ#	
8	Reserved	
9	GND	
10	Reserved	
11	REFCLK-	
12	Reserved	
13	REFCLK+	
14	Reserved	
15	GND	
16	Reserved	
17	Reserved	
18	GND	
19	Reserved	
20	Reserved	
21	GND	
22	PERST#	
23	PERn0	
24	+3.3 V aux	
25	PERp0	
26	GND	
27	GND	
28	+1.5 V	
29	GND	
30	SMB_CLK	
31	PETn0	
32	SMB_DATA	
33	PETp0	
34	GND	
35	GND	
36	USB_D-	
37	GND	(mSATA) GND
38	USB_D+	
39	+3.3 V aux	(mSATA) 3.3 V
40	GND	
41	+3.3 V aux	(mSATA) 3.3 V
42	LED_WWAN#	
43	Reserved	NC (mSATA indicator)
44	LED_WLAN#	

45	Reserved	(mSATA) Vendor
46	LED_WPAN#	
47	Reserved	(mSATA) Vendor
48	+1.5V	
49	Reserved	(mSATA) DA/DSS
50	GND	
51	Reserved	(mSATA) Presence Detection
52	+3.3 V aux	

**Table 16. 4-wire System fan header (Figure. 4. M)**

Pin	Signal Name
1	GND
2	12V DC
3	FAN_TACH
4	FAN_CONTROL

**Table 17. 4-wire CPU fan header (Figure. 4. N)**

Pin	Signal Name
1	GND
2	12V DC
3	FAN_TACH
4	FAN_CONTROL

**Table 18. LPC I/O module header (Figure. 4. P)**

Pin	Signal Name	Pin	Signal Name
1	LPC_CLK	2	GND
3	LFRAME_N	4	NC
5	LPC_RST_N	6	5V
7	LPC_AD3	8	LPC_AD2
9	3.3V	10	LPC_AD1
11	LPC_AD0	12	GND
13	SMB_CLK	14	SMB_DATA
15	3.3V_STB	16	INT_SERIRQ
17	GND	18	PM_CKRUN_N
19	PM_SUS_STAT_N	20	NC

**Table 19. Front panel header (Figure. 4. Q)**

Pin	Signal Name
1	HD_LED+
2	PWR_LED+
3	HD_LED-
4	PWR_LED-
5	RESET
6	Power Button
7	GND
8	GND

9	NC
10	Key

**Table 20. COM2 port setting jumper (Figure. 4. R)**

Description	Pin 1, 2	Pin 3, 4	Pin 5, 6
COM2 RS-232	Close	Open	Open
COM2 RS-422	Open	Close	Open
COM2 RS-485	Open	Open	Close

**Table 21. COM port2 header (Figure. 4. S)**

RS232

Pin	Signal Name
1	DCD
2	RXD#
3	TXD#
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	Key

RS422

Pin	Signal Name
1	TX-
2	TX+
3	RX+
4	RX-
5	NC
6	NC
7	NC
8	NC
9	NC
10	Key

RS485

Pin	Signal Name
1	RTX-
2	RTX+
3	NC
4	NC
5	NC
6	NC
7	NC
8	NC
9	NC
10	Key

**Table 22. COM port1 header (Figure. 4. T)**

Pin	Signal Name
1	DCD
2	RXD#
3	TXD#
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
10	Key

**Table 23. Parallel port header (Figure. 4. U)**

Pin	Signal Name	Pin	Signal Name
1	P_STB	2	P_AFD
3	P_D0	4	ERRJ
5	P_D1	6	P_INIT
7	P_D2	8	P_SLIN
9	P_D3	10	GND
11	P_D4	12	GND
13	P_D5	14	GND
15	P_D6	16	GND
17	P_D7	18	GND
19	ACKJ	20	GND
21	BUSY	22	GND
23	PE	24	LPT_DET#
25	SLCT	26	NC

**Table 24. USB 2.0 headers (Figure. 4. W)**

Pin	Signal Name
1	VCC_5VSTB
2	VCC_5VSTB
3	USB-
4	USB-
5	USB+
6	USB+
7	GND
8	GND
9	Key
10	GND

**Table 25. DMIC header (Figure. 4. Y)**

Pin	Signal Name
1	DMIC_DATA



2	GND
3	DMIC_CLK/SPDIFOUT
4	Key
5	5V

**Table 26. PCI Express Half-Mini card slot (Figure. 4. Z)**

Pin	M-PCIE	M-SATA
1	WAKE#	
2	+3.3 V aux	
3	Reserved	
4	GND	
5	Reserved	
6	1.5 V	
7	CLKREQ#	
8	Reserved	
9	GND	
10	Reserved	
11	REFCLK-	
12	Reserved	
13	REFCLK+	
14	Reserved	
15	GND	
16	Reserved	
17	Reserved	
18	GND	
19	Reserved	
20	Reserved	
21	GND	
22	PERST#	
23	PERn0	
24	+3.3 V aux	
25	PERp0	
26	GND	
27	GND	
28	+1.5 V	
29	GND	
30	SMB_CLK	
31	PETn0	
32	SMB_DATA	
33	PETp0	
34	GND	
35	GND	
36	USB_D-	
37	GND	(mSATA) GND
38	USB_D+	
39	+3.3 V aux	(mSATA) 3.3 V

40	GND	
41	+3.3 V aux	(mSATA) 3.3 V
42	LED_WWAN#	
43	Reserved	NC (mSATA indicator)
44	LED_WLAN#	
45	Reserved	(mSATA) Vendor
46	LED_WPAN#	
47	Reserved	(mSATA) Vendor
48	+1.5V	
49	Reserved	(mSATA) DA/DSS
50	GND	
51	Reserved	(mSATA) Presence Detection
52	+3.3 V aux	

**Table 27. JME (Figure. 4. AA)**

Status	Description
Short	Override
Open	Normal

**Table 28. 7.1 Audio header (Figure. 4. BB)**

Pin	Signal Name	Description
1	LINE_R_L	LINE_R Left
2	GND	Ground
3	GND	Ground
4	LINE_R_R	LINE_R Right
5	SSURR_L	Side Surround Left output
6	GND	Ground
7	GND	Ground
8	SSURR_R	Side Surround Right output
9	SURR_L	Surround Left output
10	GND	Ground
11	GND	Ground
12	SURR_R	Surround Right output
13	CEN_OUT	CENTER output
14	GND	Ground
15	GND	Ground
16	LFE_OUT	Woofers(Low Frequency) Effect out
17	Key	No Pin
18	SENSE	SENSE

**Table 29. Amplified speaker (Figure. 4. CC)**

Pin	Signal Name
1	R+

2	R-
3	L-
4	L+

**Table 30. Front panel audio header (Figure. 4. DD)**

Pin	Signal Name	Description
1	MIC_L	Front Panel MIC in Left
2	GND	Ground
3	MIC_R	Front Panel MIC in Right
4	NC	No connection
5	FRONT_R	Front Panel Audio out Right
6	F_IO_MIC_SENCE	Front Audio Jack MIC detection
7	GND	Ground
8	NC	No connection
9	FRONT_L	Front Panel Audio out Left
10	F_IO_LINE_SENCE	Front Audio Jack Line Out detection

## 4. BIOS Features

### 4.1 Introduction

The board uses an AMI BIOS that is stored in the Serial Peripheral Interface Flash Memory (SPI Flash) and can be updated using a disk-based program.

### 4.2 BIOS Updates

The BIOS can be updated using a flash utility which requires booting from DOS or directly update by UEFI. Using this utility or UEFI, the BIOS can be updated from a file on a hard disk or removable, such as a USB drive (a flash drive or a USB hard drive). Ask technical support for the utility and up-to-date BIOS file.

Verify that the updated BIOS matches the target system to prevent accidentally installing an incompatible BIOS.

### 4.3 Boot Options

In the BIOS Setup program, the user can choose to boot from a hard drive, optical drive, removable drive, or the network. The default setting is for the "UEFI: Built-in EFI Shell" when no other boot devices present

Pressing the <F11> key during POST to call a boot device menu to be displayed. This menu displays the list of available boot devices.

The network can be selected as a boot device. This selection allows booting from the onboard LAN or a network add-in card with a remote boot ROM installed(PXE function need to be enabled).

### 4.4 BIOS Setup program

The BIOS Setup program can be used to view and change the BIOS settings for the computer. The BIOS Setup program is accessed by pressing the <Del> key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins. The menu bar is shown below.

**Table 31. BIOS Setup Program Menu Bar**

Main	Advanced	Chipset	Security	Boot	Save& Exit
System Info	IDE Configuration	Onboard Audio Controller	Password Description	Boot Configuration	Save Changes and Reset
BIOS Info	F81216SEC	HDMI Azalia	Administrator Password	Setup Prompt Timeout	Discard Changes and Reset
CPU Info	Super IO Configuration	Port B			
Memory Info					

System Date System Time	Super IO Configuration	HDMI Azalia Port C	Secure Boot menu	Bootup NumLock State	Restore Defaults
Access Level	Hardware Monitor	Primary Display	Secure Flash update	Popup Menu Hotkey	Boot Override
	Intel(R) Smart Connect Technology	DVMT Total Gfx Mem		Full Logo	Launch EFI Shell from filesystem device
	Serial Port Console Redirection	Primary IGFX Boot Display		Launch PXE OpROM	Reset System with ME disable Mode
	CPU Configuration			OS Selection	
	Network Stack Configuration			Boot Option Priorities	
	Trusted Computing			CSM Configuration	
	USB Configuration				
	Platform Trust Technology				
	Security Configuration				
	Power Management				

**Table 32. BIOS Setup Program Function Keys**

BIOS Setup Program Function Key	Description
<<-> or <->	Selects a different menu screen (Moves the cursor left or right)
<↑> or <↓>	Selects an item (Moves the cursor up or down)
<Enter>	Executes command or selects the submenu
<+/->	Change Opt.
<F1>	General Help
<F7>	Previous Values
<F9>	Optimized Defaults
<F10>	Save the current values and exits the BIOS Setup program
<Esc>	Exits the menu

#### 4.4.1 BIOS Setting

Note: Default field is in bold under field column.

**Table 33. BIOS Setting - Main**

Main	Advanced	Chipset	Security	Boot	Save& Exit
Item		Field		Description	
<b>System Information</b>					
<b>System Manufacturer</b>		HBU			
<b>MB Name</b>		MITX-6770			
<b>BIOS Version</b>					
<b>Build Date and Time</b>		02/06/2015 12:36:23			
<b>CPU Information</b>					
Intel(R) Celeron(R) CPU J1900 @1.99GHz					
<b>Memory Information</b>					
<b>Total Memory</b>		xxxxMB(LPDDR3)		L: 1.35V low voltage RAM	
System Language		English			
System Date		MM/DD/YYYY			
System Time		HH:MM:SS			
Access Level		<b>Administrator</b>			

**Table 34. BIOS Setting - Advanced**

Main	Advanced	Chipset	Security	Boot	Save& Exit
▶ IDE Configuration				IDE Devices Configuration	
▶ F81216SEC Super IO Configuration				System Super IO Chip Parameters.	
▶ Super IO Configuration				System Super IO Chip Parameters.	
▶ Hardware Monitor				Monitor hardware status	
▶ Intel(R) Smart Connect Technology				Intel(R) Smart Connect Technology Settings	
▶ Serial Port Console Redirection				Serial Port Console Redirection	
▶ CPU Configuration				CPU Configuration Parameters	
▶ Network Stack Configuration				Network Stack Settings	
▶ Trusted Computing				Trusted Computing Settings	
▶ USB Configuration				USB Configuration Parameters	
▶ Platform Trust Technology				Platform Trust Technology	
▶ Security Configuration				Intel(R) Anti-Theft Technology Configuration	
▶ Power Management					

**Table 34-1. BIOS Setting - Advanced - IDE Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>IDE Configuration</b>					
Serial-ATA (SATA)		[Enabled]		Enable/Disable Serial ATA	

SATA Test Mode	[Disabled]	Test Mode enable/disable
SATA Speed Support	[Gen2]	SATA Speed Support Gen1 or Gen2
SATA ODD Port	[No ODD]	SATA ODD is Port0 or Port1
SATA Mode	[AHCI Mode]	Select IDE/AHCI
Serial-ATA Port 0	[Enabled]	Enable/Disable Serial ATA Port 0
SATA Port0 HotPlug	[Disabled]	Enable/Disable SATA Port1 HotPlug
Serial-ATA Port 1	[Enabled]	Enable/Disable Serial ATA Port 1
SATA Port1 HotPlug	[Disabled]	Enable/Disable SATA Port1 HotPlug
SATA Port0		
Not Present		
SATA Port1		
Not Present		

**Table 34-2. BIOS Setting - Advanced - F81216SEC Super IO Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>F81216SEC Super IO Configuration</b>					
<b>Super IO Chip</b>		<b>F81216SEC</b>			
▶ Serial Port 1 Configuration		Set Parameters of Serial Port 1 (COMA)			
▶ Serial Port 2 Configuration		Set Parameters of Serial Port 2 (COMA)			
▶ Serial Port 3 Configuration		Set Parameters of Serial Port 3 (COMA)			
▶ Serial Port 4 Configuration		Set Parameters of Serial Port 4 (COMA)			

**Table 34-2-1. BIOS Setting - Advanced - F81216SEC Super IO Configuration- Serial Port (x) Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>Serial Port (x) Configuration</b>					
Serial Port		[Enabled]		Enable or Disable Serial Port(COM)	
Device Settings		Reset Required			
Change Settings		[Auto]		Select an optimal settings for Super IO Device	
Change Settings		[Standard Serial Por...]		Select an optimal settings for Super IO Device	

**Table 34-3. BIOS Setting - Advanced - Super IO Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>Super IO Configuration</b>					

<b>Super IO Chip</b>	<b>IT8786</b>	
▶ Serial Port 1 Configuration		Set Parameters of Serial Port 1 (COMA)
▶ Serial Port 2 Configuration		Set Parameters of Serial Port 2 (COMA)
▶ Parallel Port Configuration		Set Parameters of Parallel Port (LPT/LPTE)

**Table 34-4. BIOS Setting - Advanced - Hardware Monitor**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>Pc Health Status</b>					
CPU temperature					
					: +39 °C
System temperature					
					: +38 °C
Fan1 Speed					
					: N/A
Fan2 Speed					
					: N/A
V CORE					
					: +0.816 V
+VCCDDR					
					: +1.368 V
VCC12					
					: +12.240 V
VCC					
					: +5.040 V
VCC3					
					: +3.302 V
Smart Fan Settings					
			[Full Speed]		Disabled / Auto Mode / User-Defined / Full Speed

**Table 34-5. BIOS Setting - Advanced - Intel(R) Smart Connect Technology**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>ISCT Support</b>					
			[Disabled]		Enable/Disable ISCT Support

**Table 34-6. BIOS Setting - Advanced - Serial Port Console Redirection**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>COMO</b>					
Console Redirection		[Disabled]			Console Redirection Enable or Disable.
▶ <b>Console Redirection Settings</b>					
<b>Serial Port for Out-of-Band Management</b>					
<b>Windows Emergency Management Services (EMS)</b>					
Console Redirection		[Disabled]			Console Redirection Enable or Disable.
▶ <b>Console Redirection Settings</b>					

**Table 34-7. BIOS Setting - Advanced - CPU Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
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<b>CPU Configuration</b>	
<b>CPU Information</b>	
Intel(R) Celeron(R) CPU J1900 @ 1.99GHz	
<b>CPU Speed</b>	<b>2001 MHz</b>
<b>64-bit</b>	<b>Supported</b>

Limit CPUID Maximum	[Disabled]	Disabled for Windows XP
Execute Disable Bit	[Enabled]	XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS(WINDOWS Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)
Hardware Prefetcher	[Enabled]	Enable the Mid Level Cache(L2) streamer prefetcher.
Adjacent Cache Line Prefetch	[Enabled]	Enable the Mid Level Cache(L2) prefetching of adjacent cache lines.
Intel Virtualization Technology	[Enabled]	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology
Power Technology	[Custom]	Enable the power management features.
EIST	[Enabled]	Enable/Disable Intel SpeedStep
Turbo Mode	[Enabled]	Turbo Mode.
P-STATE Coordination	[Enabled]	Change P-STATE Coordination type
CPU C6 report	[Disabled]	Enable/Disable CPU C6(ACPI C3) report to OS
CPU C7 report	[Disabled]	Enable/Disable CPU C7(ACPI C3) report to OS
Package C State limit	[No Limit]	Package C State limit

**Table 34-8. BIOS Setting - Advanced - Network Stack Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
Network Stack		[Disabled]		Enable/Disable UEFI Network Stack	

**Table 34-9. BIOS Setting - Advanced - Trusted Computing**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>Configuration</b>					
Security Device Support		[Disabled]		Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.	

**Current Status Information**

**SUPPORT TURNED OFF**

**Table 34-10. BIOS Setting - Advanced - USB Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>USB Configuration</b>					
<b>USB Module Version</b>				<b>8.11.01</b>	
<b>USB Devices:</b>					
(*) Keyboard, (*)Hubs					
Legacy USB Support	[Enabled]			Enables Legacy USB Support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.	
USB Device Boot	[Enabled]			Enable/Disable USB Device boot Support.	
XHCI Mode	[AUTO]			Mode of operation of xHCI controller	
USB2 Link Power Management	[Enabled]			Enable/Disable USB2 Link Power Management.	
<b>USB2.0(EHCI) Support</b>	<b>[Disabled]</b>				

**Table 34-11. BIOS Setting - Advanced - Platform Trust Technology**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>TPM Configuration</b>					
fTPM	[Disabled]			Enable/Disable fTPM	

**Table 34-12. BIOS Setting - Advanced - Security Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>Intel(R) TXE Configuration</b>					
TXE(***)	[Enabled]				
TXE HMRFPO(***)	[Disabled]				
TXE Firmware Update(***)	[Enabled]				
TXE EOP Message(***)	[Enabled]				
TXE Unconfiguration Perform(***)					
<b>Intel(R) Anti-Theft Technology Configuration</b>					
Intel(R) AT	[Disabled]			Enable/Disable BIOS AT Code from Running	
Intel(R) AT Platform PBA	[Enabled]			Enable/Disable BIOS AT Code from Running	
<b>Intel(R) AT Suspend Mode</b>	<b>[Disabled]</b>				

**Table 34-13. BIOS Setting - Advanced - Power Management**

Main	Advanced	Chipset	Security	Boot	Save& Exit
High Precision Timer		[Enabled]			Enable or Disable the Hight Precision Event Timer
ACPI Sleep State		[S3(Suspend to RAM)]			Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
WakeUp By RTC Wake From S5		[Disabled]			Enable or disable system wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime, System will wake on the current time + Increase minute(s)
Wake On By LAN(WOL) From S3/S4/S5		[Disabled]			Enable or disable System wake on LAN event. Select Enabled, System will wake from S5 when WOL message received
Restore AC Power Loss		[Power off]			Select AC power state when power is re-applied after a power failure.

**Table 35. BIOS Setting - Chipset**

Main	Advanced	Chipset	Security	Boot	Save& Exit
Onboard Audio Controller		[Enabled]			Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled. Auto = Azalia will be enabled if present disabled otherwise.
HDMI Azalia Port B		[Enabled]			Enable/Disable HDMI Port B
HDMI Azalia Port C		[Disabled]			Enable/Disable HDMI Port C
Primary Display		[IGD]			Select which of IGD/PCI Graphics device should be Primary Display.
DVMT Total Gfx Mem		[256MB]			Select DVMT 5.0 Total Graphic Memory size used by the Internal Graphics Device.
Primary IGFX Boot Display		[VBIOS Default]			Select the video Dvice which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display

**Table 36. BIOS Setting - Security**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>Password Description</b>					
If <b>ONLY</b> the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.					
If <b>ONLY</b> the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will has Administrator rights.					
The password length must be in the following range:					
Minimum length				3	
Maximum length				20	
Administrator Password			Set Administrator Password		
▶ Secure Boot menu			Customizable Secure Boot settings		
▶ Secure Flash update			Secure Flash Update support		

**Table 36-1. BIOS Setting - Security - Secure Boot menu**

Main	Advanced	Chipset	Security	Boot	Save& Exit
System Mode			Setup		
Secure Boot			Not Active		
Secure Boot			[Enabled]	Secure Boot can be enabled if 1. System running in User mode with enrolled Platform Key(PK) 2. CSM function is disabled	
Secure Boot Mode			[Standard]	Secure Boot mode selector. 'Custom' Mode enables users to change Image Execution policy and manage Secure Boot Keys.	
▶ Key Management					

**Table 36-2. BIOS Setting - Security - Secure Flash update**

Main	Advanced	Chipset	Security	Boot	Save& Exit
Signed BIOS update			Enabled		
Public Key store			N/A		
BIOS flash method			Runtime, Capsule,Recovery		
Flash write-protection			Disabled		

**Table 37. BIOS Setting - Boot**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>Boot Configuration</b>					
Setup Prompt Timeout		1	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.		
Bootup NumLock State		[On]	Select the keyboard NumLock state		
Popup Menu Hotkey		[Enabled]	Enable or Disable Popup Hotkey when POST		

Full Logo	[Enabled]	Enables or disables Quiet Boot option
Launch PXE OpROM	[Disabled]	Controls the execution of UEFI and Legacy PXE OpROM
OS Selection	[Windows 7]	OS Selection
<b>Boot Option Priorities</b>		
► CSM Configuration		CSM configuration: Enable/Disable, Option ROM execution settings, etc.

**Table 37-1. BIOS Setting - Boot - CSM Configuration**

Main	Advanced	Chipset	Security	Boot	Save& Exit
<b>Compatibility Support Module Configuration</b>					
CSM Support		[Enabled]		Enable/Disable CSM Support.	
CSM16 Module Version		07.71			
GateA20 Active		[Upon Request]		UPON REQUEST - GA20 can be disabled using BIOS services. ALWAYS - do not allow disabling GA20; this option is useful when any RT code is executed above 1MB	
Option ROM Messages		[Force BIOS]		Set display mode for Option ROM	
INT19 Trap Response		[Immediate]		BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE - execute the trap right away; POSTPONED - execute the trap during legacy boot.	
Boot option filter		[UEFI and Legacy]		This option controls Legacy/UEFI ROMs priority	
Option ROM execution order					
Storage		[UEFI only]		Controls the execution of UEFI and Legacy Storage OpROM	
Video		[Legacy first]		Controls the execution of UEFI and Legacy Video OpROM	
Other PCI devices		[UEFI first]		Determines OpROM execution policy for devices other than Network, Storage, or Video	

**Table 38. BIOS Setting - Save & Exit**

Main	Advanced	Chipset	Security	Boot	Save & Exit
Save Changes and Reset		Yes/ No		Reset the system after saving the changes.	

Discard Changes and Reset	Yes/ No	Reset the system without saving any changes.
Restore Defaults	Yes/ No	Restore/Load Default values for all the setup options.
<b>Boot Override</b>		
Launch EFI Shell from filesystem device		Attempts to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices
▶ Reset System with ME disable Mode		ME will run into the temporary disable mode, Ignore if ME Ignition FWMEUD001