



10623 Roselle Street, San Diego, CA 92121 • (858) 550-9559 • Fax (858) 550-7322  
contactus@accesio.com • www.accesio.com

# **MODEL ETX-NANO-104**

## **USER MANUAL**

METX-NANO-104.A1h

Manual ETX-NANO-104

## Notice

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## WARNING!!

**ALWAYS CONNECT AND DISCONNECT YOUR FIELD CABLING WITH THE COMPUTER POWER OFF. ALWAYS TURN COMPUTER POWER OFF BEFORE INSTALLING A BOARD. CONNECTING AND DISCONNECTING CABLES, OR INSTALLING BOARDS INTO A SYSTEM WITH THE COMPUTER OR FIELD POWER ON MAY CAUSE DAMAGE TO THE I/O BOARD AND WILL VOID ALL WARRANTIES, IMPLIED OR EXPRESSED.**

## **Warranty**

Prior to shipment, ACCES equipment is thoroughly inspected and tested to applicable specifications. However, should equipment failure occur, ACCES assures its customers that prompt service and support will be available. All equipment originally manufactured by ACCES which is found to be defective will be repaired or replaced subject to the following considerations.

## **Terms and Conditions**

If a unit is suspected of failure, contact ACCES' Customer Service department. Be prepared to give the unit model number, serial number, and a description of the failure symptom(s). We may suggest some simple tests to confirm the failure. We will assign a Return Material Authorization (RMA) number which must appear on the outer label of the return package. All units/components should be properly packed for handling and returned with freight prepaid to the ACCES designated Service Center, and will be returned to the customer's/user's site freight prepaid and invoiced.

## **Coverage**

First Three Years: Returned unit/part will be repaired and/or replaced at ACCES option with no charge for labor or parts not excluded by warranty. Warranty commences with equipment shipment.

Following Years: Throughout your equipment's lifetime, ACCES stands ready to provide on-site or in-plant service at reasonable rates similar to those of other manufacturers in the industry.

## **Equipment Not Manufactured by ACCES**

Equipment provided but not manufactured by ACCES is warranted and will be repaired according to the terms and conditions of the respective equipment manufacturer's warranty.

## **General**

Under this Warranty, liability of ACCES is limited to replacing, repairing or issuing credit (at ACCES discretion) for any products which are proved to be defective during the warranty period. In no case is ACCES liable for consequential or special damage arriving from use or misuse of our product. The customer is responsible for all charges caused by modifications or additions to ACCES equipment not approved in writing by ACCES or, if in ACCES opinion the equipment has been subjected to abnormal use. "Abnormal use" for purposes of this warranty is defined as any use to which the equipment is exposed other than that use specified or intended as evidenced by purchase or sales representation. Other than the above, no other warranty, expressed or implied, shall apply to any and all such equipment furnished or sold by ACCES.

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# Chapter 1: Introduction

## Features

- Easy prototyping/evaluation for custom baseboard designs
- Wide range of ETX CPUs and I/O boards available
- Small size – only 120mm x 125mm (4.72" by 4.92")
- Full PC/104 and PC/104-Plus I/O expansion
- Four rear-mounted USB 2.0 ports
- VGA, PS/2 mouse and keyboard
- Two COM ports (One selectable RS-232/422/485 and one RS-232 only)
- 10/100 Ethernet LAN
- Flat Panel, IDE and Compact Flash support
- Standard 3.5mm (1/8") audio with Line In, Line Out, and MIC

## Applications

The ETX-NANO-104 can be used in any application where a very small full-featured rugged motherboard is required. With PC/104 I/O expansion, low power, long life, and CPU scalability, the ETX-NANO-104 is popular in the following markets.

- Transportation – Trucking, trains, planes and seaborne
- Medical – all types of medical diagnostic equipment
- Military – submarine, planes, shipboard, mobile
- Automation – remote monitoring, embedded manufacturing
- Robotics – all types of fixed and mobile robotic equipment

## Functional Description

The ETX-NANO-104 is one of the smallest embedded motherboard systems and is designed to support USB and PC/104-based I/O modules along with the high performance benefits of ETX. Featuring a motherboard/baseboard only 120mm across, the right-angle mounted connectors include VGA, RS-232/422/485, four USB 2.0 ports, standard audio, PS/2 mouse and keyboard, and Ethernet. ACCES I/O's experience in providing OEMs with custom ETX baseboards is highlighted by this dense baseboard design.

The ETX-NANO-104 is unique due to the capability of utilizing any embedded ETX CPU board that meets the ETX standard for its processing, while providing PC/104 I/O module expansion. Whether the application requires a high-end 1.8GHz Intel Pentium M, a fanless mid-range 800MHz Celeron M, or a very low wattage AMD LX800 processor, ACCES I/O can provide a system solution to match a specific requirement. Although smaller than the EPIC embedded boards, the ETX-NANO-104 still supports PC/104-Plus I/O modules in an upward stack. In addition to the rear motherboard I/O, it has supplemental onboard I/O connectors for flat-panel support, IDE, Compact Flash, and an extra RS-232 serial port. Power is provided through a 12-pin micro-fit power connector with an optional cable adapter that connects to any ATX power supply. For an external DC powered system, a PC/104 or internal DC-DC power supply both from ACCES I/O can be mounted inside an enclosure.

The ETX-NANO-104 is the perfect product for users ranging from high-volume OEMs to small, simple evaluation/prototype systems. By combining the benefits of both the ETX and PC/104 standards, a more cost effective time to market is achieved no matter what the quantity.

Large quantity OEMs can use the wide range of COTS PC/104 and ETX products for simple and easy prototyping and evaluation purposes. ACCES I/O has a wide range of proven data acquisition design libraries readily accessible that can simply be included into your custom baseboard design featuring analog I/O, digital I/O, isolated I/O, relay outputs, communication, etc. For embedded developers designing systems which may require smaller quantities, the ETX-NANO-104 is still the perfect solution. Now your next embedded system can include all the benefits of this combo motherboard. These benefits include the capability to easily choose and upgrade your ETX CPU and the high availability of COTS PC/104 modules. Your next system can have the best of both worlds. Once again, time to market is dramatically reduced and future upgrades are as easy as choosing a new ETX CPU and/or PC/104 module.

## Included with your Baseboard

The following components are included with your shipment. Please take the time now to ensure that no items are damaged or missing.

1. ETX-NANO-104
2. Mounting Hardware Kit (PN# ETX-HDW-KITM)
  - 4- 2.5mm x 16mm PHP screws
  - 4- 9.5mm standoffs
  - 1, 2 or 3 - 2.5mm x 5mm PHP screw depending on ETX CPU
3. 2mm jumpers to configure COM1 for RS-232/422/485 (RS-232 shipped as default)
4. 2.54 mm jumper to configure V I/O(PCI-104 only) for 3.3V or 5V (shipped uninstalled)

## Optional Accessories

1. Wide range of ETX CPUs
2. Heat spreader plates
3. SODIMM memory modules 256MB, 512MB, 1GB available
4. Compact Flash modules
5. 6" ATX Power Adapter Cable (PN# CAB-ETX-ATX)
6. 60W, 6V-26V Input DC-DC Power Supply (PN# PICOPSU-60WI)
7. 60W (12V/5A) AC-DC Power Adapter (PN# PWR-ACDC-60W)
8. 80W, 12V Input DC-DC Power Supply (PN# PICOPSU-80)
9. 80W (12V/6.6A) AC-DC Power Adapter (PN# PWR-ACDC-80W)
10. 120W, 12V Input DC-DC Power Supply (PN# PICOPSU-120)
11. 110W (12V/8.5A) AC-DC Power Adapter (PN# PWR-ACDC-110W)
12. 6" 44-pin IDE Cable for 2.5" HD (PN# C44IDE6)
13. 6" COM2 10 pin IDC to DB9 (PN# CAB-DB9IDC10-6)
14. 6" Momentary panel mount Reset Switch (PN# CAB-ACT-RST)
15. 6" Momentary panel mount Power Switch (PN# CAB-ACT-RST)

## Specification

### Motherboard Rear Mounted Connectors

Sound	Three vertical 1/8" (3.5mm) audio jacks Blue – Line In Green – Line Out Pink – MIC
USB	Four USB 2.0/1.1 connectors
VGA	Standard DB15 female
Serial	COM1 DB9 male RS-232/422/485 (jumper selectable)
Keyboard	PS/2 round 6-pin type
Mouse	PS/2 round 6-pin type
LAN	RJ45 10/100 Mbit Ethernet with Tx/Rx LED's
LED	Green power indicator

### Top Mounted Board Connectors and Devices

Power	Molex 12-pin 3.0 Micro-Fit Connector
PC/104-Plus I/O Expansion	Standard PC/104 ISA bus stack up connector Standard PCI-104 PCI bus stack up connector
Flat Panel	40-pin JILI connector LVDS or LCD option (depending on ETX module)
Fan Power	3-pin 12VDC powered
Serial	COM2 RS-232 10 pin IDC header
IDE	44-pin 2.5 inch laptop drive type
Compact Flash	Standard CF2 50-pin side-mount with ejector housing
Reset	2-pin header
Power Switch	2-pin header
CMOS backup	Removable lithium disk battery holder
Buzzer	Round audio magnetic buzzer

### Bottom Mounted Board Connectors

ETX	Four standard ETX 9mm connectors
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### Environmental

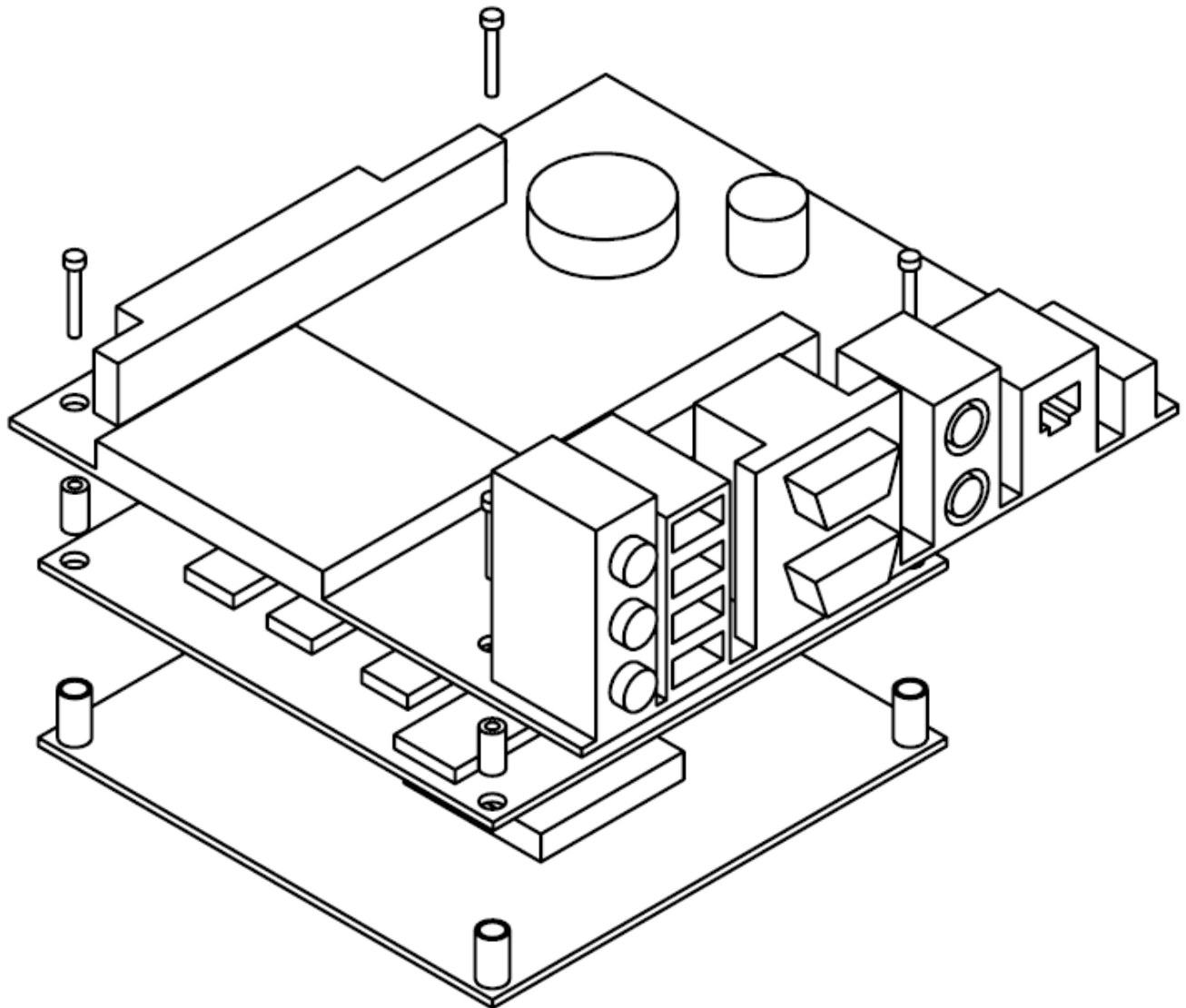
Operating temperature range	0 to 70°C (-40 to 85°C optional)
Storage temperature range	-50 to +120°C
Humidity	5% - 95% non-condensing
Base board dimensions	120mm x 125mm

### Power Consumption

Required (Baseboard only)	+5 Volts @ <100mA
Power connectors maximum input current per pin is 5A. Therefore the maximum system input power available per voltage is specified as:	
	5V @ 20A      12V @ 5A
	3.3V @ 5A      -12V @ 5A

## Chapter 2: Installation

First, make sure no power or signal cables are attached. Next, check the ETX CPU and make sure it is properly configured for your application and the memory is installed securely. Align the ETX connectors with the baseboard connectors. Snap the ETX CPU into the ETX-NANO-104, making sure that the connectors are fully seated and that nothing is interfering between the baseboard and CPU. Using the provided hardware, install the four standoffs between the ETX-NANO-104 and the ETX CPU. Next, mount the heat spread plate to an appropriate heatsink. Then install the heat spread plate and screw down through the baseboard and CPU into the threaded holes of the heat spreader plate. Check again to make sure that the connectors are seated properly.



**Figure 2-1:** Installation Diagram



# Chapter 3: Option Selection

Refer to the setup programs on the CD provided with the board. Also, refer to the Option Selection Map when reading this section of the manual.

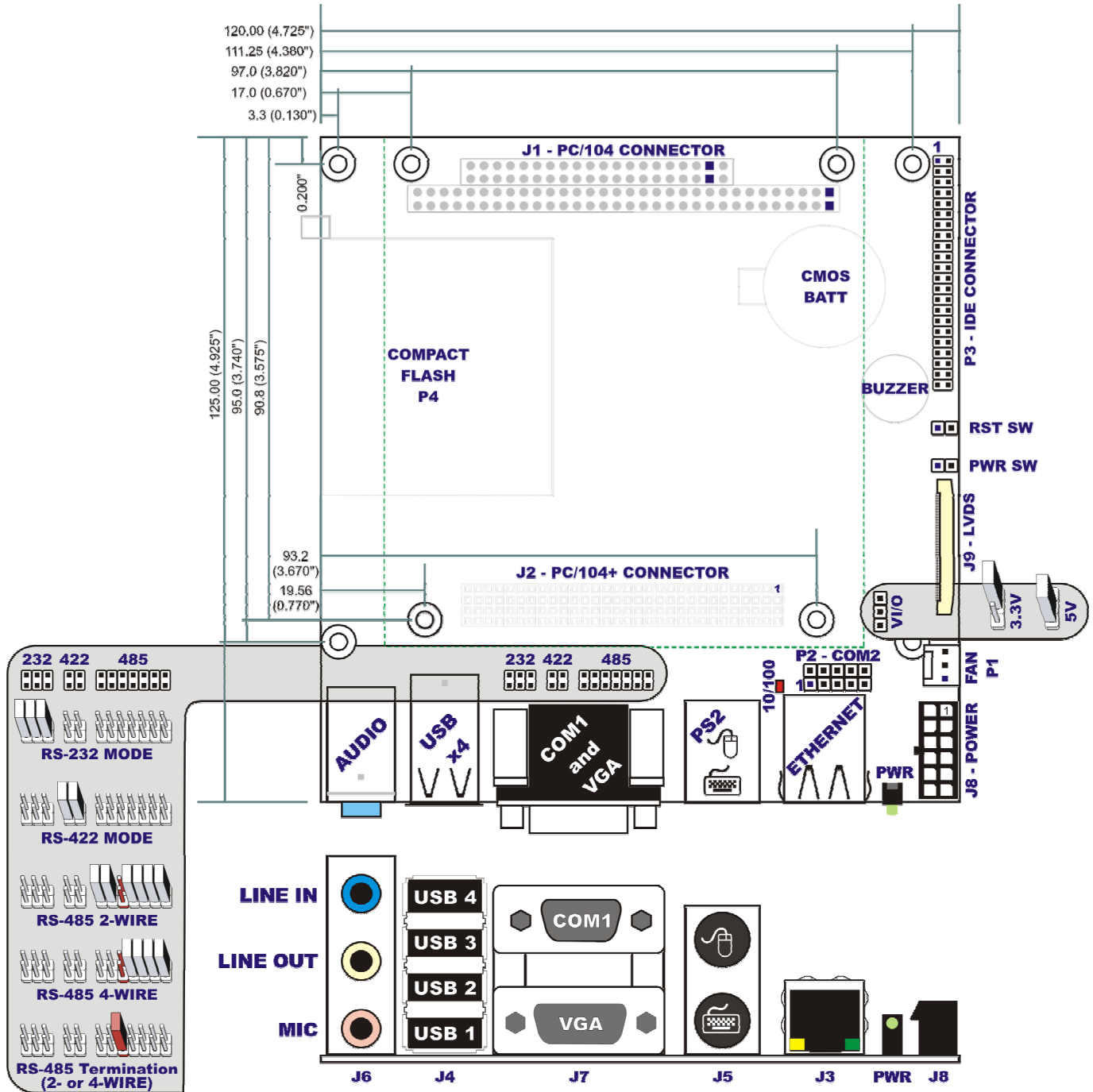


Figure 3-1: Option Selection Map

## COM1-232, 422, 485

COM1 provides jumper selectable communication for RS-232, RS-422 and RS-485. By default, the ETX-NANO-104 ships configured with the COM1 set to RS-232. To change this setting it is **important** to remove all other jumpers and only install the jumpers needed for your communication protocol. The termination jumper provides 120Ω termination to the RS-485 circuit.

## V I/O

V I/O PCI Voltage signaling level. The V I/O jumper allows the user to set the PCI signaling level on the bus by setting all V I/O pins to either 3.3V or 5V. Once the signaling level is selected, all PCI/104 or PC/104-Plus boards in the system must use that signaling level. **It is possible to damage other PCI/104 or PC/104-Plus boards in the stack if the improper V I/O signaling level is used.**

***Note: This jumper has no effect on PC/104 boards, it is only for “PCI” based 104 cards. You can tell if your board needs this set, look for a connector on your I/O board that would plug into J2 (see Figure 3-1: Option Selection Map) that is the PCI bus connector.***

## RST

Reset Button Input. This jumper can be used in conjunction with a momentary switch to provide an active low reset input into the ETX module.

## PWR

Power Button Input. This jumper can be used in conjunction with a momentary switch to implement an ATX power button control of PS\_ON.

# Chapter 4: Connectors

J1 PC/104 (ISA 8-Bit)					
Assignment	Name	Pin	Assignment	Name	Pin
IO channel check	IOCHK#	A1	Ground	GND	B1
Data 7	SD7	A2	Reset Drive	RSTDRV	B2
Data 6	SD6	A3	5V supply	VCC	B3
Data 5	SD5	A4	Interrupt 9 (2)	IRQ9	B4
Data 4	SD4	A5	-5V	-5V	B5
Data 3	SD3	A6	DMA request 2	DRQ2	B6
Data 2	SD2	A7	-12V	-12V	B7
Data 1	SD1	A8	IO channel ready	IOCHRDY	B8
Data 0	SD0	A9	12V	12V	B9
IO channel ready	ICCHRDY	A10		Reserved	B10
Address enable	AEN	A11	System memory write	SMEMW#	B11
Address 19	SA19	A12	System memory read	SMEMR#	B12
Address 19	SA18	A13	IO write	IOW#	B13
Address 19	SA17	A14	IR read	IOR#	B14
Address 19	SA16	A15	DMA acknowledge 3	DACK3#	B15
Address 19	SA15	A16	DMA request 3	DRQ3	B16
Address 19	SA14	A17	DMA acknowledge 1	DACK1#	B17
Address 19	SA13	A18	DMA request 1	DRQ1	B18
Address 19	SA12	A19	Refresh	REFRESH#	B19
Address 19	SA11	A20	System clock	SYSCLK	B20
Address 19	SA10	A21	Interrupt 7	IRQ7	B21
Address 19	SA9	A22	Interrupt 6	IRQ6	B22
Address 19	SA8	A23	Interrupt 5	IRQ5	B23
Address 19	SA7	A24	Interrupt 4	IRQ4	B24
Address 19	SA6	A25	Interrupt 3	IRQ3	B25
Address 19	SA5	A26	DMA acknowledge 2	DACK2#	B26
Address 19	SA4	A27	Terminal count	T/C	B27
Address 19	SA3	A28	Address latch enable	BALE	B28
Address 19	SA2	A29	5V supply	VCC	B29
Address 19	SA1	A30	14.318MHz	OSC	B30
Address 19	SA0	A31	Ground	GND	B31
Ground	GND	A32	Ground	GND	B32
PC/104 16 Bit Expansion (ISA 16-Bit)					
Ground	GND	C0	Ground	GND	D0
Byte High Enable	SBHE#	C1	Memory chip select	MEMCS16#	D1
Latched Address 23	LA23	C2	IO chip select	IOCS16#	D2
Latched Address 22	LA22	C3	Interrupt 10	IRQ10	D3
Latched Address 21	LA21	C4	Interrupt 11	IRQ11	D4
Latched Address 20	LA20	C5	Interrupt 12	IRQ12	D5
Latched Address 19	LA19	C6	Interrupt 15	IRQ15	D6
Latched Address 18	LA18	C7	Interrupt 14	IRQ14	D7
Latched Address 17	LA17	C8	DMA acknowledge 0	DACK0#	D8
Memory Read	MEMR#	C9	DMA request 0	DRQ0	D9
Memory Write	MEMW#	C10	DMA acknowledge 5	DACK5#	D10
Data 8	SD8	C11	DMA request 5	DRQ5	D11
Data 9	SD9	C12	DMA acknowledge 6	DACK6#	D12
Data 10	SD10	C13	DMA request 6	DRQ6	D13
Data 11	SD11	C14	DMA acknowledge 7	DACK7#	D14
Data 12	SD12	C15	DMA request 7	DRQ7	D15
Data 13	SD13	C16	5V supply	VCC	D16
Data 14	SD14	C17	Bus master	MASTER#	D17
Data 15	SD15	C18	Ground	GND	D18
	reserved	C19	Ground	GND	D19

J2 PC/104 Plus (PCI-104)					
Assignment	Name	Pin	Assignment	Name	Pin
Ground	GND	A1		reserved	B1
5 volt – IO-buffer power	VCCIO	A2	Address/data 2	AD2	B2
Address/data 5	AD5	A3	Ground	GND	B3
Com/byte enable 0	CBE0#	A4	Address/data 7	AD7	B4
Ground	GND	A5	Address/data 9	AD9	B5
Address/data 11	AD11	A6	5 volt – IO-buffer power	VCCIO	B6
Address/data 14	AD14	A7	Address/data 13	AD13	B7
3.3 volt	3.3V	A8	Com/byte enable 1	CBE1#	B8
System error	SERR#	A9	Ground	GND	B9
Ground	GND	A10	Parity error	PERR#	B10
Stop	STOP#	A11	3.3 volt	3.3V	B11
3.3 volt	3.3V	A12	Target ready	TRDY#	B12
Frame	FRAME#	A13	Ground	GND	B13
Ground	GND	A14	Address/data 16	AD16	B14
Address/data 18	AD18	A15	3.3 volt	3.3V	B15
Address/data 21	AD21	A16	Address/data 20	AD20	B16
3.3 volt	3.3V	A17	Address/data 23	AD23	B17
ID select slot 1	IDSEL0	A18	Ground	GND	B18
Address/data 24	AD24	A19	Com/byte enable 3	CBE3#	B19
Ground	GND	A20	Address/data 26	AD26	B20
Address/data 29	AD29	A21	5 volt supply	VCC	B21
5 volt supply	VCC	A22	Address/data 30	AD30	B22
Bus request slot 1	REQ0#	A23	Ground	GND	B23
Ground	GND	A24	Bus request slot 3	REQ2#	B24
Bus grant slot 4	GNT1#	A25	5 volt – IO-buffer power	VCCIO	B25
5 volt supply	VCC	A26	Clock slot 1	CLK0	B26
Clock slot 3	CLK2	A27	5 volt supply	VCC	B27
Ground	GND	A28	Interrupt D	INTD#	B28
12 volt	12V	A29	Interrupt A	INTA#	B29
-12 volt	-12V	A30	Bus request slot 4	REQ3#	B30
PC/104 Plus (PCI-104)					
5 volt supply	VCC	C1	Address/data 0	AD0	D1
Address/data 1	AD1	C2	5 volt supply	VCC	D2
Address/data 4	AD4	C3	Address/data 3	AD3	D3
Ground	GND	C4	Address/data 6	AD6	D4
Address/data 8	AD8	C5	Ground	GND	D5
Address/data 10	AD10	C6	66MHz enable	M66EN	D6
Ground	GND	C7	Address/data 12	AD12	D7
Address/data 15	AD15	C8	3.3 volt	3.3V	D8
	reserved	C9	Parity bit	PAR	D9
3.3 volt	3.3V	C10		reserved	D10
Lock	LOCK#	C11	Ground	GND	D11
Ground	GND	C12	Device select	DEVSEL#	D12
Initiator ready	IRDY#	C13	3.3 volt	3.3V	D13
3.3 volt	3.3V	C14	Com/byte enable 2	CBE2#	D14
Address/data 17	AD17	C15	Ground	GND	D15
Ground	GND	C16	Address/data 19	AD19	D16
Address/data 22	AD22	C17	3.3 volt	3.3V	D17
ID select slot 2	IDSEL1	C18	ID select slot 3	IDSEL2	D18
5 volt – IO-buffer power	VCCIO	C19	ID select slot 4	IDSEL3	D19
Address/data 25	AD25	C20	Ground	GND	D20
Address/data 28	AD28	C21	Address/data 27	AD27	D21
Ground	GND	C22	Address/data 31	AD31	D22
Bus request slot 2	REQ1#	C23	5 volt – IO-buffer power	VCCIO	D23
5 volt supply	VCC	C24	Bus grant slot 1	GNT0#	D24
Bus grant slot 3	GNT2#	C25	Ground	GND	D25
Ground	GND	C26	Clock slot 2	CLK1	D26
Clock slot 4	CLK3	C27	Ground	GND	D27
5 volt supply	VCC	C28	Reset	RST#	D28
Interrupt B	INTB#	C29	Interrupt C	INTC#	D29
Bus grant slot 4	GNT3#	C30	Ground	GND	D30

J3 Ethernet				
Pin	Function		LED	Function
1	Tx +		Orange	Activity
2	TXCT		Green	Link
3	Tx -		Red	10/100 Speed
4	Rx +			
5	RXCT			
6	Rx -			
7	NC			
8	GND			

J4-USB				
	USB 1	USB 2	USB 3	USB 4
1	VUSB	VUSB	VUSB	VUSB
2	D -	D -	D -	D -
3	D+	D+	D+	D+
4	GND_USB	GND_USB	GND_USB	GND_USB

J5 Keyboard and Mouse		
Pin	Mouse / Green / Top	Keyboard / Purple / Bottom
Pin 1	Mouse Data	Keyboard Data
Pin 2	NC	Unused / NC
Pin 3	Ground	Ground
Pin 4	+5V	+5V
Pin 5	Mouse Clock	Keyboard Clock
Pin 6	NC	Unused / NC

J6 Audio		
Input	Position / Description	Function
1	Top / Blue	Sound Line In
2	Center / Green	Sound Line Out
3	Bottom / Pink	Microphone

J7 COM1 / Top			
Pin Number	232 Mode	422 Mode	485 Mode
Pin 1	DCD	Rx-	NC
Pin 2	Rx	Tx+	TxRx+
Pin 3	Tx	Tx-	TxRx-
Pin 4	DTR	NC	NC
Pin 5	Ground	Ground	Ground
Pin 6	DSR	NC	NC
Pin 7	RTS	NC	NC
Pin 8	CTS	NC	NC
Pin 9	RI	Rx+	NC

<b>J7 Video / Bottom</b>	
<b>Pin Number</b>	<b>Function</b>
Pin 1	Red
Pin 2	Green
Pin 3	Blue
Pin 4	Reserved
Pin 5	Ground
Pin 6	Ground
Pin 7	Ground
Pin 8	Ground
Pin 9	DDC-Power
Pin 10	Ground
Pin 11	Reserved
Pin 12	DDDA
Pin 13	Horizontal Sync
Pin 14	Vertical Sync
Pin 15	DDCK

<b>J8 Power</b>	
<b>Pin Number</b>	<b>Function</b>
Pin 1	3V_ATX
Pin 2	VCC
Pin 3	5V_SB
Pin 4	-12V
Pin 5	Ground
Pin 6	+12V
Pin 7	PS_ON
Pin 8	VCC
Pin 9	Ground
Pin 10	VCC
Pin 11	Ground
Pin 12	VCC

<b>J9 LVDS Interface Pinout</b>			
<b>Pin</b>	<b>Signal</b>	<b>Pin</b>	<b>Signal</b>
1	LTGIO0	2	LCDDO0
3	LCDDO1	4	DIGON
5	LCDDO2	6	LCDDO3
7	BIASON	8	LCDDO4
9	LCDDO5	10	GND
11	LCDDO6	12	LCDDO7
13	GND	14	LCDDO8
15	LCDDO0	16	JILI_DAT
17	LCDDO10	18	LCDDO11
19	JILI_CLK	20	LCDDO12
21	LCDDO13	22	/DETECT
23	LCDDO14	24	LCDDO15
25	GND	26	LCDDO16
27	LCDDO17	28	GND
29	LCDDO18	30	LCDDO19
31	VCC	32	VCC
33	VCC	34	VCC
35	/BLON	36	GND
37	GND	38	+12V
39	+12V	40	+12V

<b>P1 Fan</b>	
Pin 1	Ground
Pin 2	+12V
Pin 3	NC

<b>P2 COM2</b>			
		With 10 pin IDC to 9pin DB	
Pin 1	DCD	Pin 1	DCD
Pin 2	DSR	Pin 2	Rx
Pin 3	Rx	Pin 3	Tx
Pin 4	RTS	Pin 4	DTR
Pin 5	Tx	Pin 5	Ground
Pin 6	CTS	Pin 6	DSR
Pin 7	DTR	Pin 7	RTS
Pin 8	RI	Pin 8	CTS
Pin 9	Ground	Pin 9	RI
Pin 10	NC		

P3 Secondary IDE					
Pin	Name	Description	Pin	Name	Description
1	SRST#	reset	2	GND	ground
3	SDD7	data bit 7	4	SDD8	data bit 8
5	SDD6	data bit 6	6	SDD9	data bit 9
7	SDD5	data bit 5	8	SDD10	data bit 10
9	SDD4	data bit 4	10	SDD11	data bit 11
11	SDD3	data bit 3	12	SDD12	data bit 12
13	SDD2	data bit 2	14	SDD13	data bit 13
15	SDD1	data bit 1	16	SDD14	data bit 14
17	SDD0	data bit 0	18	SDD15	data bit 15
19	GND	ground	20	reserved	
21	SDDREQ	DMA request signal	22	GND	ground
23	SDIOW#	write signal	24	GND	ground
25	SDIOR#	read signal	26	GND	ground
27	SDRDY	ready signal	28		
29	SDDACK#	DMA acknowledge signal	30	GND	ground
31	SDIRQ	interrupt signal	32	reserved	
33	SDA1	address bit 1	34	SDIAG#	passed diagnostic
35	SDA0	address bit 2	36	SDA2	address bit 2
37	SDSC0#	chip select signal 0	38	SDCS1#	chip select signal 1
39	DASP#	device active	40	GND	ground
41	VCC	supply HDD 5V	42	VCC	supply HDD 5V
43	GND	ground	44	reserved	



P4 Primary IDE CF		
Pin	Name	Description
1	GND	Ground
2	D3	Data 3
3	D4	Data 4
4	D5	Data 5
5	D6	Data 6
6	D7	Data 7
7	/CE1	Card Enable 1
8	A10	Address 10
9	/OE	Output Enable
10	A9	Address 9
11	A8	Address 8
12	A7	Address 7
13	VCC	+5V
14	A6	Address 6
15	A5	Address 5
16	A4	Address 4
17	A3	Address 3
18	A2	Address 2
19	A1	Address 1
20	A0	Address 0
21	D0	Data 0
22	D1	Data 1
23	D2	Data 2
24	/WP:/IOIS16	Write Protect: IOIS16
25	/CD2	Card Detect 2
26	/CD1	Card Detect 1
27	D0	Data 0
28	D0	Data 0
29	D0	Data 0
30	D0	Data 0
31	D0	Data 0
32	/CE2	Card Enable 2
33	/VS1	Refresh
34	/IORD	I/O Read
35	/IOWR	I/O Write
36	/WE	Write Enable
37	/READY:/RDY:/IREQ	Read : Busy : IREQ
38	VCC	+5V
39	CSEL	
40	/VS2	RFU
41	RESET	Reset
42	/WAIT	Wait
43	/INPACK	
44	/REG	Register Select
45	/BVD2:SPKR	Battery Voltage Detect 2 : SPKR
46	/BVD1L:STSCHG	Battery Voltage Detect 1 : STSCHG
47	D8	Data 8
48	D9	Data 9
49	D10	Data 10
50	GND	Ground

# Chapter 5: Mechanical Diagrams

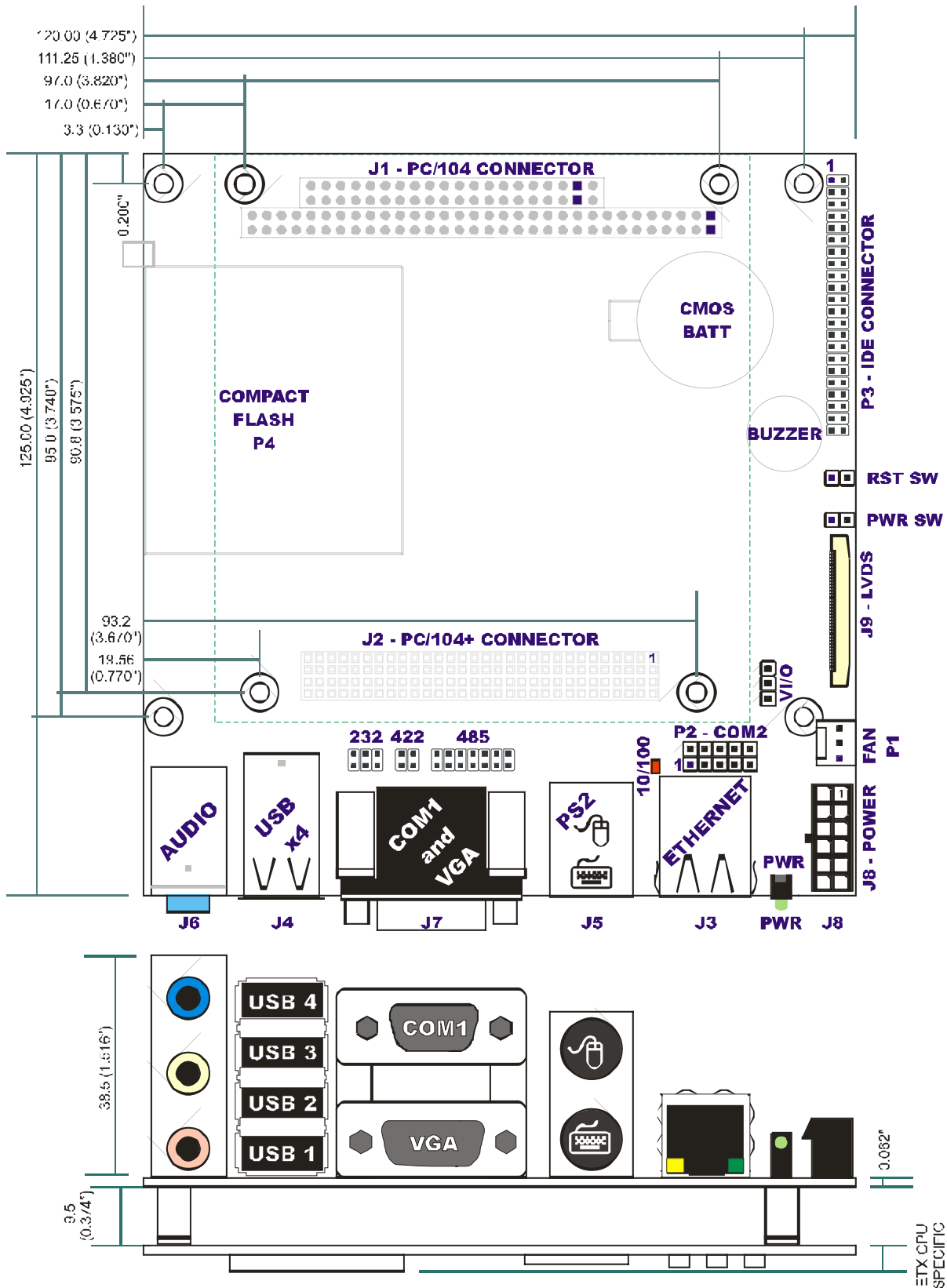


Figure 5-1: Mechanical Drawing

## Customer Comments

If you experience any problems with this manual or just want to give us some feedback, please email us at: ***manuals@acesio.com***. Please detail any errors you find and include your mailing address so that we can send you any manual updates.



10623 Roselle Street, San Diego CA 92121  
Tel. (858)550-9559 FAX (858)550-7322  
[www.acesio.com](http://www.acesio.com)