3301115

User's Manual

Version 1.0

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Chapter 1. Introduction

1.1 Product Overview

The 3301115 Single Board Computer is an all-in-one industrial half-size ISA-bus CPU card. It integrated with embedded AMD Am5x86-133 CPU and 8 MB of EDO DRAM, PCI-based flat panel / CRT SVGA, 10/100 Mbps Fast Ethernet interfaces, 4 serial ports and DiskOnChip embedded flash disk socket.

Embedded 486 Level CPU
AMD Am5x86-133 CPU provides the embedded platform with 486DX5 architecture at 133 MHz of working frequency.

Integrated System Memory
Onboard 8 MB of EDO DRAM and one 72-pin SIMM expansive slot supports additional 32 MB of memory.
.
Flat Panel SVGA Interface
PCI-based C&T 69000 flat panel / CRT SVGA with 2 MB of on-die video memory supports flat panel and CRT display.

Fast Ethernet Interface
PCI-based 10/100 Mbps Fast Ethernet interface, 10Base-T/100Base-TX, auto-switching Fast Ethernet, full duplex, IEEE 802.3U compliant.

Four Serial Ports
Four serial ports include three RS-232C and one jumper selectable RS-232C/485 ports with high speed 16C550 compatible UART with 16 byte FIFO and BIOS enabled/disabled.

DiskOnChip Interface
32-pin M-systems DiskOnChip 2000 socket supports 2 to 288 MB embedded solid state of flash disk.

1.2 Specifications

General Specification

- **CPU (installed)** : AMD Am5x86-133 embedded CPU with jumper selectable speed (75/100/133) for the low power, low temperature operation
- **Chipset** : ALi 1487 / 1489
- **BIOS** : AWARD PCI/ISA PnP system BIOS
- **Green Function** : power saving options supported in BIOS. DOZE / STANDBY / SUSPEND modes
- **L2 Cache** : 128 KB pipelined Burst
- **DRAM Memory** : 8 MB up to 40MB EDO DRAM, with onboard 8 MB of EDO DRAM and one 72-pin single sided SIMM slot supports up to 32 MB of expansive EDO DRAM
- **Bus Interface** : ISA and PC/104
- **Data Bus** : 16-bit
- **Bus Speed** : ISA, PC/104 - 8.3MHz
- **DMA Channels** : 7
- **Interrupt Levels** : 15
- **PCI Enhanced IDE** : supports two ports and up to four ATAPI devices. Supports IDE PIO mode up to Mode 4 and DMA mode 2.
- **Watchdog Timer** : generates an NMI or system RESET when your application loses control over the system. The timer interval is: 1, 2, 10, 20, 110 and 220 seconds.
- **Real-time Clock** : Benchmarq bq3287AMT (Dallas DS-12B887 compatible) RTC. CMOS data backup of BIOS setup and BIOS default.
- ***Keyboard and Mouse Connectors***:
  - External 6-pin mini DIN for PS/2 Mouse on bracket
  - External 6-pin mini DIN for PS/2 Keyboard on bracket
  - Onboard 5-pin box header connector for AT keyboard

High Speed Multi-I/O

! **Chipset** : ALi 5113
! **Serial Ports** : three high speed RS-232C ports (COM1, COM3, COM4) and one jumper selectable RS-232C/485 port (COM2). All with high speed 16C550 compatible UART with 16 byte FIFO and BIOS enabled/disabled.
! **Floppy Disk Drive interface** : up to two floppy drives, 5.25" (360 KB or 1.2 MB) and 3.5" (720 KB, 1.44MB or 2.88 MB) , BIOS enabled/disabled.
! **Bi-directional Parallel Port** : SPP, EPP and ECP mode, BIOS enabled/disabled.

Flat Panel / CRT SVGA Interface

! **Chipset** : PCI-based C&T69000 with 2 MB of on-die video memory
! **BIOS** : combined with system BIOS
! **Display Type** : CRT, TFT, DSTN, SSTN, EL, Plasma Quarter VGA
! **Display Mode** :

VGA Type	Resolution	Color	Refresh Rate
SVGA	800 x 600	True Color / 24 bpp	60/75/85 Hz
XGA	1024 x 768	High Color / 16 bpp	60/75/85 Hz
SXGA	1280 x 1024	256 Color / 8 bpp	60 Hz

! **Connectors** :
- onboard 50-pin box header for Flat Panel display
- external 15-pin D-sub connector on bracket for CRT

Flash Disk DiskOnChip 2000

! **Package** : Single Chip Flash Disk in 32-pin DIP JEDEC

! **Capacity** : up to 288 MB

! **Data Reliability** : ECC/EDC error correction

! **Memory Window** : 8 KByte

Environmental and Power

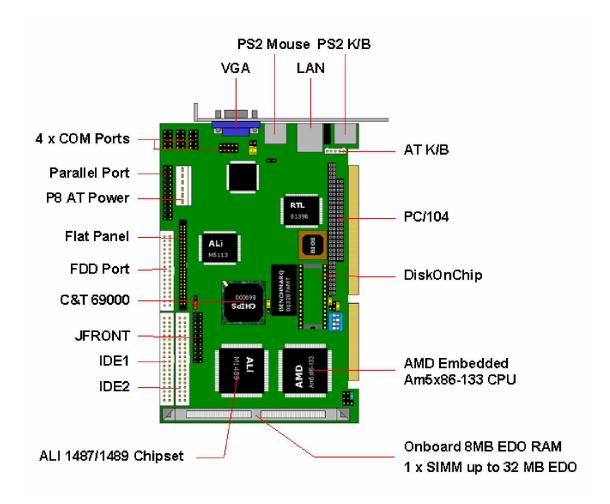! **Power Requirement** : +5V (4.75~5.25 V) @ 1.8A typical (onboard

  CPU and EDORAM), +/-12 V

! **Board Dimension** : 185mm x 122mm (L x W)

! **Board Weight** : 0.24Kg

! **Operating Temperature** : 0 to 60℃ (32 to

1.3 Component Placement

PS2 Mouse PS2 K/B

VGA   LAN

4 x COM Ports

Parallel Port

P8 AT Power

Flat Panel

FDD Port

C&T 69000

JFRONT

IDE1

IDE2

AT K/B

PC/104

DiskOnChip

AMD Embedded
Am5x86-133 CPU

ALI 1487/1489 Chipset

Onboard 8MB EDO RAM
1 x SIMM up to 32 MB EDO

Chapter 2. Hardware Setup

2.1 Connectors and Jumpers Location

2.2 Jumpers Settings

JCK0/1/2	CPU Speed			
JCK0	JCK1	JCK2	Speed	
OFF	OFF	2-3	133 MHz	
OFF	OFF	1-2	100 MHz	
2-3	2-3	2-3	75 MHz	

JRTC	RTC/COMS Operation
1-2	Clear COMS
2-3	Normal Operation

JWDT	Watchdog Timer Setting
1-2	IO Check
2-3	Reset
OFF	Disable

SWDT1	Watchdog Timer Timeout Value Setting			
1	2	3	4	Timeout (Seconds)
OFF	OFF	ON	OFF	1
OFF	OFF	ON	ON	2
OFF	ON	ON	OFF	10
OFF	ON	ON	ON	20
ON	OFF	OFF	OFF	110
ON	OFF	OFF	ON	220

JDOC	DiskOnChip Address Setting
1-2	D000h
2-3	D800h
OFF	Disable

J485	COM2 RS-232C/485 Mode Selection
1-2	RS-232C
2-3	RS-485

JVOLT	Flat Panel V_{CC} Voltage Setting
1-2	5 Volt
2-3	3.3 Volt

Default Setting

2.3 Connectors

IDE1	40-pin Primary IDE Port
IDE2	40-pin Secondary IDE Port
FLP	34-pin FDD Port
PRINT	26-pin Parallel Port
LCD	50-pin Flat Panel Connector
JP8	2-pin RS485 COM2 Serial Port
EXKB	5-pin AT Keyboard Connector
PWRCON1	6-pin P8 AT Power Connector
COM1	10-pin COM1 RS-232C Serial Port
COM2	10-pin COM2 RS-232C Serial Port
COM3	10-pin COM3 RS-232C Serial Port
COM4	10-pin COM4 RS-232C Serial Port
SIMM1	72-pin SIMM Slot
U6	32-pin DiskOnChip Socket
PC104AB/CD	PC/104 Connector
JFRPN1	Switched and Indicators
VGA	DB15 Female VGA Port on Bracket
PS2_K/B	6-pin MiniDIN PS/2 Keyboard on Bracket
PS2_MS	6-pin MiniDIN PS/2 Mouse on Bracket
LAN_CON1	RJ45 LAN Port on Bracket

2.4 Switches & Indicators Pin Assignment

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2.5 LCD Connector Pin Assignment

Connector : **LCD**
Type : onboard 50-pin box header

Pin	Signal	Pin	Signal
1	+12V	2	+12V
3	GND	4	GND
5	V_{CC} (LCD)	6	ENAVDD
7	ENAVEE	8	GND
9	P0	10	P1
11	P2	12	P3
13	P4	14	P5
15	P6	16	P7
17	P8	18	P9
19	P10	20	P11
21	P12	22	P13
23	P14	24	P15
25	P16	26	P17
27	P18	28	P19
29	P20	30	P21
31	P22	32	P23
33	P24	34	P25
35	SHFCLK	36	FLM
37	M	38	LP
39	GND	40	ENABKL
41	P26	42	P27
43	P28	44	P29
45	P30	46	P31
47	P32	48	P33
49	P34	50	P35

Chapter 3. BIOS Setup

The single board computer uses the Award BIOS for the system configuration. The Award BIOS in the single board computer is a customized version of the industrial standard BIOS for IBM PC AT-compatible computers. It supports Intel x86 and compatible CPU architecture based processors and computers. The BIOS provides critical low-level support for the system central processing, memory and I/O sub-systems.

The BIOS setup program of the single board computer let the customers modify the basic configuration setting. The settings are stored in a dedicated battery-backed memory, NVRAM, retains the information when the power is turned off. If the battery runs out of the power, then the settings of BIOS will come back to the default setting.

The BIOS section of the manual is subject to change without notice and is provided here for reference purpose only. The settings and configurations of the BIOS are current at the time of print, and therefore they may not be exactly the same as that displayed on your screen.

Chapter 4. Driver installation

You can use the auto run menu of this CD Disc.

The CD Driver Disk for Single Board Computer's Chipset Setup includes drivers for IDE, VGA, and LAN interfaces.