

**Half-size pure ISA CPU card with on-board AMD Geode™ LX
600@0.7W Processor at FSB 366MHz, 128KB L2 cache,
128MB memory on board include VGA, LAN, USB2.0, CF,
COM, LPT and Audio, RoHS**

IOWA-LX-600

Quick Installation Guide

Version 1.0

Mar. 14, 2011

Package List

IOWA-LX-600 package includes the following items:

- 1 x IOWA-LX-600 Single Board Computer
- 1 x USB Cable
- 1 x IDE Flat Cable
- 1 x KB/MS Y Cable
- 1 x Audio Cable
- 1 x Mini Jumper Pack
- 1 x Utility CD (within manual)
- 1 x QIG (Quick Installation Guide)
- 1 x One Key Recovery CD



©2011 Copyright by IEI Technology corp.
All rights reserved.

Specifications

- CPU:
On-board AMD Geode™ LX 600@ processor at FSB 366MHz, 128KB L2 cache
- System chipset: AMD Geode™ CS5536
- BIOS: Award BIOS
- System memory:
On-board 128MB (max.) 200/266MHz DDR SDRAM supported.
One 204-pin 512MB (max.) 200/266MHz DDR SO-DIMM supported.
- Ethernet:
10/100Mbps Realtek RTL8100C Ethernet controller
- Super IO: Winbond W83627EHG
- I/O Interface:
2 x RS-232
1 x RS-422/485
1 x IDE
1 x FDD
1 x LPT
2 x SATA (Optional for IOWA-LX-600S-R10)
1 x CF type II
4 x USB 2.0 (by pin header)
1 x PS/2 KB/MS
- Expansion:
ISA bus supported via golden finger
- Digital I/O: 8-bit digital I/O, 4-bit input / 4-bit output
- Display Output:
Single HD VOP 2.0 output
1920x1440 CRT output
1600x1200 TFT output
- Graphic Engine:
VGA integrated in the AMD Geode™ LX 600
- Audio: Realtek ALC203 with AC'97 codec

- Watchdog Timer:
Software programmable supports 1~255sec. System reset
- Power supply: 5V/12V via ISA bus, AT/ATX mode supported
- Power Consumption:
5V@1.51A, 5VSb@0.09 (On-board AMD Geode™ LX 600 CPU
366MHz with 200MHz DDR 128MB On-board Memory and
333MHz DDR 512MB Memory)
- Temperature: Operation: -10°C~60°C
- Humidity: Operation: 5%~95% non-condensing
- Dimension: 185mm x 122mm

Ordering Information

- IOWA-LX-600-R10 : Half-size pure ISA CPU card with on-board AMD Geode™ LX 600 processor at FSB 366MHz, 128KB L2 cache, 128MB memory on board include VGA, LAN, USB 2.0, COM, CF, LPT and Audio, RoHs
- IOWA-LX-600S-R10 : Half-size pure ISA CPU card with on-board AMD Geode™ LX 600 processor at FSB 366MHz, 128KB L2 cache, 128MB memory on board include VGA, LAN, USB 2.0, SATA, COM, CF, LPT and Audio, RoHs
- 32000-062800-RS : SATA Cable
- 32200-000017-RS : FDD Cable
- 19800-000400-100-RS : LPT Cable
- 19800-000058-RS : RS-232/422/485 Cable

Jumpers Setting and Connectors

LABEL	FUNCTION
JP2	Use AT & ATX Power Select jumper
JP3	COM3 Signal jumper Setting
JP4	Serial port' s (CN21 & CN18) RI Signal Select
JP5	Flat Panel TTL (CN10) power using select
JP6	Flat Panel TTL (CN10) Clock using select
CN1	External – VCC Power Connector
CN2	Power Connector
CN3	PS-ON Connector
CN6	PWR & RST Button and Indicators panel
CN7	Inverter Connector
CN8	CPU Fan Connector
CN9	Floppy Connector
CN10	TFT LCD Connector
CN11	Primary IDE Connector (40pin 2.54mm)
CN12	Internal USB1 2.0 Connector (2 ports)
CN13	Internal USB2 2.0 Connector (2 ports)
CN14	Battery socket
CN15	IrDA Connector
CN16	10-pin Digital I/O Connector
CN17	Parallel Port Connector
CN18	Internal Serial Port (COM2/3) Connector
CN19	Audio Connector (Line out, Line in & MIC in)
CN20	Audio CD In Connector
CN21	External Serial Port (COM1) Connector
CN22	LAN Connector (RJ -45)
CN23	DB- 15pin VGA Connector
CN24	Keyboard / Mouse Connector
CN25	6-pin Pin Header Keyboard/Mouse Connector
CN26	Serial ATA Connector
CN27	Serial ATA Connector
CN29	SDRAM DDR SO-DIMM socket

JP2: Use AT & ATX Power Select jumper	
PIN NO.	DESCRIPTION
Short 1 - 2	Use AT Power
Open 1 - 2	Use ATX Power

JP3: COM3 Signal jumper Setting	
PIN NO.	DESCRIPTION
Short 1 - 2	RS-422
Short 2 - 3	RS-485

JP5: Flat Panel TTL (CN10) power using select	
PIN NO.	DESCRIPTION
Short 1 - 2	+ 3.3V
Short 2 - 3	+ 5V

JP4: Serial port' s CN21 Pin9 (CN18 Pin8) RI Signal Select		
CONNECTOR		DESCRIPTION
CN21	CN18	
Short 1 - 3	Short 2 - 4	12 Voltage output
Short 3 - 5	Short 4 - 6	5 Voltage output
Short 5 - 7	Short 6 - 8	
Short 7 - 9	Short 8 - 10	Normal RI Function

JP6: Flat Panel TTL (CN10) Clock using select	
PIN NO.	DESCRIPTION
Short 1 - 2 Default	FPCLK
Short 2 - 3	FPCLK#

CN19: Audio Connector (Line out, Line in & MIC in)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Line Out (Right)	2	Line In (Right)
3	GROUND	4	GROUND
5	Line Out (Left)	6	Line In (Left)
7	GROUND	8	GROUND
9	MIC1 In	10	MIC2 In

CN20: Audio CD In Connector	
PIN NO.	DESCRIPTION
1	CD SIGNAL (Left)
2	GROUND
3	GROUND
4	CD SIGNAL (Right)

CN11: Primary IDE Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	CHRDY	28	(PULL LOW TO GND)
29	DACK#	30	GROUND
31	INTERRUPT	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND

CN17: Parallel Port Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	STROBE#	2	AUTO FORM FEED #
3	DATA 0	4	RROR#
5	DATA 1	6	INITIALIZE
7	DATA 2	8	PRINTER SELECT LN#
9	DATA 3	10	GROUND
11	DATA 4	12	GROUND
13	DATA 5	14	GROUND
15	DATA 6	16	GROUND
17	DATA 7	18	GROUND
19	ACKNOWLEDGE	20	GROUND
21	BUSY	22	GROUND
23	PAPER EMPTY	24	GROUND
25	PRINTER SELECT	26	N/C

CN12: Internal USB 2.0 Connector (2 ports)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GROUND
3	DATA1-	4	DATA2+
5	DATA1+	6	DATA2-
7	GROUND	8	VCC

CN13: Internal USB 2.0 Connector (2 ports)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GROUND
3	DATA3-	4	DATA4+
5	DATA3+	6	DATA4-
7	GROUND	8	VCC

CN15: IrDA Connector	
PIN NO.	DESCRIPTION
1	VCC
2	N/C
3	IR-RX
4	Ground
5	IR-TX

CN8: CPU Fan	
PIN NO.	DESCRIPTION
1	Ground
2	+5V
3	Rotation Signal

CN21: External Serial Port Connector	
PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	RECEIVE DATA (RXD)
3	TRANSMIT DATA (TXD)
4	DATA TERMINAL READY (DTR)
5	GROUND (GND)
6	DATA SET READY (DSR)
7	REQUEST TO SEND (RTS)
8	CLEAR TO SEND (CTS)
9	RING INDICATOR (RI)

CN18: Internal Serial Port Connector	
PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	DATA SET READY (DSR)
3	RECEIVE DATA (RXD)
4	REQUEST TO SEND (RTS)
5	TRANSMIT DATA (TXD)
6	CLEAR TO SEND (CTS)
7	DATA TERMINAL READY (DTR)
8	RING INDICATOR (RI)
9	GROUND (GND)
10	GROUND (GND)

CN24: KB/MS Connector	
PIN NO.	DESCRIPTION
1	KEYBOARD DATA
2	MOUSE DATA
3	GROUND
4	+5V
5	KEYBOARD CLOCK
6	MOUSE CLOCK

CN25: 6-pin KB/MS Connector	
PIN NO.	DESCRIPTION
1	+5V
2	MOUSE DATA
3	MOUSE CLOCK
4	KEYBOARD DATA
5	KEYBOARD CLOCK
6	GROUND

CN23: DB-15pin VGA Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	N/C
5	GROUND	6	GROUND
7	GROUND	8	GROUND
9	N/C	10	GROUND
11	N/C	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDCCLK		

CN16: 10-pin Digital I/O			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	2	+5V
3	OUTPUT 0	4	OUTPUT1
5	OUTPUT 2	6	OUTPUT3
7	INPUT 0	8	INPUT 1
9	INPUT 2	10	INPUT 3

CN2: Power Connector	
PIN NO.	DESCRIPTION
1	+5V
2	GND
3	GND
4	+12V

CN3: PS-ON Connector	
PIN NO.	DESCRIPTION
1	Ground
2	PS-ON
3	+5V Standby

CN6: PWR & RST Button and Indicators Panel			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PWRBTN	2	+5V
3	GROUND	4	GROUND
5	+5V	6	RESET
7	HDDLED-	8	GROUND

CN1: External -VCC Power	
PIN NO.	DESCRIPTION
1	-5V
2	GROUND
3	-12V

CN18: RS-422/485	
PIN NO.	DESCRIPTION
11	TX+
12	TX-
13	RX+
14	RX-

CN22: LAN Connectors (RJ-45)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TX+	8	N/C
2	GROUND	9	ACT_LED-
3	TX-	10	ACT_LED+
4	RX+	11	LINK_LED -
5	GROUND	12	LINK_LED+
6	RX-	13	GROUND
7	N/C	14	GROUND

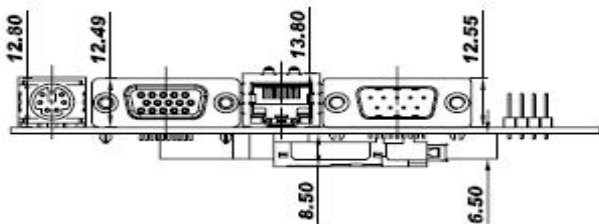
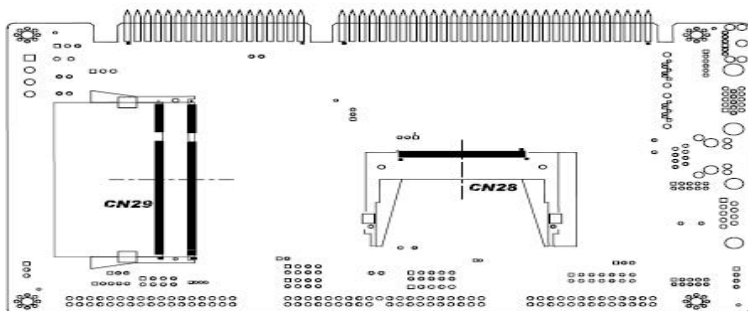
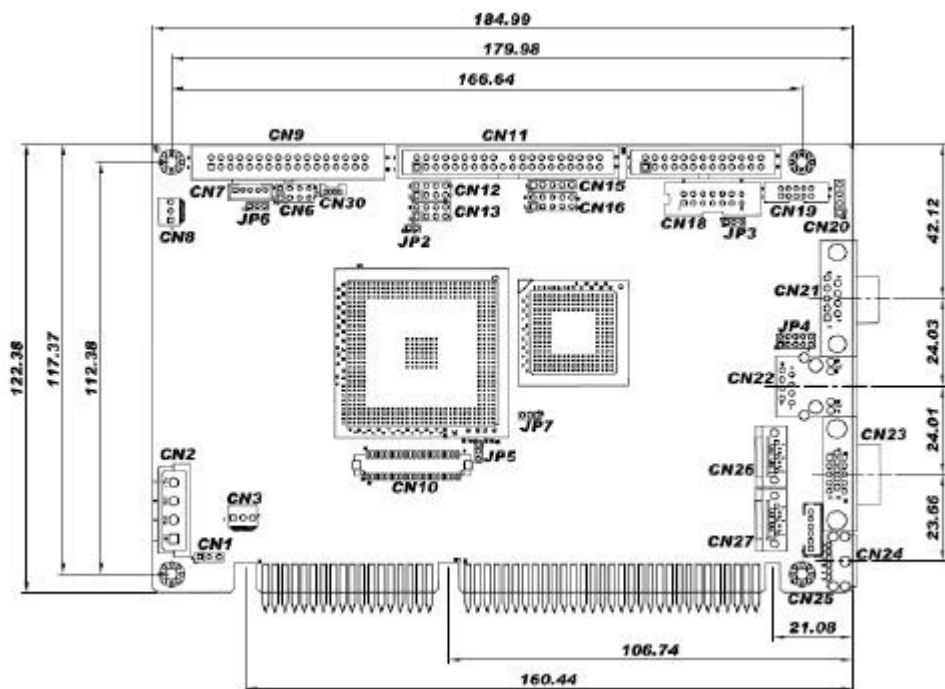
CN10: TFT LCD Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCD_VCC	2	VCD_VCC
3	GROUND	4	GROUND
5	VCD_VCC	6	VCD_VCC
7	I_SDATA	8	GROUND
9	TFT_B0	10	TFT_B1
11	TFT_B2	12	TFT_B3
13	TFT_B4	14	TFT_B5
15	TFT_B6	16	TFT_B7
17	TFT_G0	18	TFT_G1
19	TFT_G2	20	TFT_G3
21	TFT_G4	22	TFT_G5
23	TFT_G6	24	TFT_G7
25	TFT_R0	26	TFT_R1
27	TFT_R2	28	TFT_R3
29	TFT_R4	30	TFT_R5
31	TFT_R6	32	TFT_R7
33	GROUND	34	GROUND
35	FPCLK	36	VSYNC
37	LCD_EN	38	HSYNC
39	I_SCLK	40	DISPEN

CN9: Floppy Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	2	DRVDE0
3	GROUND	4	N/C
5	GROUND	6	N/C
7	GROUND	8	INDEX#
9	GROUND	10	MOT0#-
11	GROUND	12	N/C
13	GROUND	14	DSA#-
15	GROUND	16	N/C
17	GROUND	18	DIR#
19	GROUND	20	STEP#
21	GROUND	22	WDATA#
23	GROUND	24	WGATE#
25	GROUND	26	TRK0#
27	GROUND	28	WP#
29	N/C	30	RDATA#
31	GROUND	32	HDSEL#
33	N/C	34	DSKCHG#

CN26 & CN27: Serial ATA	
PIN NO.	DESCRIPTION
1	GND
2	S_TXP
3	S_TXN
4	GND
5	S_RXN
6	S_RXP
7	GND

CN7: Inverter Power	
PIN NO.	DESCRIPTION
1	Ground
2	Ground
3	+12V
4	Ground
5	LCD Enable

Board Layout: Jumper and Connector Locations



(Unit:mm)