# INOSP-152-RE series
# INOSP-192-RE series

## Industrial All-in-One Panel PC

## User's Manual

Version 1.0
(Jan. 2021)

iBASE

## Copyright



## Disclaimer

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## Trademarks

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# Compliance

CE

This is a class A product. In a domestic environment, this product may cause radio interference in which case users may be required to take adequate measures.

FC

This product has been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications.

Operation is subject to the following two conditions:

- This product may not cause harmful interference
- This product must accept any interference received including interference that may cause undesired operation.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception which can be determined by turning the equipment off and on, you may correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the distributor or an experienced radio/TV technician for help.

## WEEE

This product must not be disposed of as normal household waste, in accordance with the EU directive of for waste electrical and electronic equipment (WEEE - 2012/19/EU). Instead, it should be disposed of by returning it to a municipal recycling collection point. Check local regulations for disposal of electronic products.

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**Green IBASE**


This product is compliant with the current RoHS restrictions and prohibits use of the following substances in concentrations exceeding 0.1% by weight (1000 ppm) except for cadmium, limited to 0.01% by weight (100 ppm).

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent chromium (Cr6+)
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ether (PBDE)

# Important Safety Information

Carefully read the precautions before using the device.

### Environmental conditions:

- Lay the device horizontally on a stable and solid surface during installation in case the device may fall, causing serious damage.
- Leave plenty of space around the device for ventilation.
- Use this product in environments with ambient temperatures between 0˚C and 50˚C.
- DO NOT LEAVE THIS DEVICE IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY BE BELOW -20° C OR ABOVE 60° C. To prevent from damages, the device must be used in a controlled environment.
- Keep the device away from humidity to avoid fog or condensation from accumulating on the inner surface of the panel.

### Care for your IBASE products:

- Before cleaning the device, turn it off and unplug all cables such as power in case a small amount of electrical current may still flow.
- Use neutral cleaning agents or diluted alcohol to clean the device chassis with a cloth. Then wipe the chassis with a dry cloth.
- Vacuum the dust with a computer vacuum cleaner to prevent the air vent or slots from being clogged.

## WARNING

**Attention during use:**

- Operate with fingers on the panel. Sharp-pointed articles are prohibited.
- Do not use this product near water.
- Do not spill water or any other liquids on your device.
- Do not place heavy objects on the top of the device.
- Operate this device from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your distributor or local power company.
- Ensure that you apply correctly the power supply voltage.
- Do not walk on the power cord or allow anything to rest on it.
- If you use an extension cord, make sure that the total ampere rating of the product plugged into the extension cord does not exceed its limits.

**Avoid Disassembly**

You are not suggested to disassemble, repair or make any modification to the device. Disassembly, modification, or any attempt at repair could generate hazards and cause damage to the device, even bodily injury or property damage, and will void any warranty.

## CAUTION

Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

# Warranty Policy

- **IBASE standard products:**

  24-month (2-year) warranty from the date of shipment. If the date of shipment cannot be ascertained, the product serial numbers can be used to determine the approximate shipping date.

- **3rd-party parts:**

  12-month (1-year) warranty from delivery for the 3rd-party parts that are not manufactured by IBASE, such as CPU, CPU cooler, memory, storage devices, power adapter, panel and touchscreen.

◆ Products, however, that fail due to misuse, accident, improper installation or unauthorized repair shall be treated as out of warranty and customers shall be billed for repair and shipping charges.

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# Technical Support & Services

1. Visit the IBASE website at www.ibase.com.tw to find the latest information about the product.
2. If you need any further assistance from your distributor or sales representative, prepare the following information of your product and elaborate upon the problem.

   - Product model name
   - Product serial number
   - Detailed description of the problem
   - The error messages in text or in screenshots if there is any
   - The arrangement of the peripherals
   - Software in use (such as OS and application software, including the version numbers)

3. If repair service is required, you can download the RMA form at http://www.ibase.com.tw/english/Supports/RMAService/. Fill out the form and contact your distributor or sales representative.

# Table of Contents

# Chapter 1
# General Information

The information provided in this chapter includes:

- Features
- Packing List
- Specifications
- Overview
- Dimensions

## 1.1 Introduction

INOSP series, a stainless-steel panel PC, utilizes the qual-core 1.91GHz Intel® Processor E3845 providing high computing performance and low power consumption. It includes 15- and 19-inch size.
The INOSP series supports a wide range 10V~30V DC power input with optional 24V DC IP56 stainless steel power adaptor, which makes it ideal for food, livestock, chemical, mining, petrol and factory automation or any other industrial applications.

## 1.2 Features

- Totally IP65 and IP69K certificated
- Sealed resistive touch screen
- Durable stainless-steel housing
- Providing USB3.0 interface with M12 connector
- Wide-range DC power input 10V to 30V

## 1.3 Packing List

Your product package should include the items listed below. If any of the items below is missing, contact the distributor or the dealer from whom you purchased the product.

- INOSP-xx2-RE or INOSP-xx2-RE-F x 1
- M12 connector dust cover for INOSP-xx2-RE or x 5
  M12 connector dust cover for INOSP-xx2-RE-F x 7
- Motherboard User manual and driver CD x 1

## 1.4 Optional Accessories

IBASE provides optional accessories as follows. Please contact us or your dealer if you need any.

- SSPA-24: IP56 stainless steel power adapter
- M12 power cable C501PW35203A21000P
- M12 USB 2.0 cable C501USB1804A32000P
- M12 USB 3.0 cable C501USB1540A22000P
- M12 GbE LAN cable A012CB01200101000P
- M12 DSUB cable A012CB01210101000P

## 1.5 Specifications

| Product Name | INOSP-152-RE(-F) | INOSP-192-RE(-F) |
|---|---|---|
| **System** | | |
| **Motherboard** | IB897 | |
| **Operating System** | Windows 7, Windows 10, Linux kernel 3.X+ | |
| **CPU** | Intel E3845 | |
| **Chipset** | Integrated | |
| **Memory** | 1 x DDR3L SO-DIMM 4 GB, up to 8 GB | |
| **Storage** | 2.5” HDD/SSD | |
| **Graphics** | Intel® HD graphics | |
| **Power Supply** | DC-In 10~ 30V | |
| **BIOS** | AMI BIOS | |
| **Watchdog** | Watchdog Timer 256 segments, 0, 1, 2…255 sec/min | |
| **iSmart** | Yes (auto-scheduler / power resume) | |
| **Chassis** | Stainless steel with hairline | |
| **Membrane Control** | None | |
| **Mounting** | VESA 100 x 100 mm | |
| **Dimensions (W x H x D)** | 425 x 330x 62.5 mm<br>(16.73” x 12.99” x 2.46”) | 470 x 390x 62.5 mm<br>(18.50” x 15.35” x 2.46”) |
| **Net Weight** | 8.5 kg (16.52 lb) | 10.5 kg (23.13 lb) |
| **Ingress Protection** | IP65 and IP69K | |
| **Certificate** | CE, FCC Class B, LVD | |

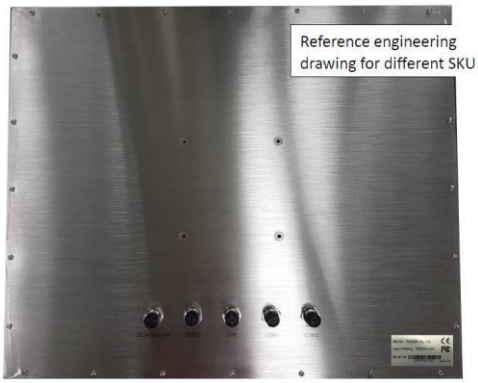
| Product Name | INOSP-152-RE(-F) | INOSP-192-RE(-F) |
|---|---|---|
| **Display & Touchscreen** | | |
| **Display Type** | 15” TFT-LCD | 19” TFT-LCD |
| **Resolution** | Max. 1024 x 768 | Max. 1280 x 1024 |
| **Color** | Max. 16.2M | Max. 16.7M |
| **Viewing Angle** | H/V: 160° / 160° | H/V: 170° / 160° |
| **Luminance** | 500 cd/m2 | 350 cd/m2 |
| **Contrast** | 800:1 | 1000:1 |
| **Backlight Lifetime** | 50000 hrs | 50000 hrs |
| **Touch Type** | Resistive touch | |
| **Touch Interface** | USB | |
| **Light Transmission** | 80% | |
| **Point of Touch** | 1 | |
| **System I/O Ports and functions** | | |
| **Power** | 1 x M12 4 pin | |
| **LAN** | 1 x M12 8 pin for GbE LAN<br>Second LAN as an option | |
| **Serial** | 1 x M12 8 pin for RS-232/422/485 COM1<br>1 x M12 8 pin for RS-232 COM2 | |
| **USB** | 1 x M12 4 pin for USB 2.0<br>1 x M12 8 pin for USB 3.0 for option | |
| **Display** | None addition graph output | |
| **Storage** | 1 x 2.5” SATA 64GB SSD | |
| **Audio** | None | |
| **Internal Expansion Bus** | • 1 x Mini-PCIe (x1) slot (full/half-size) with USB<br>• 1 x Mini-PCIe (x1) slot (half-size) with USB | |
| **Expansion Slot** | N/A | |

| Product Name | INOSP-152-RE(-F) | INOSP-192-RE(-F) |
|---|---|---|
| **Environment** | | |
| **Temperature** | • **Operating:** 0 ~ 50 °C (32 ~ 122 °F)<br>• **Storage:** --20 ~ 60 °C (-4 ~ 140 °F) | |
| **Relative Humidity** | 10 ~ 90% (non-condensing) | |

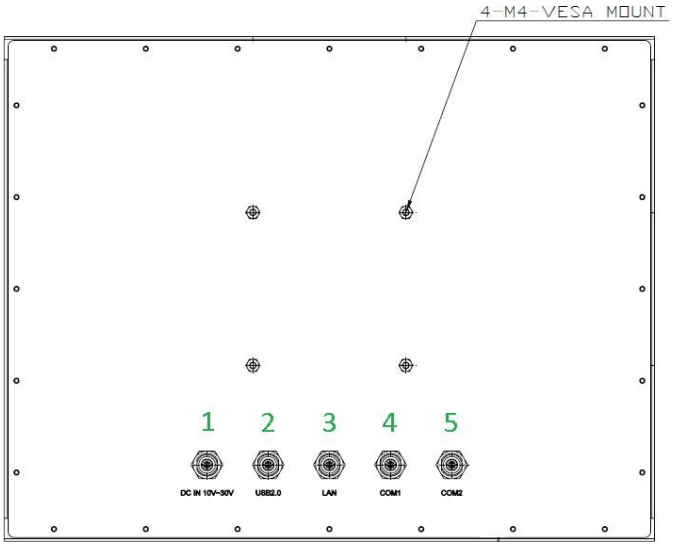
All specifications are subject to change without prior notice.

## 1.6 Overview – INOSP-152/192-RE series

### 1.6.1 Oblique & Rear View for INOSP-152/192-RE

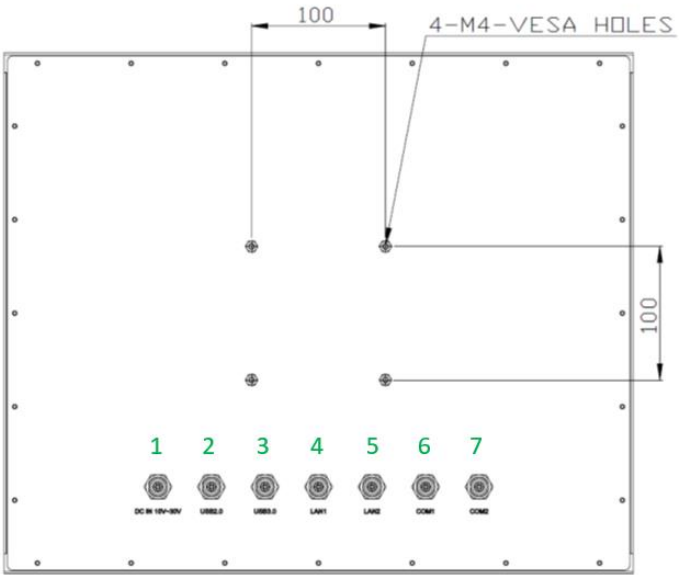



### 1.6.2 I/O View for INOSP-152/192-RE




| No. | Name | No. | Name |
|---|---|---|---|
| 1 | Power input | 5 | COM2 RS232 |
| 2 | USB 2.0 | | |
| 3 | LAN (GbE) | | |
| 4 | COM1 RS232/422/485 | | |

### 1.6.3 I/O View for INOSP-152/192-RE-F

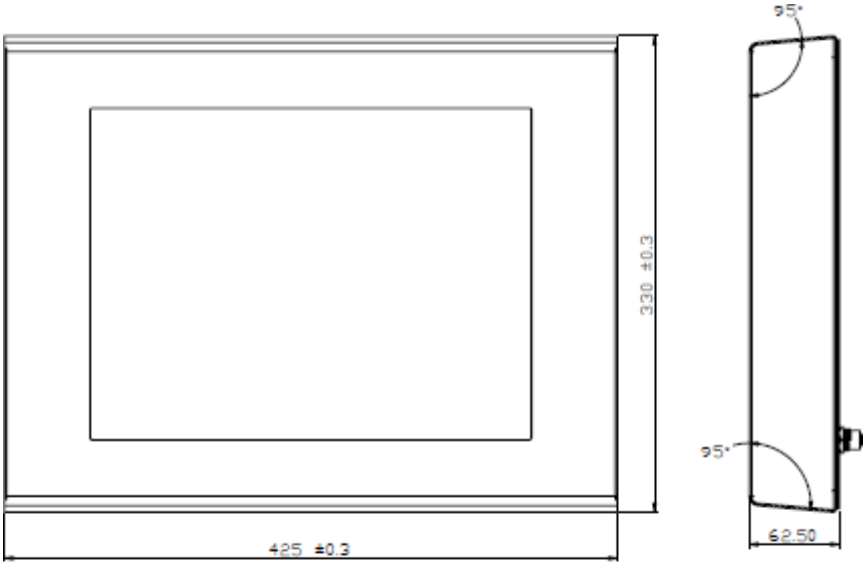


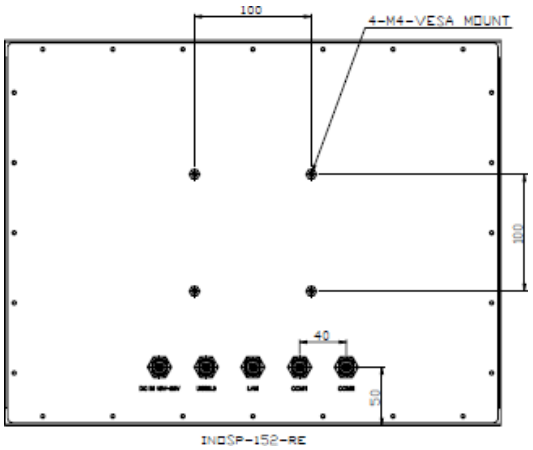

| No. | Name | No. | Name |
|---|---|---|---|
| 1 | Power input | 5 | LAN2(GbE) |
| 2 | USB 2.0 | 6 | COM1 RS232/422/485 |
| 3 | USB 3.0 | 7 | COM2 RS232 |
| 4 | LAN1(GbE) | | |

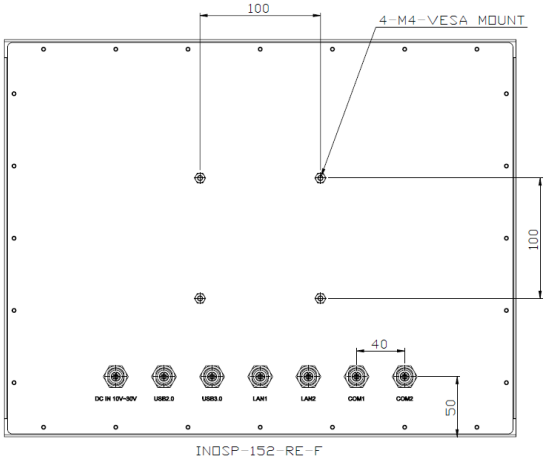
## 1.7 Dimensions

Unit: mm

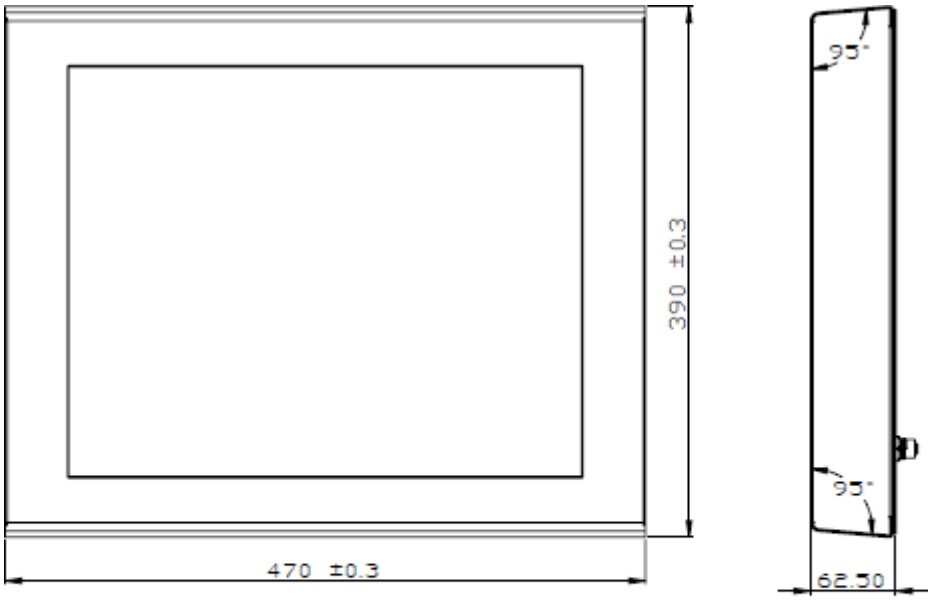
### INOSP-152-RE series

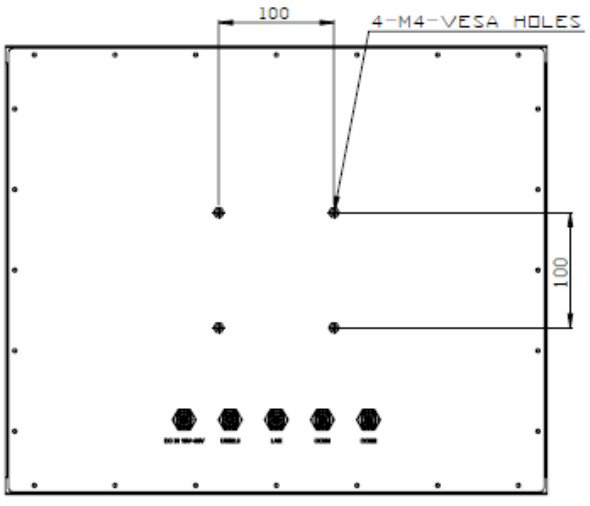


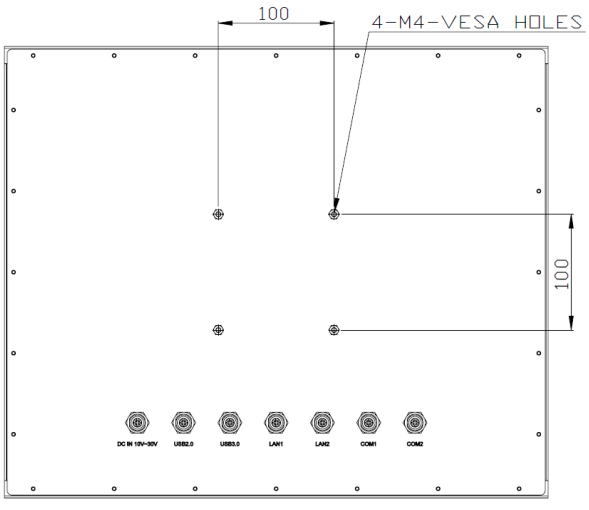



**INOSP-192-RE series**




INOSP-192-RE




INOSP-192-RE-F

# Chapter 2
# Hardware Installation & Motherboard Information

The information provided in this chapter includes:

- Information and locations of connectors

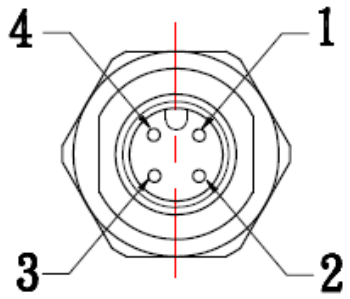
## 2.1 Hardware Installation

This section is all illustrated by the example of INOSP-152/192-RE

**Avoid device disassembly:** Because INOSP-152/192-RE systems are totally IP65 and IP69K. You are not suggested to disassemble, repair or make any modification to the device. Disassembly, modification, or any attempt at repair could generate hazards and cause damage to the device. If you need to make any change to the device, please contact iBASE.

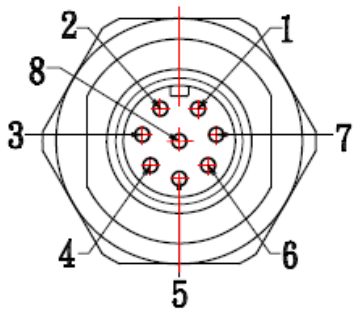
### 2.1.1 I/O Pin definition

**Power input**



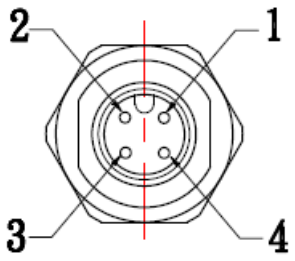

| Pin | Subject |
|---|---|
| 1 | V+ |
| 2 | FG |
| 3 | NC |
| 4 | V- |

**LAN port**



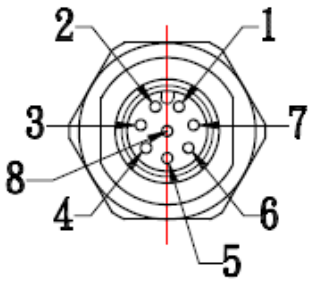

| Pin | Subject |
|---|---|
| 1 | White/Orange |
| 2 | White/Blue |
| 3 | Blue |
| 4 | Brown |
| 5 | Green |
| 6 | White/Brown |
| 7 | Orange |
| 8 | White/Green |

**USB 2.0**



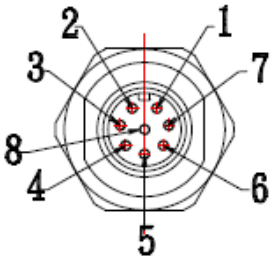

| Pin | Subject |
|---|---|
| 1 | +5V |
| 2 | D- |
| 3 | D+ |
| 4 | GND |

**USB 3.0**




| Pin | Subject |
|---|---|
| 1 | VCC1 |
| 2 | TX- |
| 3 | RX+ |
| 4 | RX- |
| 5 | GND |
| 6 | D1+ |
| 7 | D1- |
| 8 | TX+ |

**Serial port**

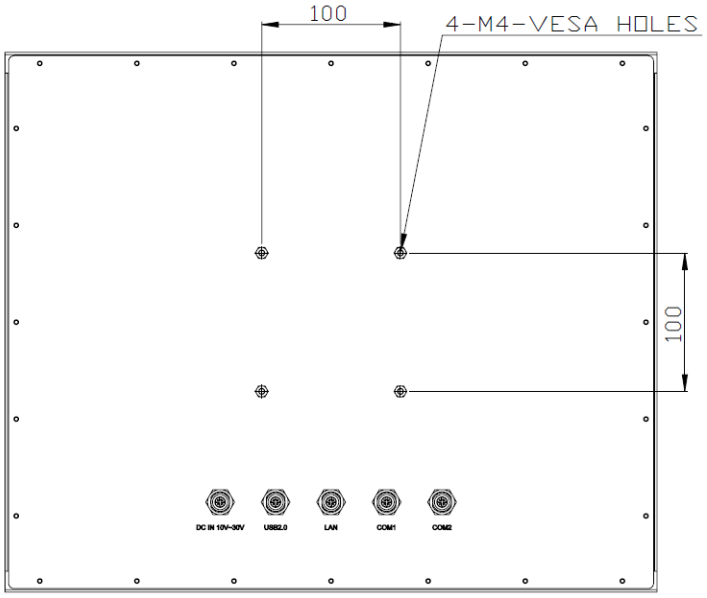



| Pin | Subject |
|---|---|
| 1 | DCD |
| 2 | RXD |
| 3 | TXD |
| 4 | DTR |
| 5 | GROUND |
| 6 | DSR |
| 7 | RTS |
| 8 | CTS |

### 2.1.2 VESA Mount & Wall Mount Installation

**1. VESA Mount**

You will need to prepare the VESA mount bracket in advance.
Tighten 4 screws(4-M4) as below to attach the device to the bracket.



# Chapter 3
# Driver Installation for INOSP152/192-RE

The information provided in this chapter includes:

- Intel Chipset Software Installation Utility
- VGA Drivers Installation
- Realtek High Definition Audio Driver Installation
- Intel Trusted Execution Engine Installation

## 3.1 Introduction

This section describes the installation procedures for software drivers. The software drivers are in a disk enclosed with the product package. If you find anything missing, please contact the distributor where you made the purchase.

---

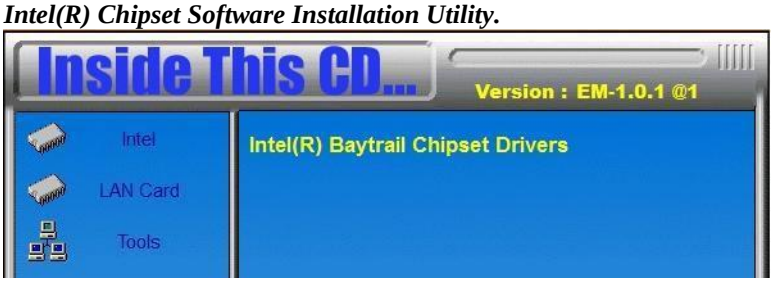
**Note:** After installing your Windows operating system, you must install the Intel® Chipset Software Installation Utility first before proceeding with the drivers installation.

---

## 3.2 Intel® Chipset Drivers

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.

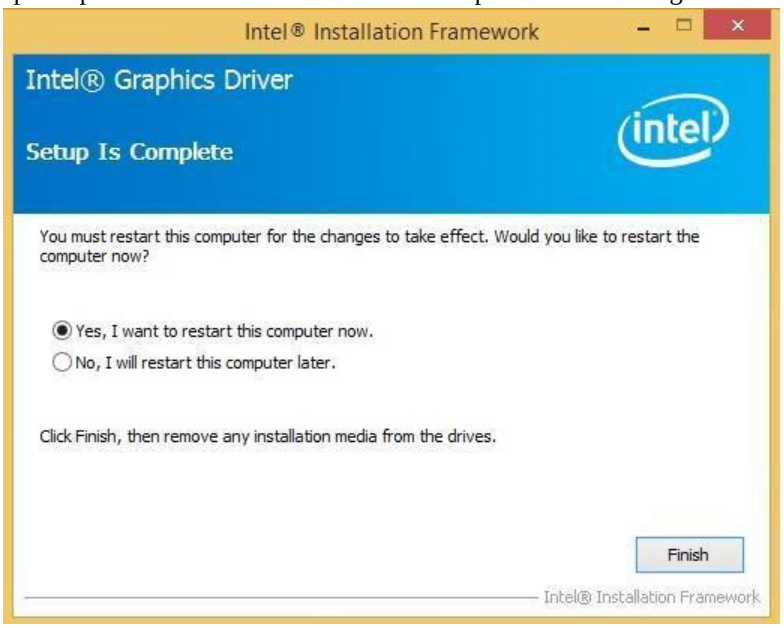
## 3.3 VGA Drivers Installation

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.

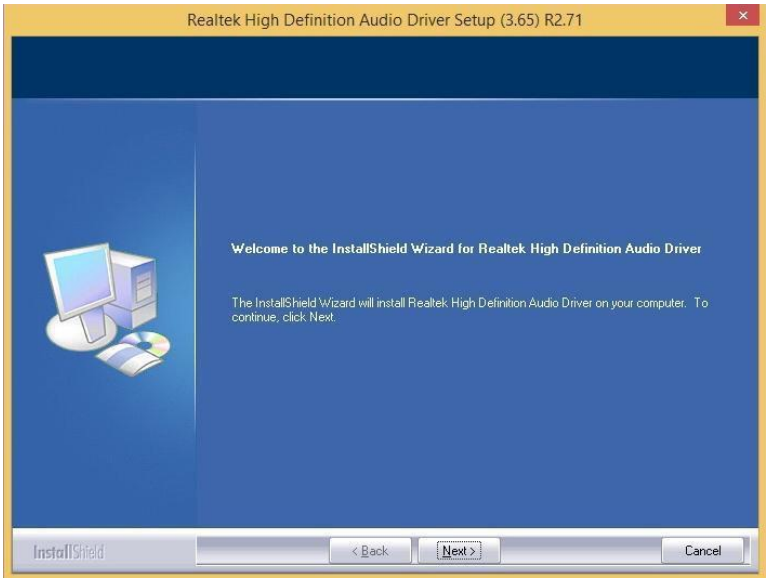
4. Setup complete. Click ***Finish*** to restart the computer and for changes to take effect.



## 3.4 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.***

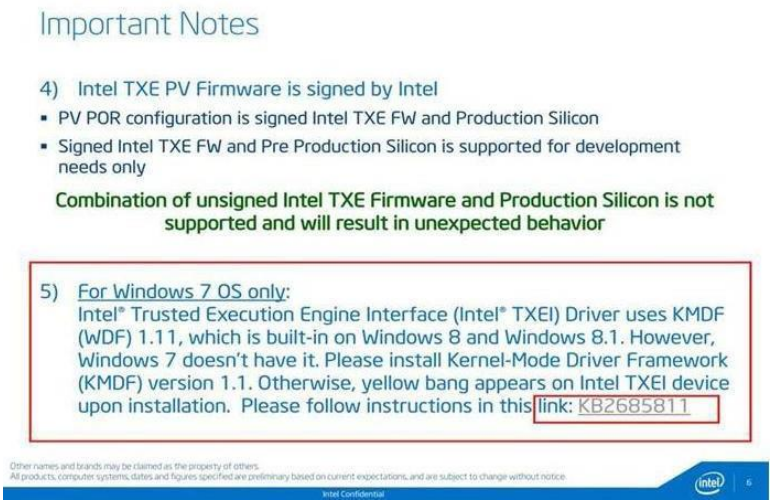

2. On the Welcome screen, click ***Next*** to proceed with the installation.




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

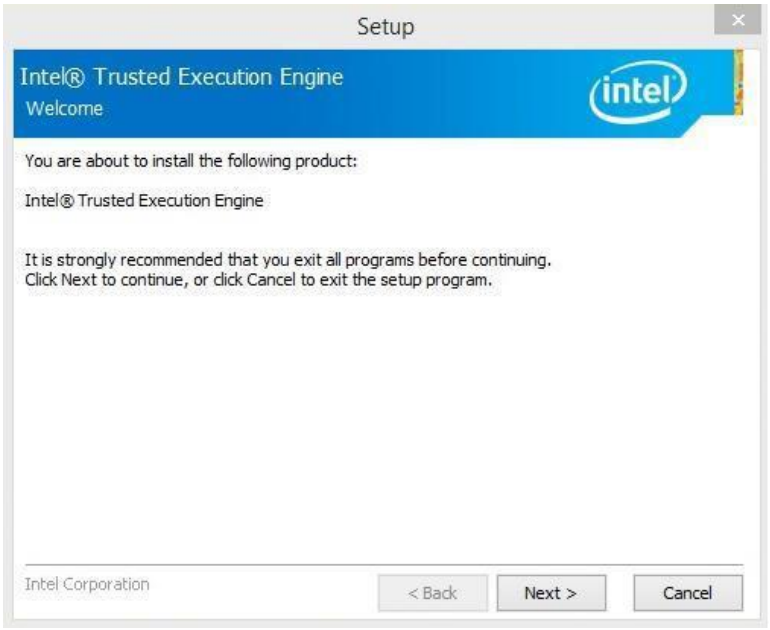
## 3.5 Intel Trusted Execution Engine Installation

Note :Windows 7 OS only




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

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



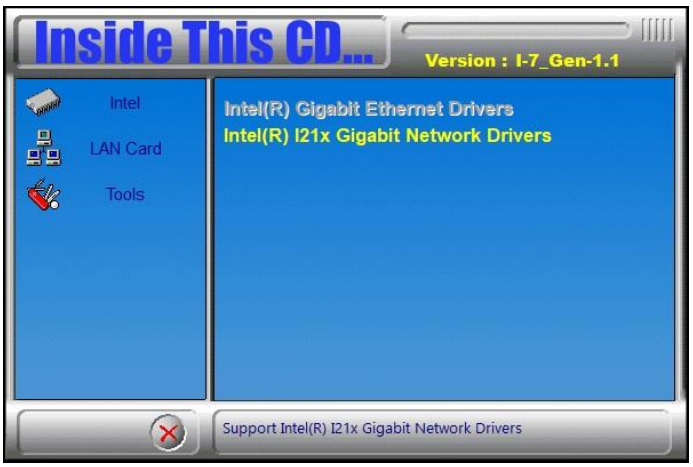

3. Click ***Next*** accept the license agreement and continue the installation.

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

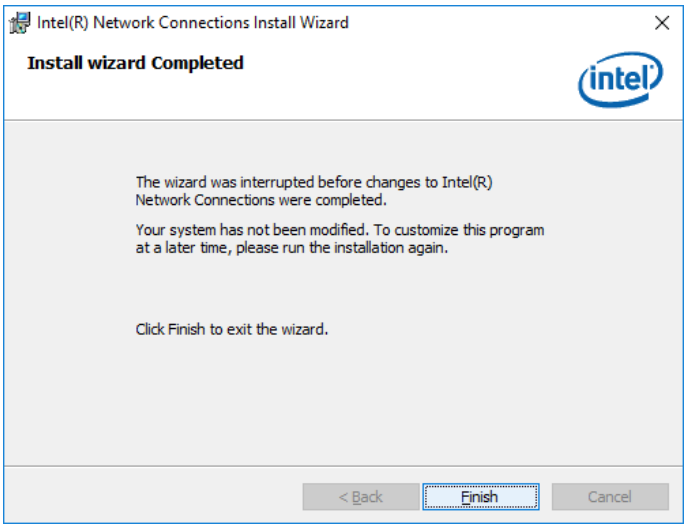
## 3.6 LAN Controller Drivers Installation

1. Click **LAN Card** and then **Intel LAN Controller Drivers**.


2. Click **Intel(R) I21x Gigabit Network Drviers**.




3. Choose a destination folder for installation.
4. The driver has been completely installed. Click **Finish** and restart the computer for changes to take effect.


Intel(R) Network Connections Install Wizard
Install wizard Completed
The wizard was interrupted before changes to Intel(R) Network Connections were completed.
Your system has not been modified. To customize this program at a later time, please run the installation again.
Click Finish to exit the wizard.
< Back
Finish
Cancel

# Chapter 4
# BIOS Setup for

# INOSP-152/192-RE

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:

- Main Settings
- Advanced Settings
- Chipset Settings
- Security Settings
- Boot Settings
- Save & Exit

# Introduction

The BIOS (Basic Input/Output System) installed in the ROM of your computer system supports Intel® processors. The BIOS provides critical low-level support for standard devices such as disk drives, serial ports and parallel ports. It also provides 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:

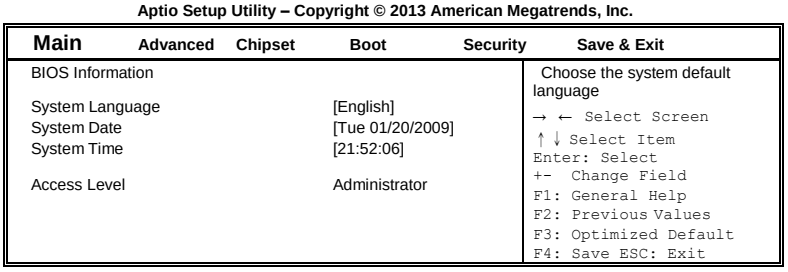
```
Press <DEL> to Enter Setup
```

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.*

## Main Settings




### System Language

Choose the system default language.

### System Date

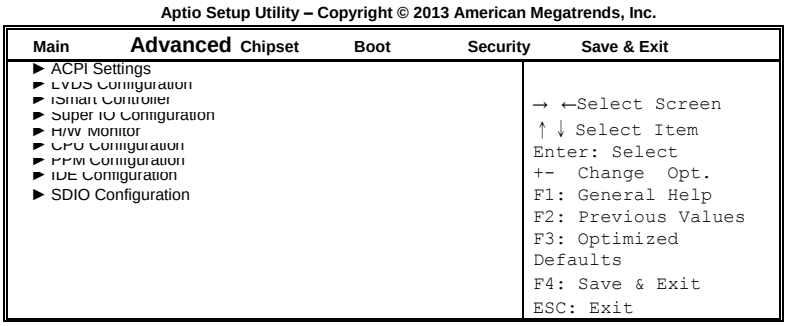
Set the Date. Use Tab to switch between Data elements.

### System Time

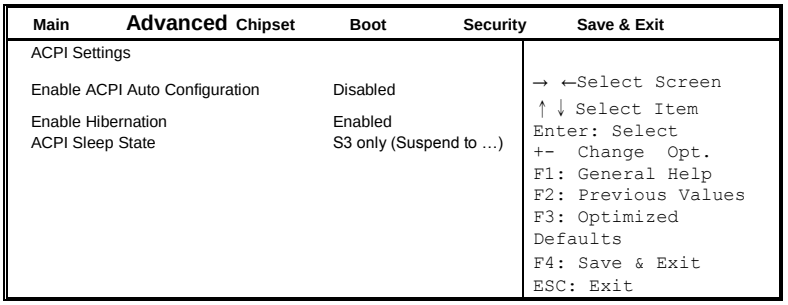
Set the Time. Use Tab to switch between Data elements.

## 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.




### ACPI Settings




### Enabled ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration.

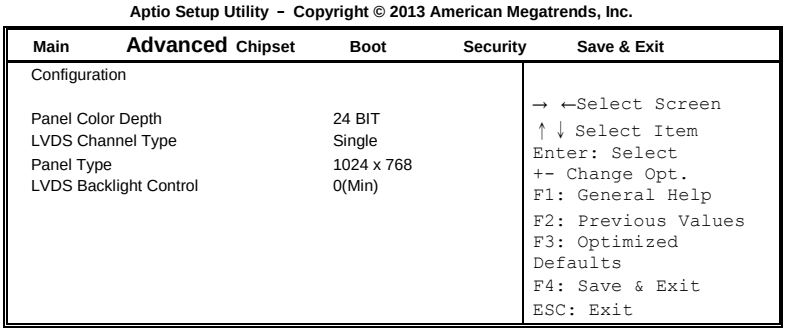
### Enable Hibernation

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.

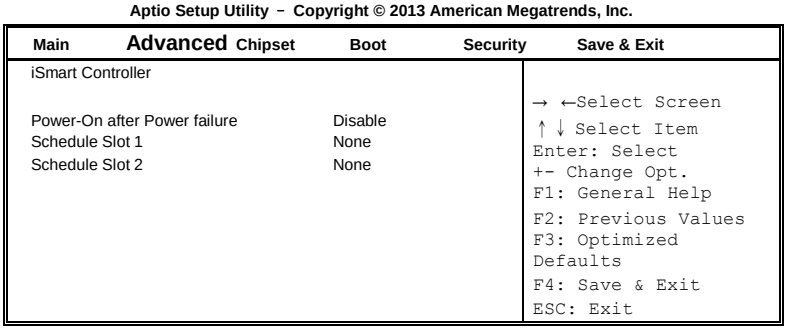
### LVDS Configuration




Notice!

Please do not change any LVDS setting with INOSP-152/192 series, else the system may not work

### iSmart Controller



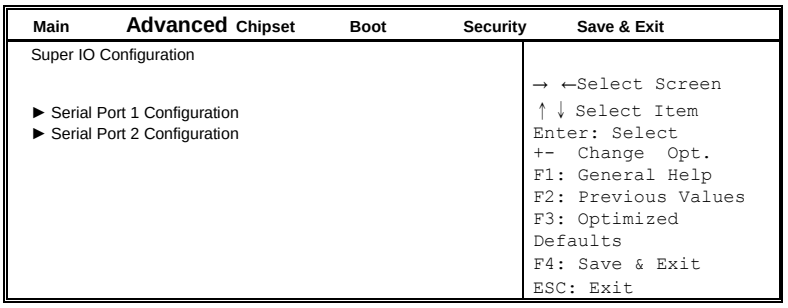

### Power-On after Power failure

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

### Schedule Slot 1 / 2

Setup the hour/minute for system power on.

### Super IO Configuration



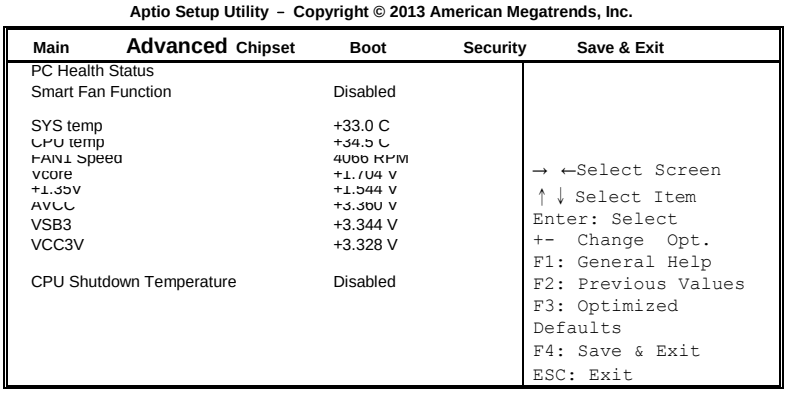

### Serial Port 1 Configuration

Set parameters of serial port 1(COMA)

### Serial Port 2 Configuration

Set parameters of serial port 2(COMA)

### 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

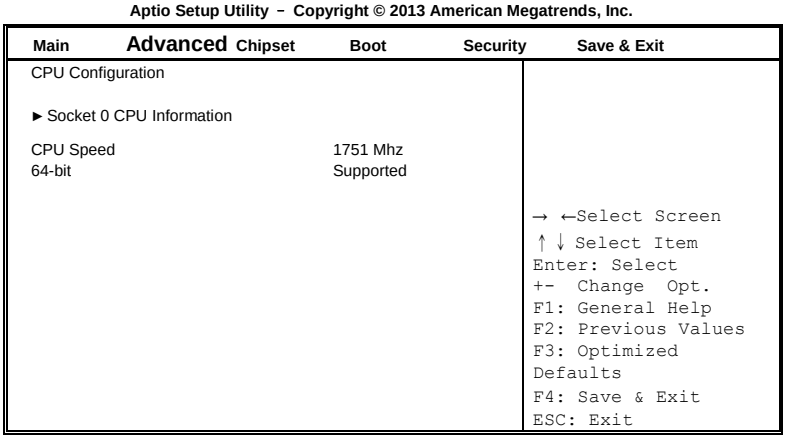
90 ℃/203 F

### 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

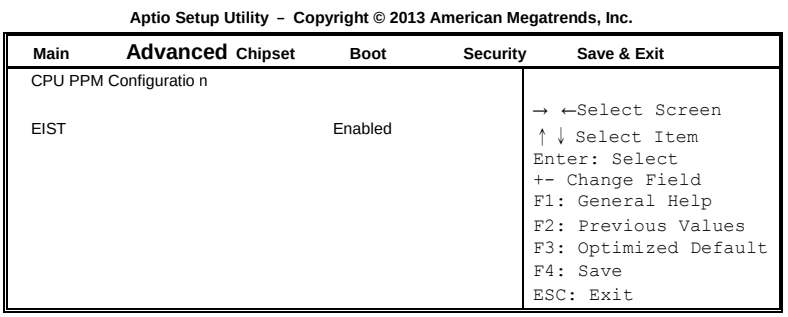
This section shows the CPU configuration parameters.




## Socket 0 CPU Information

Socket specific CPU Information.

## CPU PPM Configuration

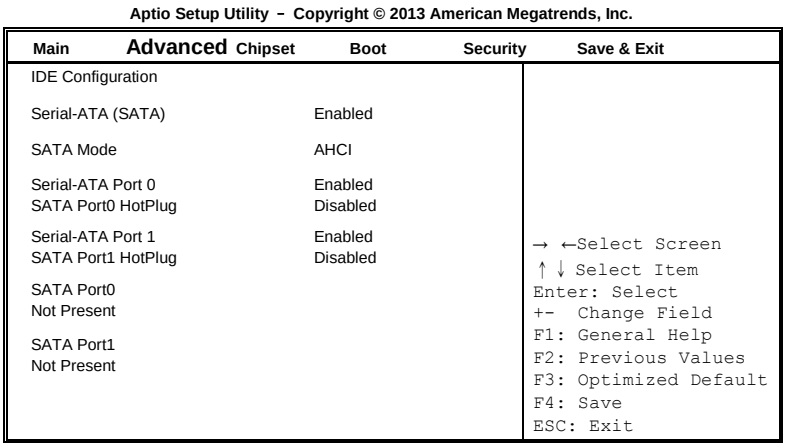



### EIST

Enable/Disable Intel SpeedStep.

### IDE Configuration

SATA Devices Configuration.




### Serial-ATA(SATA)

Enabled / Disabled Serial ATA

### SATA Mode

Select IDE / AHCI Mode

### Serail –ATA Port 0

Enabled / Disabled Serial Port 0

### SATA Port0 HotPlug

Enabled / Disabled SATA Port 0 HotPlug

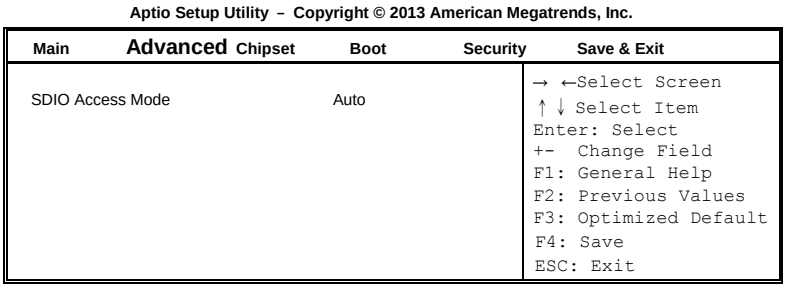
### Serail –ATA Port 1

Enabled / Disabled Serial Port 1

### SATA Port1 HotPlug

Enabled / Disabled SATA Port 1 HotPlug

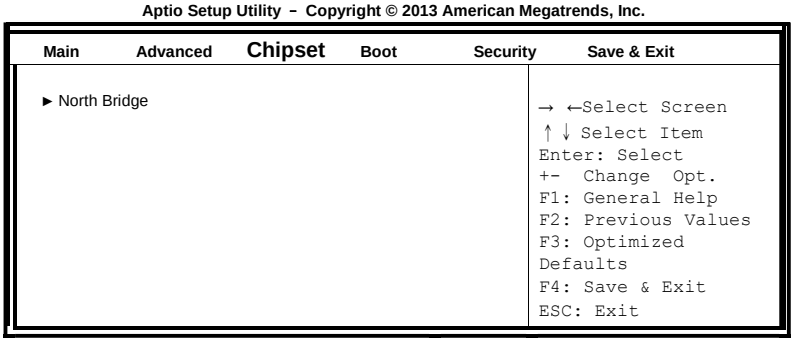
## SDIO Configuration



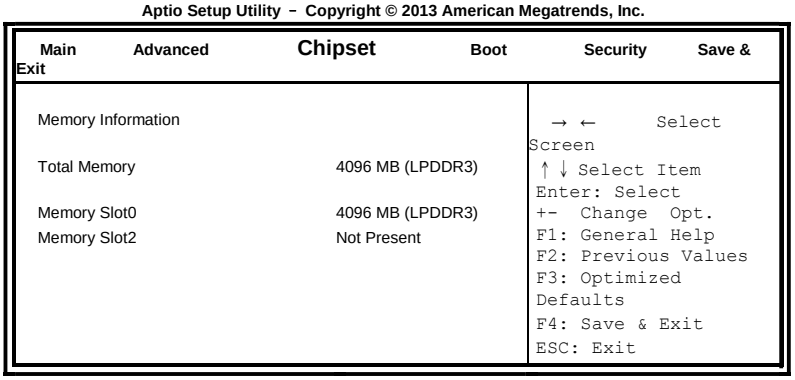

### SDIO Access Mode

Auto Option: Access SD device in DMA mode if controller supports it. Otherwise, in PIO mode. DMA options: Access SD device in DMA mode. PIO Option: Access PIO device in DMA

## Chipset Settings

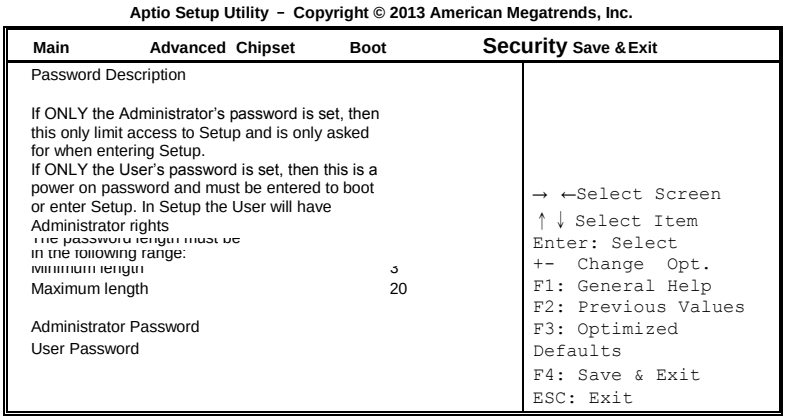



## North Bridge



## 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.

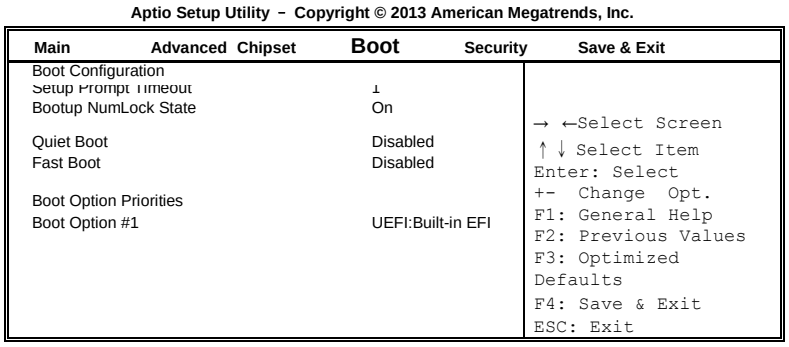



### Administrator Password

Set Administrator Password.

## 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.

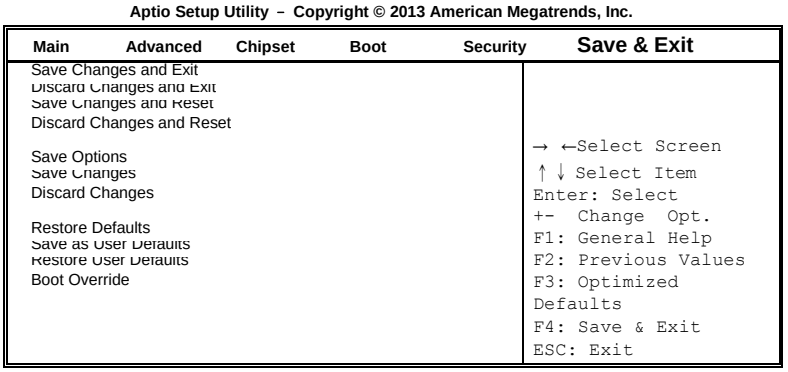
### Fast Boot

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.

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# Appendix

This section provides the mapping addresses of peripheral devices and the sample code of watchdog timer configuration.

- I/O Port Address Map
- Interrupt Request Lines (IRQ)
- Digital I/O Sample Code
- Watchdog Timer Configuration

# A. Watchdog Timer Configuration

The Watchdog Timer (WDT) is used to generate a variety of output signals after a user programmable count. The WDT is suitable for the 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, you will need to restart the WDT at regular intervals before the timer counts to zero.

### Sample Code (for Fintek F81846 / F81866):

```
//-----------------------------------------------------------------------
//
// 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 "F81866.H"
//-----------------------------------------------------------------------
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("Fintek 81866 watch dog program\n");
        SIO = Init_F81866();
        if (SIO == 0)
        {
                printf("Can not detect Fintek 81866, program abort.\n");
                return(1);
        }//if (SIO == 0)

        if (argc != 2)
        {
                printf(" Parameter incorrect!!\n");
                return (1);
        }
```

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

        if (bTime)
        {       EnableWDT(bTime); }
        else
        {       DisableWDT(); }
        return 0;
}
//---------------------------------------------------------------------------
void EnableWDT(int interval)
{
        unsigned char bBuf;

        bBuf = Get_F81866_Reg(0x2B);
        bBuf &= (~0x20);
        Set_F81866_Reg(0x2B, bBuf);             //Enable WDTO

        Set_F81866_LD(0x07);                    //switch to logic device 7
        Set_F81866_Reg(0x30, 0x01);             //enable timer

        bBuf = Get_F81866_Reg(0xF5);
        bBuf &= (~0x0F);
        bBuf |= 0x52;
        Set_F81866_Reg(0xF5, bBuf);             //count mode is second
        Set_F81866_Reg(0xF6, interval);         //set timer
        bBuf = Get_F81866_Reg(0xFA);
        bBuf |= 0x01;
        Set_F81866_Reg(0xFA, bBuf);             //enable WDTO output

        bBuf = Get_F81866_Reg(0xF5);
        bBuf |= 0x20;
        Set_F81866_Reg(0xF5, bBuf);             //start counting
}
//---------------------------------------------------------------------------
void DisableWDT(void)
{
        unsigned char bBuf;
        Set_F81866_LD(0x07);                    //switch to logic device 7
        bBuf = Get_F81866_Reg(0xFA);
        bBuf &= ~0x01;
        Set_F81866_Reg(0xFA, bBuf);             //disable WDTO output

        bBuf = Get_F81866_Reg(0xF5);
        bBuf &= ~0x20;
        bBuf |= 0x40;
        Set_F81866_Reg(0xF5, bBuf);             //disable WDT
}
//---------------------------------------------------------------------------
```

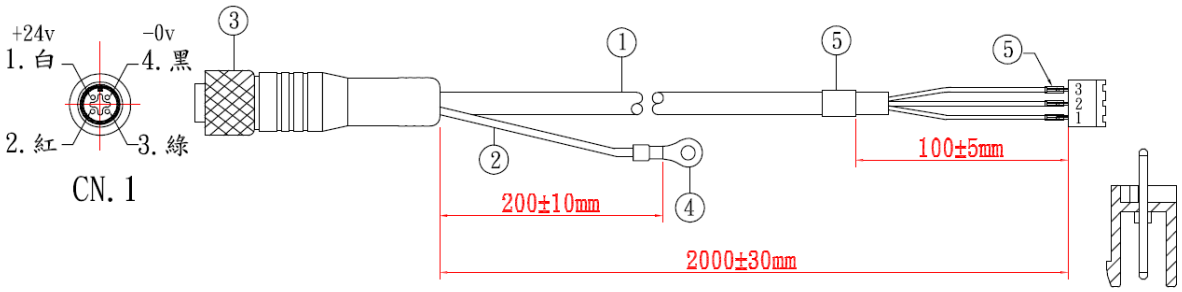
```
//---------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A
PARTICULAR
// PURPOSE.
//
//---------------------------------------------------------------------------
#include "F81866.H"
#include <dos.h>
//---------------------------------------------------------------------------
unsigned int F81866_BASE; void Unlock_F81866 (void); void Lock_F81866 (void);
//---------------------------------------------------------------------------
unsigned int Init_F81866(void)
{
	unsigned int result;
	unsigned char ucDid;

	F81866_BASE = 0x4E;
	result = F81866_BASE;

	ucDid = Get_F81866_Reg(0x20);
	if (ucDid == 0x07)			//Fintek 81866
	{	goto Init_Finish;}

	F81866_BASE = 0x2E;
	result = F81866_BASE;

	ucDid = Get_F81866_Reg(0x20);
	if (ucDid == 0x07)			//Fintek 81866
	{	goto Init_Finish;}

	F81866_BASE = 0x00;
	result = F81866_BASE;

Init_Finish:
	return (result);
}
//---------------------------------------------------------------------------
void Unlock_F81866 (void)
{
	outportb(F81866_INDEX_PORT, F81866_UNLOCK);
	outportb(F81866_INDEX_PORT, F81866_UNLOCK);
}
//---------------------------------------------------------------------------
void Lock_F81866 (void)
{
	outportb(F81866_INDEX_PORT, F81866_LOCK);
}
//---------------------------------------------------------------------------
void Set_F81866_LD( unsigned char LD)
{
	Unlock_F81866();
```

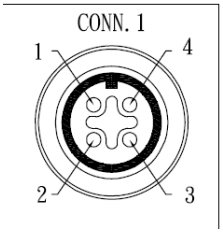
```
        outportb(F81866_INDEX_PORT, F81866_REG_LD);
        outportb(F81866_DATA_PORT, LD); Lock_F81866();
}
//----------------------------------------------------------------------
void Set_F81866_Reg( unsigned char REG, unsigned char DATA)
{
        Unlock_F81866();
        outportb(F81866_INDEX_PORT, REG);
        outportb(F81866_DATA_PORT, DATA);
        Lock_F81866();
}
//----------------------------------------------------------------------
unsigned char Get_F81866_Reg(unsigned char REG)
{
        unsigned char Result;
        Unlock_F81866();
        outportb(F81866_INDEX_PORT, REG);
        Result = inportb(F81866_DATA_PORT);
        Lock_F81866();
        return Result;
}
//----------------------------------------------------------------------
```

```
//----------------------------------------------------------------------
//
// 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.
//
//----------------------------------------------------------------------
#ifndef        F81866_H
#define        F81866_H     1
//----------------------------------------------------------------------
#define     F81866_INDEX_PORT      (F81866_BASE)
#define     F81866_DATA_PORT       (F81866_BASE+1)
//----------------------------------------------------------------------
#define     F81866_REG_LD      0x07
//----------------------------------------------------------------------
#define F81866_UNLOCK 0x87
#define     F81866_LOCK  0xAA
//----------------------------------------------------------------------
unsigned int Init_F81866(void);
void Set_F81866_LD( unsigned char);
void Set_F81866_Reg( unsigned char, unsigned char); unsigned char
Get_F81866_Reg( unsigned char);
//----------------------------------------------------------------------
#endif //     F81866_H
```

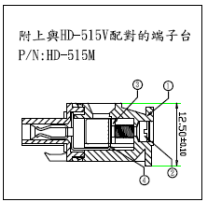
## B. External M12 cables PIN definition

- M12 power cable C501PW35203A21000P

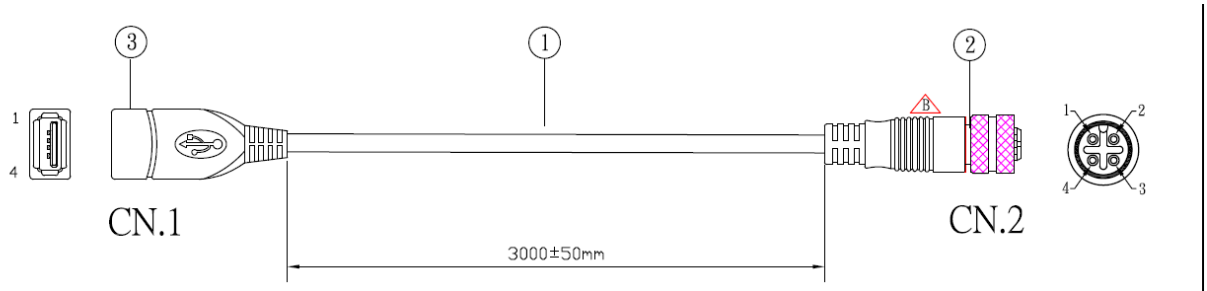


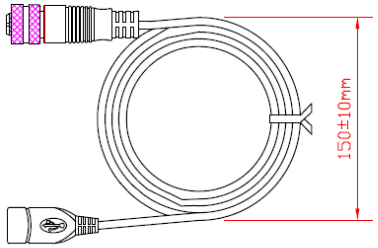




| | | |
|---|---|---|
| 4 | Black/黑 | 端子台(3) |
| 3 | Green/綠 | 3.2mmR型端子 |
| 2 | Red/紅 | 端子台(2) |
| 1 | White/白 | 端子台(1) |
| CN1 | Wire Color | CN2 |
| Pin out | | |



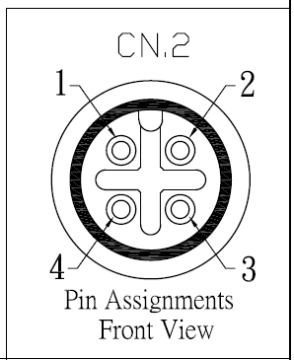

- M12 USB 2.0 cable C501USB1804A32000P



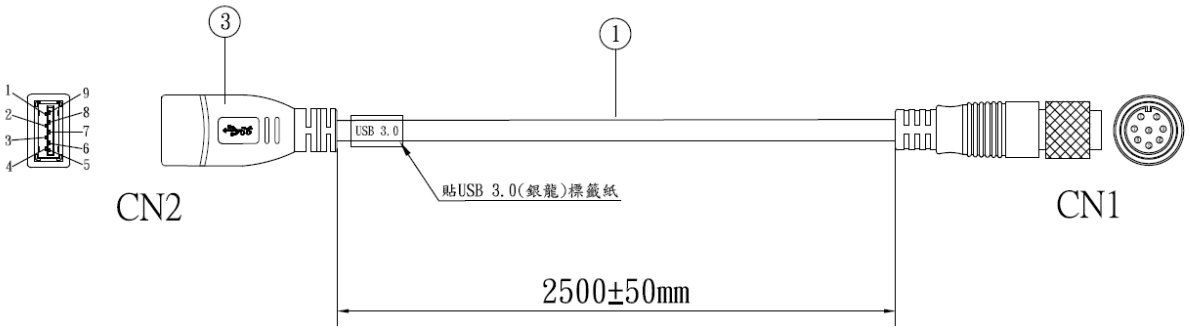

**WIRE CONNECTION**

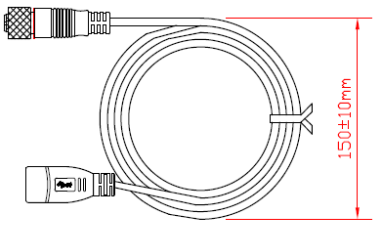
| CN.1 | CN.2 | |
|---|---|---|
| 1 | 1 RED | +5V |
| 2 | 2 WHITE | D- |
| 3 | 3 GREEN | D+ |
| 4 | 4 BLACK | GND |
| SHELL | SHELL | |



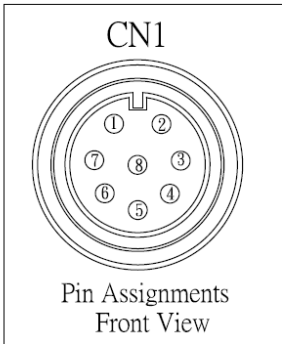

IBASE P/N:C501USB1804A32000P

- M12 USB 3.0 cable C501USB1540A22000P

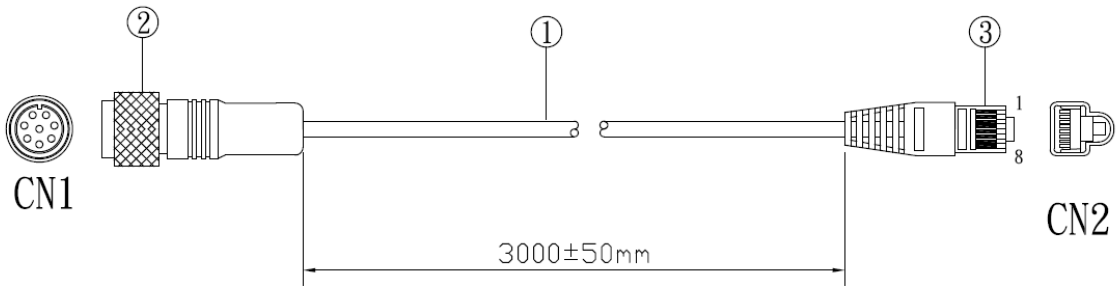


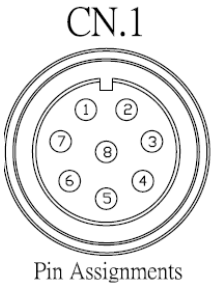




| shell | GND | shell |
|---|---|---|
| 1 | 紅 (VCC1) | 1 |
| 2 | 白 (D1-) | 7 |
| 3 | 綠 (D1+) | 6 |
| 4, 7 | 黑 (GND) | 5 |
| 5 | 藍 (Rx-) | 4 |
| 6 | 黃 (Rx+) | 3 |
| 8 | 紫 (Tx-) | 2 |
| 9 | 橘 (Tx+) | 8 |
| CN. 2 | Wire Color | CN. 1 |
| PIN OUT | | |

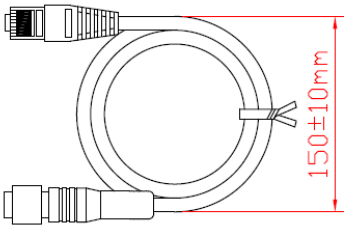



- M12 GbE LAN cable A012CB01200101000P

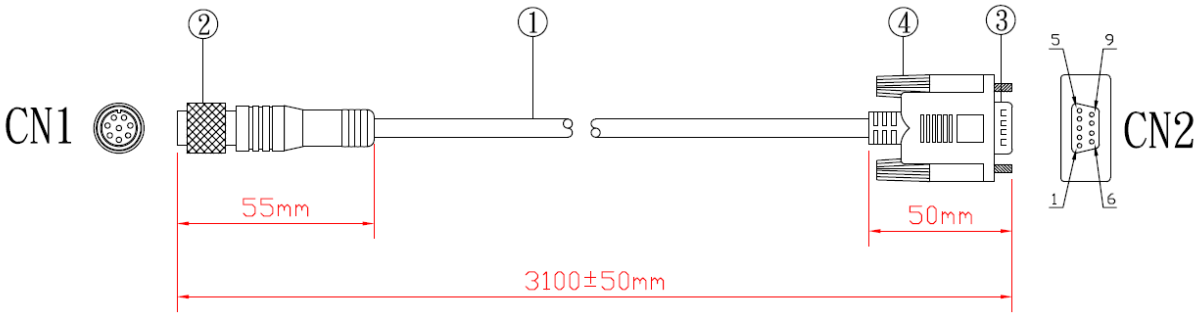


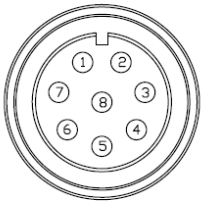




| Shell | Gnd | Shell | |
|---|---|---|---|
| 4 | Brown | 8 | TWIST |
| 6 | Brown/ White | 7 | |
| 5 | Green | 6 | |
| 2 | Blue/ White | 5 | TWIST |
| 3 | Blue | 4 | TWIST |
| 8 | Green/ White | 3 | |
| 7 | Orange | 2 | |
| 1 | Orange/ White | 1 | TWIST |
| Conn.1 | Wire Color | Conn.2 | |
| PIN OUT | | | |



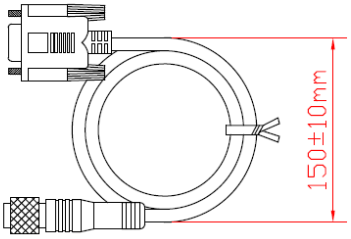
- M12 DSUB cable A012CB01210101000P




CN1
Pin Assignments
Front View

| Shell | Gnd | Shell | |
|---|---|---|---|
| 8 | Brown | 8 | TWIST |
| 7 | Brown/ White | 7 | |
| 6 | Green | 6 | |
| 5 | Blue/ White | 5 | TWIST |
| 4 | Blue | 4 | TWIST |
| 3 | Green/ White | 3 | |
| 2 | Orange | 2 | TWIST |
| 1 | Orange/ White | 1 | |
| Conn.1 | Wire Color | Conn.2 | |
| | PIN OUT | | |




IBASE P/N:A012CB01210101000P