

LR-J1900T Series

User' s Manual

Model No. :

LR-J1900T

REV:1.0

DATE : 2015/06/05

Security

- ◆Please read this manual carefully before you install the mainboard and other hardware.
- ◆Please wear antistatic gloves before taking mainboard.
- ◆Please ensure all cables in good connection before use.
- ◆To avoid short circuit, please don't leave any useless screws and other accessories on the mainboard or computer host.
- ◆Please try to protect the mainboard from dust, moisture and extreme temperature variation.
- ◆Please don't leave the mainboard on shaky places.
- ◆If you encounter any technical problem about this product, please contact the experienced technical.
- ◆Please turn off power before you install or remove any hardware.
- ◆Please pull up power cord before you connect or discount any cable in the computer.
- ◆In order to avoid the harm to products by turn on&off frequently, please wait 30 seconds to turn on after you turn it off.
- ◆If the power is broke, don't fix it by yourself, please connect to professional technical.

Catalogue

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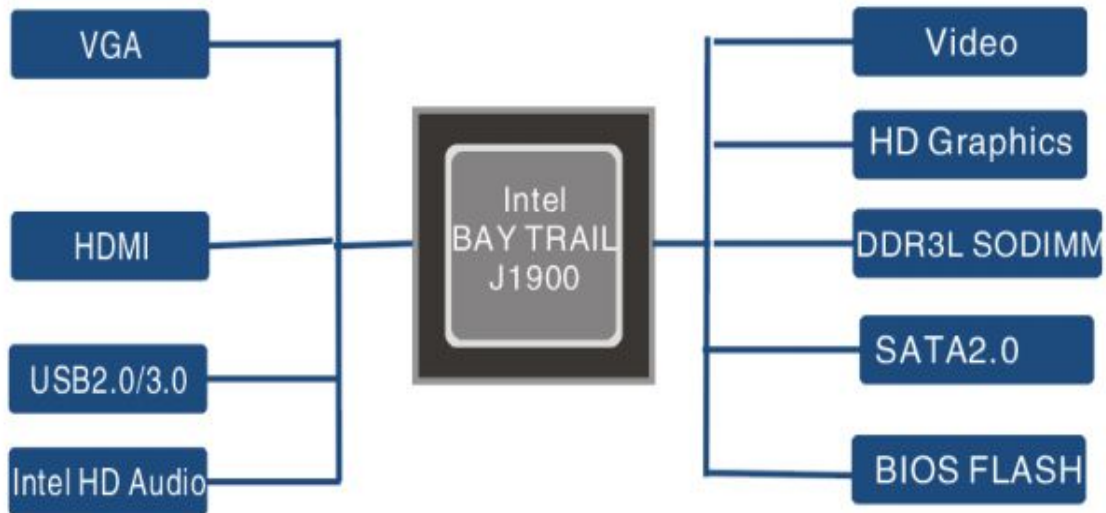
Chapter One Mainboard brief and specification

Thanks for purchasing Realan LR-J1900T series Mainboard. Please check if the packing box is intact. If it is broke or short of some accessories, pls contact the suppliers.

1.1 Items list in the packing box

- ※ LR-J1900T Series Mainboard
- ※ SATA data cable
- ※ SATA power cable
- ※ driver disk
- ※ I/O shield

1.2 Mainboard frame diagram



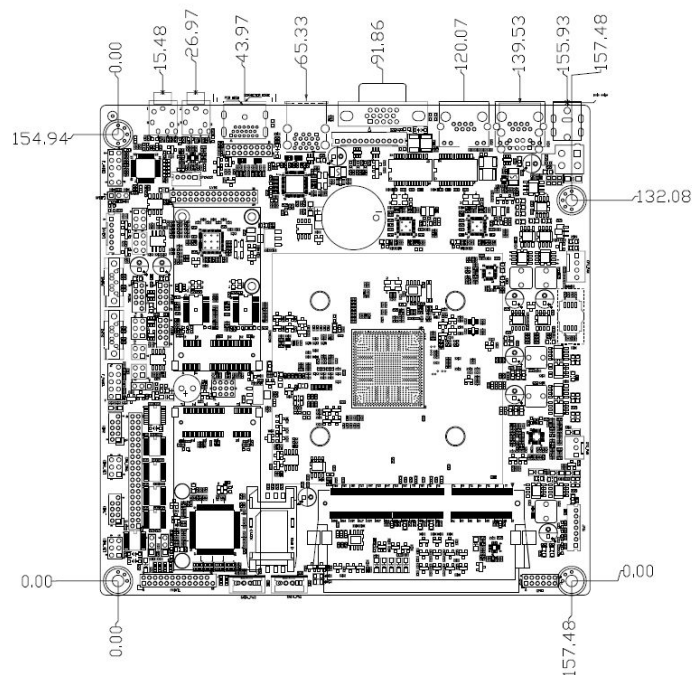
1.3 LR-J1900T Series Mainboard Specification

(CPU)	<ul style="list-style-type: none"> Ⓜ Built in with Intel Celeron J1900 Quad Core 2.0GHz, Max Turbo can reach 2.41GHz
Memory	<ul style="list-style-type: none"> Ⓜ 1*DDR3L SO-DIMM sockets, supporting up to 8 GB of system memory Ⓝ Support 1.35V DDR3L 1066/1333 MHz Ⓟ Support non-ECC memory
Display	<ul style="list-style-type: none"> Ⓟ Intel HD Graphics Ⓟ 1*HDMI 1.4, supporting a maximum resolution of 1920*1080 Ⓠ 1*VGA, supporting a maximum resolution of 1920*1080
Audio	<ul style="list-style-type: none"> Ⓠ Built in with Realtek ALC662 HD Audio Controller Ⓠ Support High Definition Audio ⓂⓆ Supporting 2/4/5.1 channel * To configure (Through HDMI)
Network	<ul style="list-style-type: none"> ⓂⓂ Built in Realtek RTL8111E network card

Expansion Slots	<p>2*MINI PCI Express slot (The Mini PCI Express slot conforms to PCI Express 2.0 standard, support WIFI&BT modules and mSATA card)</p>
USB	<p>3*USB 2.0 1*USB 3.0 6*USB 2.0 (need to expand, two of them and 3G are option)</p>
Internal I/O Connectors	<p>2*MINI PCIE 1*F_Panel 1*SPDIF 1*CPU_FAN 1*SYS_FAN 2*SATA 6*COM 1*LVDS 1*PRINT 1*JPS1 1*GPIO 1*SPEAKER 1*ATX1 1*CIR 1*CLR_CMOS 1*AUTO_ON 1*VGA_H1 1*JHDMI1</p>
Storage Interface	<p>2*SATA 3Gb/s SSD/HDD (one of them and mSATA are option) 1*mSATA</p>
Back Panel Connectors	<p>1*DC_IN 2*USB2.0 1*RJ45 1*VGA 2*USB3.0 1*HDMI 1*HP_OUT 1*MIC_IN</p>
BIOS	<p>AMI BIOS</p>
Power Supply	<p>12V adapter</p>

Operating System	P̂ Support Windows 8.1/8 32-bit/64-bit P̂ Support Windows 7 32-bit/64-bit P̂ Support Windows ES 7/8
Form Factor	P̂ 170mm*170mm

1.4 Mainboard Layout Diagram



Chapter Two Installation Instructions of Hardware

2.1 Matters before installation

Since there are lots of electronic components on the mainboard that is easy to be damaged by static, pls wear the antistatic gloves before take it out of bags and install hardware. The damage can happen possibly during transportation, so please check the packing is intact, if there is obvious damage on the mainbord, please don' connect with power.

Steps of installation:

- 1、 check accessories;
- 2、 intall memory;
- 3、 check if the jumper is correct;
- 4、 fasten mainboard on the chassis;
- 5、 install all expend bracket;

6、install other device and ensure the connection is good;

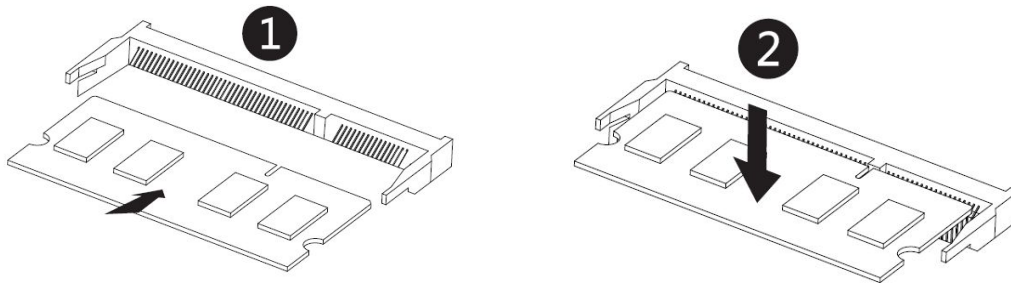
Remark: Don' t power on the mainboard before finish installation otherwise it will damage the mainboard.

2.2 Install Memory

LR-J1900T Series 204Pin S0-DIMM memory slot onboard support 1.35V 1066/1333MHZ DDR3L (memory working voltage 1.35V), support max 8G, min 2G

Steps of memory installation:

- 1、Goldfinger in the face of slot, Pls pay attention to fool-proof gap and slot point.
- 2、45° inclined infix into slot, then push it down softly, snap joint chucking and installing successfully when hearing “crack”. As Follows :



Remark: Pls use standard Memory in order to keep system stable

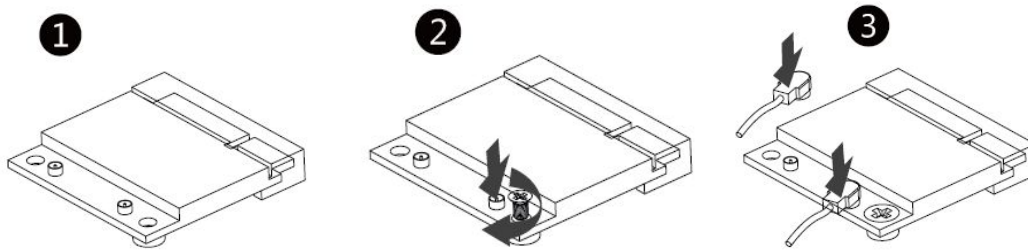
2.3 Install WiFi&3G module

LR-J1900T Series Mini PCIE slot onboard support WiFi module, 3G module and other Mini PCIE device.

W steps of installing WiFi&3G module:

WIFI Module&3G Module Goldfingerin the face of MINI PCIE slot, Pls pay attention to WIFI&3GModule fool-proof slot and MINI PCIE slot salient point;

- 1、WIFI &3G Module 45° inclined infix MINI PCIE slot, then push softly and lock screw .
- 2、Insert WiFi&3G module into the Mini PCIE slot, then press down and lock it by screw;
- 3、 connect the antenna with WiFi&3G module. as following:



Remark: If use 3G and SIM card at same time , 3G_SET needle cap need to be set on 3-5/4-6, now there is a USB2.0 extend cann' t be used.

2.4 install mSATA SSD

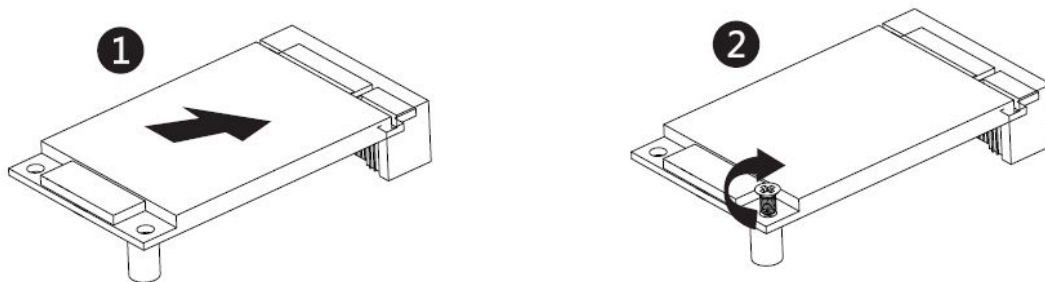
LR-J1900T Series MB come with a mSATA slot , support mSATA SSD hard driver.

mSATA installing steps:

1、mSATA SSD Goldfinger in the face of mSATA slot, Pls pay attention to mSATA SSD fool-proof gap and mSATA slot salient point;

2、mSATA SSD 45° inclined infix mSATA slot, then push softly and lock screw .

As following:



Note: if use mSATA SSD, the jumper on STAT_SET1 should be set on 1-5/2-6/3-7/4-8, in this case the function of SATA3 isn't workable.

2.5 Rear I/O introduction



2.5.1 DC power interface

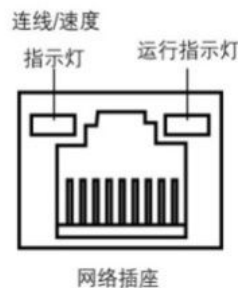
This interface is for connection with DC 12V AC adapter.

2.5.2 USB2.0 interface

USB2.0 interface support USB2.0 device, compatible with USB1.1/USB1.0, you can connect USB device with this interface, such as Udisk, keyboard, mouse and so on.

2.5.3 LAN interface (RJ45)

LAN interface is high speed Ethernet (Gigabit Ethernet), can connect with internet. Transmission rate up to 1000Mbps. Its indicator light introduction as follows:



Link LED	Network transmission rate
Light off	10Mbps
Green light on	100Mbps
Yellow light on	1000Mbps

Active LED	Network light
flicker	Data transmission
Light off	No data transmission

2.5.4 VGA interface

VGA (Video Graphics Array) is an interface for analog signal output, also called D-sub interface, total 15pin, divide into three rows, 5pin in each row.

2.5.5 USB3.0

USB3.0 is regarded as super speed USB. It is a standard interface for the device that connects with PC, audio or devices of high frequency. Only when a computer owns a USB3.0 relevant device can you use USB3.0. Its actual transmission speed: read speed is 60MB/s to 140MB/s, write speed is 50MB/s to 90MB/s.

2.5.6 HDMI interface

HDMI (high definition multimedia interface) is an interface for full

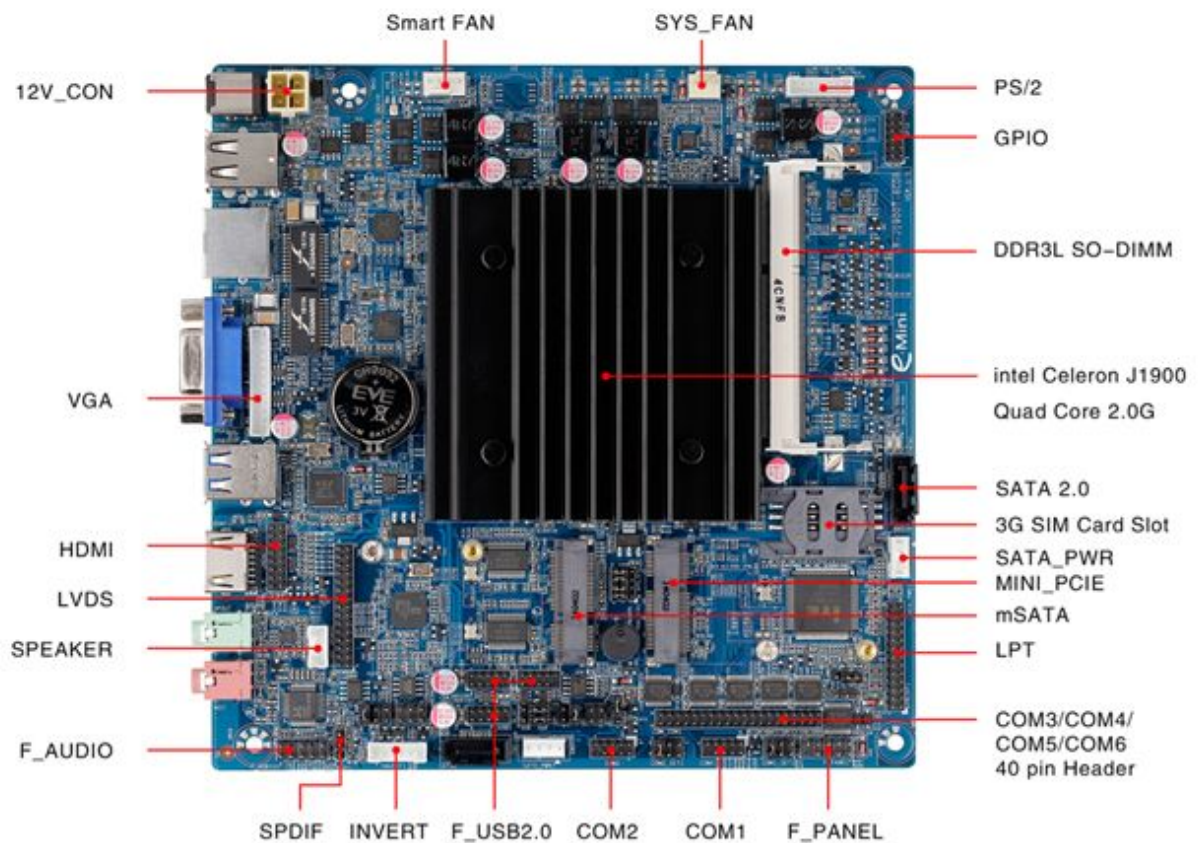
digitalization image/sound transmission. It can transfer uncompressed signal of audio and image. It is compatible with HDCP, Dolby TrueHD and DTS HD Master Audio signal format. It supports max 492KHz/24bit-8Channel LPCM audio output and can connect with HDMI monitor. Support max 1920*1200 resolution ratio, the actual resolution ratio is different in different monitor.

2.5.7 Audio interface

Green interface is for audio output. In the output mode of 4/5.1/7.1 sound track audio frequency, it is for main sound output.

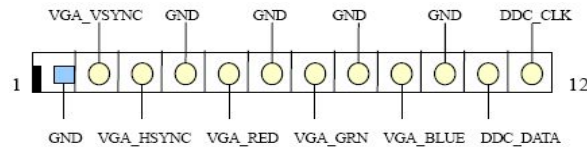
Red interface is for microphone.

2.6 Sockets and jumper setting



2.6.1 VGA_H header

LR-J1900T Series provide a 1*12Pin 2.0Pitch Header, Pin as listed below:

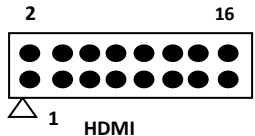


Pin	definition	Pin	definitio
1	GND	2	VGA_VSYNC (field synchronization)
3	VGA_HSYNC (line synchron ization)	4	GND
5	VGA_RED (red)	6	GND
7	VGA_GRN (green)	8	GND
9	VGA_BLUE (blue)	10	GND
11	DDC_DATA	12	DDC_CLK (clock)

2.6.2 JHDMI Header

LR-J1900T Series provide a 2*8Pin 2.0Pitch Header, Pin as listed below:


Pin	definition	Pin	definition
1	Signal line 2+	2	DDCclock
3	Signal line 2-	4	DDC data
5	l+	6	black
7	l-	8	floating-detection
9	Signal line 0+	10	
11	Signal line 0-	12	Ground connection



13	clock+	14	Ground connection
15	clock-	16	Ground connection

2.6.3 ATX-12V header

LR-J1900T Series provide a 2*2Pin ATX-12V header, Pin as listed below:



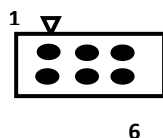
pin	definition
1	GND
2	GND
3	+12V
4	+12V

ATX_12V

2.6.4 LVDS_PWR Header

LR-J1900T Series provide a 2*3Pin 2.54Pitch Header, Pin as listed below:

pin	definition	pin	definition
1	VCC3	2	LVDS_PWR
3	VCC5	4	LVDS_PWR
5	+12V	6	LVDS_PWR

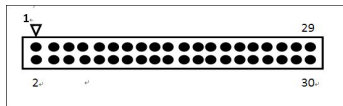


2.6.5 LVDS Header

LR-J1900T Series provide a 2*15Pin 2.0Pitch Header, Pi as listed below:

Pin	definition	Pin	definition	Pin	definition
1	VCC	2	VCC	3	VCC
4	GND	5	GND	6	GND
7	LVDS_A_DATA 0-	8	LVDS_A_DAT A0+	9	LVDS_A_DATA 1-
10	LVDS_A_DATA 1+	11	LVDS_A_DAT A2-	12	LVDS_A_DATA 2+
13	GND	14	GND	15	LVDS_A_CLK-
16	LVDS_A_CLK+	17	LVDS_A_DAT A3-	18	LVDS_A_DATA 3+

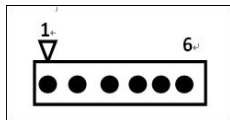
19	LVDS_B_DATA 0-	20	LVDS_B_DAT A0+	21	LVDS_B_DATA 1-
22	LVDS_B_DATA 1+	23	LVDS_B_DAT A2-	24	LVDS_B_DATA 2+
25	GND	26	GND	27	LVDS_B_CLK-
28	LVDS_B_CLK+	29	LVDS_B_DAT A3-	30	LVDS_B_DATA 3+



2.6.5 INVENT LED header

LR-J1900T Series provide a 1*6Pin 2.0Pitch Header, Pin as listed below:

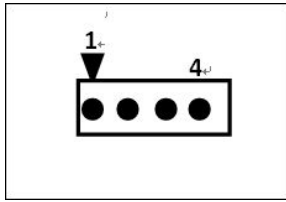
Pin	definition	Pin	definition
1	+ 12V	2	+12V
3	LVDS_BKL_EN(led switch)	4	BKL_PWM(led brightness)
5	GND	6	GND



2.6.6 CPU CPU_FAN header

LR-J1900T Series provide a 1*4Pin 2.54Pitch Header, Pin as listed below:

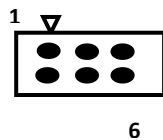
Pin	definition
1	GND
2	+12V
3	SENSE
4	CONTROL



2.6.7 LED controller J_1 Header

LR-J1900T Series provide a 2*3Pin 2.54Pitch Header, Pin as listed below:

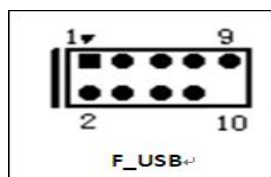
Pin	definition
1-2(Default)	Led turned off
3-4	led+
5-6	led-



2.6.8 F_USB(front expanded USB2.0)

LR-J1900T Series provide 3 2*5Pin 2.0Pitch Header, Pin as listed below:

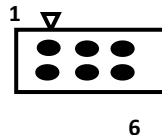
Pin	definition	Pin	definition
1	VCC	2	VCC
3	USB_PN	4	USB_PN
5	USB_PP	6	USB_PP
7	GND	8	GND
9	NA		



2.6.9 3G_SET1 Header

LR-J1900T Series provide a 2*3Pin 2.0Pitch Header, Pin as listed below:

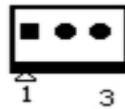
Pin	definition
1-3 2-4	3G
3-5 4-6	USB



2.6.10 SYS_FAN Header

LR-J1900T Series provide a 1*3Pin 2.54Pitch Header, Pin as listed below:

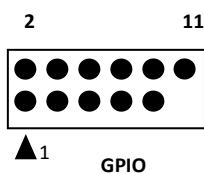
Pin	definition
1	GND
2	+12V
3	FAN speed detection



2.6.11 GPIO Header

LR-J1900T Series provide a 2*6Pin 2.0Pitch Header, Pin as listed below:

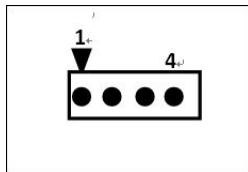
pin	definition	pin	definition
1	5V	2	12V
3	GIPO	4	GIPO
5	GIPO	6	GIPO
7	GIPO	8	GIPO
9	GIPO	10	GIPO
11	GND	12	GND



2.6.12 SATA_PWR Header

LR-J1900T Series provide 2 1*4Pin 2.0Pitch Header 接口, Pin 定义如下:

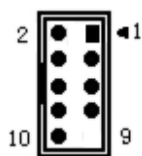
Pin	definition
1	+ 5V
2	GND
3	GND
4	+ 12V



2.6.13 COM Header

LR-J1900T Series provide 2 2*5Pin Cut 9Pin2.0Pitch and 1 2*20Pin 2.0Pitch Header, Pin as listed below:

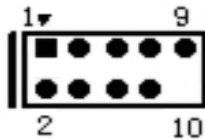
Pin	definition
1	DCD#
2	RXD
3	TXD
4	DTR#
5	GND
6	DSR#
7	RTS#
8	CTS#
9	RI#
10	NA



2. 6. 14 F_Panel Header

LR-J1900T Series provide a 2*5Pin 2.54Pitch Header, Pin as listed below:

Pin	definition	Pin	definition
1	HD LED+ (HDD+)	2	Power LED+
3	HD LED- (HDD-)	4	Power LED-
5	GND	6	POWER-SW (switch)
7	RESET-SW (reset)	8	GND
9	GND		



2. 6. 15 AUTO_ON

LR-J1900T Series provide a 1*3Pin 2.54Pitch Header, Pin as listed below:

Pin	definition
1-2(Default)	Normal
2-3	AUTO POWER ON

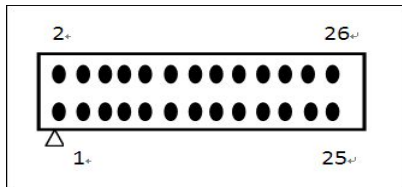


2. 6. 16 PRINT

LR-J1900T Series provide a 2*13Pin 2.0Pitch Header, Pin as listed below:

Pin	definition	Pin	definition
1	STB	2	AFD
3	PD0	4	ERR
5	PD1	6	INIT
7	PD2	8	SLIN
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND

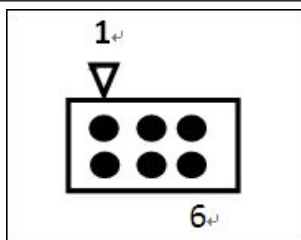
17	PD7	18	GND
19	ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC



2. 6. 17 COM2_SET

LR-J1900T Series provide a 2*3Pin 2.54Pitch Header, Pin as listed below:

Pin	definition
1-2	+12V
3-4	+5V
5-6 (DEFAULT)	DCD



2. 6. 18 J485E Header

LR-J1900T Series provide a 2*3Pin 2.54Pitch Header, Pin as listed below:

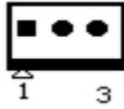
Pin	definition	Pin	definitio n
1	485+	2	485-
3	GND	4	GND



2. 6. 19 CLR_COMS

LR-J1900T Series provide a 1*3Pin 2.54Pitch Header, Pin as listed below:

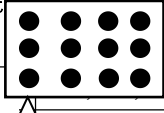
pin	definition
1-2(Default)	Normal
2-3	Clear COMS



2.6.20 SATA_SET

LR-J1900T Series provide a 3*4Pin 2.54Pitch Header, Pin as listed below:

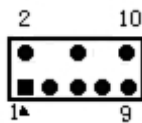
SAT 12	
definition	pin
MSATA	7, 4-8
MINI_PCIE	5-9, 6-10, 7-11, 8-12



2.6.21 F_AUDIO

LR-J1900T Series provide a 2*5Pin 2.54Pitch Header pin, Pin as listed below:

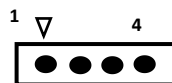
1	FP_MIC_L	2	GND
3	FP_MIC_R		
5	FP_OUT_R	6	Jack Detect
7	GND		
9	FP_OUT_L	10	Jack Detect



2.6.21 SPEAKER header

LR-J1900T Series provide a 1*4Pin 2.0Pitch Header, Pin as listed below:

Pin	definition
1	Left horn-
2	Left horn+
3	Right horn-
4	Right horn+



Note: How to recognize the 1Pin

- 1、 Check the header and the sign besides the header, usually is signed by “1”、 bold or triangle;
- 2、 Check the back bonding pad, usually the square one is 1Pin.

2.6.22 BAT (COMS battery)

The battery supports remembering CMOS even when system is off (For example: date and BIOS setting) needed power. CMOS will go wrong or missing when the battery doesn't have enough power. So replace the battery in time when power is not enough. You can also remove the battery to clear the CMOS:

- 1、 Pls turn off the computer first and pull out the power cord;
- 2、 Carefully remove the battery from the holder and wait a minute; (or use metal like screwdriver to touch the positive and negative pole of the holder to cause short cut for 5 seconds)
- 3、 Put the battery back;
- 4、 Plug in the cord and restart the computer

2.7 SATA header

LR-J1900T Series provide a 2*SATA2.0 header, as listed below:

Pin	Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



SATA hot plug notes:

- 1、 HDD must support SATA 2.0 and use 15 cord SATA HDD header;
- 2、 The chipset driver supports SATA HDD hot plug;
- 3、 Don't hot plug the HDD where the OS located

3. Brief introduction of BIOS

The BIOS (/ˈbaɪ.ɒs/, an acronym for Basic Input/Output System and also known as the System BIOS, ROM BIOS or PC BIOS) is a type of firmware built on the ROM, where the most important input and output software, automatic check and boot software are stored, which could read system setting details; BIOS is mainly used to set and control computer's hardware

Remark:

A, To update BIOS might meet risk, so here suggest you don't refresh your BIOS if nothing wrong with it; If you have got to, Please be cautious, in case the system damage happens because of improper operation.

B, Don't change original setting of BIOS, because the improper setting might make system instable, or lead to other unexpected result; If you could meet boot failure or system instability because of improper setting, Please tr to clear COM setting value to restore the original default setting.

3.2 BIOS configuration setting

3.2.1 The functions of BIOS contents

Main	For basic setting for system
Advanced	For advanced setting for system
Chipset	For setting of chipset configuration
Security	For security setting
Boot	For setting options for boot disc
Exit	For exist after setting, or restore original setting

3.2.2 Keys instruction for BISO operation

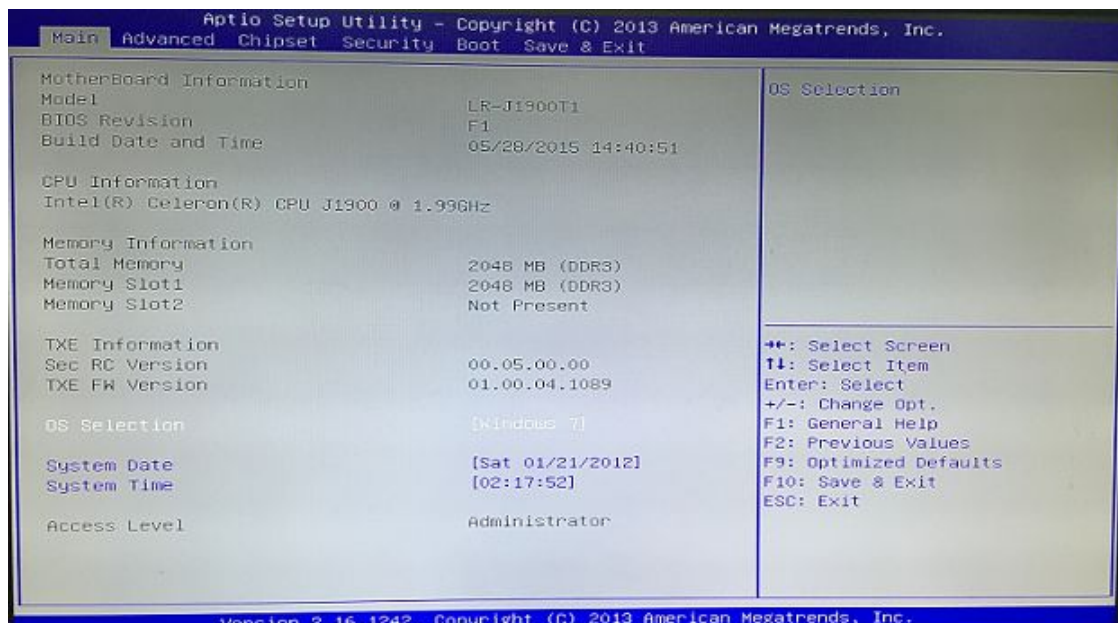
→←	Rightward or leftward move for selection
↓↑	Upward or downward move for selection
Enter	For selection confirmation
+/-/Space	change option
F7	For Restoring user's default setting
F8	For saving user's default setting
F9	For loading optimized default setting
F10	To save and exit setting
ESC	Exit or go back to main interface

3.2.3 Introduction of BIOS option setting

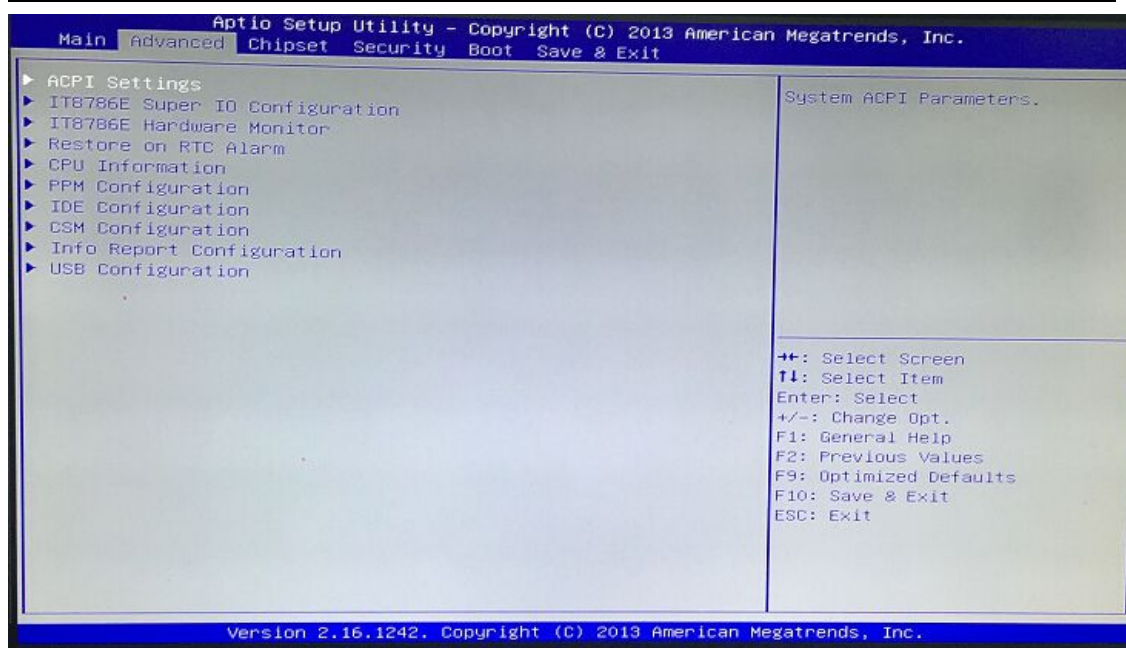
1> Details of “MAIN” configuration

A, “MAIN” configuration shows the basic information of system, such as BIOS version, BIOS date, CPU information, RAM information, system date and time

B, System date and time : it shows current date and time on computer. If OS was run, date and time would update automatically as the modification the date and time of OS



2> Details of “ADVANCED” setting



“ADVANCED” includes 10 subsidiary configurations, ACPI Settings, IT8786E IO Configuration, IT8786E Hardware Monitor, Restore On RTC Alarm, CPU information, PPM configuration, IDE configuration, CSM configuration, configuration report and USB configuration.

a、 (ACPI Settings)

The configuration is for selecting the work status of ACPI, the regular setting is S3, namely Suspend to RAM ,also known as STR. STR is used to store work status figures to RAM before enter STR. Once the HDD received wake up signal or other orders, the system will restore to the work status before dormancy

b、 (IT8786E IO Configuration)

The configuration is setting serial interface address, parallel port address, Infrared sense and watch dog device

c、 (IT8786E Hardware Monitor)

The configuration allow user to monitor the key factors of PC, such as voltage circuits on the mainboard ,running speed of fan, fan work status and temperature

d、 (Restore On RTC Alarm)

The configuration is for real time boot (Only for real time ON, doesn’ t support real time OFF, if Real time OFF needed, need to the third party software, if this content was enabled, then could set following function:

Wake up day of Month **【Every Day】** (1-31) Real time ON every day (1st to 30th)

Wake up Hour Real time on as per hour (1st to 24th)

Wake up Minute Real time on as minute (1st to 60th)

Remark: Please avoid improper OFF or Power outage during operation, when set ON RTC

e、 (CPU Information)

The configuration is for check CPU information, such as the model, Clock, multipliers, cores mount, cache and other technology support

f、 (PPM Configuration)

The PM configuration can adjust the voltage and frequency of CPU as per system task to decrease the power consumption and heat

g、 (IDE Configuration)

The configuration is for setting IDE or ACHI mode, to boot enable or disable the hot-swap function or SATA controller.

h、 CSM Configuration

i、 Info Report Configuration

j、 USB Configuration , For enable or disable USB 3.0 controller

3 (Chipset)

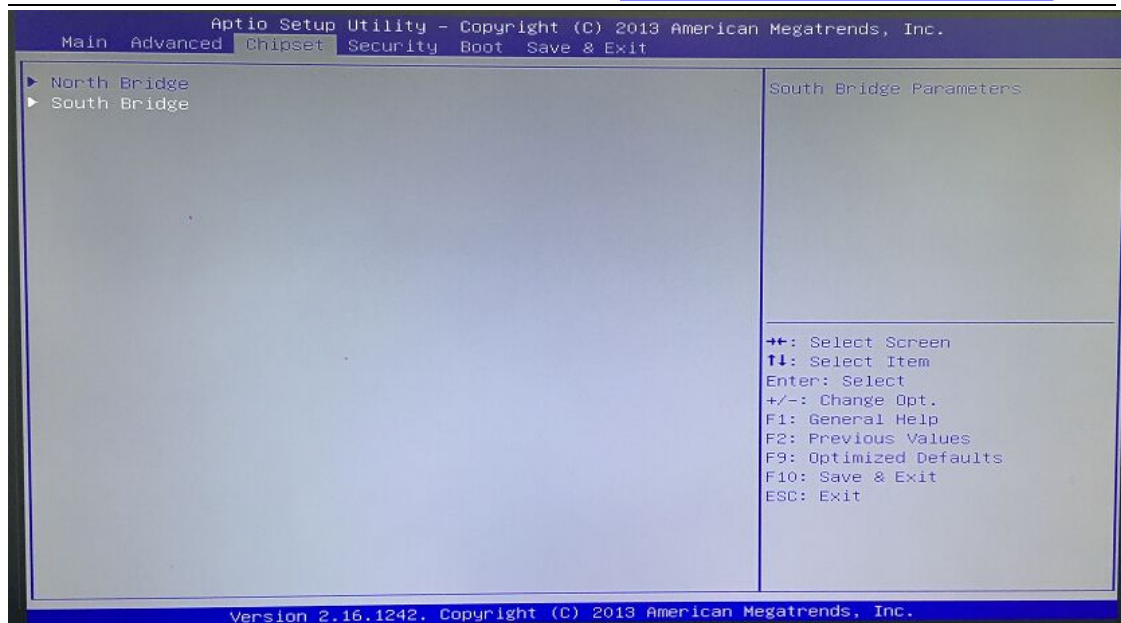
a、 North Bridge

The configuration for setting video card, display port, LCD resolution, LVDS setting.

b、 South Bridge

The configuration is for setting USB configuration, PCI-E configuration, Restore on AC Power Loss, to enable or disable the LAN and PXE, and CPIO configuration

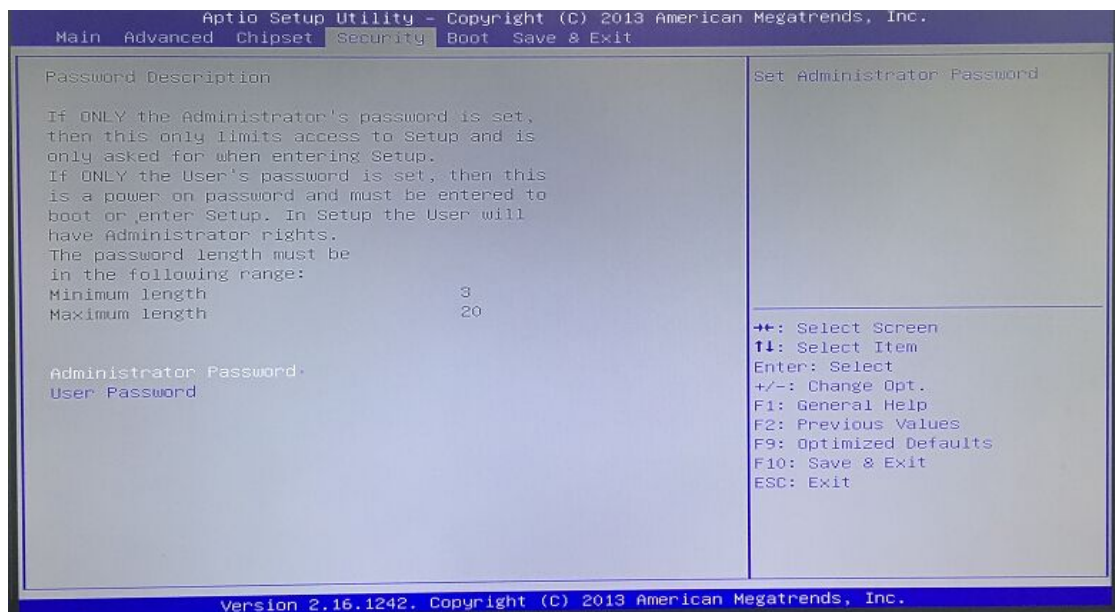
Interface of Chipset as follows:



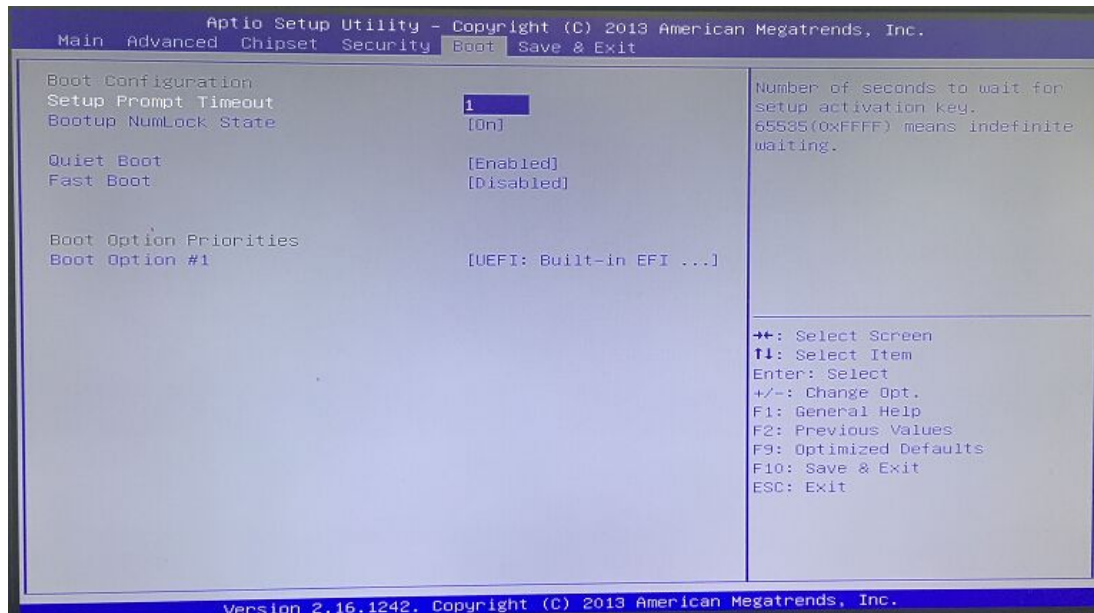
4> (Security)

The configuration is for setting administrator or user PIN, could type 20 letters at most, click Enter key after finish typing, the system will indicate and let you to type again to confirm the PIN.

Security interface as follows:

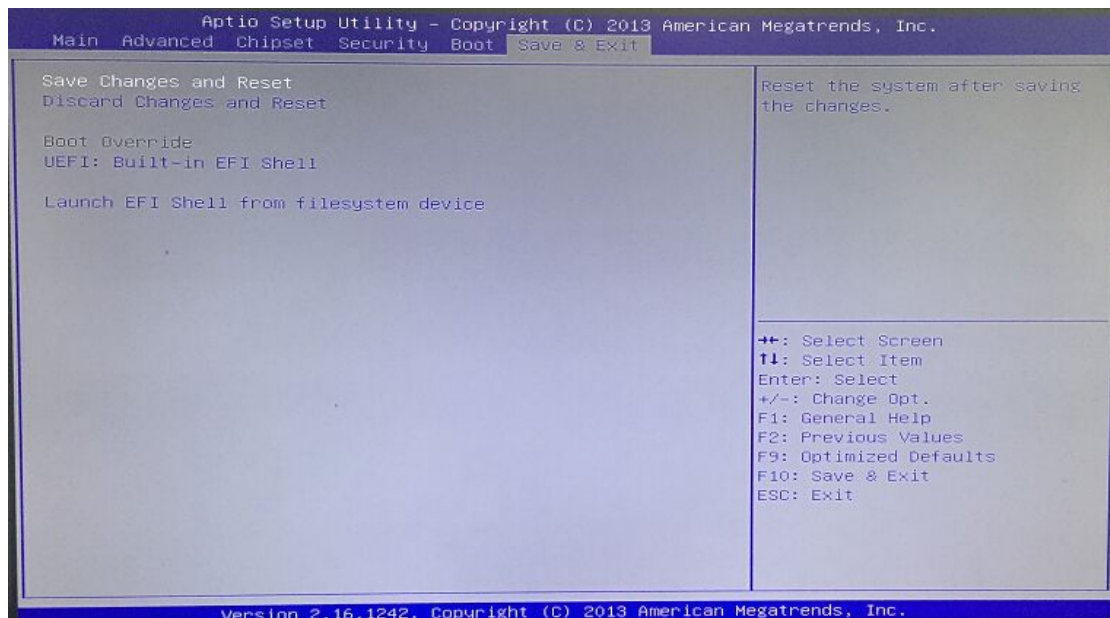


5> (Boot)



The configuration is used to change boot priority, enable or disable fast boot; Once fast boot enabled ,user could boot the computer by keyboard or mouse after the computer is OFF

6> (Save&Exit)



a、 Save Changes and Reset

- b、Disregard Changes and Reset
- c、F9 Optimized Defaults

Chapter 4, The installation of Drives

4.1 Chipset drive installation

- 4.1.1 Enter into drive disc content LR-J1900T/Chipset, then double-click “set up” ;
- 4.1.2 Click “Next” on the interface by mouse
- 4.1.3 Click “Yes ” then “Next”
- 4.1.4 After installation finished, click “Yes” in reboot option then click “Finish” to reboot computer and load drive automatically.

4.2 Installation of video card drive

- 4.2.1 setup; Enter into drive disc content LR-J1900T/Graphics, then double-click “set up” ;
- 4.2.2 Click “Next” on the interface by mouse
- 4.2.3 Click “Yes ” then “Next”
- 4.2.4 After installation finished, click “Yes” in reboot option then click “Finish” to reboot computer and load drive automatically.

4.3 Onboard network drive installation

- 4.3.1 Enter into drive disc content LR-J1900T/LAN, then double-click “set up” ;
- 4.3.2 Click “Next” on the interface by mouse
- 4.3.3 Click “Yes ” then “Next”
- 4.3.4 After installation finished, click “Yes” in reboot option then click “Finish” to reboot computer and load drive automatically.

4.4 Onboard audio card drive installation

- 4.4.1 Enter into drive disc content LR-J1900T/Audio, then double-click “set up” ;
- 4.4.2 Click “Next” on the interface by mouse
- 4.4.3 Click “Yes ” then “Next”
- 4.4.4 After installation finished, click “Yes” in reboot option then click “Finish” to reboot computer and load drive automatically.

4.5 USB 3.0USB drive installation

4.5.1 Enter into drive disc content LR-J1900T/3.0 USB, then double-click “set up” ;

4.5.2 Click “Next” on the interface by mouse

4.5.3 Click “Yes ” then “Next”

4.5.4 After installation finished, click “Yes” in reboot option then click “Finish” to reboot computer and load drive automatically.