MI805

Intel® Celeron® QC J1900
Mini-ITX Motherboard

USER'S MANUAL

Version 1.1

Acknowledgments

Table of Contents

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Introduction

MI805 is a Mini ITX board (170mm x 170mm) that comes with the Intel Intel® Celeron® QC J1900 processor that runs at 2.0GHz and has two DDR3 SO-DIMM sockets supporting up to 8GB of system memory. It supports the Intel® Gen7 w/ 4EUs graphics engine with interface for CRT, DVI-D and 24-bit dual channel LVDS displays.

Connectivity is provided by one USB 3.0 connector at the board edge and a total of seven USB 2.0 ports with two ports also at the board edge. Two SATA II ports are included.

MI805 FEATURES

- Mini ITX form factor, 170mm x 170mm
- Onboard Intel® Celeron® QC J1900 /2MB L2 cache/2.0 GHz
- Two DDR3 SO-DIMM sockets, DDR3L-1333, Max. 8GB
- Intel® Gen7 w/4EUs graphics for CRT, DVI-D interface
- 24-bit dual channel LVDS interface
- Dual Intel I211-AT PCIe Gigabit LAN
- 1x USB 3.0 on edge, total of 7 USB 2.0 support
- Two SATA II 2 ports, 6x COM ports
- Digital IO 4-in / 4-out, PCIe (1x) slot, 2x Mini-PCIe
- Watchdog Timer, iSMART, RoHS compliance

Checklist

Your MI805 package should include the items listed below.

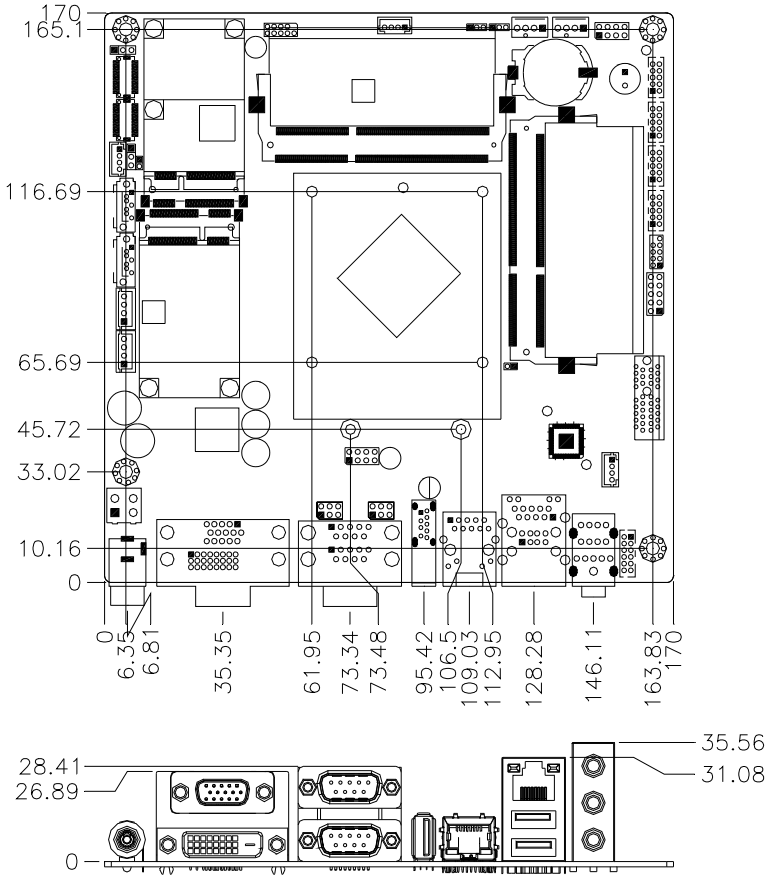
- The MI805 Mini-ITX motherboard
- This User's Manual
- 1 CD containing chipset drivers and flash memory utility
- Serial ATA cable
- I/O shield

MI805 Specifications

Product Name	**MI805F-D**
Form Factor	Mini-ITX
SoC Type/Speed	Intel® Celeron® QC J1900 /2MB L2 cache/2.0 GHz [TDP=10W] Package = FCBGA1170,Type-3, 25mmx27mm, 22nm
BIOS	AMI BIOS
Memory	**2** xDDR3 SO-DIMM sockets [Horizontal type] Maximum to DDR3**L**-1333@8GB (Non-ECC, Unbuffered, 1.35V)
Display	Intel® Gen7 w/ 4EUs graphics engine Supports DX 11, OGL 3.0, OCL 1.1, OGLES 2.0, CRT x1; DVI-D x1
LVDS	24-bit dual channel via NXP PTN3460 thru eDP
LAN	Intel I211-AT PCIe Gigabit LAN x 2
USB	Intel® Atom™ SoC built-in USB 3.0, supports **1** port, Edge I/O Intel® Celeron® SoC built-in USB 2.0 host controller, support **7** ports - 2 ports in the rear panel - 2 ports thru Mini PCIe slot (Full-sized#1 / Half-sized) - 2 ports thru onboard pin-header thru USB 2.0 hub (SMSC USB2514) - 1 port compatible with USB3.0 port
Serial ATA	Intel® Atom™ SoC built-in SATA II controller, supports 2 ports
Audio	Realtek ALC269QHD Codec w/class-D speaker amplifier (2W per channel @ 5V power supply) ; support 2-channel audio out + amp
LPC I/O	**Nuvoton NCT6106D** / [128-pin LQFP, 14x14x1.4mm] - COM #1 (RS232/422/485) support ring-in with power @500 mA (selectable for 5V or 12V) [SP339EER1 232/422/485 transceiver for jumper-less] - Com #2 (RS232 only), supports ring-in with power @500 mA (selectable for 5V or 12V), with SP3243EBER - COM #3~COM #6 (RS232 only) with SP3243EBER [Hardware Monitor] 2x thermal inputs; 2 x Voltage monitoring 2x fan header, 1x CPU fan (PWM), 1x system fan (DC mode)
Digital IO	4-in / 4-out (User configurable)
Expansion Slots	PCIe (1x) slot x 1 Full-sized Mini-PCIe x **2** [Mounting holes for full-sized (x2)+half-sized (x1)] MiniPCIe #1 support PCIe(1x)/USB signal Mini-PCIe #2 support mSATA only (Share with SATA #1)
Edge Connector	DC Jack x 1(refer to IB902, C1213512DCSC03000P) Dual DB9 Stack connector x1 for COM#1 / COM#2 DB15 + DVI-D stack connector x 1 for CRT + DVI-D Dual USB + RJ45 stack connector x 1 for USB2.0 + LAN USB 3.0 vertical connector x1 Single RJ-45 connector x1 (C1213811RJ4514401P) Audio 3-port connector x1 (Line-out, Line-in, MIC)
Onboard Header/ Connector	2x4 pins header x2 for USB 4 ports (2.54 pitch type) 2x6 pins header x1 for front audio (2.54 pitch type) DF11-10 pins box header x4 for COM # 3~# 6 DF**20** socket connector x 2 for 24-bit dual channel LVDS 4 pins box header x1 for LCD backlight control (PWM mode only) SATA connector x2 for SATA II device 4-pin power connector x 2 for SATA device 2x5 pins header x 1 for Digital I/O (2.54 pitch type) 4-pin header for speaker out (from ALC269 internal amplifier) 2x4 pins header x1 for front I/O panel (2.54 pitch type) 2 x 2 pins connector x1 for 12V power-in

Watchdog Timer	Yes (256 segments, 0, 1, 2…255 sec/min)
Power Connector	+12V ~ +24V DC-in (+10%) **** When power input @ +12V, there is no tolerance****
iSMART ver. 3.0	1. EuP / ErP (thru Super I/O) 2. Auto-scheduler 3. Power fail detector 4. **Low temperature Guardian** 5. **IFUB (Intelligent Firmware Update from BIOS & NVRAM data)**
Others	PCB = 8 Layers
OS support	- Windows 8.1 (32-bit; 64-bit) - Window Embedded 8 - Windows 7 (32-bit; 64-bit) - Linux (Fedora)
RoHS	Yes
Certification	CE /FCC/LVD
Environment	Operation Temperature: 0~60 degree C Storage Temperature: -40 ~ 80 degree C Relative humidity: 0~90%, non-condensing
Board Size	170mm x 170mm

Board Dimensions



Installations

This section provides information on how to use the jumpers and connectors on the MI805 in order to set up a workable system. The topics covered are:

Installing the Memory

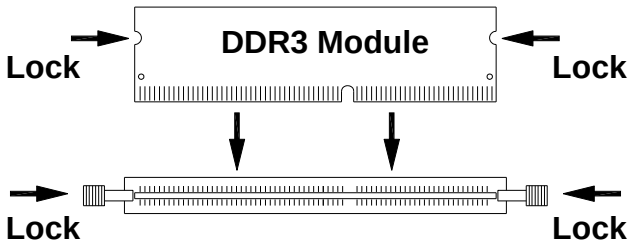
The MI805 board supports two DDR3-1333 memory slots.

Remarks:
J1900 supports two SO-DIMM (w/o ECC) modules. Total maximum memory supported is 8GB.

Installing and Removing Memory Modules

To install the DDR3 modules, locate the memory slot on the board and perform the following steps:

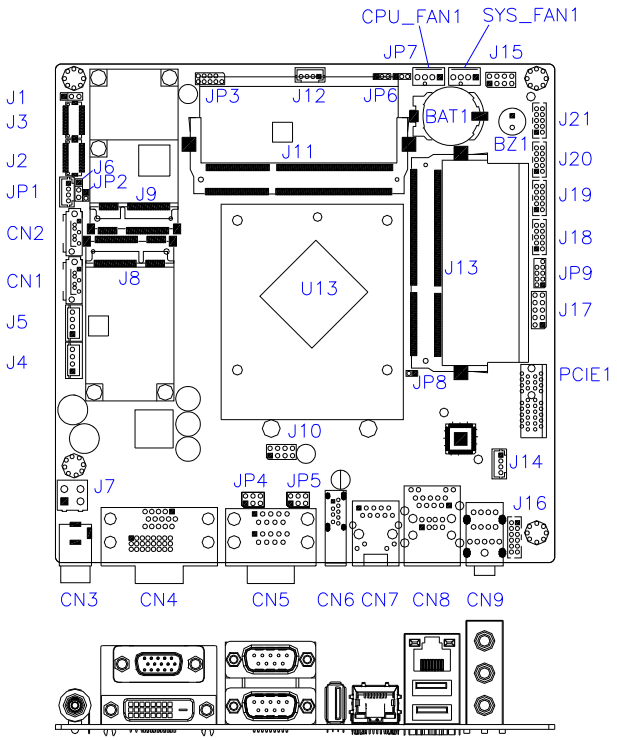
1. Hold the DDR3 module so that the key of the DDR3 module aligned with that on the memory slot.
2. Gently push the DDR3 module in an upright position until the clips of the slot close to hold the DDR3 module in place when the DDR3 module touches the bottom of the slot.
3. To remove the DDR3 module, press the clips with both hands.



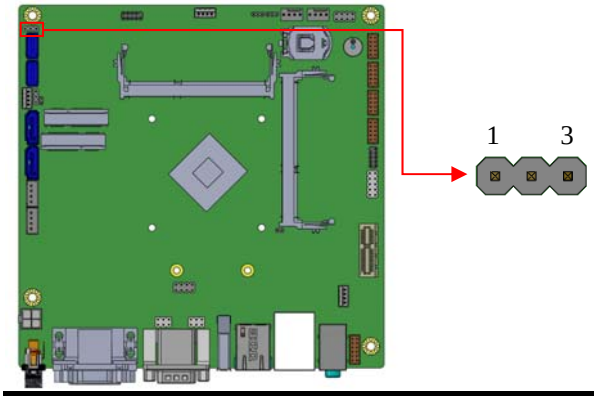
Setting the Jumpers

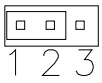
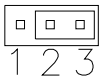
Jumpers are used on MI805 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs. The following lists the connectors on MI805 and their respective functions.

Jumper Locations on MI805

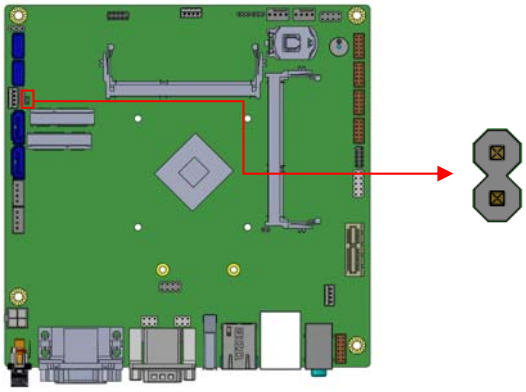


J1: LCD Backlight Adjustment



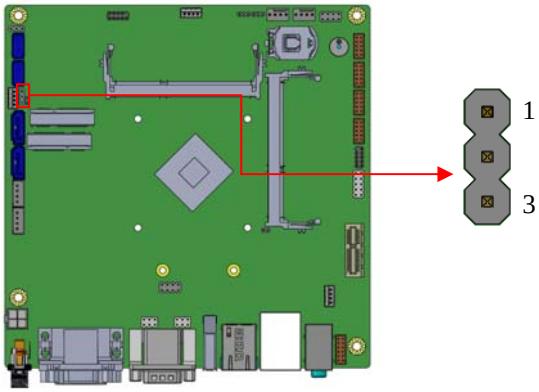
J1	Setting	Panel Voltage
	Pin 1-2 Short/Closed	DC Mode (default)
	Pin 2-3 Short/Closed	PWM Mode

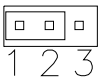
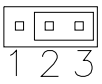
JP2: LVDS Panel Brightness Control Selection



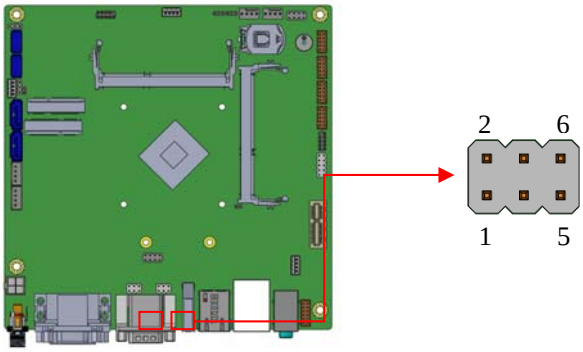
JP2	Brightness Control (PWM mode)
Open	3.3V
Close	5V(Default)

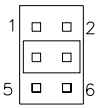
J6: LVDS Panel Power Selection



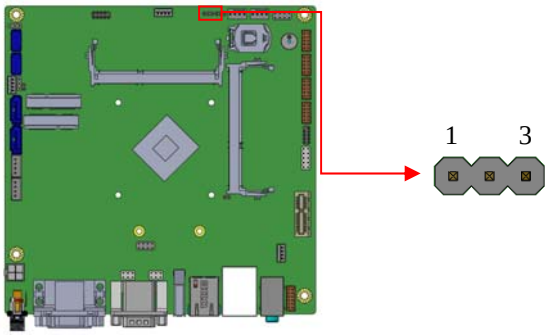
J5	Setting	Panel Voltage
	Pin 1-2 Short/Closed	3.3V (default)
	Pin 2-3 Short/Closed	5V

JP4/JP5: COM1/COM2 RS232 RI/+5V/+12V Power Setting



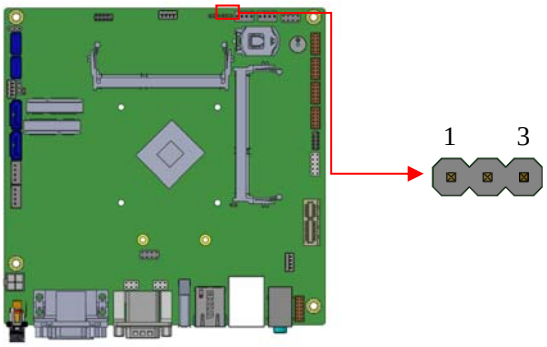
JP4/JP5	Setting	Function
	Pin 1-3 - Short/Closed	+12V
	Pin 3-4 - Short/Closed	RI
	Pin 3-5 - Short/Closed	+5V

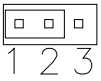
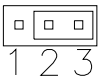
JP6: Clear CMOS Contents



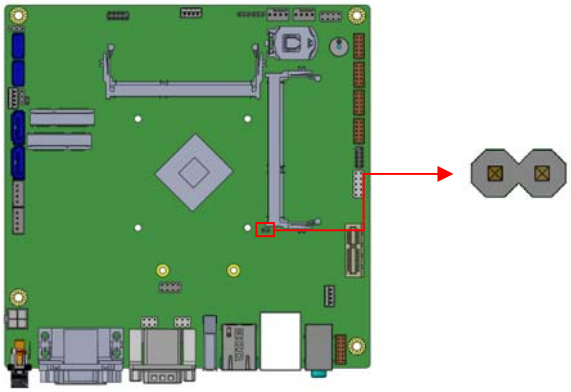
JP6	Setting	Function
	Pin 1-2 Short/Closed	Normal
	Pin 2-3 Short/Closed	Clear CMOS

JP7: Clear ME Contents



JP7	Setting	Function
	Pin 1-2 Short/Closed	Normal
	Pin 2-3 Short/Closed	Clear ME REGISTER

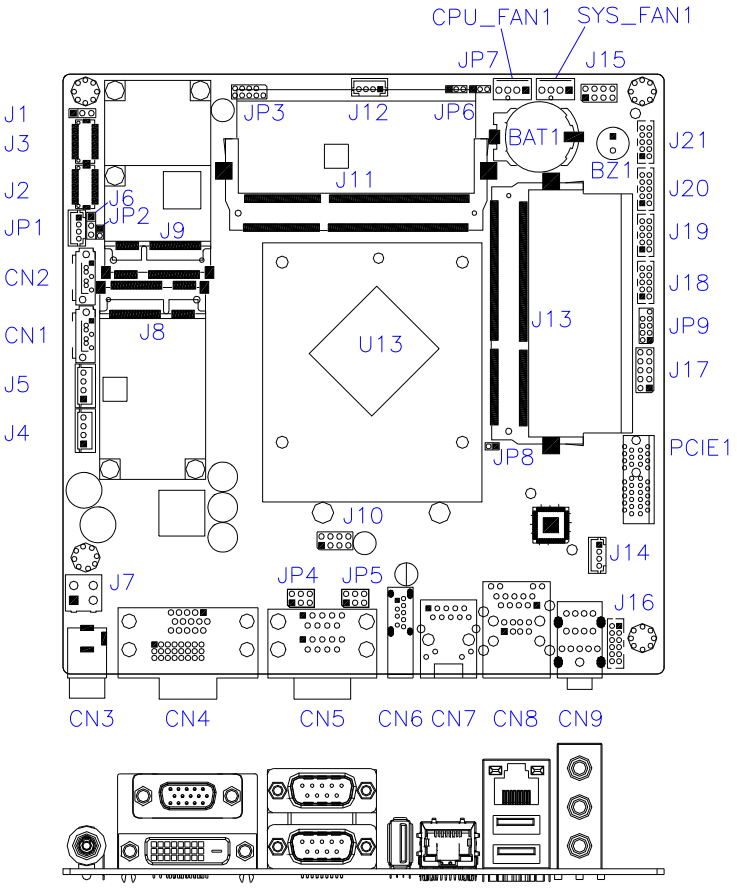
JP8: Factory use only

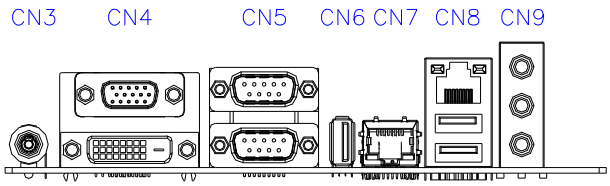


Connectors on MI805

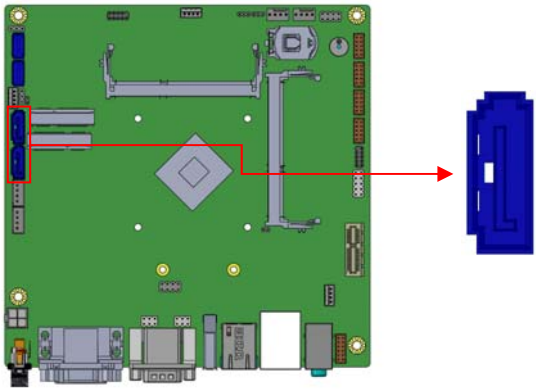
The connectors on MI805 allows you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers, etc. The following table lists the connectors on MI805 and their respective functions.

Connector Locations on MI805



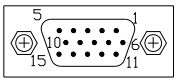


CN1 / CN2: SATA2 Connector

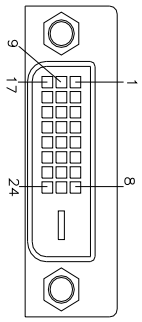


CN3: DC_IN Connector +12V~24V

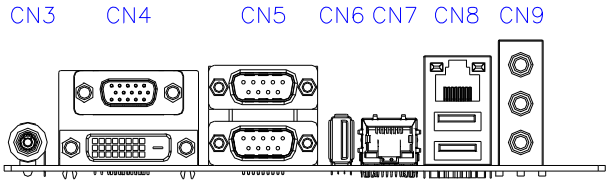
CN4: CRT+DVI Connector



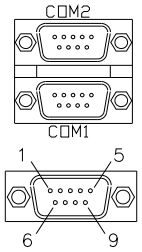
Signal Name	Pin #	Pin #	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
VCC	9	10	GND
N.C.	11	12	DDCDATA
HSYNC	13	14	VSYNC
DDCCLK	15		



Signal Name	Pin #	Pin #	Signal Name
DATA2-	1	2	DATA2+
GND	3	4	N.C.
N.C.	5	6	DDCCLK
DDCDATA	7	8	N.C.
DATA1-	9	10	DATA1+
GND	11	12	N.C.
N.C.	13	14	VCC
GND	15	16	Hot Plug Detect
DATA0-	17	18	DATA0+
GND	19	20	N.C.
N.C.	21	22	GND
CLK+	23	24	CLK-

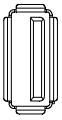


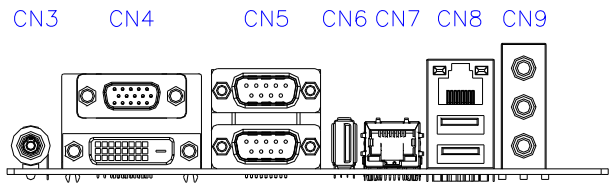
CN5: COM1 / COM2



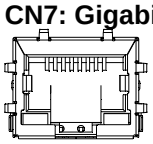
Pin #	Signal Name		
	RS-232	**R2-422**	**RS-485**
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	Ground	Ground	Ground
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC
10	NC	NC	NC

CN6: USB3.0 Connector

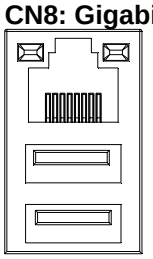




CN7: Gigabit LAN

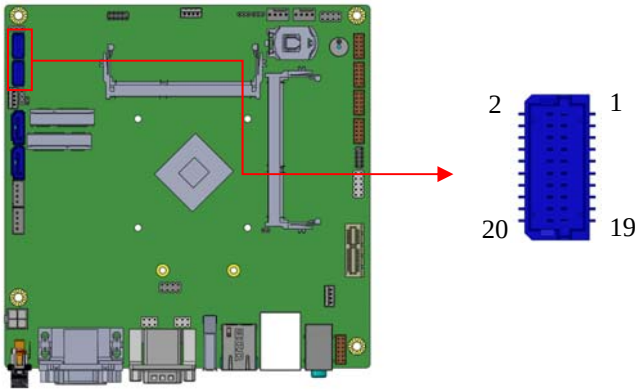


CN8: Gigabit LAN / USB 2.0 Connector



CN9: Audio Connector

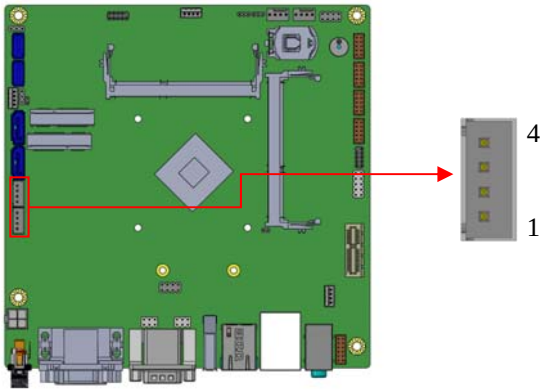
J2, J3: LVDS Connectors, Hirose DF20G-20DP-1V



J3: First Channel LVDS; J2: Second Channel LVDS

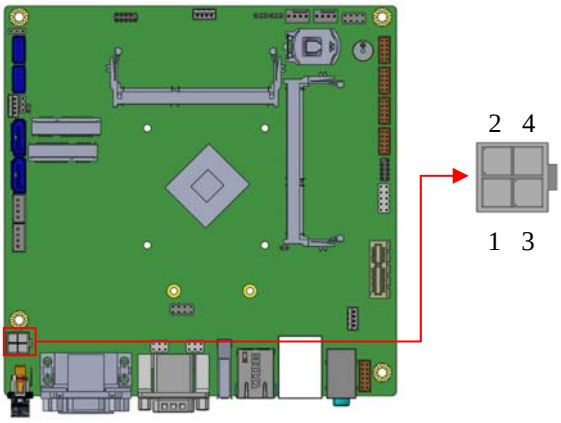
Signal Name	Pin #	Pin #	Signal Name
TX0N	2	1	TX0P
Ground	4	3	Ground
TX1N	6	5	TX1P
Ground	8	7	Ground
TX2N	10	9	TX2P
Ground	12	11	Ground
CLKN	14	13	CLKP
Ground	16	15	Ground
TX3N	18	17	TX3P
Power	20	19	Power

J4, J5: SATA HDD Power Connectors



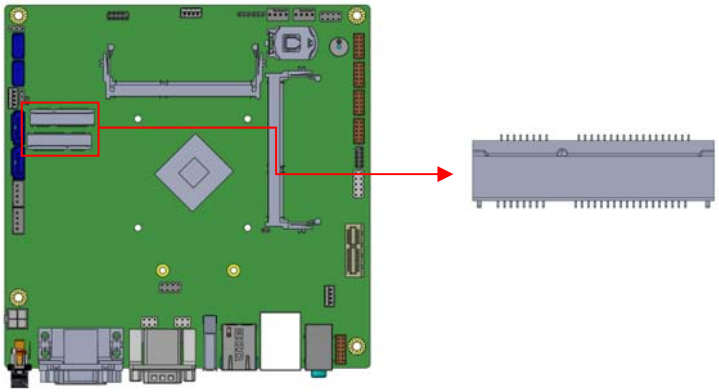
Pin #	Signal Name
1	+5V
2	Ground
3	Ground
4	+12V

J7: DC_IN Connector

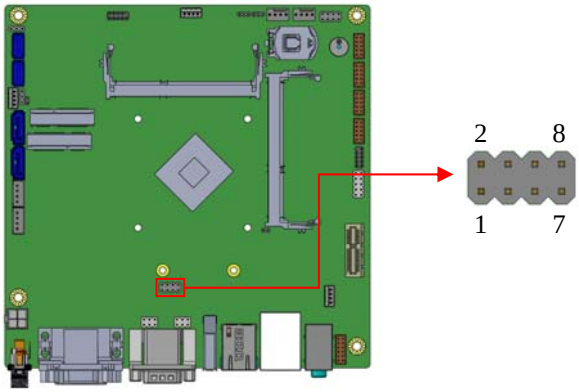


Pin #	Signal Name
1	GND
2	GND
3	+12V to +24V
4	+12V to +24V

J8 / J9: Mini PCIE Slot (J8 mSATA Only)

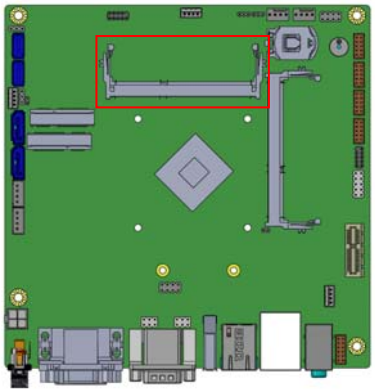


J10: USB 2.0 Pin header

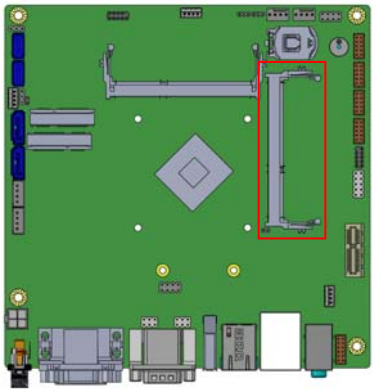


Signal Name	Pin #	Pin #	Signal Name
Vcc	1	2	Ground
D0-	3	4	D1+
D0+	5	6	D1-
Ground	7	8	Vcc

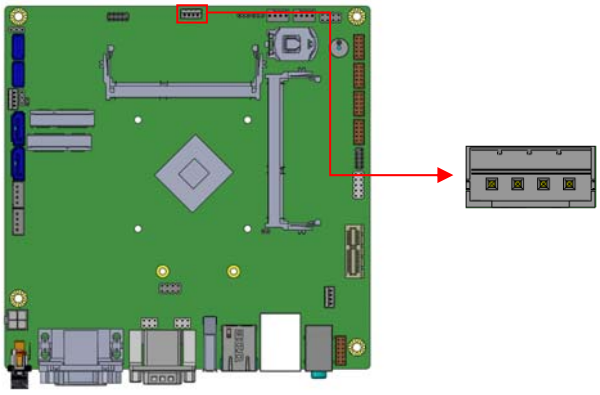
J11: DDR3L SO-DIMM (CH-A) Sockets



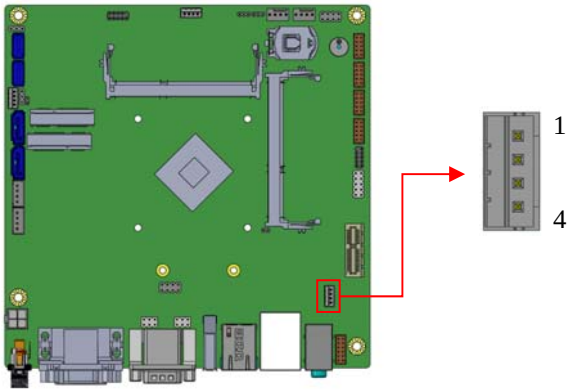
J13: DDR3L SO-DIMM (CH-B) Sockets



J12: MCU JTAG

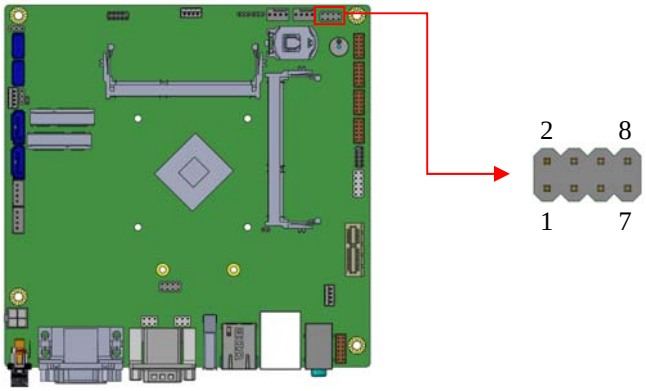


J14: Amplifier Connector



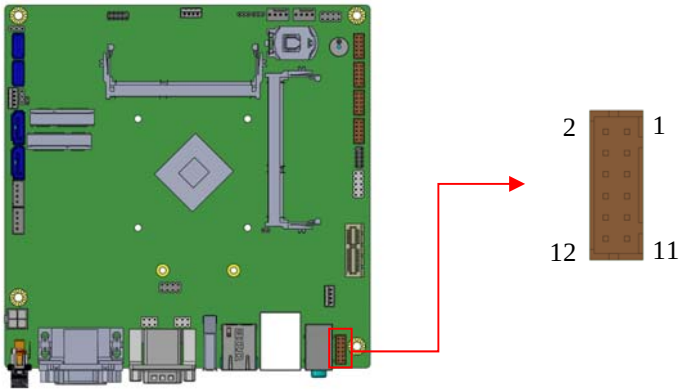
Pin #	Signal Name
1	OUTL+
2	OUTL-
3	OUTR-
4	OUTR+

J15: Front Panel



Signal Name	Pin #	Pin #	Signal Name
GND	1	2	PWR_BTN
3.3V	3	4	HDD Active
GND	5	6	Reset
+5V	7	8	GND

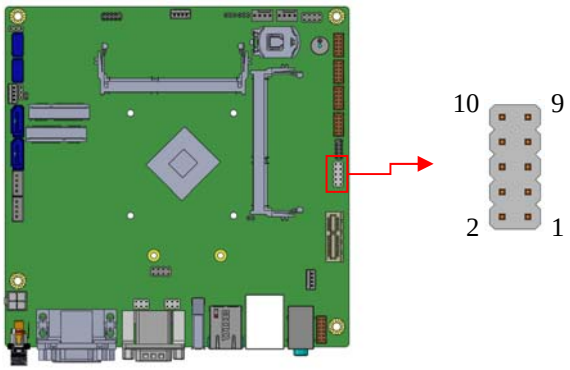
J16: Audio Connector (DF11-12DP-2DSA)



Signal Name	Pin #	Pin #	Signal Name
LINEOUT_R	2	1	LINEOUT_L
Ground	4	3	JD_FRONT
LINEIN_R	6	5	LINEIN_L
Ground	8	7	JD_LINEIN
MIC-R	10	9	MIC_L
Ground	12	11	JD_MIC1

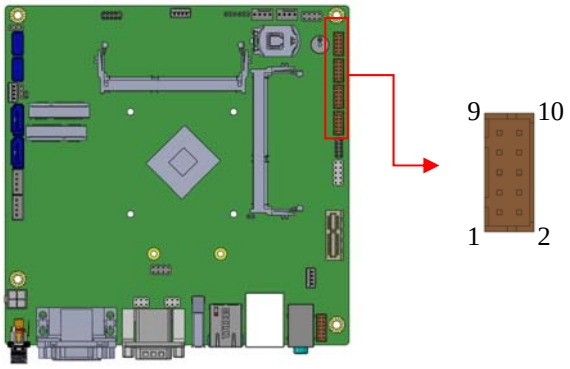
#J16 & CN9 ether One (Only one output)

J17: Digital I/O



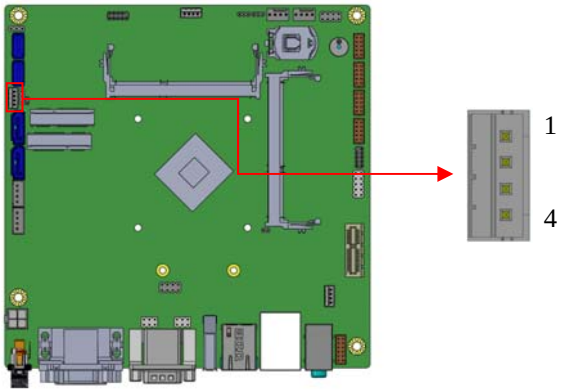
Signal Name	Pin #	Pin #	Signal Name
GND	1	2	VCC
OUT3	3	4	OUT1
OUT2	5	6	OUT0
IN3	7	8	IN1
IN2	9	10	IN0

J18, J19, J20, J21: COM6/COM5/COM4/COM3



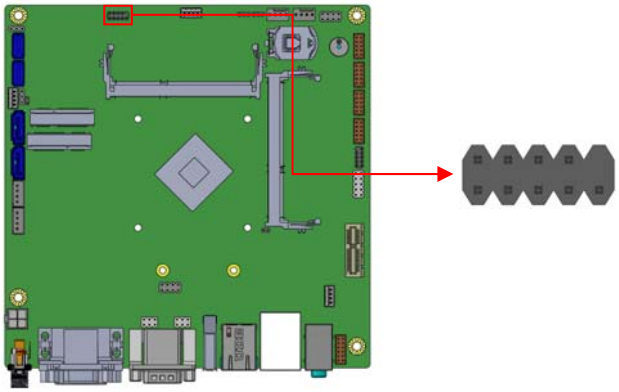
Signal Name	Pin #	Pin #	Signal Name
DCD, Data carrier detect	1	2	RXD, Receive data
TXD, Transmit data	3	4	DTR, Data terminal
GND, ground	5	6	DSR, Data set ready
RTS, Request to send	7	8	CTS, Clear to send
RI, Ring indicator	9	10	Not Used

JP1: LCD Backlight Connector

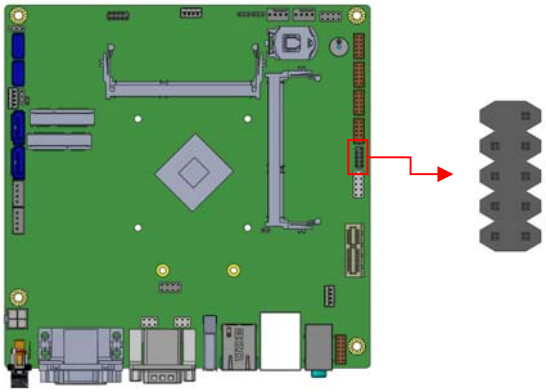


Pin #	Signal Name
1	+12V
2	Backlight Enable
3	Brightness Control
4	Ground

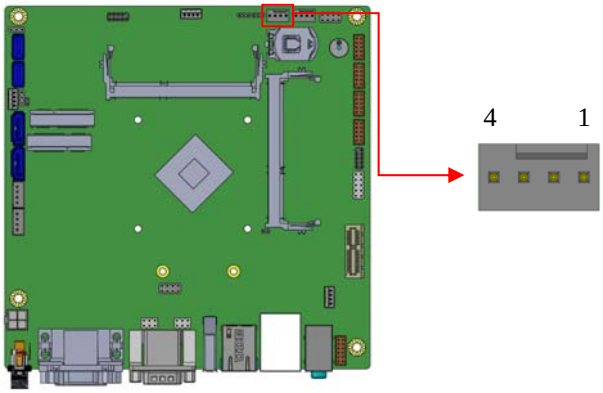
JP3: For SPI Debug tools Pin Header



JP9: Debug Port

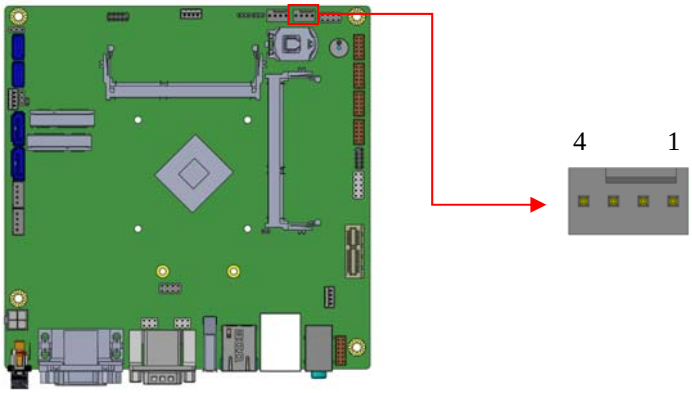


CPU_FAN1: CPU Fan Power Connector



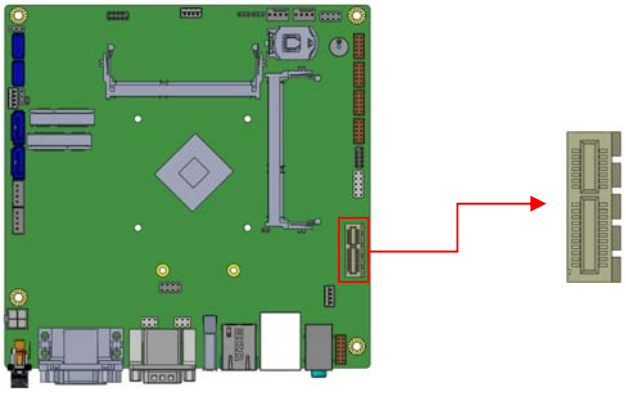
Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection
4	Control

SYS_FAN1: System Fan1 Power Connector



Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection
4	Control

PCIE1: PCI Express_x1 Slot



BIOS Setup

This chapter describes the different settings available in the AMI BIOS that comes with the board. The topics covered in this chapter are as follows:

BIOS Introduction

The BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

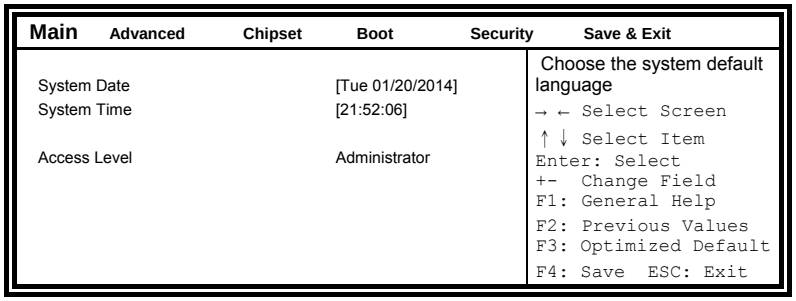
The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press  <DEL>  to  Enter  Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Warning: *It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

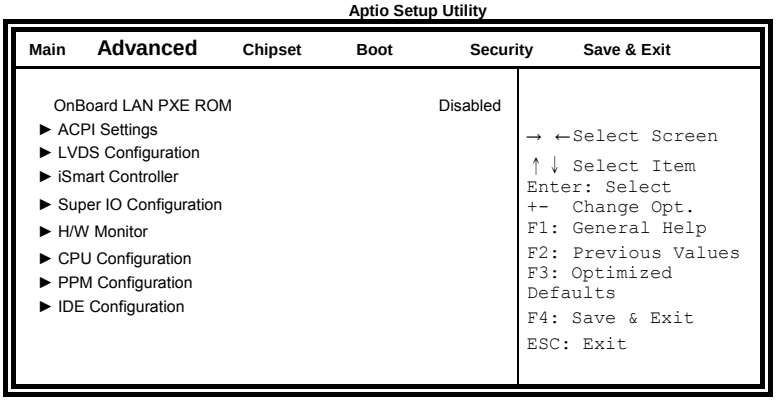


System Date
Set the Date. Use Tab to switch between Data elements.

System Time
Set the Time. Use Tab to switch between Data elements.

Advanced Settings

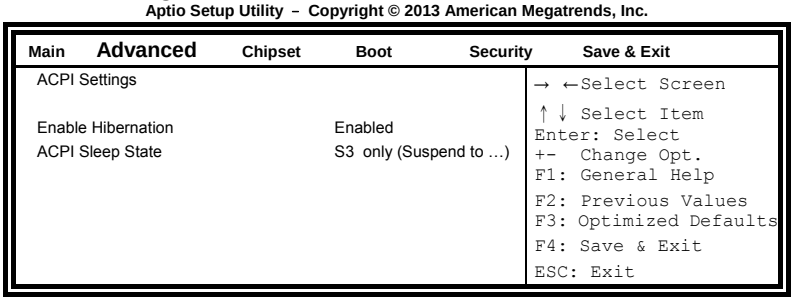
This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



OnBoard LAN PXE ROM

Enable or Disable Boot Option for Legacy Network Devices.

ACPI Settings



Enable Hibernation

Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

ACPI Sleep State

Select ACPI sleep state the system will enter when the SUSPEND button is pressed.

LVDS Configuration

Aptio Setup Utility – Copyright © 2013 American Megatrends, Inc.

Main	Advanced	Chipset	Boot	Security	Save & Exit
Configuration					
Panel Color Depth		24 BIT			
LVDS Channel Type		Single			
Panel Type		1024 x 768			
Backlight ON/OFF LEVEL		3.3V			
Backlight Control Output (ADJ)		3.3V			

→ ←Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

iSMART Controller

Aptio Setup Utility – Copyright © 2013 American Megatrends, Inc.

Main	Advanced	Chipset	Boot	Security	Save & Exit
iSMART Controller					
Power-On after Power failure		Disable			
Temperature Guardian		Disable			
Schedule Slot 1		None			
Schedule Slot 2		None			
Brightness Control		Enable			
Brightness Percent		100%			
PWM Clock		200Hz			

→ ←Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

Power-On after Power failure

This field sets the system power status whether *Disable or Enable* when power returns to the system from a power failure situation.

Temperature Guardian

Generate the reset signal when system hangs up on POST

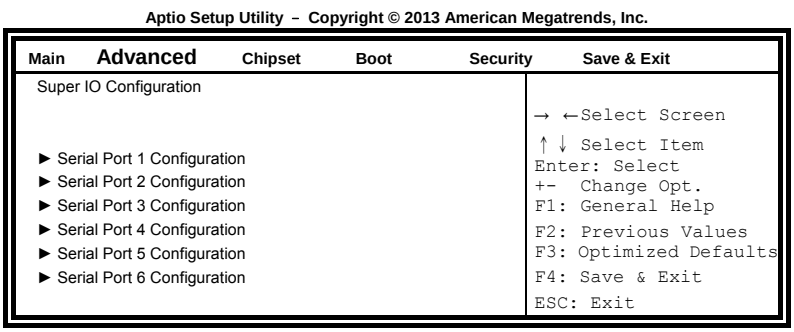
Schedule Slot 1 / 2

Setup the hour/minute for system power on.

Brightness Control

LVDS Backlight Brightness Control

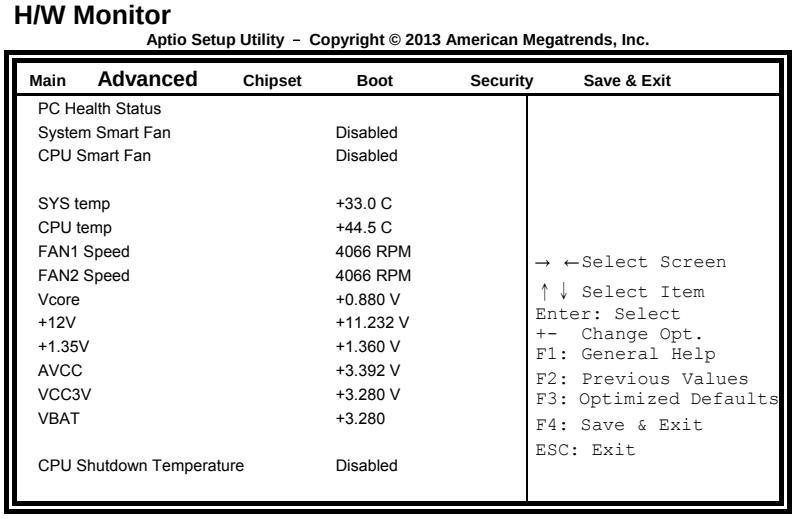
Super IO Configuration



Serial Port Configuration

Set Parameters of Serial Ports. User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device

H/W Monitor



Smart Fan Function

This field enables or disables the smart fan feature.
Disabled (default)
50 ℃
60 ℃
70 ℃
80 ℃
90 ℃

Shutdown Temperature

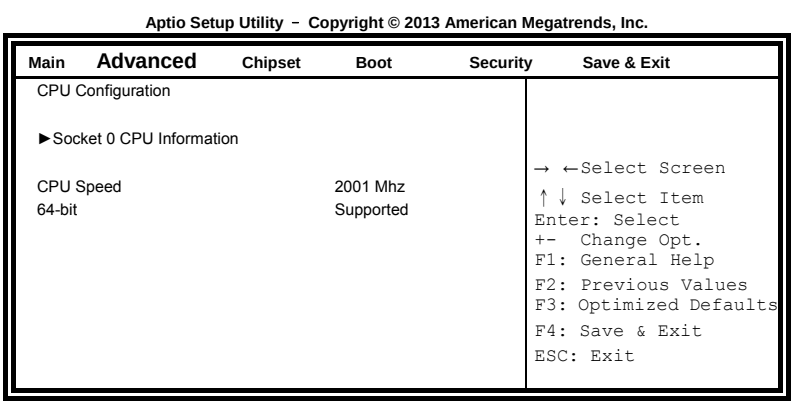
This field enables or disables the Shutdown Temperature
Disabled (default)
70 ℃/158 F
75 ℃/167 F
80 ℃/176 F
85 ℃/185 F
90 ℃/194 F
95 ℃/203 F

Temperatures/Voltages

These fields are the parameters of the hardware monitoring function feature of the motherboard. The values are read-only values as monitored by the system and show the PC health status

CPU Configuration

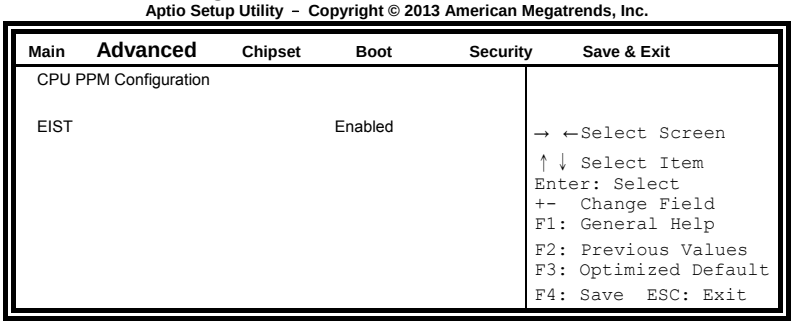
This section shows the CPU configuration parameters.



Socket 0 CPU Information

Socket specific CPU Information.

CPU PPM Configuration

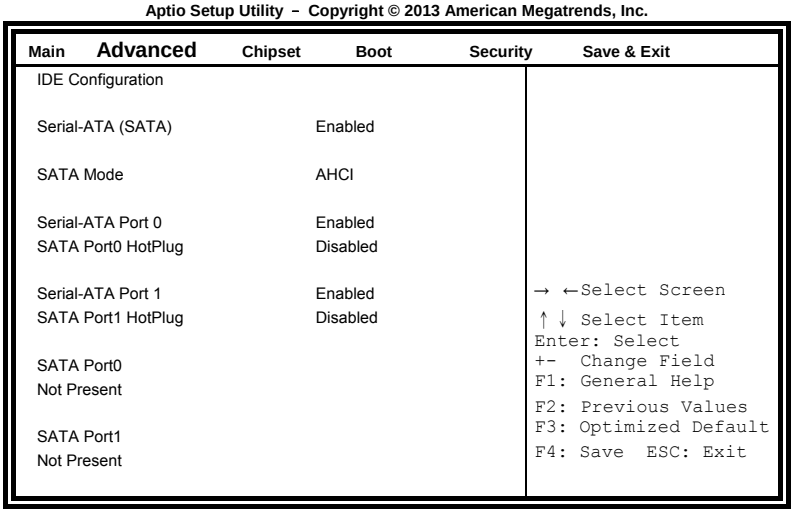


EIST

Enable/Disable Intel SpeedStep.

IDE Configuration

SATA Devices Configuration.



Serial-ATA(SATA)

Enabled / Disabled Serial ATA

SATA Mode

Select IDE / AHCI Mode

Serial –ATA Port 0

Enabled / Disabled Serial Port 0

SATA Port0 HotPlug

Enabled / Disabled SATA Port 0 HotPlug

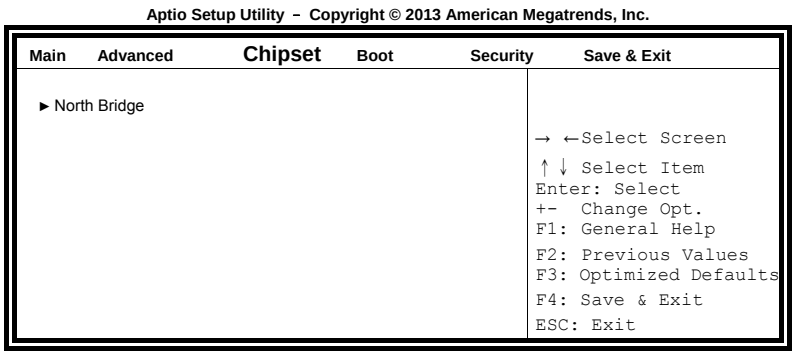
Serial –ATA Port 1

Enabled / Disabled Serial Port 1

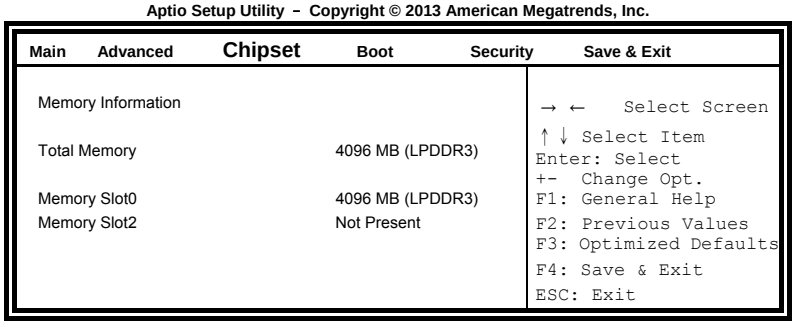
SATA Port1 HotPlug

Enabled / Disabled SATA Port 1 HotPlug

Chipset Settings

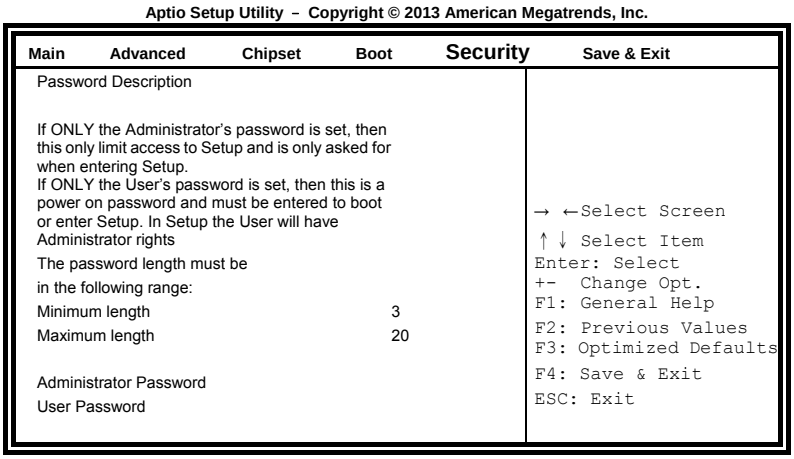


North Bridge



Security Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



Administrator Password

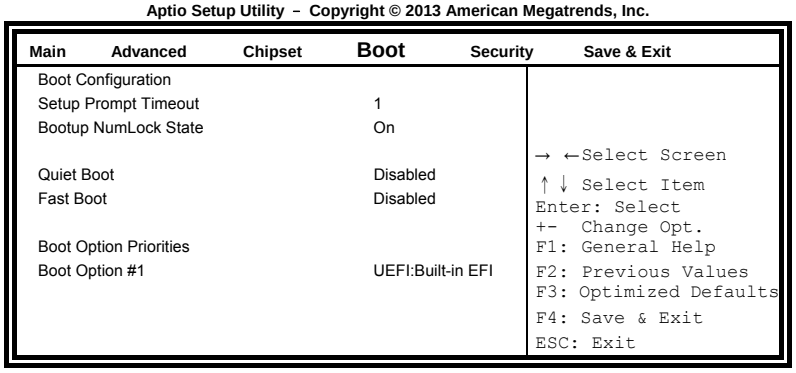
Set Administrator Password.

User Password

Set User Password

Boot Settings

This section allows you to configure the boot settings.



Setup Prompt Timeout

Number of seconds to wait for setup activation key.
65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Select the keyboard NumLock state.

Quiet Boot

Enables or disables Quiet Boot option.

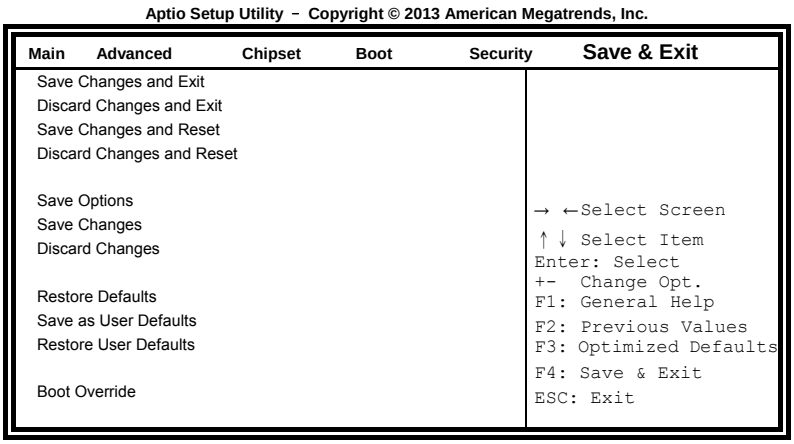
Fast Boot

Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

Boot Option Priorities

Sets the system boot order.

Save & Exit Settings



Save Changes and Exit
Exit system setup after saving the changes.

Discard Changes and Exit
Exit system setup without saving any changes.

Save Changes and Reset
Reset the system after saving the changes.

Discard Changes and Reset
Reset system setup without saving any changes.

Save Changes
Save Changes done so far to any of the setup options.

Discard Changes
Discard Changes done so far to any of the setup options.

Restore Defaults
Restore/Load Defaults values for all the setup options.

Save as User Defaults
Save the changes done so far as User Defaults.

Restore User Defaults
Restore the User Defaults to all the setup options.

Drivers Installation

This section describes the installation procedures for software and drivers. The software and drivers are included with the motherboard. If you find the items missing, please contact the vendor where you made the purchase. The contents of this section include the following:

IMPORTANT NOTE:
After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

Intel Chipset Software Installation Utility

The Intel Chipset Drivers should be installed first before the software drivers to enable Plug & Play INF support for Intel chipset components. Follow the instructions below to complete the installation.

1. Insert the DVD that comes with the board. Click ***Intel*** and then ***Intel(R) Baytrail Chipset***. Click ***Intel(R) Chipset Software Installation Utility.***

3. When the Welcome screen to the Intel® Chipset Device Software appears, click ***Next*** to continue.

4. Click ***Yes*** to accept the software license agreement and proceed with the installation process.

5. The Setup process is now complete. Click ***Finish*** to restart the computer and for changes to take effect.

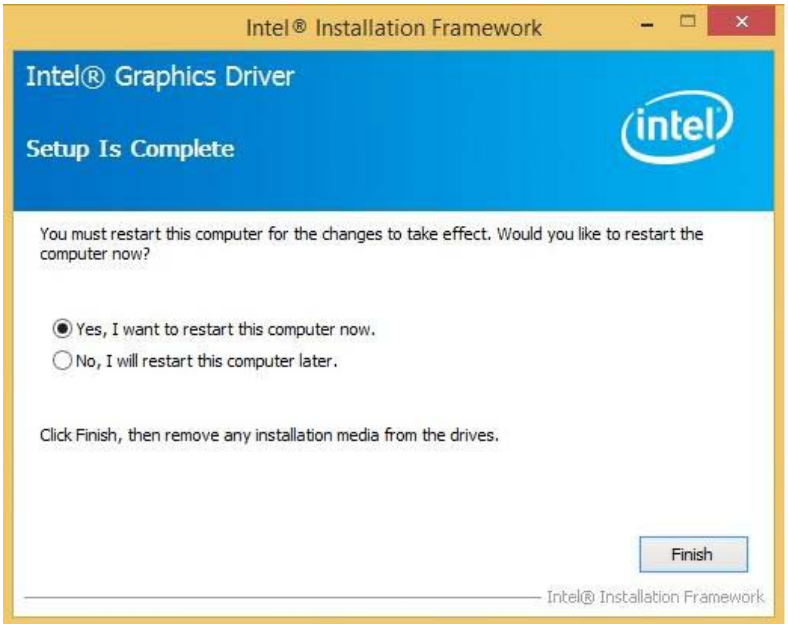
VGA Drivers Installation

1. Insert the DVD that comes with the board. Click ***Intel*** and then ***Intel(R) Baytrail Chipset***. Click ***Intel(R) Baytrail Graphics Driver.***

2. When the Welcome screen appears, click ***Next*** to continue.

3. Click ***Yes*** to accept the license agreement and continue the installation.

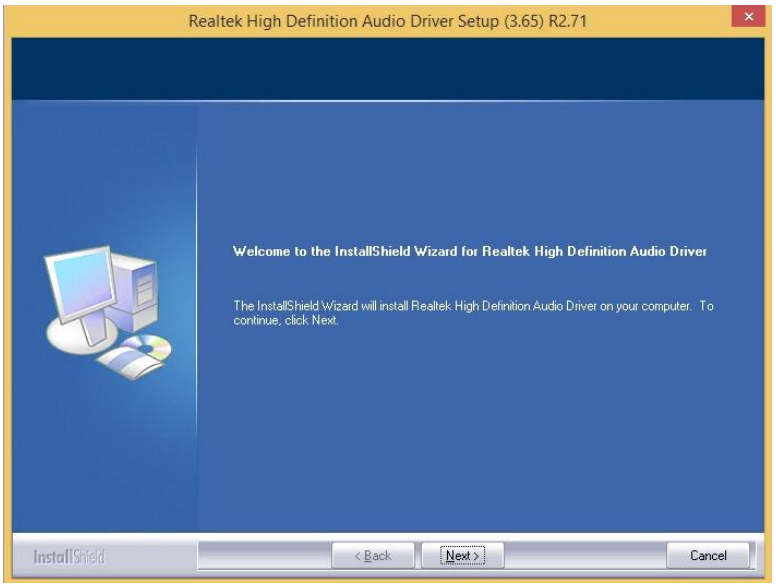
4. Setup complete. Click ***Finish*** to restart the computer and for changes to take effect.



Realtek High Definition Audio Driver Installation

1. Insert the DVD that comes with the board. Click ***Intel*** and then ***Intel(R) Baytrail Chipset***. Click ***Realtek High Definition Audio Driver.***

2. On the Welcome screen, click ***Next*** to proceed with the installation.

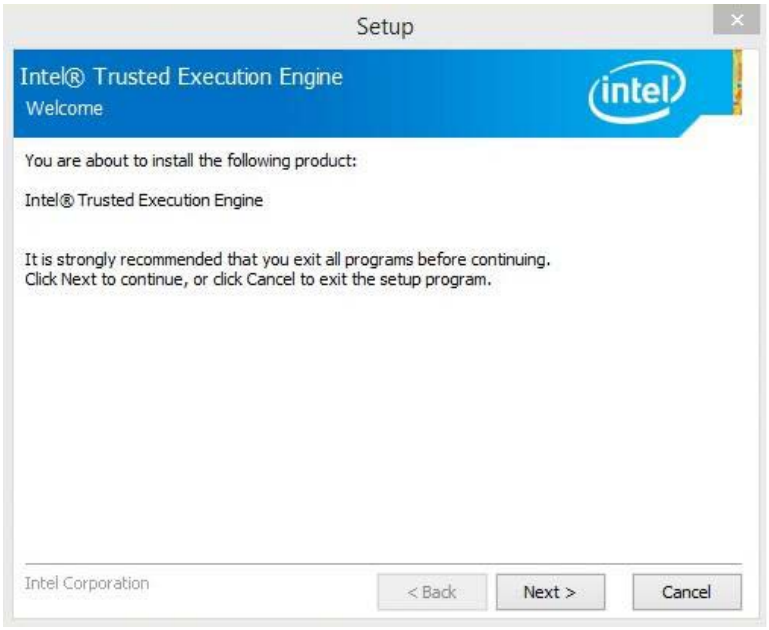


4. InstallShield Wizard is complete. Click ***Finish*** to restart the computer and for changes to take effect.

Intel Trusted Execution Engine Installation

1. Insert the DVD that comes with the board. Click ***Intel*** and then ***Intel(R) Baytrail Chipset***. Click ***Intel(R) TXE Driver.***

2. On the Setup Welcome screen, click ***Next*** to proceed with the installation process.



3. Click ***Next*** accept the license agreement and continue the installation.

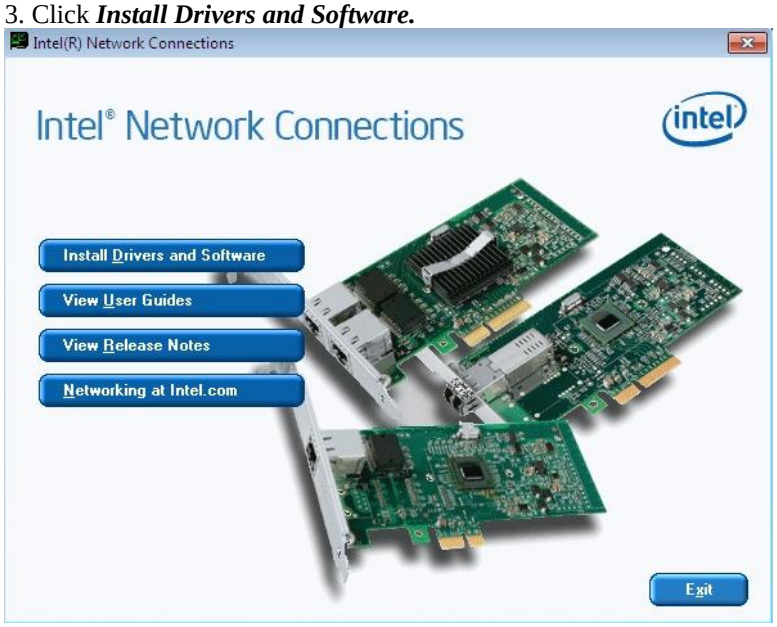
4. Installation of the Intel Trusted Execution Engine is now complete. Click ***Finish***.

LAN Drivers Installation

1. Insert the DVD that comes with the board. Click ***Intel*** and then ***Intel(R) Baytrail Chipset*** .Click ***Intel(R) LAN Drivers***.

2. Click ***Intel(R) I21X Giga Network Driver.***

3. Click ***Install Drivers and Software.***

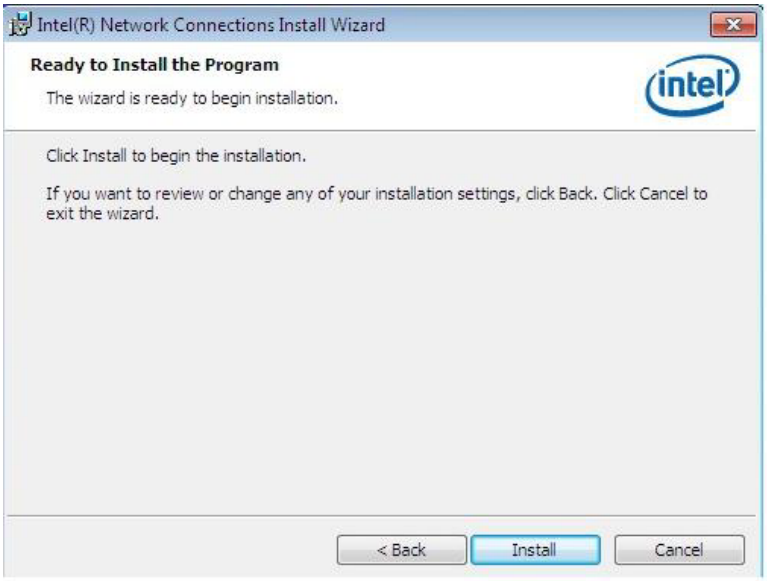


4. When the Welcome screen appears, click ***Next***.

5. Click ***Next*** to to agree with the license agreement.

6. Click the checkbox for **Drivers** in the Setup Options screen to select it and click **Next** to continue.

7. The wizard is ready to begin installation. Click ***Install*** to begin the installation.



8. When InstallShield Wizard is complete, click ***Finish***.

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Appendix

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses that also becomes the identity of the device. The following table lists the I/O port addresses used.

Address	Device Description
070h – 07Fh	Real Time Clock
2E0h – 2E7h	Serial Port #6(COM6)
2E8h – 2EFh	Serial Port #4(COM4)
2F0h – 2F7h	Serial Port #3(COM3)
2F8h – 2FFh	Serial Port #2(COM2)
3B0h – 3DFh	Intel(R) HD Graphics
3E8h – 3EFh	Serial Port #5(COM5)
3F8h – 3FFh	Serial Port #1(COM1)
0D00 – FFFF	PCI-e Root Complex

B. Interrupt Request Lines (IRQ)

Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on board.

Level	Function
IRQ0	System Timer
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ6	Serial Port #5
IRQ7	Serial Port #4
IRQ8	High precision event timer
IRQ10	Serial Port #3
IRQ11	Serial Port #6
IRQ22	High Definition Audio Controller

C. Watchdog Timer Configuration

The WDT is used to generate a variety of output signals after a user programmable count. The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under these sorts of circumstances, the timer will count to zero and the selected outputs will be driven. Under normal circumstance, the user will restart the WDT at regular intervals before the timer counts to zero.

SAMPLE CODE:

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#include <dos.h>
#include <conio.h>
#include <stdio.h>
#include <stdlib.h>
#include "6106"
//---------------------------------------------------------------------------
int main (int argc, char *argv[]);
void EnableWDT(int);
void DisableWDT(void);
//---------------------------------------------------------------------------
int main (int argc, char *argv[])
{
                                                    unsigned char bBuf;
                                                   unsigned char bTime;
                                                     char **endptr;

//                                                     char SIO;

                                                  printf("6106 watch dog program\n");


                                                bTime = strtol (argv[1], endptr, 10);
                                          printf("System will reset after %d seconds\n", bTime);

                                                  if (bTime)
                                                    {
                                                   else
                                                    {

                                                if (bTime > 0 && bTime < 256)
                                                    {

          A=2;

           unsigned char result;
           Set_6106_LD(0x08);

           gotoxy(1,12);


                                                    }
```

```
                                                    return 0;
}
//---------------------------------------------------------------------------
void EnableWDT(int interval)
{
                                                    unsigned char bBuf;

                                                    Set_6106_LD(0x08);
                                                    Set_6106_Reg(0x30, 0x01);

                                                    Set_6106_Reg(0xF1, interval);

}
//---------------------------------------------------------------------------
void DisableWDT(void)
{
                                                    unsigned char bBuf;

                                                    Set_6106_LD(0x08);
                                                    Set_6106_Reg(0x30, 0x00);

}
//---------------------------------------------------------------------------
```

```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#include "6106.H"
#include <dos.h>
//---------------------------------------------------------------------------
unsigned int 6106_BASE;
void Unlock_6106 (void);
void Lock_6106 (void);
//---------------------------------------------------------------------------
unsigned int Init_6106(void)
{
        unsigned int result;
        unsigned char ucDid;

        6106_BASE = 0x4E;
        result = 6106_BASE;

        ucDid = Get_6106_Reg(0x20);
        if (ucDid == 0x07)                                      //6106
        {       goto Init_Finish;       }

        6106_BASE = 0x2E;
        result = 6106_BASE;

        ucDid = Get_6106_Reg(0x20);
        if (ucDid == 0x07)                                      //6106
        {       goto Init_Finish;       }

        6106_BASE = 0x00;
        result = 6106_BASE;

Init_Finish:
        return (result);
}
//---------------------------------------------------------------------------
void Unlock_6106 (void)
{
        outportb(6106_INDEX_PORT, 6106_UNLOCK);
        outportb(6106_INDEX_PORT, 6106_UNLOCK);
}
//---------------------------------------------------------------------------
void Lock_6106 (void)
{
        outportb(6106_INDEX_PORT, 6106_LOCK);
}
//---------------------------------------------------------------------------
void Set_6106_LD( unsigned char LD)
{
        Unlock_6106();
        outportb(6106_INDEX_PORT, 6106_REG_LD);
        outportb(6106_DATA_PORT, LD);
        Lock_6106();
}
//---------------------------------------------------------------------------
void Set_6106_Reg( unsigned char REG, unsigned char DATA)
{
        Unlock_6106();
        outportb(6106_INDEX_PORT, REG);
        outportb(6106_DATA_PORT, DATA);
        Lock_6106();
}
//---------------------------------------------------------------------------
unsigned char Get_6106_Reg(unsigned char REG)
```

```
{
        unsigned char Result;
        Unlock_6106();
        outportb(6106_INDEX_PORT, REG);
        Result = inportb(6106_DATA_PORT);
        Lock_6106();
        return Result;
}
//---------------------------------------------------------------------------
```

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