

# 2I847H Specification

Date:11/29/2013 Rev:03

History List:

Edit By :KEN

- 11/29/2013 REV: 03    **1. Modify Option Code**  
**2. ADD Model 2I847H-C3I7-H4**  
**3. del all HM65 and Sandy CPU Spec**
- 11/28/2013 REV: 02    1. Modify Option Code  
2. ADD Battery in wafer
- 10/07/2013 REV: 01    1.FirstVersion

## Model list: 2I847H

2I847H-C3C4-H2 : LVDS ,CPU 1047UE, DDR3-2G On Board

2I847H-C3I7-H4 : LVDS,CPU I7-3517UE, DDR3-4G On Board

### ALL spec: All connector use Wafer connector

1. VGA wafer (2x5pin 2.0mm)
2. HD Audio wafer (2x5pin 2.0mm)
3. I2C Interface wafer (1x4pin 1.25mm)
4. SATA connector (Gen III)
5. COM 1/2 wafer for RS232 (2x5pin 2.0mm)
6. PS2 KB/MS wafer (1x6pin 1.25mm)
7. USB wafer x 4 (1x4pin 1.25mm)
8. LVDS 18/24bit wafer (2x15pin 1.25mm)
9. 4DI/4DO wafer (2x5pin 2.0mm)
10. USB Touch wafer (2x5pin 2.0mm)
11. LAN & LAN LED wafer (2x4pin 2.0mm + 1x4pin 1.25mm)
12. Full size Mini card MPCE1 (USB and PCIe)
13. Full size Mini card MPCE2 (USB and mSATA \PCIe by Auto)

### Option code list:

#### 2I847H-EFGH-IJ

EFGH = CPU code definition

E = C: LVDS + Touch function. A: No LVDS+ Touch function.

F= CPU type: " 3 " 3<sup>rd</sup> Ivy Bridge CPU Type

3<sup>rd</sup> + HM76

G = CPU grade: " C " Celeron series, " I " Core I series

H = " 4 " Ivy Bridge Celeron 1047UE

= " 3 , 5 , 7 " i3 , i5 , i7 ( For ULV CPU Only )

CPU product code:

"3C4" Ivy Bridge Celeron 1047UE + HM76

"3I7" Ivy Bridge i7 + HM76

I = Vendor Code: "H" Hynix , "E" Elpida , "S" Samsung

J = DRAM size : "4" 4G , "2" 2G

### OEM option :

1. COM1: RS232,RS422,RS485

2. COM2: RS232,RS422,RS485

## Chipset list

Main Chipset 1 : Intel **Chief River** platform The two-chip platform consists of a **Mobile Ivy Bridge 1047UE/i3/i5/i7 Processor** and the Platform Controller Hub (PCH) **Panther Point HM76** chipset

### System Chipset list:

01. **Process** : The Mobile **Ivy Bridge 1047UE processor** includes Integrated Display Engine, GPU and Integrated Memory Controller and is designed for mobile, The processor is designed for the Chief River platform and may be offered in a **BGA1023** package
02. **PCH Chipset** : **Panther Point** Platform Controller Hub (PCH) **HM76**
03. **VGA Chipset** : Intel Mobile **IVY Bridge 1047UE Processor** Integrated Graphics
04. **LAN Chipset** : LAN1 Intel 82579LM Gigabit Ethernet PHY
05. **SIO and UARTs** : Fintek F71869A and F81216AD I/O chipset.
06. **Sound Chipset** : HD Audio Two channel sound
07. **Touch Screen** : C8051F321 USB or COM touch screen controller  
(Default USB)
08. **WDT/DIO** : Fintek F75111N

## Processor

The Mobile **Ivy Bridge 1047UE** processor includes Integrated Display Engine, GPU and Integrated Memory Controller and is designed for mobile ,The processor is designed for the **Chief River** platform and may be offered in a **BGA1023** Package

### Processor Feature Details

- Four or two execution cores
- A 32-KB instruction and 32-KB data first-level cache (L1) for each core
- A 256-KB shared instruction/data second-level cache (L2) for each core
- Up to 8-MB shared instruction/data third-level cache (L3), shared among all cores
- **Now use Embedded Processor easy spec below :**  
**I-Core i7-3517UE ULV 1.7GHz , Cache 4MB TPD 17W , Core/Thread 2/4 GT2(Graphic type) , EIST , VT-x , 64Bit**

**Celeron 1047UE ULV 1.4GHz , Cache 2MB TPD 17W , Core/Thread 2/2  
GT1(Graphic type) , EIST , VT-x , 64Bit**

### **Supported Technologies**

- Intel Streaming SIMD Extensions 4.1 (Intel SSE4.1)
- Intel Streaming SIMD Extensions 4.2 (Intel SSE4.2)
- Intel Hyper-Threading Technology
- Intel 64 Architecture
- Execute Disable Bit
- PCLMULQDQ Instruction

### **Supported Technologies**

- On board DDR3 SDRAM
- Single Channel Non-ECC, unbuffered DDR3 SDRAM only
- [2GB Capacity for 2Gb SDRAM in x 8 configurations](#)
- [4GB Capacity for 4Gb SDRAM in x 8 configurations](#)

### **Graphics Processing Unit (GPU)**

- The integrated GPU (Graphics Processing unit) contains a refresh of the sixth generation graphics core enabling substantial gains in performance and lower power consumption
- [3<sup>rd</sup> processor](#) Up to [16 EU](#) Support
- Next Generation Intel Clear Video Technology HD Support is a collection of video playback and enhancement features that improve the end user's viewing experience.-Encode / transcode HD content- Superior image quality with sharper, more colorful images
- [DirectX\\* Video Acceleration \(DXVA\)](#) support for accelerating video processing
- [Advanced Scheduler 2.0, 1.0, XPDM](#) support
- [Windows\\* 7, XP, Windows Vista\\*, OSX, Linux OS](#) Support
- [3<sup>rd</sup> processor DX11, DX10.1, DX10, DX9](#) support
- [OGL 3.0](#) support
- [Graphic / Video out CRT / DVI / HDMI 1.3a](#)
- [LVDS support 18/24Bits single / Dual channel](#)

### **SATA Interface**

- [Integrated Serial ATA Host Controller](#) Up to [ONE](#) SATA ports
- [Integrated AHCI controller](#)
- [One SATA ports 3.0](#) Data transfer rates up to 6.0 Gb/s (600 MB/s)

- One SATA ports 2.0 Data transfer rates up to 3.0 Gb/s (300 MB/s)
- One mini card socket for mSATA support SATA 3.0

### High Definition Audio

- Intel High Definition Audio Interface
- Supports 32-bit sample rate depth and 192 kHz sample rate output
- Support for up two channels of PCM audio out
- Line-out / Mic-in support

### USB

- HM76 XHCI Host controller, supporting up to One super speed USB 3.0 ports
- Two EHCI Host Controllers, supporting up to Seven USB 2.0 ports
- Two USB 2.0 Rate Matching Hubs to replace functionality of UHCI controllers
- Per-Port-Disable Capability
- One port internal USB3.0/2.0
- Three ports internal USB2.0
- Two port for internal mini card USB interface
- One port support touch control
- Supports Legacy keyboard / mouse software

### LAN (10/100/Giga bit PHY)

- Integrated Gigabit LAN Controller
- Connection utilizes PCI Express pins
- Intel 82579LM Gigabit Ethernet PHY
- Integrated ASF Management Controller
- Network security with System Defense
- Supports IEEE 802.3u , 802.3az
- 10/100/1000 Mbps Ethernet Support
- Jumbo Frame Support

### IO Function

- LPC (Low Pin Count) Interface
- Supports Hardware Monitor Controller
- Baud rate up to 115.2Kbps
- Two ports 16C550 UARTs RS232 or RS422 or RS485 half duplex

- Supports PS2 keyboard and PS2 mouse

#### **DIO and WDT function**

- Hardware Watch Dog Timer support can programmable 0—255 sec
- Hardware Digital Input Output provide 4 DI and 4 DO

#### **Touch Screen function**

- C8051F321 USB interface Touch screen controller
- Supported 4- , 5- , 8- wire Analog Resistive touch screen.
- Resister range from 200 to 1000Ω
- USB 1.1full speed sample rate maximum of 300 point per second
- Resolutions : 2048 x 2048
- Defaults USB interface

#### **Expend Interface**

- One PCIe Mini card for PCIe x1 and USB interface
- One PCIe Mini card for PCIe x1 or mSATA (Auto Detect)and USB interface

#### **DC in**

- From DC in Convert into system power +12VAD to +5V/±5% and +3.3V/±5% And +12V/±5%
- System not provided -5V and -12V voltage

Provide embedded mobile PC or POS or ATM and Kiosk or Panel PC or Embed PC

or special integrated PC or Industry Control SBC solution application.

## Internal connectors

- One DC-In 2x2 pin (4.20mm) Wafer connector **CPI1 (option)**
- One DC-In 1x4pin(2.0mm) Wafer connector **CPI11**
- One CMOS Battery CR1220 socket **BAT1**
- One +12V/+5V power output 4 pin (2.00mm) Wafer connector **CPO1**
- One FP connector 2x5pin (2.00mm) Wafer connector **CFP1**
- One VGA-port 2x5pin (2.00mm) Wafer connector **CG1**
- One LVDS 24Bits 2x15 pin (1.25mm) connector **LVDS1**
- One Panel Inverter power connector 5 pin (2.0mm) Wafer connector **CPP1**
- One Touch screen device 2x5 pin (2.0mm) Wafer connector **CT1**
- One Line-out / Line-in / Mic-in 2x5 pin (2.00mm) Wafer connector **CA3**
- Two COM-port 2x5pin (2.00mm) Wafer connector **CC1 CC2**
- One DIO 2x5pin (2.0mm) Wafer connector **CIO1**
- One I2C 4pin(1.25mm) Wafer connector **CO1**
- One PS2 KB/MS port 6pin(1.25mm) Wafer connector **CKM1**
- One LAN connector 2x4pin(2.0mm) Wafer connector **CL1**
- One LAN LED 1x4pin(1.25mm) Wafer connector **CL11**
- Four USB ports 1x4pin (1.25mm) Wafer connector **CU1 CU2 CU3 CU4**
- One **USB 3.0** port 1x5pin(1.25mm) Wafer connector **CU11**
- One SATA standard connector **SATA1**
- Two Mini Card 52pin Socket **MPCE1 MPCE2**
- One CPU FAN 3pin (2.54mm)Wafer connector **FAN1**

## BIOS

- AMI UEFI BIOS
- Windows XP/7/8 Plug and play BIOS
- Support wake up function : [LAN wake up](#)

## Connector and Jumper

### 1. Quick List of jumper setting

1. JSB12: CMOS and ME RTC clear select
2. JVL1: LCD Panel power select

### 1.1 JSB12: CMOS DATA SET

JSB12	DESCRIPTION
1-2	CMOS data clear
2-3	ME RTC data clear

Note: normal work is open jumper

### 1-2 JVL1: LCD panel power select

JVL1	DESCRIPTION
1-2	+5V
2-3	+3.3V

Note: Attention! Check Device Power in spec.

## 2. Quick List of Connectors

CPI1: DC-In 2x2 pin (4pin ATX power 4.20mm) Wafer connector( option)

CPI11:DC-In 1x4pin(2.0mm) Wafer connector

BAT1: 3V CMOS Battery hold 2pin(CR1220)

CPO1: +12V/+5V power output 4 pin (2.0mm) Wafer

CFP1: FP port 2x5 pin (2.0mm) Wafer

CG1: VGA port 2x5 pin (2.0mm) Wafer

LVDS1: LVDS 18/24Bits 2x15 pin (1.25mm) connector

CPP1: Panel inverter power connector 1x5 pin (2.0mm) Wafer

CT1: Touch screen device 2x5 pin (2.0mm) Wafer

CA3: Line-out/Line-in/Mic-in 2x5 pin (2.0mm) Wafer

CC1 : COM1 2x5 pin (2.0mm) Wafer

CC2 : COM2 2x5 pin (2.0mm) Wafer

CIO1: One DIO 2x5 pin (2.0mm) Wafer

CO1: I2C 1x4pin (1.25mm) Wafer

CKM1: PS2 KB/MS 1x6pin(1.25mm) Wafer

CL1: LAN port 2x4pin (2.0mm) Wafer

CL11: LAN LED 1X4 (1.25mm) Wafer

CU1: USB1 port 4pin(1.25mm) Wafer

CU11 USB1 port 1x5in(1.25mm) Wafer

CU2: USB2 port 1x4pin(1.25mm) Wafer

CU3: USB3 port 1x4pin(1.25mm) Wafer



CU4: USB4 port 1x4pin(1.25mm) Wafer

SATA1: One SATA connector 7pin

MPCE1/2: Two Mini card socket 52pin

## 2-1 DC-IN

2-1-1 DC -IN power connector

2-1-1-1 CPI1:

DC 12V-in Internal connector (4pin ATX power 4.20mm) wafer( option )

PIN NO.	DESCRIPTION
1,2	GND
3,4	+12V DC-IN

Note: Very important check DC-in Voltage

2-1-1-2 CPI11:

DC 12V-in 1x4pin(2.0mm) Wafer Internal connector

PIN NO.	DESCRIPTION
1	GND
2	DC-IN(12V)
3	DC-IN(12V)
4	GND

Note: Very important check DC-in Voltage

## 2-2-1 CMOS Battery in

BAT1: 3V Battery holder 2pin

BAT1: Battery use type Li 3V / 45mA (CR1225)

2-2-2 CBT1 :

Battery in wafer 2pin(1.25mm)

PIN NO.	DESCRIPTION
1	Battery in (GND)
2	Battery in (+3V)

NOTE: CBT1 for BOM option.share BAT1

## 2-3 DC-OUT

DC +5/+12V Voltage output connector

CPO1: +12V/+5V DC voltage output 4pin (2.0mm) Wafer

PIN NO.	DESCRIPTION
1	+5V
2	GND

3	<b>GND</b>
4	<b>+12V *</b>

\* Note: Attention! Check Device Power in spec

## 2-4 Front Panel control

### 2-4-1 CFP1 FP connector (2x5pin 2.0mm wafer)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Power button pin	2	Power button <b>GND</b>
3	Reset pin	4	Reset <b>GND</b>
5	Power LED -	6	Power LED +
7	HDD LED-	8	HDD LED+
9	LAN LED-	10	LAN LED+

Note: CFP1 power button function same as SWP1

## 2-5 Display

### 2-5-1 VGA port Connector

CG1: VGA 2x5pin 2.0mm wafer connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	BULE	2	<b>GND</b>
3	<b>GND</b>	4	DDC CLOCK
5	GREEN	6	V-SYNC
7	<b>GND</b>	8	H-SYNC
9	RED	10	DDC DATA

### 2-5-2 LVDS Connector

LVDS1: 18/24bits LVDS interface (2x15pin 1.25mm wafer)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PWM dimming	2	<b>+5V</b>
3	<b>+LCD(5V or 3.3V)</b>	4	<b>+LCD(5V or 3.3V)</b>
5	Channel-1-DATA3+	6	Channel-0-DATA3+
7	Channel-1-DATA3-	8	Channel-0-DATA3-
9	Channel-0-DATA2+	10	Channel-0-CLK+
11	Channel-0-DATA2-	12	Channel-0-CLK-
13	<b>GND</b>	14	<b>GND</b>
15	Channel-0-DATA1+	16	Channel-0-DATA0+
17	Channel-0-DATA1-	18	Channel-0-DATA0-

19	<b>GND</b>	20	<b>GND</b>
21	<b>+LCD(5V or 3.3V)</b>	22	<b>+LCD(5V or 3.3V)</b>
23	Channel-1-DATA2+	24	Channel-1-CLK+
25	Channel-1-DATA2-	26	Channel-1-CLK-
27	Channel-1-DATA1+	28	Channel-1-DATA0+
29	Channel-1-DATA1-	30	Channel-1-DATA0-

Note: 1. LVDS interface support 18/24bits two channel .

2. JVL1: LVDS panel +5V/+3.3V Voltage select

### 2-5-3 Panel backlight power

#### CPP1: Panel backlight power (5pin 2.0mm wafer)

PIN NO.	DESCRIPTION
1	<b>+12V</b>
2	<b>GND</b>
3	PWM dimming
4	ENBKL (+3.3V)
5	ENBKL (+ 5V )

Note: 1. Attention ! Check Device Power in spec

2. Pin 3 backlight dimming control .provided 200Hz / 275Hz / 380Hz / 20 KHz/25KHz  
and adjust PWM duty cycle by software program .

3. PWM duty cycle 100 % is Hi level +3.3V by power on default.

4. Pin 4 Backlight enable output, Hi enable (+3.3V), Low disable (0V)

5. Pin 5 Backlight enable output, Hi enable (+5V), Low disable (0V)

### 2-5-4 Touch screen device

#### CT1: Touch screen (2x5 pin 2.0mm wafer)

Default use USB6 interface.

2-5-4-1 For 8- wire type pin define

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Bottom	2	Bottom Sense
3	Top Sense	4	Top
5	Right	6	Right Sense
7	Left	8	Left Sense

9	<b>GND</b>	10	NC
---	------------	----	----

Note: For eight wire type cable **Pin 3 and Pin4 need short.**

#### 2-5-4-2 For 4- wire type pin define

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Bottom	2	N/A
3	N/A	4	Top
5	Right	6	N/A
7	Left	8	N/A
9	<b>GND</b>	10	NC

Note: For four wire type cable **Pin 3 and Pin4 need short.**

#### 2-5-4-3 For 5- wire type pin define

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	UR(H)	2	N/A
3	Sense	4	UL(Y)
5	LR(X)	6	N/A
7	LL(L)	8	N/A
9	<b>GND</b>	10	NC

### 2-5 Audio port

#### 2-5-1 CA3: Audio port (2x5pin 2.0mm Wafer)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Line-out-R	2	MIC-IN
3	Line-in-R	4	<b>GND</b>
5	<b>GND</b>	6	<b>SPDIF-OUT</b>
7	Line-in-L	8	+5V
9	Line-out-L	10	MIC-IN

### 2-6 I/O port

#### 2-6-1 COM port connector

##### 2-6-1-1 Two RS232 ports (2x5pin 2.0mm Wafer)

CC1: COM 1 CC2: COM2

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	2	RXD
3	TXD	4	DTR
5	<b>GND</b>	6	DSR
7	RTS	8	CTS
9	<b>RI</b>	10	<b>+5V</b>

**Note: 1. ALL COM wafer 2.0mm connector pin 10 provide +5V**

### 2-6-1-2 Two RS485 ports (2x5pin 2.0mm Wafer)

CC1: COM 1 CC2: COM2

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RS485 TX-	2	RS485 TX+
3	NC	4	NC
5	GND	6	NC
7	NC	8	NC
9	NC	10	+5V

**Note: 1. Default BOM set to RS232 Mode**

**2. Option RS485 function for OEM BOM request**

**3. BIOS need setting to RS485 mode**

### 2-6-1-3 Two RS422 ports (2x5pin 2.0mm Wafer)

CC1: COM 1 CC2: COM2

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TX-	2	TX+
3	RX+	4	RX-
5	GND	6	NC
7	NC	8	NC
9	NC	10	+5V

**Note: 1. Default BOM set to RS232 Mode**

**2. Option RS422 function for OEM BOM request**

**3. BIOS need setting to RS485 mode**

**4. ALL COM port wafer 2.0mm connector pin 10 provide +5V**

### 2-6-2 DIO & WDT

#### 4DI & 4DO

2-6-2-1 CIO1 DIO 0—3 (2x5pin 2.0mm wafer)

#### Digital Input / Output / Watch Dog Time

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DI-0	2	DO-3
3	DI-1	4	DO-2
5	DI-2	6	DO-1
7	DI-3	8	DO-0
9	GND	10	+5V

**Note: 1.All DI-0~3 external pull Hi 10KΩ to +V5S**

**2. If want connect to out side device, suggest use Isolator component like photo coupler or Relay**

3. All pin can porting to DI function but need provide push pull VIL +0.8 , VIH +2V

4. All pin can porting to DO function , pin need define to push pull or OD

5. ALL Signal pin are 5V Tolerance

### 2-6-2-2 WDT For F75111N I2C watch dog timer device:

DC spec :

Input low Voltage (VIL):+0.8 Max ,

Input High Voltage(VIH) : +2V Min

Output low Current (IOL):10mA (Min) VOL=0.4V

Output High Current (IOH):-10mA (Min) VOH=2.4V

Watch Dog Time value 0~255 sec

The system will be issued reset. When WDT is enable the hardware start down counter to zero. The reset timer have 10~20% tolerance upon the Temperature.

Note: Please refer to "Manual" for sample code for detail description

### 2-6-3 I2C BUS

#### CO1:I2C Bus 4pin (1.25mm)Wafer

PIN NO.	DESCRIPTION
1	+3.3V
2	GND
3	I2C Clock
4	I2C DATA

### 2-6-4 PS2 Keyboard / Mouse connector

#### CKM1: KB/MS port 1x6pin (1.25mm) Wafer

PIN NO.	DESCRIPTION
1	+5V
2	Keyboard Data
3	Keyboard Clock
4	GND
5	Mouse DATA
6	Mouse Clock

### 2-7 LAN port

#### 2-7-1 CL1 : LAN1 port Giga /100Mb( 2x4pin 2.0mm wafer)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TR0- / TX-	2	TR0+ / TX+
3	TR2+ / NC	4	TR1+ / RX+
5	TR1- / RX-	6	TR2- / NC

7	TR3- / NC	8	TR3+ / NC
---	-----------	---	-----------

### 2-7-2 RJ45 jack to CL1 wafer

RJ45 PIN	CL1 PIN	DESCRIPTION	RJ45 PIN	CL1 PIN	DESCRIPTION
1	2	TR0+/TX+	5	6	TR2-/NC
2	1	TR0-/TX-	6	5	TR1-/RX-
3	4	TR1+/RX+	7	8	TR3+/NC
4	3	TR2+/NC	8	7	TR3-/NC

Note: 1. CL1 pin connector to RJ45 describer table

2. RJ45 PIN to CL1 cable check table

3. Can use CL001 connector board to RJ45 connector

### 2-7-3 CL11: LAN1 LED indicator ( 1X4pin 1.25mm Wafer )

PIN NO.	DESCRIPTION
1	+3.3V
2	Speed 10M
3	Speed 100M
4	Speed 1000M

### 2-8 USB port

Internal USB connector (4pin 1.25mm Wafer)

CU1/CU2: USB 1/2 ports

CU3/CU4: USB 3/4 ports

PIN NO.	DESCRIPTION
1	+5V
2	USB DATA -
3	USB DATA +
4	GND

### 2-8-1 CU1/CU11: USB2.0/3.0 port (1x4pin + 1x5pin 1.25mm Wafer)

PIN NO.	CU1(1x4pin 1.25mm)	PIN NO.	CU11(1x5pin 1.25mm)
1	+5V	1	USB3.0 TX+
2	USB 2.0 D-	2	USB3.0 TX-
3	USB 2.0 D+	3	GND
4	GND	4	USB3.0 RX+
		5	USB3.0 RX-

Note: 1. Can use UB004 connector Board to USB 3.0 Type A

2. USB2.0/3.0 Keyboard and Mouse use CU1/CU11 can pitch Some OS install

And wake up Keyboard and Mouse can't work issue

## 2-9 SATA port

SATA1: SATA connector (7pin wafer)

PIN NO.	DESCRIPTION
1	<b>GND</b>
2	DATA TX+
3	DATA TX-
4	<b>GND</b>
5	DATA RX-
6	DATA RX+
7	<b>GND</b>

Note: CPO1 provide SATA HDD power.

## 2-10 Mini card

MPCE1: Full size mini card (Mini card socket 52pin)

MPCE2: Full size mini card (Mini card socket 52pin)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC(Wake up)	2	<b>+3.3V</b>
3	NC	4	<b>GND</b>
5	NC	6	<b>+1.5V</b>
7	NC (CLKREQ-)	8	NC
9	<b>GND</b>	10	NC
11	PCIe-CLK-	12	NC
13	PCIe-CLK+	14	NC
15	<b>GND</b>	16	NC
<b>KEY</b>	<b>KEY</b>	<b>KEY</b>	<b>KEY</b>
17	NC	18	<b>GND</b>
19	NC	20	NC
21	<b>GND</b>	22	PRST-
23	PCIe-RX- / mSATA-RX+	24	<b>+3.3V</b>
25	PCIe-RX+ / mSATA-RX-	26	<b>GND</b>
27	<b>GND</b>	28	<b>+1.5V</b>
29	<b>GND</b>	30	SMB-CLK
31	PCIe-TX- / mSATA-TX-	32	SMB-DATA
33	PCIe-TX+ / mSATA-TX+	34	GND
35	<b>GND</b>	36	USB-DATA-
37	<b>GND</b>	38	USB-DATA+
39	<b>+3.3V</b>	40	<b>GND</b>
41	<b>+3.3V</b>	42	NC
43	<b>GND</b>	44	NC
45	NC	46	NC
47	NC	48	<b>+1.5V</b>
49	NC	50	<b>GND</b>
51	NC ( mSATA detect)	52	<b>+3.3V</b>



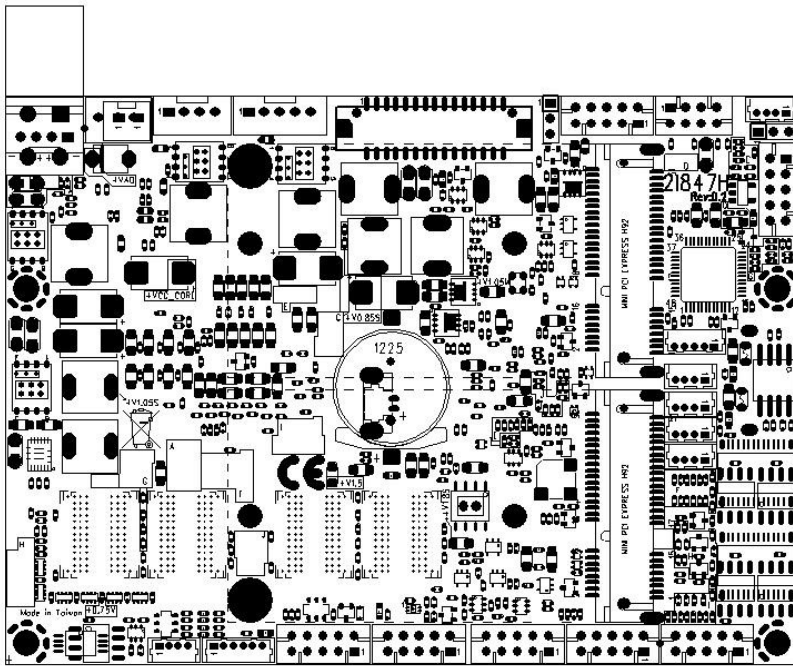
Note: 1. MPCE1: Default support USB / PCIe interface

2. MPCE2: Default support USB / PCIe interface / mSATA 3.0(auto detect)

## Dimension

SBC size 102 x 73 mm (2.5 inch) / 8Layer

- Layout placement for Top side



- Layout placement for Bottom side

