2I382DW

Intel Bay Trail Quad Core / Dual Core CPU, On Board DDR3L, 3 x Intel LAN / USB / VGA / COM

All-In-One

Intel Bay Trail-I D J1900, 2.0 GHz VGA, PCIe mini card, M.2, 1 x Nano SIM 1 x RS232 / 422 / 485 (Phoenix isolated) 3 x GbE, 4 x USB, 1 x RS232 / 422 / 485 (DB9)



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Warning !

1. Battery

Batteries on board are consumables. The life time of them are not guaranteed.

2. Fanless solution with HDD

The specification & limitation of HDD should be considered carefully when the fanless solution is implemented.

- 3. We will not give further notification in case of changes of product information and manual.
- 4. SATA interface does not support Hot SWAP function.
- 5. There might be a 20% inaccuracy of WDT at room temperature.
- 6. Please make sure the voltage specification meets the requirement of equipment before plugging in.
- 7. There are two types of SSD, commercial grade and industrial grade, which provide different read / write speed performance, operation temperature and life cycle. Please contact sales for further information before making orders.
- Caution! Please notice that the heat dissipation problem could cause the MB system unstable. Please deal with heat dissipation properly when buying single MB set.
- 9. Please avoid approaching the heat sink area to prevent users from being scalded with fanless products.
- 10. If users repair, modify or destroy any component of product unauthorizedly, We will not take responsibility or provide warranty anymore.
- 11. DO NOT apply any other material which may reduce cooling performance onto the thermal pad.
- 12. It is important to install a system fan toward the CPU to decrease the possibility of overheating / system hanging up issues, or customer is suggested to have a fine cooling system to dissipate heat from CPU.

***** Hardware Notice Guide

- Before linking power supply with the motherboard, please attach DC-in adapter to the motherboard first. Then plug the adapter power to AC outlet. Always shut down the computer normally before you move the system unit or remove the power supply from the motherboard. Please unplug the DC-in adapter first and then unplug the adapter from the AC outlet. Please refer photo 1 as standard procedures.
- 2. In case of using DIRECT DC-in (without adapter), please check the allowed range for voltage & current of cables. And make sure you have the safety protection for outer issues such as short / broken circuit, overvoltage, surge, lightning strike.
- 3. In case of using DC-out to an external device, please make sure its voltage and current comply with the motherboard specification.
- The total power consumption is determined by various conditions (CPU / motherboard type, device, application, etc.). Be cautious to the power cable you use for the system, one with UL standard will be highly recommended.
- 5. It's highly possible to burn out the CPU if you change / modify any parts of the CPU cooler.
- Please wear wrist strap and attach it to a metal part of the system unit before handling a component. You can also touch an object which is ground connected or attached with metal surface if you don't have wrist strap.
- 7. Please be careful to handle & don't touch the sharp-pointed components on the bottom of PCBA.
- 8. Remove or change any components form the motherboard will VOID the warranty of the motherboard.
- Before you install / remove any components or even make any jumper setting on the motherboard, please make sure to disconnect the power supply first. (follow the aforementioned instruction guide)
- "POWERON after PWR-Fail" function must be used carefully as below: When the DC power adaptor runs out of power, unplug it from the DC current; Once power returns, plug it back after 5 seconds.

If there is a power outage, unplug it from the AC current, once power returns, plug it back after 30 seconds. Otherwise it will cause system locked or made a severe damage.

Remark 1:

Always insert / unplug the DC-in horizontally & directly to / from the motherboard. DO NOT twist, it is designed to fit snugly.

Moreover, erratic pull / push action might cause an unpredictable damage to the component & system unit.



Unplug



Chapter-1

General Information

The 2I382DW SBC with built-in 3 x Intel Giga LAN ports, 1 USB 3.0 & 3 USB 2.0 ports as an economic and flexible hardware platform for industrial communication solution. A reliable and efficient communication network which connects all the components of the factory to work together effectively plays an important role of success industrial automation.

LEX 2I382DW provides customers a robust, wide range power input and compact computing system with an industrial design and built-in I/O to handle diverse applications. 2I382DW is specially designed for advanced embedded VPN or firewall applications where the economical use of power is in high demand.

2I382DW supports with 3 Intel I211-AT (I210-IT) LAN chipset for PCIe x 1 V2.1 interface with 10 / 100 / 1000 Mbps 1 USB 3.0, 3 USB 2.0 and also offers two COM ports auto selected RS232 / 485 / 422 by BIOS setting, 1 is DB9 and 1 is phoenix connector.

2I382DW integrates 1 PCIe mini card for mSATA / PCIe / USB device and 1 M.2 (B key 2242) SATA interface for storage.

1-1 Major Feature

- 1. Intel Bay-Trail J1900 2.00GHz SOC (Quad core)
- Intel Bay-Trail Integrated Graphics chipset, J1900 688 MHz to 854MHz render clock frequency
- 3. On board DDR3L SDRAM 2GB Memory, data transfer rate of 1333MT/s
- 4. Support 3 x 10 / 100 / 1000 Mbps Intel LAN ports
- 5. Support 2 x RS232 / 485 / 422 selected by BIOS, 1 x USB3.0 and 3 x USB 2.0
- Support extended 1 x Mini PCIe card for mSATA / PCIe / USB device, 1 x M.2 (B key 2242) SATA interface for storage
- 7. On board DC +12V ~ 36V
- 8. PCB Dimension: 102.35 x 81.25 mm
- 9. Support VGA display

1-2 Specification

- 1. SOC: Intel Bay-Trail J1900 2.00GHz (Qaud core)
- 2. Memory: DDR3L SDRAM 2GB Memory, data transfer rate of 1333MT/s
- 3. **Graphics:** Intel Bay-Trail Integrated Graphics chipset, J1900 688 MHz to 854MHz render clock frequency
- 4. I/O Chip: F81801U I/O chipset for 2 ports RS232 / 485 / 422 auto selected
- 3 Intel I210-IT LAN chipset or Intel I211-AT LAN chipset (Option) with 10 / 100 / 1000 Mbps for PCIe x 1 V2.1 interface
- 6. 1 type A USB 3.0 and 3 USB 2.0 connector onboard
- 7. Expansion interface: one full size PCIe Mini card for mSATA / PCIe / USB,

1 M.2 connector for B key 2242

- 8. Power button & power + HDD LED on board
- 9. BIOS: Insyde UEFI BIOS
- 10. Dimension: 102.35 x 81.25 mm
- 11. Power: On board DC +12V ~ 36V

1-3 Installing the Mini PCI-e Card (Full Size)

1. Unscrew the screw on the board



2. Plug in the Mini Card in a 45 angle



3. Gently push down the Mini Card and screw the screw back.



1-4 Directions for installing the M.2 B Key Mini Card

1. Unscrew the screw on the board



2. Plug in the Mini Card in a 45 angle



3. Gently push down the Mini Card and screw the screw back.



Chapter-2

2-1 Dimension-2I382DW



2-2 Layout-2I382DW-Connector and Jumper TOP



2-2-1 Layout-2I382DW-Connector and Jumper BOT



2-2-2 Diagram- 2I382DW TOP



2-2-3 Diagram- 2I382DW BOT



2-3 LAYOUT-2I382DW-FUNCTION MAP TOP



2-3-1 LAYOUT-2I382DW-FUNCTION MAP BOT



2-3-2 Function MAP- 2I382DW



2-4 List of Jumpers

JSB1: CMOS DATA Clear JAT1: AT / ATX Power type select

2-5 Jumper Setting Description

A jumper is ON as a closed circuit with a plastic cap covering two pins. A jumper is OFF as an open circuit without the plastic cap. Some jumpers have three pins, labeled 1, 2, and 3. You could connect either pin 1 and 2 or 2 and 3.

The below figure 2.2 shows the examples of different jumper settings in this manual.



All jumpers already have its default setting with the plastic cap inserted as ON, or without the plastic cap as OFF. The default setting may be referred in this manual with a " * " symbol .

2-6 JSB1: CMOS DATA Clear

A battery must be used to retain the motherboard configuration in CMOS RAM. Close Pin1 and pin 2 of JSB1 to store the CMOS data.

To clear the CMOS, follow the procedures below:

- 1. Turn off the system and unplug the AC power.
- 2. Make sure there is no AC & DC power connect to the system or MB.
- 3. Close pin 2-3 of JSB1 for a few seconds.
- 4. Return to default setting by close pin 1-2
- 5. Connect DC IN power cable back to DC IN Power connector

JSB1	DESCRIPTION
*1-2	Normal set
2-3	CMOS data clear

Note: Do not clear CMOS unless

- 1. Troubleshooting
- 2. Forget password
- 3. You fail over-clocking system



JSB1





2-7 JAT1: AT / ATX Power type select

JAT1	DESCRIPTION
1-2	AT power mode
*2-3	ATX power mode







Chapter-3

Connection

This chapter provides all necessary information of the peripheral's connections, switches and indicators. Always power off the board before you install the peripherals.

3-1 List of Connectors

CBT1:	Li 3V battery 2 pin (1.25mm) wafer
CPI1:	+12V power input 2 pin (2.0mm) wafer Red.
CPI2:	+12V power input TB Connector 2 pin (3.5mm) Red
CG1:	VGA D-SUB 15 pin connector
CC1:	COM1 D-SUB 9 pin connector
CC2:	COM2 TB Connector 5 pin (3.5mm)
CU1,CU2,CU3:	USB2.0 Type A Connector
CU4:	USB3.0 Type A Connector
CL1,CL2,CL3:	RJ45 LAN Connector
CL11:	LAN 2x4 pin (2.0mm) wafer (option)
CIO1:	DIO 2x5 pin (2.0mm) wafer
CO1:	SMBus 1x4 pin (1.25mm) wafer
CLPC1:	for LPC signal 2x5 pin wafer (2.0mm)
MPCE1:	Full size mini card port 1 sockets 52 pin
NGFF1:	PCIe M.2 B key slot 2242
SIM1:	Nano SIM card socket (option)

3-2 CMOS battery connector

• CBT1: 3V Battery 2 pin (1.25mm) wafer

PIN NO. DESCRIPTION	
1	GND
2	VBAT



3-3 CPI1: DC Power input (2 pin 2.0mm Wafer) (Red)

PIN NO.	DESCRIPTION	
1	DC-IN (12V to 24V)	
2	GND	

Note: Very important check Dc-in Voltage



3-3-1 CPI2: DC Power input (TB 2 pin 3.5mm) (Red)

PIN NO.	DESCRIPTION	
1	GND	
2	DC-IN (12V to 24V)	



CPI2 DC-IN +12V~24V

3-4 CG1: VGA D-SUB 15 pin connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	DDC DATA
3	BLUE	8	GND	13	H-SYNC
4	NC	9	NC	14	V-SYNC
5	GND	10	GND	15	DDC CLOCK



3-5 COM port connector

• CC1: Default support RS232 Mode COM1 conector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND		

• CC1: RS485 Mode COM1 conector (D-SUB 9 pin)

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

Note: 1. BIOS need setting to RS485 mode

• CC1: RS422 Mode COM1 conector (D-SUB 9 pin)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RS422 TX-	6	NC
2	RS422 TX+	7	NC
3	RS422 RX+	8	NC
4	RS422 RX-	9	NC
5	GND		

Note: 1. BIOS need setting to RS422 mode



• CC2: Default support RS232 To Isolator RS232 TX / RX / GND TB 5 Pin conector

PIN NO.	DESCRIPTION
1	NC
2	ISO_RXD+
3	GND
4	ISO_TXD+
5	NC

• CC2: RS485 To Isolator RS485 TB 5 Pin conector

PIN NO.	DESCRIPTION
1	RS485_DATA-
2	RS485_DATA+
3	GND
4	NC
5	NC

Note: 1. BIOS need setting to RS485 mode

• CC2: RS422 To Isolator RS485 TB 5 Pin conector

2		
	PIN NO.	DESCRIPTION
	1	RS422_TX-
	2	RS422_TX+
	3	GND
	4	RS422_RX+
	5	RS422 RX-

Note: 1. BIOS need setting to RS422 mode



CC2 Isolation RS232 (3Line RX / TX / GND) RS422 / RS485

3-6 CU1 / CU2 / CU3: USB2.0 Type A Connector

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

3-7 CU4: USB3.0 / 2.0 Type A Connector (USB2.0 Option)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
		1	USB3.0 TX+
1	+5V		
2	USB 2.0 D-	2	USB3.0 TX-
		3	GND
3	USB 2.0 D+	4	USB3.0 RX+
4	GND		
		5	USB3.0 RX-

Note: USB 2.0 share MPCE1.



PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TD0+ / TX+	5	TD2-/NC
2	TD0- / TX-	6	TD1- / RX-
3	TD1+ / RX+	7	TD3+ / NC
4	TD2+ / NC	8	TD3- / NC

3-8 CL1 / CL2 / CL3: RJ45 LAN Connector



3-8-1 RJ45 LAN LED Behavior

• CL1 RJ45 LAN Connector---LED define Giga / 100MB Connector

Pook side oon	Rig	ght	Left	
Dack side con	RED LED	GREEN LED	YELLOW LED	
Indicate	GIGA LAN	100Mb LAN	Active LED	
	LINK (light)	LINK (light)	LINK (BIINK)	

• CL2 / CL3 RJ45 LAN Connector---LED define Giga / 100MB Connector

Back side con	Le	eft	Right	
Dack Side COIT	RED LED	GREEN LED	YELLOW LED	1444
Indicate	GIGA LAN Link (light)	100Mb LAN Link (light)	Active LED Link (Blink)	

3-8-2 CL11 LAN signal out (2x4 pin 2.0 Wafer) (option)

PIN NO.	Signal	PIN NO.	Signal
1	TR0-	5	TR1-
2	TR0+	6	TR2+
3	TR2+	7	TR3-
4	TR1+	8	TR3+

3-9 Digital Input / Output / Watch Dog Time

• CIO1 DIO 0—3 (2x5 pin 2.0mm wafer)

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. DI pin default pull up $10K\Omega$ to +5V
- 2. If use need isolate circuit to control external device
- 3. F75111N-1 I2C bus address 0x9c
- 4. Mating connector: JST B10B-PHDSS or compatible
- 5. Cable housing: JST PHDR-10VS or compatible



• 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) VOL=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: If want to SDK support. Please contact to sales window.

3-9-1 IO Device: F75111 CIO Utility

The Sample code source you can download from

Source file: CIO_Utility_Src_v3.0.5_w.zip http://tprd.info/lexwiki/index.php/IO_Device:F75111_CIO_Utility Binary file: CIO_Utility_Bin_v3.0.5_x32_w.zip CIO_Utility_Bin_v3.0.5_x64_w.zip F75113 DLL : F75113.dll

We do the demo test with a test tool which DIx connect to DOx with Relay.



How to use this Demo Application

CIO_Utility v3.0.4			A CIO_Utility v3.0.4
210 Test 2120(Cl01)	F75111(9 F75111(6 F75113(6	PC) successful E) fail E fail	CIO Test F75111(9C) successfu F75111(6E) fail F75113(6E fail
7 6 5 4 3	2	1 0	7 6 5 4 3 2 1 0
DO1	(0 0	D01 O O O
DI1 status	(0 0	DI1 status
D02			DO2
DI2 status			DI2 status
SINGLE TEST LOOP TEST COU	IT 1		SINGLE TEST LOOP TEST COUNT 1
NDT Test			WDT Test
F75111(9C) F75111(6E) F75	13(6E)		F75111(9C) F75111(6E) F75113(6E)
Enable 10 Disab	le		Enable 10 Disable
			Enable loop WDT status

140*2(CI01+0	CIO2)					F75111 F75111	L(9C) L(6E)	successfi fail
					1	F75113	3(6E	fail
	7	6	5	4	3	2	1	0
DO1	۲	۲	٢	۲	۲	۲	۲	٢
DI1 status	۲	۲	۲	۲	۲	۲	0	0
D02								
DI2 status								
	T	LOOP	TEST		OUNT	1		
SHOLE TES								
T Test								
T Test F75111(90		F7511	1(6E)		F7511	3(6E)]	
T Test F75111(90 Enable)	F7511	.1(6E)		F7511)isable	3(6E)]	

D Test								
(75115_00110					-	F7511 F7511 F7511	1(9C) 1(6E) 3(6E	successful fail fail
	7	6	5	4	3	2	1	0
DO1			۲	۲	۲	۲	۲	۲
DI1 status	۲	۲	۲	۲	۲	۲	۲	
DO2	۲	۲	۲	۲	۲	۲	۲	۲
DI2 status	۲	۲	۲	۲	۲	۲	۲	
SINGLE TEST		LOOP	TEST		COUNT	1		
DT Test								
F75111(9C)		F7511	1(6E)		F7511	3(6E)		
Enable	1	0	_	[Disable			
🗖 Enable loop	w	DT sta	atus					
D	DO1 DI1 status DO2 DI2 status SINGLE TEST T Test F75111(9C) Enable	7 DO1 DII status DO2 DI2 status SINGLE TEST T Test F75111(9C) Enable 1000 W	7 6 D01 Image: Constraint of the second sec	7 6 5 D01 Image: Constraint of the second seco	7 6 5 4 D01 Image: Constraint of the status D02 Image: Constraint of the status D11 status Image: Constraint of the status T Test Test F75111(6E) Image: Constraint of the status Image: Constraint of the status Image: Constraint of the status Image: Constraint of the status Image: Constraint of the status Image: Constraint of the status	7 6 5 4 3 D01 Image: Constraint of the status D02 Image: Constraint of the status D11 status Image: Constraint of the status D12 status Image: Constraint of the status	7 6 5 4 3 2 D01 Image: Constraint of the status D02 Image: Constraint of the status D12 Image: Constraint of the status Image: Constraint of the status Image: Constraint of the status Image: Constraint of the status Image: Constraint of the status Image: Constraint of the status	7 6 5 4 3 2 1 D01 Image: Constraint of the status Image: Constraintof the status Image: Constratus

BI+80(CI01+C	(02)			-		F7511 F7511 F7511	1(9C) 1(6E) 3(6E	successfu fail fail
	7	6	5	4	3	2	1	0
DO1	۲	۲	۲	۲	۲	۲	۲	0
DI1 status	۲	۲	۲	۲	۲	۲	۲	
D02								
DI2 status								
SINGLE TES	т	LOOP	TEST		COUNT	1		
DT Test								
F75111(90)	F7511	1(6E)		F7511	3(6E)		
Enable		10		[Disable			

Attention Please:You must be install vcredist_x86.exe when first time you run the F75111_DIO.exe DEMO AP,The vcredist_x86.exe include all required DLL file.

- 1. Press the select your test "2i2o","4i4o","4i4o*2","F75111CIO116", "F75113CIO116","8i+8o"
- 2. start test , select single mode or looptest



Introduction F75111

Ir	nitial Internal F75111 port address (0x9c)			
Į.	define GPIO1X, GPIO2X, GPIO3X to input or output			ì
i	and Enable WDT function pin			i
•				1
S	et F75111 DI/DO (sample code as below Get Input va	lue/S	et output value)	
Į.	DO: InterDigitalOutput(BYTE byteValue))			ì
÷	DI: InterDigitalInput()			ł
				1
Ρ	ULSE mode			
S	ample to setting GP33, 32, 31, 30 output 1mS low pul	se si	gnal.	
Ľ	{			ì
ł	this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_PULSE_CONTROL	0x00);	//This is setting low,Level output	ł
ł	this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_PULSE_WIDTH_CONTROL	., 0x01);	//This selects the pulse width to $1\ensuremath{mS}$	ł
i	this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_CONTROL_MODE,	0x0F);	//This is setting the GP33, 32, 31, 30 to	,
÷	output function.			ł
÷	this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_Output_Data ,	0x0F);	//This is setting the GP33, 32, 31, 30	ł
÷	output data.			ł
	}			1

Initial internal F75111

-				-
i	void F75111::InitInternalF75111()			i
1	{			ļ
1	$this \text{-} W rite_Byte(F75111_INTERNAL_ADDR, GPIO1X_CONTROL_MODE)$,0x00);	//set GPIO1X to Input function	ł
i	this->Write_Byte(F75111_INTERNAL_ADDR,GPIO3X_CONTROL_MODE	,0x00);	//set GPIO3X to Input function	1
!	this->Write_Byte(F75111_INTERNAL_ADDR,GPIO2X_CONTROL_MODE	,0xFF);	//set GPIO2X to Output function	1
1				1
1	this->Write_Byte(F75111_INTERNAL_ADDR,F75111_CONFIGURATION,	0x03);	//Enable WDT OUT function	1
ľ	}			1
•				1

Set output value

void F75111::InterDigitalOutput(BYTE byteValue)	
{	
BYTE byteData = 0;	
byteData = (byteData & 0x01)? byteValue + 0x01 : byteValue;	
byteData = (byteData & 0x02)? byteValue + 0x02 : byteValue;	
byteData = (byteData & 0x04)? byteValue + 0x04 : byteValue;	
byteData = (byteData & 0x80)? byteValue + 0x08 : byteValue;	
byteData = (byteData & 0x40)? byteValue + 0x10 : byteValue;	
byteData = (byteData & 0x20)? byteValue + 0x20 : byteValue;	
byteData = (byteData & 0x10)? byteValue + 0x40 : byteValue;	
byteData = (byteData & 0x08)? byteValue + 0x80 : byteValue;	// get value bit by bit
this->Write_Byte(F75111_INTERNAL_ADDR,GPIO2X_OUTPUT_DATA,byteData);	// write byteData value via
GPIO2X output pin	
}	
```
Get Input value
  BYTE F75111::InterDigitalInput()
  {
 BYTE byteGPIO1X = 0;
  BYTE byteGPIO3X = 0;
  BYTE byteData
                    = 0;
 this->Read Byte(F75111 INTERNAL ADDR,GPIO1X INPUT DATA,&byteGPIO1X); // Get value from GPIO1X
  this->Read Byte(F75111 INTERNAL ADDR,GPIO3X INPUT DATA,&byteGPIO3X); // Get value from GPIO3X
  byteGPIO1X = byteGPIO1X & 0xF0;
                                                                                 // Mask unuseful value
  byteGPIO3X = byteGPIO3X & 0x0F;
                                                                                 // Mask unuseful value
  byteData = ( byteGPIO1X & 0x10 )? byteData + 0x01 : byteData;
  byteData = ( byteGPIO1X & 0x80 )? byteData + 0x02 : byteData;
  byteData = ( byteGPIO1X & 0x40 )? byteData + 0x04 : byteData;
  byteData = ( byteGPIO3X & 0x01 )? byteData + 0x08 : byteData;
  byteData = ( byteGPIO3X & 0x02 )? byteData + 0x10 : byteData;
  byteData = ( byteGPIO3X & 0x04 )? byteData + 0x20 : byteData;
  byteData = ( byteGPIO3X & 0x08 )? byteData + 0x40 : byteData;
  byteData = ( byteGPIO1X & 0x20 )? byteData + 0x80 : byteData; // Get correct DI value from GPIO1X & GPIO3X
  return byteData;
  }
```

define F75111 pin in F75111.h

1	//						
	#define	F75111 INTERNAL ADDR	0x9C	//	OnBoard F75111 Chipset		
	#define	F75111_EXTERNAL_ADDR	0x6E	//	External F75111 Chipset		
1	//						
1	#define	F75111_CONFIGURATION	0x03	//	Configure GPIO13 to WDT2 Fi	unction	
1	//						
1	#define	GPIO1X_CONTROL_MODE	0x10	//	Select Output Mode or Input M	ode	
	#define	GPIO2X_CONTROL_MODE	0x20	//	Select GPIO2X Output Mode c	or Input Mod	e
	#define	GPI03X_CONTROL_MODE	0x40	//	Select GPIO3X Output Mode c	or Input Mod	e
1	//		0v12	,,	GPIO1X Input		
1	#define		0x42	"	GPI03X Input		
1	//						
1	#define	GPIO2X_OUTPUT_DATA	0x21	//	GPIO2X Output		1
1	//						
1	#define	GPIO1X_PULSE_CONTROL	0x13	//	GPIO1x Level/Pulse Control R	egister	
1				//	0:Level Mode		
1				//	1:Pulse Mode		
	#define	GPIO1X_PULSE_WIDTH_CONTROL	0x14	//	GPIO1x Pulse Width Control R	egister	
1	#define	GP1_PSWIDTH_500US	0x00	//	When select Pulse mode:	500	us.
į	#define	GP1_PSWIDTH_1MS	0x01	//	When select Pulse mode:	1	ms.
	#define	GP1_PSWIDTH_20MS	0x02	//	When select Pulse mode:	20	ms.
	#define	GP1_PSWIDTH_100MS	0x03	//	When select Pulse mode:	100	ms.
	//		0.000		CDIO2x Laval/Dulas Control D		
1	#ueime	GFIOZX_FOLSE_CONTROL	0823	"	0:1 ovel Mede	egistei	
į				"			
į	#define	GPIO2X PUILSE WIDTH CONTROL	0x24	"	GPIO2x Pulse Width Control R	eaister	
	#define	GP2 PSWIDTH 500US	0x00	"	When select Pulse mode:	500	115
	#define	GP2_PSWIDTH_1MS	0x01	,,	When select Pulse mode:	1	ms
1	#define	GP2 PSWIDTH 20MS	0x02		When select Pulse mode:	20	ms.
1	#define	GP2 PSWIDTH 100MS	0x03	//	When select Pulse mode:	100	ms.
1	//						
1	#define	GPIO3X_PULSE_CONTROL	0x43	//	GPIO3x Level/Pulse Control R	egister	
1				//	0:Level Mode		
				//	1:Pulse Mode		
	#define	GPIO3X_Output_Data	0x41	//	GPIO3x Output Data Register		
	#define	GPIO3X_PULSE_WIDTH_CONTROL	0x44	//	GPIO3x Pulse Width Control R	egister	
	#define	GP3_PSWIDTH_500US	0x00	//	When select Pulse mode:	500	us.
	#define	GP3_PSWIDTH_1MS	0x01	//	When select Pulse mode:	1	ms.
i	#define	GP3_PSWIDTH_20MS	0x02	//	When select Pulse mode:	20	ms.
	#define	GP3_PSWIDTH_100MS	0x03	//	When select Pulse mode:	100	ms.
	//						
							/

3-9-2 IO Device: F75111 CIO Utility CIO116 The Sample code source you can download from

Source file: CIO_Utility_Src_v3.0.3.tar.gz

Binary file: CIO_Utility_Bin_v3.0.3_x32.tar.gz CIO_Utility_Bin_v3.0.3_x64.tar.gz

http://tprd.info/lexwiki/index.php/IO_Device:F75111_CIO_Utility_CIO116

How to use this Demo Application

	ility v2.6	CIO_Utility v2.6 📃 📵 😣
DIO Test	Customize F75111 Address: 0x 📴 Customize Second F75111 Address: 0x 6E	DIO Test Customize F75111 Address: 0x 9C Customize Second F75111 Address: 0x 6E
Selection Mod	e 💌 🗆 second 75111	Selection Mode
DO1 Status DI1 Status DO2 Status DI2 Status	7 6 5 4 3 2 1 0 1 1 1 1 1 1 1 1	7 6 5 4 3 2 1 0 D01 Status 1 1 1 1 1 1 1 1 D11 Status 1 1 1 1 1 1 1 1 1 D02 Status 1 1 1 1 1 1 1 1 1 D12 Status 1 1 1 1 1 1 1 1 1 1
	CIO_Utility v2.6 🕒 🖨 🖏	CIO_Utility v2.6 🛛 🔵 🗊 😣
DIO Test	Customize F75111 Address: 0x 9C Customize Second F75111 Address: 0x 6E	DIO Test Customize F75111 Address: 0x 9C Customize Second F75111 Address: 0x 6E
Selection Mod	e	Selection Mode
DO1 Status DI1 Status DO2 Status DI2 Status	7 6 5 4 3 2 1 0 1 1 1 1 1 1 0 1 1 1 1 1 1 0 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 6 5 4 3 2 1 0 DO1 Status Image: Constraint of the status I
	CIO_Utility v2.6 🛛 🖨 🖲 🥥	
DIO Test	Customize F75111 Address: 0x 9C	
Selection Mod	e	
DO1 Status DI1 Status DO2 Status	7 6 5 4 3 2 1 0	
DI2 Status		

Before executing the program began, Please switch to the highest authority , continued second F75111 ,chmod 777 and root: $\$

- 1. Press the select your test "2i2o", "4i4o", "8i8o", "CIO1616"
- 2. If you test CIO1616 checkbutton second 75111
- 3. start button , select single mode or looptest



Introduction

Initial Internal F75111 port address (0x9c)

define GPIO1X, GPIO2X, GPIO3X to input or output and Enable WDT function pin	
Set F75111 DI/DO (sample code as below Get Input val	ue/Set output value)
DO: InterDigitalOutput(BYTE byteValue)) DI: InterDigitalInput()	
PULSE mode	,
Sample to setting GP33, 32, 31, 30 output 1mS low pulse signal.	
this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_PULSE_CONTROL, this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_PULSE_WIDTH_CONTRO	0x00); //This is setting low pulse output L,0x01); //This selects the pulse width to 1mS
to output function.	
this->Write_Byte(F75111_INTERNAL_ADDR, GPIO3X_Output_Data , output data.	UxU⊢); // I his is setting the GP33, 32, 31, 30

Initial internal F75111

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	<pre>void F75111::InitInternalF75111() { this->Write_Byte(F75111_INTERNAL_ADDR,GPI01X_CONTROL_MODE ,0x00); //set GPI01X to Input function this->Write_Byte(F75111_INTERNAL_ADDR,GPI03X_CONTROL_MODE ,0x00); //set GPI03X to Input function this->Write_Byte(F75111_INTERNAL_ADDR,GPI02X_CONTROL_MODE ,0xFF); //set GPI02X to Output function this->Write_Byte(F75111_INTERNAL_ADDR,F75111_CONFIGURATION ,0x03); //Enable WDT OUT function }</pre>	
s	et output value	-
	void F75111::InterDigitalOutput(BYTE byteValue) { BYTE byteData = 0;	
	byteData = (byteData & 0x01)? byteValue + 0x01 : byteValue; byteData = (byteData & 0x02)? byteValue + 0x02 : byteValue;	
	byteData = (byteData & 0x04)? byteValue + 0x04 : byteValue; byteData = (byteData & 0x80)? byteValue + 0x08 : byteValue; byteData = (byteData & 0x40)? byteValue + 0x10 : byteValue;	
ļ	byteData = (byteData & 0x20)? byteValue + 0x20 : byteValue;	

byteData = (byteData & 0x10)? byteValue + 0x40 : byteValue; byteData = (byteData & 0x08)? byteValue + 0x80 : byteValue;

// get value bit by bit

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this->Write_Byte(F75111_INTERNAL_ADDR,GPIO2X_OUTPUT_DATA,byteData);	// write byteData value via
GPIO2X output pin	
}	

Get Input value

```
BYTE F75111::InterDigitalInput()
{
BYTE byteGPIO1X = 0;
BYTE byteGPIO3X = 0;
BYTE byteData
                   = 0:
this->Read Byte(F75111 INTERNAL ADDR,GPIO1X INPUT DATA,&byteGPIO1X); // Get value from GPIO1X
this->Read Byte(F75111 INTERNAL ADDR,GPIO3X INPUT DATA,&byteGPIO3X); // Get value from GPIO3X
byteGPIO1X = byteGPIO1X & 0xF0;
                                                                              // Mask unuseful value
byteGPIO3X = byteGPIO3X & 0x0F;
                                                                              // Mask unuseful value
byteData = ( byteGPIO1X & 0x10 )? byteData + 0x01 : byteData;
byteData = ( byteGPIO1X & 0x80 )? byteData + 0x02 : byteData;
byteData = ( byteGPIO1X & 0x40 )? byteData + 0x04 : byteData;
byteData = ( byteGPIO3X & 0x01 )? byteData + 0x08 : byteData;
byteData = ( byteGPIO3X & 0x02 )? byteData + 0x10 : byteData;
byteData = ( byteGPIO3X & 0x04 )? byteData + 0x20 : byteData;
byteData = ( byteGPIO3X & 0x08 )? byteData + 0x40 : byteData;
byteData = (byteGPIO1X & 0x20)? byteData + 0x80: byteData; // Get correct DI value from GPIO1X & GPIO3X
return byteData;
}
```

define F75111 pin in F75111.h

· · · · · · · · · · · · · · · · · · ·						
I #define	E75111 INTERNAL ADDR	0x9C	//	OnBoard E75111 Chipset		
u #define	F75111 EXTERNAL ADDR	0x6E		External F75111 Chipset		
 //						
#define	F75111 CONFIGURATION	0x03	// (Configure GPIO13 to WDT2	Function	
//	_					
#define	GPIO1X_CONTROL_MODE	0x10	// :	Select Output Mode or Input	t Mode	
#define	GPIO2X_CONTROL_MODE	0x20	// :	Select GPIO2X Output Mod	e or Input Mode	e
#define	GPIO3X_CONTROL_MODE	0x40	// :	Select GPIO3X Output Mod	e or Input Mode	e i
//						
#define	GPIO1X_INPUT_DATA	0x12	// (GPIO1X Input		
#define	GPIO3X_INPUT_DATA	0x42	// (GPIO3X Input		1
//						1
#define	GPIO2X_OUTPUT_DATA	0x21	// (GPIO2X Output		
I //						
I #define	GPIO1X_PULSE_CONTROL	0x13	// (GPIO1x Level/Pulse Contro	Register	
1			// (
I I — 4 - 6		044		1:Puise Mode	I Da sista s	
	CP1 PSWIDTH FOOLS	0x14	// 0	GPIOTX Pulse Width Contro	FOO	
Hoeline H #dofino	GP1_PSWIDTH_30003	0x00	// \	When select Pulse mode:	500 1 mc	us.
Hoefine		0x01		When select Pulse mode:	1 IIIS.	
I #define	GP1_PSWIDTH_2000S	0x02	// \	When select Pulse mode:	20 ms.	me
#denne		0,00			100	1113.
u '' #define	GPIO2X PULSE CONTROL	0x23	// (GPIO2x Level/Pulse Control	Register	
1			// (0:Level Mode	<u>9</u>	
1 1			// ·	1:Pulse Mode		
u #define	GPIO2X_PULSE_WIDTH_CONTROL	0x24	// (GPIO2x Pulse Width Contro	l Register	
#define	GP2_PSWIDTH_500US	0x00	// \	When select Pulse mode:	500	us.
#define	GP2_PSWIDTH_1MS	0x01	// \	When select Pulse mode:	1 ms.	
#define	GP2_PSWIDTH_20MS	0x02	// \	When select Pulse mode:	20 ms.	
#define	GP2_PSWIDTH_100MS	0x03	// \	When select Pulse mode:	100	ms.
۱ //						
#define	GPIO3X_PULSE_CONTROL	0x43	// (GPIO3x Level/Pulse Contro	l Register	
			// (0:Level Mode		
			// ·	1:Pulse Mode		
#define	GPIO3X_Output_Data	0x41	// (GPIO3x Output Data Regist	er	
#define	GPIO3X_PULSE_WIDTH_CONTROL	0x44	// (GPIO3x Pulse Width Contro	l Register	
#define	GP3_PSWIDTH_500US	0x00	// \	When select Pulse mode:	500	us.
#define	GP3_PSWIDTH_1MS	0x01	// \	When select Pulse mode:	1 ms.	
I #define	GP3_PSWIDTH_20MS	0x02	// \	When select Pulse mode:	20 ms.	
Hefine	GP3_PSWIDTH_100MS	0x03	// \	When select Pulse mode:	100	ms. I
ı //						

3-10 SMBus Interface

• CO1: SMBus 4 pin (1x4 pin 1.25mm Wafer)

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

Note:

1. Mating connector: MOLEX 53047-0410 or compatible

2. Cable housing: MOLEX 51021-0400 or compatible



3-11 CLPC1: for LPC signal 2x5 pin wafer (2.0mm)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	AD3	2	CLK
3	AD2	4	FRAME
5	AD1	6	RESET
7	AD0	8	SERIAL IRQ
9	GND	10	+3.3V



3-12 PCI Express Mini card

	1		
PIN NO.	Description	PIN NO.	Description
1	NC	2	+3.3V
3	NC	4	GND
5	NC	6	+1.5V
7	NC	8	UIM_PWR
9	GND	10	UIM_DATA
11	PCIe-CLK-	12	UIM_CLK
13	PCIe-CLK+	14	UIM_RESET
15	GND	16	UIM_VPP
	KEY		
17	NC	18	GND
19	NC	20	NC
21	GND	22	RST-
23	PCIe-RX- / mSATA-RX+	24	+3.3V
25	PCIe-RX+ / mSATA-RX-	26	GND
27	GND	28	+1.5V
29	GND	30	SMB-CLK
31	PCIe-TX- / mSATA-TX-	32	SMB-DATA
33	PCIe-TX+ / mSATA-TX+	34	GND
35	GND	36	USB-DATA-
37	GND	38	USB-DATA+
39	+3.3V	40	GND
41	+3.3V	42	NC
43	NC	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	mSATA-Detect	52	+3.3V



Note :

1. MPCE1 USB Share CU4

2. MPCE1 Pin 8, 10, 12, 14, 16 for SIM1 card reader use.

3-13 SIM1: Nano SIM Card Push-Push (option) Follow ISO 7816-2 Smart Card Standard.

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	5	GND
2	RST	6	VPP
3	CLK	7	DATA
4	NC	8	NC



3-14 PCI Express M.2 B key Mini card

 NGFF1: Support SATA-based SSD Interface (Mini card socket 75 pin) NGFF1: size 2242

PIN NO.	Description	PIN NO.	Description
1	GND	2	+3.3V
3	GND	4	+3.3V
5	NC	6	NC
7	NC	8	NC
9	NC	10	NC
11	NC		
	Bł	<ΕY	
21	GND	20	NC
23	NC	22	NC
25	NC	24	NC
27	GND	26	NC
29	NC	28	NC
31	NC	30	NC
33	GND	32	NC
35	NC	34	NC
37	NC	36	NC
39	GND	38	DEVSLP
41	mSATA-RX+	40	NC
43	mSATA-RX-	42	NC
45	GND	44	NC
47	mSATA-TX-	46	NC
49	mSATA-TX+	48	NC
51	GND	50	NC
53	NC	52	NC
55	NC	54	NC
57	GND	56	NC
59	NC	58	NC
61	NC	60	NC
63	NC	62	NC
65	NC	64	NC
67	NC	66	NC
69	GND	68	NC
71	GND	70	+3.3V
73	GND	72	+3.3V
75	GND	74	+3.3V



Chapter-4

Introduction of BIOS

The BIOS is a program located in the Flash Memory on the motherboard.

This program is a bridge between motherboard and operating system.

When you start the computer, the BIOS program gains control.

The BIOS first operates an auto-diagnostic test called POST (Power on Self Test) for all the necessary hardware, it detects the entire hardware devices and configures the parameters of the hardware synchronization. After these tasks are completed, BIOS will give control of the computer back to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate with, it is the key factor of system stability and of ensuring your system performance at best.

In the BIOS Setup main menu, you can see several options. We will explain these options in the following pages. First, let us see the function keys you may use here:

Press <Esc> to quit the BIOS Setup.

Press $\uparrow\downarrow \leftarrow \rightarrow$ (up, down, left, right) to choose the option you want to confirm or modify. Press <F10> to save these parameters and to exit the BIOS Setup menu after you complete

the setup of BIOS parameters.

Press Page Up / Page Down or +/- keys to modify the BIOS parameters for the active option.

4-1 Enter Setup

Power on the computer and press key immediately to enter Setup. If the message disappears before your respond but you still wish to enter Setup, restart the system by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart the system by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys.

4-2 BIOS Menu Screen & Function Keys

	InsydeH20 Setup Utility	Rev. 5.0
Main Advanced Security Power Boot	Exit	
BIOS Version Build Date Build Time Processor Type System Henory Speed Cache RAM Total Hemory Platform firmware Information	21382DVV D1 03/03/2020 14:02:00 Intel(R) Celeron (R) CPU J1900 @ 1.99GHz 1333 HHz 2048 KB 2048 HB	This is the help for the hour, minute, second field. Valid range is from 0 to 23, 0 to 59, 0 to 59. INCREASE/REDUCE : + /
BXT SOC	B1 Stepping	
System Time System Date	[00:23:34] [05/26/2020]	
F1 Help ↑\\$elect Item Esc Exit ←Select Menu	F5/F6 Change Values Enter Select ► SubHenu	F9 Setup Defaults F10 Save and Exit

In the above BIOS Setup main menu of, you can see several options.

We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press $\leftarrow \rightarrow$ (left, right) to select screen;
- Press 11 (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<-> or <F5>/<F6> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F9]: Optimized defaults.
- [F10]: Save & Exit.
- Press <Esc> to quit the BIOS Setup.

4-3 General Help

		InsydeH20 Setup Utility	Rev. 5.0		
Main Advanced	Security Power Boot Exit				
		[General Help]			
The Setup Utilit system's configu system parameter Load setup defau	The Setup Utility is a ROH-based configuration utility that displays the system's configuration status and provides users with a tool to set their system parameters. Setting incorrect values may cause system boot failure: .oad setup default values to recover				
<left right=""> Sel <up down=""> Select <enter> Select o <f9> Load Setup <f10> Save and E <esc> Exit Setup <f1> key display</f1></esc></f10></f9></enter></up></left>	ect Screen Item r Enter SubHenu Default xit s General Help(This Screen)				
Push Enter/ESC Push PageUp Push PageDown	- Leave - previous - Next Page				
F1 Help Esc Exit	∱√Select Item ←Select Henu	F5/F6 Change Values Enter Select ▶ SubMenu	F9 Setup Defaults F10 Save and Exit		

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

4-4 Menu Bars

There are six menu bars on top of BIOS screen:

Main To change system basic configuration

Advanced To change system advanced configuration

Security Password settings

Power PME & Power button settings

Boot Exit Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar.

The selected one is highlighted.

4-5 Main

	InsydeH20 Setup Utility	Rev. 5.0
Main Advanced Security Power Boot	Exit	
BIOS Version Build Date Build Time Processor Type System Memory Speed Cache RAM Total Memory	21382DW D1 03/03/2020 14:02:00 Intel(R) Celeron(R) CPU J1900 @ 1.99GHz 1333 HHz 2048 KB 2048 KB	This is the help for the hour, minute, second field. Valid range is from 0 to 23, 0 to 59, 0 to 59. INCREASE/REDUCE : + /
Platform firmware Information BXT SOC	B1 Stepping	
System Time System Date	[00:23:34] [05/26/2020]	
F1 Help ↑\\$elect Item Esc Exit ← Select Menu	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.

System Date

Set the Date. Please use [Tab] to switch between data elements.

System Time

Set the Time. Please use [Tab] to switch between data elements.

4-6 Advanced

Main Advanced Security Power Boot Exit		
>Boot Configuration >PCI Express Configuration >VISB Configuration >Thermal Configuration >SATA Configuration >ACPI Table/Features Control		Configures Boot Settings.
FI Help ↑\Select Item For Exit ← Select Nenu	F5/F6 Change Values	F9 Setup Defaults F10 Save and Exit

Boot Configuration

Please refer section 4-6-1

PCI Express Configuration

Please refer section 4-6-2

USB Configuration Please refer section 4-6-3

Video Configuration Please refer section 4-6-4

Thermal Configuration Please refer section 4-6-5

SATA Configuration Please refer section 4-6-6

ACPI Table / Features Control Please refer section 4-6-7

4-6-1 Boot Configuration

	InsydeH20 Setup Utility	Rev. 5.0
Advanced		
Boot Configuration		Selects Power-on state for Numlock
Numlock		
FI Help ↑\Select Item Esc Exit ← Select Menu	F57F6 Change Values Enter Select ▶ SubMenu	F9 Setup Defaults F10 Save and Exit

Numlock

Select Power-on state for Numlock, default is <ON>

4-6-2 PCI Express Configuration

		InsydeH20 Setup Utility	Rev. 5.0
Advanced			
PCI Express Conf	iguration		Control the PCI Express Root Port.
PPCI Express Roo PPCI Express Roo PPCI Express Roo PPCI Express Roo	t Port 1 t Port 2 t Port 3 t Port 4		
F1 Help Esc Exit	∱√Select Item ←Select Menu	F5/F6 Change Values Enter Select ► SubHenu	F9 Setup Defaults F10 Save and Exit

PCIe 1 / 2 / 3 / 4 configuration settings

4-6-2-1 ► PCI Express Root Port 1 / 2 / 3 / 4

		InsydeH20 Setup Utility	Rev. 5.0
Advanced			
PCI Express Root Port	t 1		Control the PCI Express Root Port.
PC1 Express Root Por PC1E Port 1 Speed PC1E Port 1 Option RC	t 1	inab led> ien1>) i sab led>	
F1 Help Esc Exit	↑\Select Item ←Select Menu	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit

Control the PCI Express Root Port.

The optional settings are: Enabled (default), Disabled.

Select PCI Express port speed.

The optional settings are: Gen1 (default), Gen2

Select PCIE TXE ROM support

The optional settings are: Disabled (default), Enabled

4-6-3 USB Configuration

	Insydel	120 Setup Utility	Rev. 5.0
Advanced			
USB Configuration		Mode	of operation of AHC1 controller
xHC1 Mode	<best auto=""></best>		
XHCI Controller EHCl Controller	<enabled> <enabled></enabled></enabled>		
F1 Help ↑↓ Esc Exit ←	Select Item F5/F0 Select Menu Enter	Change Values Select ► SubMenu	F9 Setup Defaults F10 Save and Exit

XHCI Mode

TMode of operation of xHCI controller.

The optional settings are: Best Auto (default), Enabled, Disabled.

4-6-4 Video Configuration

		InsydeH20 Setup Utility	Rev. 5.0
Advanced			
Video Configuration			Select Hardware CRT configuration
Configure CRT as Aperture Size IGD - DYNT Pre-Alloca IGD - DYNT Total Gfx I	<en <250 ted <641 fen <250</en 	ah led> 3/HB- > 3/ 3/H>	
El Help	↑ Select Item	E5/E6 Change Values	EQ Setun Defaults
Esc Exit	Select Menu	Enter Select ► SubMenu	F10 Save and Exit

Configure CRT as

Enable or disable CRT function.

The optional settings are: Enabled (default) or disabled.

Aperture Size

The optional settings are: 128MB, 256MB (default)

IGD - DVMT Pre-Allocated

Use this item to select DVMT 5.0 pre-allocated (fixed) graphics memory size used by the internal graphics device.

The optional settings are: 64 (default) / 128 / 256 / 512MB

IGD - DVMT Total Gfx Mem

Use this item to select DVMT 5.0 total graphics memory size used by the internal graphics device The optional settings are: 128M, 256M (default), MAX

4-6-5 Thermal Configuration

	InsydeH20	Setup Utility	Rev. 5.0
Auvanceu			
Thermal Configuration Parameter Critical Trip Point	rs <110 ℃>	This value contro the ACP1 Critical in which the OS w	is the temperature of Trip Point - the point ill shut the system
Passive Trip Point	<105 *C>	off. NOTE: 100C is the for all intel mob	Plan Of Record (POR) le processors.
	-t itaa E5/E5 Cb		Defaulte
Esc Exit Selec	ct item F5/F6 Ch ct Menu Enter Se	lange values F9 Setup lect ▶ SubHenu F10 Save a	uerauits and Exit

Thermal Configuration Parameters

This Value controls the temperature of the ACPI Critical Trip Point, the point in which the OS will shutdown the system.

Critical Trip point is the shutdown temperature, the default value is 110°

The CPU frequency will auto reduce when CPU temperature arrived to passive Trip point.

The default of the passive trip point is 105°

4-6-6 SATA Configuration

	InsydeH20 Setup Utility	Rev. 5.0
Advanced		
SATA Configuration SATA Controller Chipset SATA Mode SATA Speed IDE Mode SATA Port 0 Connected to an ODD SATA Port 1 Connected to an ODD	<enabled> <(DE> <gen1> <native ide=""> <enabled></enabled></native></gen1></enabled>	DISABLED: Disables SATA Controller. ENABLED: Enables SATA Controller.
▶Serial ATA Port 0 [Not Installed] ▶Serial ATA Port 1 [Not Installed]		
F1 Help ↑√Select Item Esc Exit ←Select Menu	F5/F6 Change Values Enter Select ▶ SubMenu	F9 Setup Defaults F10 Save and Exit

SATA Controller

Use this item to Enable or Disable SATA Device. The optional settings are: Enabled (default) or Disabled

Chipset SATA Mode

Determine how SATA controller(s) operate. The optional settings are: IDE Mode (default), AHCI Mode.

SATA Speed

Indicates the maximum speed the SATA controller can support. The optional settings: Gen1 (default), Gen2

IDE Mode

Legacy IDE or Native IDE MODE, The optional settings: Legacy IDE or Native IDE (default)

SATA Port 0 Connected to an ODD

Use this item to Enable or Disable SATA Port0 ODD function The optional settings are: Enabled (default) or Disable

SATA Port 1 Connected to an ODD

Use this item to Enable or Disable SATA Port1 ODD function The optional settings are: Enabled (default) or Disable

4-6-7 ACPI Table / Features Control

		InsydeH20 Setup Utility	Rev. 5.0
	Advanced		
ACP1 Tal	ble/Features Control		Enable/Disable ACP1 \$3 state
DSDT -	ACPI S3	<disabled></disabled>	
El Heln	↑ Select Item	F5/F6 Change Values	E9 Setup Defaults
Esc Exit	Select Menu	Enter Select ▶ SubMenu	F10 Save and Exit

ACPI Table / Features Control

Select ACPI sleep state the system will enter when the SUSPEND button is pressed. The optional settings: DSDT - ACPI S3 (Suspend to RAM), Enabled or Disabled (default)

4-7 Security



Supervisor Password

To set up an Supervisor password

1. Select Supervisor Password.

The screen then pops up an Create New Password dialog.

- 2. Enter your desired password that is no less than 3 characters and no more than 10 characters.
- 3. Hit [Enter] key to submit.

4-8 Power

		InsydeH20 Setup Utility	Rev. 5.0
Main Advanced So	ecurity <mark>Power</mark> Boot Exit		
Hain Advanced Si Wake on LAN Wake on USB	ecurity Yower Boot Exit «Disabled «Enabled»	InsydeH2O Setup Utility	Rev. 5.0 Determines the action taken when the system power is off and a PCI Power Management Enable wake up event occurs.
F1 Help	↑\Select Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	←Select Menu	Enter Select ► SubMenu	F10 Save and Exit

Wake on LAN

Wake On LAN from LAN1 when system in S3 or S5 state or both. The optional settings: S3, S5, S3 / S5, Disabled (default)

Wake on USB

Wake On USB form mouse or keyboard when system in S3 state. The optional settings: S3, Disabled (default)

4-9 Boot

	InsydeH20 \$	Setup Utility	Rev. 5.0
Main Advanced Security Po	ower <mark>Boot</mark> Exit		
Main Advanced Security Pd Boot Type Quiet Boot EFI/Legacy Device Order	wer Boot Exit Qual Boot Type> Chailed> Legacy device firs: 	Select boot type to Dual type or UEFI type	type, Legacy
F1 Help	lect Item F5/F6 Ch. lect Henu Enter Se	ange Values F9 Setup Default lect ► SubHenu F10 Save and Exit	s

Boot type

Select boot type for Dual type, Legacy boot type or UEFI boot type, default is Dual boot type

Quiet Boot

The optional settings are: Enabled (default), Disabled.

EFI / Legacy Device order

Determine EFI device first or legacy device first. The optional settings: EFI device first, Legacy device first (default), smart mode

4-9-1 Legacy

		InsydeH20 Setup Utility		Rev. 5.0
Main Advanced Security	Power <mark>Boot</mark> Exit			
Boot Device Priority			Select boot type to Dual type, type or UEFI type	Legacy
Normal Boot Menu	<normal></normal>			
▶Boot Type Order ▶USB				
F1 Help ↑ Esc Exit ←	Select Item Select Henu	F5/F6 Change Values Enter Select ▶ SubMenu	F9 Setup Defaults F10 Save and Exit	

Normal Boot Menu

Select Normal Boot option priority or Advance Boot option priority.

The optional settings: Normal (default), Advance

4-9-2 Boot Type Order

		InsydeH20 Setu	up Utility	Rev. 5.0
Main Advanced	Security Power	Boot Exit		
Hain Advanced Boot Type Order USB Hard Disk Drive CD/DVD-ROH Drive Others	Security Power	InsydeH20 Setu	p Utility	Rev. 5.0
F1 Help Fsc Exit	∱√Select I ←Select M	tem F5/F6 Change	≥ Values F9 Se t ▶ SubHonu E10 Sa	tup Defaults ve and Exit

Boot Type Order

Setting the boot type priority.

The default settings is 1.USB drive 2.Hard Disk Drive 3.CD / DVD ROM drive 4.Others

4-10 EXIT

						InsydeH20 Set	tup Utility							Re	v. 5.0
Main	Advanced	Security	Power	Boot	Exit										
												_		_	
Exit S Save (Exit I Load (Discar	Saving Char Change Witt Discarding Optimal Det rd Changes	nges nout Exit Changes faults						I	Exit :	system	setup	and s	save yo	ur ct	anges.
F1 He	lp	\uparrow	Select	ltem		F5/F6 Chang	je Values			F9	Setup	Defa	ilts		
Esc Ex	it	\leftarrow	Select	Menu		Enter Selec	ct ▶ SubMenu			F10	Save a	ind Ex	cit		

Exit Saving Changes

This item allows user to reset the system after saving the changes.

Save Change Without Exit

This item allows user to saving the changes but doesn't restart.

Exit Discard Changes

This item allows user restart the system but no saving the changes.

Load Optimal Default

Use this item to restore the optimal default for all the setup options.

Discard Changes

Use this item to cancel all the setup options.

4-11 Device Manager

Please press the key F10 when boot up to go into the Device Manager menu

	Device Manager	
Devices List SIO FINTEK81801U		About Super10 Setting
Press ESC to exit.		
↑↓=Move Highlight <e< td=""><td>nter>=\$elect Entry</td><td>Esc=Discard Changes</td></e<>	nter>=\$elect Entry	Esc=Discard Changes

Serial Port 1 / 2 / 3 / 4 Configuration

Please refer section 4-11-1

4-11-1 SIO FINTEK F81801U

SIO FINTEK81801U					
Serial Port 1 Base 1/0 Address Interrupt Serial Mode Serial Port 2 Base 1/0 Address Interrupt Serial Mode Power Fail Hardware Monitor	<pre><finable> <3F8> <1RQ4> <rs232 driver=""> <enable> <2F8> <1RQ3> <rs232 driver=""> <keep state=""></keep></rs232></enable></rs232></finable></pre>	Configure Serial port using options : [Disable] No Configuration			
↑↓=Move Highlight	F9=Reset to Defaults <enter>=Select Entry</enter>	F10=Save Esc=Discard Changes			

Serial Port 1/2

Use this item to enable or disable serial port (COM1 or COM2). The optional settings are: Enabled (default), Disabled.

Serial Port 1 Base IO Address / Interrupt / Serial Mode

Use this item to select an optimal setting for super IO device. The optional settings are: IO=3F8h; IRQ=4 (default) IO=3E8h; IRQ=3,4 IO=2E8h; IRQ=3,4 IO=2F8h; IRQ=3,4

Serial Port 2 Base IO Address / Interrupt / Serial Mode

Use this item to select an optimal setting for super IO device. The optional settings are: IO=2F8h; IRQ=3(default) IO=2E8h; IRQ=3,4 IO=3E8h; IRQ=3,4 IO=3F8h; IRQ=3,4

Power Fail

This item specifies whether your system will reboot after a power failure or interrupt occurs. [Keep state] Restores the system to the status before power failure or interrupt occurred. (default) [Always on] Leaves the computer in the power on state. [Always off] Leaves the computer in the power off state.

Hardware Monitor

	Hardware Monitor
Hardware Monitor	
Voltage	
VCC3	3.392 V
VCORE	0.720 V
VGFX	0.920 V
VBAT	3.202 V
Temperature CPU(°C/°F) System (°C/°F)	40.0°C/ 104.0°F 40.0°C/ 104.0°F

Press [Enter] to view PC health status.

This section shows the status of your CPU, Fan, and overall system.

This is only available when there is Hardware Monitor function onboard.

Chapter-5

DRIVER INSTALLATION

There is a system installation DVD in the package. This DVD does not only include all the drivers you need but also some other free application programs and utility programs. In addition, this DVD also includes an auto detect software telling you which hardware is installed and which driver is needed so that your system can function properly. We call this auto detect software SYSTEM INSTALL.

SYSTEM INSTALL Supports Windows 7 (32bit / 64bit) / Windows 8 / 8.1(32bit / 64bit)

Insert the DVD into your DVD-ROM drive and the SYSTEM INSTALL menu should appear as below. If the menu does not appear, double-click MY COMPUTER and double-click DVD-ROM drive or click START, click RUN, and type X:\SETUP.EXE (assuming your DVD-ROM drive is X).



Make your selection from SYSTEM INSTALL menu:

- 1. Auto Detect Main board and OS to AUTOMATIC DRIVER INSTALLATION menu
- 2. Browse DVD to view the contents of the DVD
- 3. Exit to exit SYSTEM INSTALL menu

AUTOMATIC DRIVER INSTALLATION menu

Bay Trail for Windows 8.1 (x64)

1. INF	4. LAN
2. VGA	5. TXE
3. HD Audio	6. MBI

Back to previous page

Bay Trail for Windows 7 (x64)

1. INF	5. HD Audio
2. VGA	6. LAN
3. Serial IO	7. TXE Patch
4. xHCl	8. TXE

Back to previous page

- 1. INF Install Intel Baytrail chipset driver
- 2. VGA Install onboard VGA driver
- 3. Serial IO Install Serial IO driver (FOR Win 7 only)
- 4. xHCI Install Intel USB 3.0 xHCI driver (FOR Win 7 only)
- 5. HD Audio Install HD Audio Codec driver
- 6. MBI Install MBI driver (FOR Win 8 / 8.1 only)
- 7. LAN To the LAN driver Readme file
- 8. TXE Patch Install Intel TXE patch (FOR Win 7 only)
- 9. TXE Install Intel TXE driver

Each selection is illustrated below:

5-1 INF Install Intel Baytrail Chipset Driver (example for WIN8 64bit)

Bay Trail for W	indows 8.1 (x64)
1. INF	4. LAN
2. VGA	5. TXE
3. HD Audio	6. MBI
Back to previous page	

1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "INF".



3. At the "License Agreement" screen, click "Yes"."Next".



5. Click "Next".

NOTE: SYSTEM INSTALL will auto detect file path For Windows 7 64/32-bit, X:\driver\INTEL\BAY\INF\WIN7\infinst_autol.exe For Windows 8 / 8.1 32/64-bit X:\driver\INTEL\BAY\INF\WIN 8 64\infinst autol.exe



 At the "Intel[®] Chipset Device Software" screen, click "Next".



4. At the "Readme File Information" screen, click.



6. Click "Finish" & restart computer.
5-2 VGA Install Intel Baytrail VGA Driver (example for WIN8 64bit)

Bay Trail for Wi	indows 8.1 (x64)
1. INF	4. LAN
2. VGA	5. TXE
3. HD Audio	6. MBI
Back to previous page	

1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "VGA".



3. At the "License Agreement" screen, Click "Yes" "Next".



5. At the "Setup Progress" screen, Click "Next".

NOTE: SYSTEM INSTALL will auto detect file path For Windows 7 32-bit,

X:\driver\INTEL\BAY\VGA\WIN_7_32\Setup.exe



2. At the "Welcome to the Setup Programscreen, Click "Next".



4. At the "Readme File Information" screen, Click.



6. Click "Finish" to restart computer.

For Windows 7 64-bit X:\driver\INTEL\BAY\VGA\WIN_7_64\Setup.exe For Windows 8 / Windows 8.1 32-bit X:\\driver\INTEL\BAY\VGA\WIN_8_32\Setup.exe For Windows 8 / Windows 8.1 64-bit X:\driver\INTEL\BAY\VGA\WIN 8 64\Setup.exe

5-3 Serial IO Install Driver Baytrail Serial IO Driver (FOR Windows 7 only)

Bay Trail for W	indows 7 (x64)
1. INF	5. HD Audio
2. VGA	6. LAN
3. Serial IO	7. TXE Patch
4. xHCI	8. TXE
Back to previous page	

1. At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "Serial IO".



3. At the "License Agreement" screen, Click "Yes" "Next".



2. At the "Welcome to the Setup Program screen, Click "Next".



4. At the "Readme File Information" screen, Click.



5. At the "Ready to install the program" screen, Click "Install".

NOTE: SYSTEM INSTALL will auto detect file path For Windows 7 32-bit, X:\driver\INTEL\BAY\SERIALIO\WIN7_32Bit.msi For Windows 7 64-bit X:\driver\INTEL\BAY\SERIALIO\Win7_64Bit.msi

i Intel Processor Win7 IO Drivers 64Bit - InstallShield Wizard	
2	InstallShield Wizard Completed
	Processor Win7 IO Drivers 648it. Click Finish to exit the wizard.
\geq	
	< Back Finish Cancel

6. Click "Finish" and restart computer.

5-4 xHCI Install Intel USB 3.0 xHCI Driver (FOR Windows 7 only)

Bay Trail for	Windows 7 (x64)
1. INF	5. HD Audio
2. VGA	6. LAN
3. Serial IO	7. TXE Patch
4. xHCl	8. TXE
Back to previous page	

At the "AUTOMATIC DRIVER INSTALLATION menu" screen, click "xHCI".



3. At the "License Agreement" screen, Click "Yes" "Next".



5. At the "Setup Progress" screen, Click "Next".

NOTE: SYSTEM INSTALL will auto detect file path For Windows 7 32 / 64-bit, X:\driver\INTEL\BAY\XHCI\Driver_Installer\Setup.exe



2. At the "Welcome to the Setup Programscreen, Click "Next".



4. At the "Readme File Information" screen, Click

Intel® Installation Framework

Intel® USB 3.0 eXtensible Host Controller Driver
Setup Is Complete

You must restart this computer for the changes to take effect. Would you like to restart the
computer now?

No. I will restart this computer inter.

Click Finish, then remove any installation media from the drives.

Intel® Installation Framework.

Enab

6. Click "Finish" to restart computer.

5-5 HD Audio Install High Definition Audio Driver (example for WIN8 64bit)

Bay Trail for Win	ndows 8.1 (x64)
1. INF	4. LAN
2. VGA	5. TXE
3. HD Audio	6. MBI
Back to previous page	

1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "HD Audio".



2. Click "Next".



3. Click "Finish" to restart computer

NOTE: SYSTEM INSTALL will auto detect file path For Windows 7 32 / 64-bit, Windows 8/8.1 32 / 64-bit X:\driver\INTEL\BAY\SOUND\Win7_Win8_Win81_R273.exe

5-6 MBI Install Intel MBI Driver (FOR Win 8 / 8.1 only)



1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "HD Audio".



3. At the "License Agreement" screen, Click "Yes".



5. Click "Finish" to restart computer.

NOTE: SYSTEM INSTALL will auto detect file path For Windows 8/8.1 32 / 64-bit, X:\driver\INTEL\BAY\MBI\Setup.exe



2. At the "Welcome to the Setup Programscreen, Click "Next".



4. At the "Setup Progress" screen, Click "Next".

5-7 TXE Install Intel TXE driver 5-7-1 TXE Install for WIN8 / WIN8.1

Bay Trail for W	indows 8.1 (x64)
1. INF	4. LAN
2. VGA	5. TXE
3. HD Audio	6. MBI
Back to previous page	

1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE".



3. At the "License Agreement" screen, Click "Yes".



5. Click "Finish" to restart computer.



2. At the "Setup" screen, Click "Next".

Set	up
Intel® Trusted Execution Engine Confirmation	(intel)
You are about to install the following components: - Intel® Trusted Execution Engine - Intel® Dyname Application Loader - Intel® Junetty Protection Technology - Intel® Trusted Connect Service	
Intel Corporation	< Back Next > Cancel

4. Click "Next".

NOTE: SYSTEM INSTALL will auto detect file path For Windows 8 32 / 64-bit,

X:\driver\INTEL\BAY\TXE\WIN_8\SetupTXE.exe For Windows 8.1 32 / 64-bit,

X:\driver\INTEL\BAY\TXE\WIN_8.1\SetupTXE.exe

5-7-2 TXE Install for WIN7 Please install PXE Patch first.

Bay Trail for Windows 7 (x64)

1. INF	5. HD Audio
2. VGA	6. LAN
3. Serial IO	7. TXE Patch
4. xHCl	8. TXE
Back to previous page	

1. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE Patch".



3. Click "Finish" & restart computer.



5. At the "TXE Setup" screen, Click "Next".



2. At the "Windows Update" screen, Click "Yes".

1. INF	5. HD Audio
2. VGA	6. LAN
3. Serial IO	7. TXE Patch
4. xHCI	8. TXE

4. At the "AUTOMATIC DRIVER INSTALLATION menu", click "TXE "



6. At the "License Agreement" screen, Click "Yes".

Setup	×
Intel® Trusted Execution Engine Confirmation	(intel)
You are about to install the following components: - Intel® Thrusted Execution Engine - Intel® Dimaine Application Coder - Intel® Internative Protection Technology - Intel® Trusted Connect Service	
Intel Corporation	< Back Next > Cancel



8. Click "Finish" & restart computer.

7. Click "Next".

NOTE: SYSTEM INSTALL will auto detect file path For Windows 7 32 / 64-bit, TXE Patch X:\driver\INTEL\BAY\TXE\WIN_7\kmdf-1.11-Win-6.1-x86.msu X:\driver\INTEL\BAY\TXE\WIN_7\kmdf-1.11-Win-6.1-x64.msu TXE X:\driver\INTEL\BAY\TXE\WIN_7\SetupTXE.exe X:\driver\INTEL\BAY\TXE\WIN_7\SetupTXE.exe

5-8 How to update Insyde BIOS

Under DOS Mode

STEP 1. Prepare a bootable disc.

(Storage device could be USB FDD or USB pen drive.)

STEP 2. Copy utility program to your bootable disc. You may download it from our website.

- STEP 3. Copy the latest BIOS for your LEX motherboard from our website to your bootable disc.
- STEP 4. (Here take 2I382DW as an example, please enter your motherboard's name) Insert your bootable disc into X: (X could be C:, A: or others. It depends on which type of storage device you use.)

Start the computer and type

X:\: H2OFFT-D.EXE 2I382DWA1.BIN-BIOS-ALL

-BIOS : Flash BIOS region

-ALL : Flash all

STEP 5. Press ENTER and the BIOS will be updated, Computer will restart automatically.

Appendix B: Resolution list

640 x 480 x (256 / 16bit / 32bit)
800 x 600 x (256 / 16bit / 32bit)
1024 x 768 x (256 / 16bit / 32bit)
1152 x 864 x (256 / 16bit / 32bit)
1280 x 600 x (256 / 16bit / 32bit)
1280 x 720 x (256 / 16bit / 32bit)
1280 x 768 x (256 / 16bit / 32bit)
1280 x 800 x (256 / 16bit / 32bit)
1280 x 960 x (256 / 16bit / 32bit)
1280 x 1024 x (256 / 16bit / 32bit)
1400 x 1050 x (256 / 16bit / 32bit)
1440 x 900 x (256 / 16bit / 32bit)
1600 x 900 x (256 / 16bit / 32bit)
1600 x 1200 x (256 / 16bit / 32bit)
1680 x 1050 x (256 / 16bit / 32bit)
1920 x 1080 x (256 / 16bit / 32bit)
1920 x 1200 x (256 / 16bit / 32bit)