Chapter 1 Product Introduction

1.1 Parameters

Processor: Celeron J1900(2.00GHz, quad-core,TDP10W)

System memory: one single channel DDR3L 1333MHz slot up to 8GB

GPU: Integrated Intel HD Graphics

Storage: 2*SATA2.0, 1x mSATA;

USB: 5*USB2.0, 1*USB3.0

Display: 1*HDMI, 1*VGA, 1*dual channel 24bit LVDS, support independent display

Ethernet: 2*RTL8111F LAN (LAN1 and 2*USB2.0optional)

Audio: ALC662, support Speaker-out, MIC-in, SPDIF and amplifier

I/O: IT8786E supports 6*COM (COM2 can cahnge to RS485) and 1*LPT; IT8772E supports only 1*COM

Other I/O interfaces: 1*MINI-PCIE (support WIFI, support 3G/4G network with SIM card slot), 1*LPT; GPIO; PS/2 KB /MS

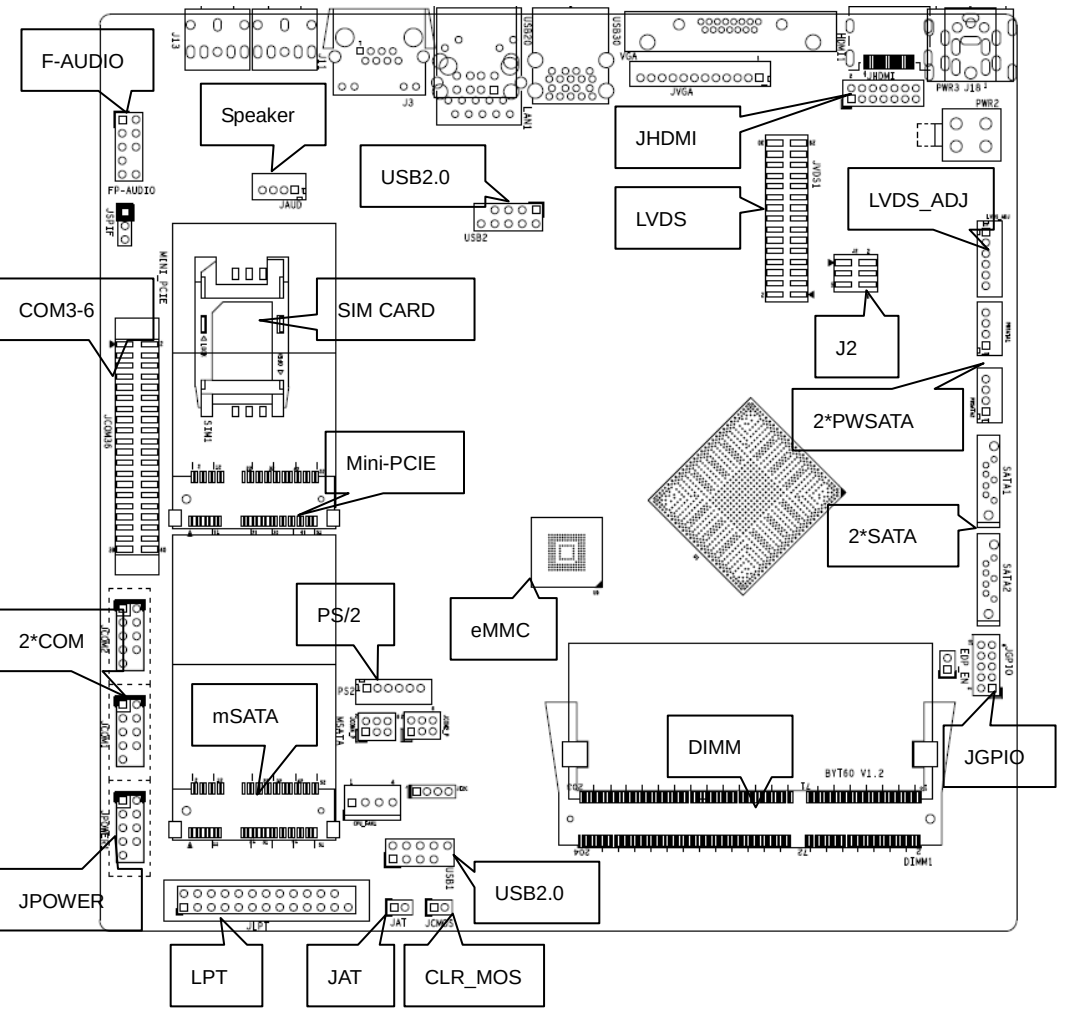
Dimension: 170mm x 170mm

Power: DC-IN adapter (12V)

Do not power this board with adapters or power of other voltage.

Chapter 2 Hardware

2.1 Graphic description



⚠ **Please carefully read this manual before you connect an external connector, so as to avoid damage to the board.**

2.1.1 Jumper Function Setting

Set jumpers according to your needs before installing hardware.

Tips about how to identify the first header of jumpers and interfaces: 1. Observe the mark beside plugs, the first header is usually marked by "1" or bold line or triangular symbol; 2. The first header is the square pad of pads on the back; 3. There is a white arrow beside the first header of all jumpers.

2.1.2 System Memory

There are one DDR3L-1333MHZ SO-DIMM slot on the board, supporting single channel and up to memory of 8GB.

2.1.3 Internal Display Interfaces (JHDMI, JVGA)

14pin JHDMI and 12pin JVGA headers reserved.

JHDMI:

Signal	Pin		Signal
DVI1_DATA2_P	1	2	DVI1_DATA2_N
DVI1_DATA1_P	3	4	DVI1_DATA1_N
DVI1_DATA0_P	5	6	DVI1_DATA0_N
DVI1_CLK_P	7	8	DVI1_CLK_N
DVI1_SCL	9	10	DVI1_SDA
VGA_DATA_5V	11	12	GND
DVI1_DETECT	13	14	GND

JVGA:

Pin	Signal
1	CRT_DDC_ DATA
2	CRT_DDC_ CLK
3	GND
4	VGA_B_R
5	GND
6	VGA_G_R
7	GND
8	VGA_R_R
9	GND
10	CRT_HSYNC1
11	CRT_VSYNC1
12	VGA_DVI_5V

2.1.4 Internal PWR2

Pin	Signal
1	+12V
2	+12V
3	GND
4	GND

2.1.5 Internal USB (USB1, USB2)

Internal USB2.0 Port

USB1, USB2:

Signal	Pin		Signal
5V	1	2	5V
USB DATA-	3	4	USB DATA-
USB DATA+	5	6	USB DATA+
GND	7	8	GND
	9	10	NUL

2.1.6 LAN

With 10-gigabit Ethernet chip RTL8111F. When the LAN port is connected to cable, the Link LED will be green and on all the time, and the Action LED will be yellow and flicker if internet data is transmitted.

RJ45 LAN LED Description:

LILED(green)	Function	ACTLED (yellow)	Function
On	Connected	Flicker	Data transmission

2.1.7 Audio (FP_AUDIO, JAUD, JSPIF)

ALC662 audio control chip. The green one is Speaker-out, and the pink one is Mic-in; JAUD is amplifier output; JSPIF is SPDIF.

FP_AUDIO:

Signal	Pin		Signal
MIC2-L	1	2	AGND
MIC2-R	3	4	AVCC
FRO-R	5	6	MIC2-JD
F-IO-SEN(AGNG)	7	8	NC
FRO-L	9	10	LIN2-JD

JAUD:

Pin	Signal
1	L+
2	L-
3	R-
4	R+

JSPIF:

Pin	Signal
1	+5V
2	SPDIF Out
3	GND

2.1.8 LVDS (JLVDS, LVDS_ADJ, J2)

There is a dual channel 24bit LVDS. The VCC power of LVDS screen cable is controlled by J2, and the backlight power is controlled by LVDS_ADJ.

JLVDS1:

Signal	Pin		Signal
VCC	1	2	VCC
VCC	3	4	GND
GND	5	6	GND
A_DATA0_DN	7	8	A_DATA0_DP
A_DATA1_DN	9	10	A_DATA1_DP
A_DATA2_DN	11	12	A_DATA2_DP
GND	13	14	GND
A_CLK_DN	15	16	A_CLK_DP
A_DATA3_DN	17	18	A_DATA3_DP
B_DATA0_DN	19	20	B_DATA0_DP
B_DATA1_DN	21	22	B_DATA1_DP

B_DATA2_DN	23	24	B_DATA2_DP
GND	25	26	GND
B_CLK_DN	27	28	B_CLK_DP
B_DATA3_DN	29	30	B_DATA3_DP

LVDS_ADJ:

Pin	Signal
1	12V
2	12V
3	LCD_BKL_ON
4	LCD_BKL_ADJ
5	GND
6	GND

J2:

Interface	Setting	Function
1-2	Close	VCC(+3.3V)
3-4	Close	VCC(+5V)
5-6	Close	VCC(+12V)

Attention: LVDS screen's power can be adjusted from 12V/5V/3.3V via jumper setting. Customers can connect VCC with jumper cap by 2pin according to their LVDS screen's voltage(It is strictly forbidden that connect 2 or more interfaces via jumper cap at the same time).

2.1.9 COM (JCOM1 , JCOM2, JCOM3-6, JCOM2_P, JCOM4_P)

6 COM. COM1 and COM2 are industrial definition; JCOM2_P and JCOM4_P supply power for COM2 and COM4 with voltage of 5V or 12V.

JCOM1, JCOM2 (can change to RS485):

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

JCOM3-6:

Signal	Pin		Signal
DCD#	1	2	RXD
TXD	3	4	DTR#

GND	5	6	DSR#
RTS#	7	8	CTS#
RI#	9	10	
DCD#	11	12	RXD
TXD	13	14	DTR#
GND	15	16	DSR#
RTS#	17	18	CTS#
RI#	19	20	
DCD#	21	22	RXD
TXD	23	24	DTR#
GND	25	26	DSR#
RTS#	27	28	CTS#
RI#	29	30	
DCD#	31	32	RXD
TXD	33	34	DTR#
GND	35	36	DSR#
RTS#	37	38	CTS#
RI#	39	40	

JCOM2_P; JCOM4_P:

Interface	Setting	Function
1-2	Close	5V
3-4	Close	RI
5-6	Close	12V

2.1.10 LPT

One 2x13pin LPT header. Pallets are needed to change it to be standard interface for practical use. Customers can connect it to equipment like printer.

LPT:

Signal	Pin		Signal
STB	1	2	AFD
LPT_ PPD0	3	4	ERROR
LPT_ PPD1	5	6	INIT
LPT_ PPD2	7	8	SLIN
LPT_ PPD3	9	10	GND
LPT_ PPD4	11	12	GND
LPT_ PPD5	13	14	GND

LPT_ PPD6	15	16	GND
LPT_ PPD7	17	18	GND
ACK	19	20	GND
BUSY	21	22	GND
PE	23	24	GND
SLCT	25	26	NC

2.1.11 JGPIO

4 bit input and 4 bit output.

Signal	Pin		Signal
GPI_S5_0	1	2	1.8V
GPI_S5_1	3	4	GPO_S5_6
GPI_S5_2	5	6	GPO_S5_7
GPI_S5_3	7	8	GPO_S5_8
GND	9	10	GPO_S5_9

2.1.12 SATA and mSATA (SATA1, mSATA, PWSATA1)

Two SATA2.0 (SATA2 anad mSATA optional), one mSATA, two 4pin PWSATA interfaces.

PWSATA1:

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

2.1.13 eMMC (optional)

eMMC supports UEFI OS, including Windows 10 64bit, Windows10 32bit, Windows 8 64bit, linux 64bit OS.

2.1.14 Mini-PCIE (MINI-PCIE, SIM1)

If 3G/4G card is loaded, it will support 3G/4G network.

2.1.15 PS/2 KB/MS

Pin	Signal
1	+5V
2	KB_DATA

3	KB_CLK
4	MS_ DATA
5	MS_CLK
6	GND

2.1.16 Front Panel Control Interface (JPOWER1)

Front panel control interface is to connect function buttons and indication lights on the front panel.

JPOWER1:

Signal	Pin		Signal
HDD_LED+	1	2	PWR_LED+
HDD_LED-	3	4	PWR_LED-
RSTBTN+	5	6	PWR_ON+
RSTBTN-	7	8	PWR_ON-
NUL	9	10	

2.1.17 Auto Power On (JAT)

JAT:

Setting	JAT
Close	On

2.1.18 JCMOS

CMOS is powered by the button battery on the board. Clearing CMOS will permanently clear previous system setting and restore it to factory setting.

Steps: 1. Power the computer off;

2. Connect the jumper cap to CLR_MOS pin for 3-5 secs, and disconnect;

3. Turn the computer on, and press <Del> to enter BIOS setting, overload the best default value;

4. Save and exit.

CLR_MOS:

Setting	CLR_MOS
Close	Clear CMOS contents

⚠ Do not clear CMOS when the computer is connected to power.