



VDX-6314D / VDX-6314D-AU

DM&P Vortex86DX 800MHz

Tiny CPU Module

with 4S/2USB/VGA/LVDS/LAN/GPIO/PWMx16

256MB DDR2 Onboard

User's Manual

(Revision 1.0A)

◆ Copyright

The information in this manual is subject to change without notice for continuous improvement in the product. All rights are reserved. The manufacturer assumes no responsibility for any inaccuracies that may be contained in this document and makes no commitment to update or to keep current the information contained in this manual.

No part of this manual may be reproduced, copied, translated or transmitted, in whole or in part, in any form or by any means without the prior written permission of the ICOP Technology Inc..

©Copyright 2008 ICOP Technology Inc.

Manual No. IUM6314D000-01 Ver.1.0A ◆ January, 2010

◆ Trademarks Acknowledgment

Vortex86DX™ is the registered trademark of ICOP Technology Inc.

Other brand names or product names appearing in this document are the properties and registered trademarks of their respective owners. All names mentioned herewith are served for identification purpose only.

Table of Contents

Table of Contents.....	iii
Chapter 1 Introduction.....	1
1.1 Packing List.....	1
1.2 Product Description	2
1.3 Specifications	3
1.4 Board Dimension.....	5
Chapter 2 Installation.....	6
2.1 Board Outline	6
2.2 Connectors & Jumpers Location	7
2.3 Connectors & Jumpers Summary.....	9
2.4 Pin Assignments & Jumper Settings.....	10
2.5 System Mapping.....	16
2.6 Watchdog Timer	19
2.7 GPIO	20
2.8 SPI flash.....	21
2.9 PWM	22
3.0 IDE to SD	23
Chapter 3 Driver Installation.....	24
Appendix	25
A. LVDS Flat Panel Support List.....	25
B. Flat Panel Wiring and Lighting	26
C. TCP/IP library for DOS real mode	27
D. BIOS Default Setting	28
Warranty.....	29

This page is blank

Chapter 1

Introduction

1.1 Packing List

Product Name	Package
VDX-6314D & VDX-6314D-AU	- Embedded Vortex86DX CPU All-in-One Board - Manual & Drivers CD x 1 - RS232 cable x 4 - IDE cable x 1 - USB cable x 1 (USB port x 2) - VGA cable x 1 - GPIO cable x 1 - PS/2 Mouse cable x 1 - PS/2 Keyboard cable x 1

1.2 Product Description

The VDX-6314D family of low-power x86 embedded controller is designed to meet Tiny specification and integrated with the following features.

- 800 MHz Vortex86DX System-On-Chip
- 256 / 512MB DDR2 system memory
- VGA, LVDS LCD support up to 1280x1024 resolution
- Enhanced IDE (UltraDMA-100/66/33)
- 10/100Mbps Ethernet
- 2 USB 2.0 (host)
- Up to 4 serial ports
- 16-bit GPIO x1
- x-ISA bus
- RS-485 with Auto Direction
- 2 watchdog timer
- 16~24 PWM channels
- JTAG interface
- AMI BIOS
- 4MB SPI flash
- Single voltage +5V DC
- Support extended operating temperature range of -20°C to +70°C

The VDX-6314D Tiny family of embedded controller is designed with backward compatibility in mind, to provide migration path for projects facing end-of-life challenges with their existing x86 based Tiny controller. The VDX-6314D family of controller is designed as a plug in replacement, with backward compatibility to support legacy software to help extend existing product life cycle without heavy re-engineering.

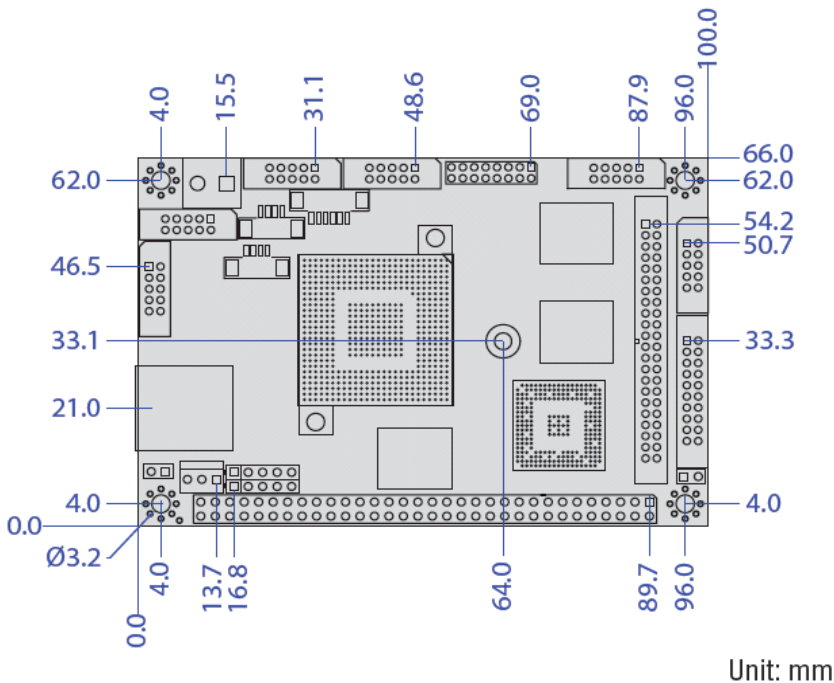
VDX-6314D is suitable for broad range of data-acquisition, Industrial automation, Process control, Automotive controller, AVL, Intelligent Vehicle management device, Medical device, Human machine interface, Robotics, machinery control And more...application that required small footprint, low-power and low-cost hardware with open industry standard such as Tiny.

1.3 Specifications

Features	VDX-6314D
CPU	DM&P SoC CPU Vortex86DX- 800MHz Real Time Clock with Lithium Battery Backup
Cache	L1:16K I-Cache, 16K D-Cache L2:128KB Cache
BIOS	AMI BIOS
Bus Interface	16-bit x-ISA interface
System Memory	256 / 512MB DDR2 Onboard
Watchdog Timer	Software programmable from 30.5 us to 512 seconds x2 sets(Watchdog 1 fully compatible with M6117D)
VGA	XGI Volari Z9s Chipset VGA and LVDS Flat Panel Interface Support Onboard 32MB VGA Memory Support resolution up to 1280 x 1024,16MB colors
LAN	Integrated 10/100M Ethernet
Audio	CM119 USB Audio Controller (Optional)
I/O Interface	● Enhanced IDE port (UltraDMA-100/66/33) x1 ● RS-232 port x3 ● RS-232/422/485 port x1(RS485 with Auto Direction) ● USB port x2 (USB 2.0 version) ● 16-bit GPIO port x1 ● 10/100Mbps Ethernet port x1
Connectors	● 2.00 mm Ø 44-pin box header for IDE x1 ● 2.00 mm Ø 20-pin box header for 16-bit GPIO x1 ● 2.00 mm Ø 10-pin box header for RS-232 x4 ● 2.00 mm Ø 10-pin box header for USB x1 ● 2.00 mm Ø 10-pin box header for VGA x1 ● 2.00 mm Ø 16-pin header for LVDS x 1 ● 2.54 mm Ø 3-pin header for RS-485 x1 ● 2.54 mm Ø 5-pin header for keyboard x1 ● 2.54 mm Ø 5-pin header for Mouse x1 ● 2.54 mm Ø 2-pin header for Reset x1 ● 1.25 mm Ø 6-pin wafer for JTAG x1 ● 1.25 mm Ø 4-pin wafer for Line-out/MIC-in x2 (Opt.) ● External RJ-45 connector for Ethernet x1

Flash Disk Support	- Onboard 4MB SPI Flash Disk (Driver: A) 44-pin IDE Flash Disk(EmbedDisk 16MB or above) 44-pin IDE to Micro SD (Optional)
PWM	16~24 Channels
Power Requirement	Single Voltage +5V @ 700mA
Dimension	100mm X 66mm (3.94 x2.6 inches)
Weight	65g
Operating Temperature	-20°C ~ +70°C -40°C ~ +85°C (Optional)

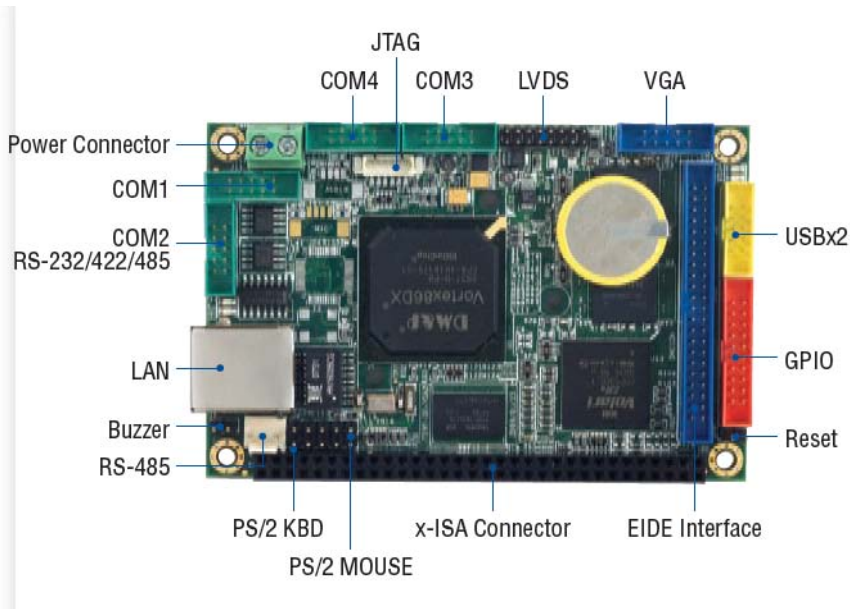
1.4 Board Dimension



Chapter 2

Installation

2.1 Board Outline



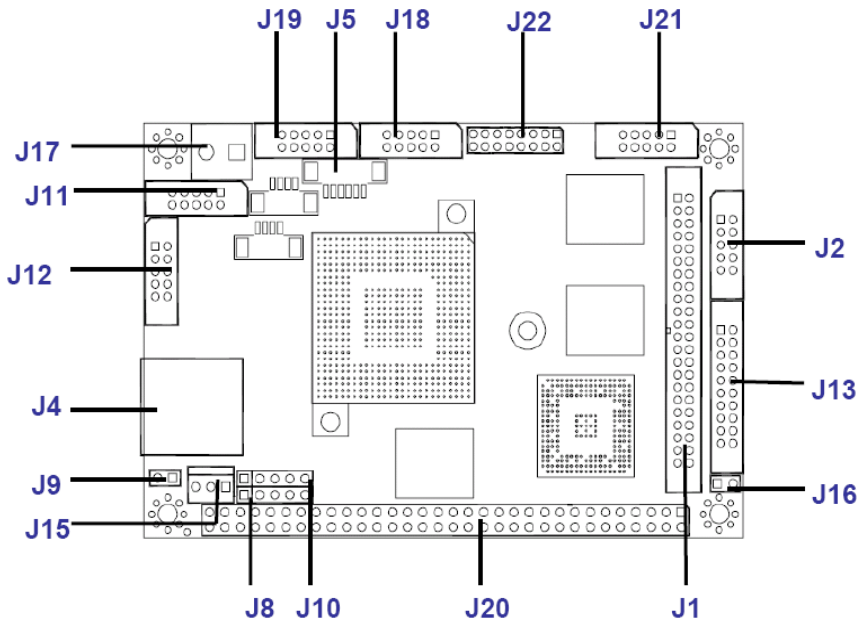
(Note1: COM2 RS232/422/485 is selected by BIOS setting)

(Note2: Audio is optional)

(Note3: VDX-6314D-512 is optional)

2.2 Connectors & Jumpers Location

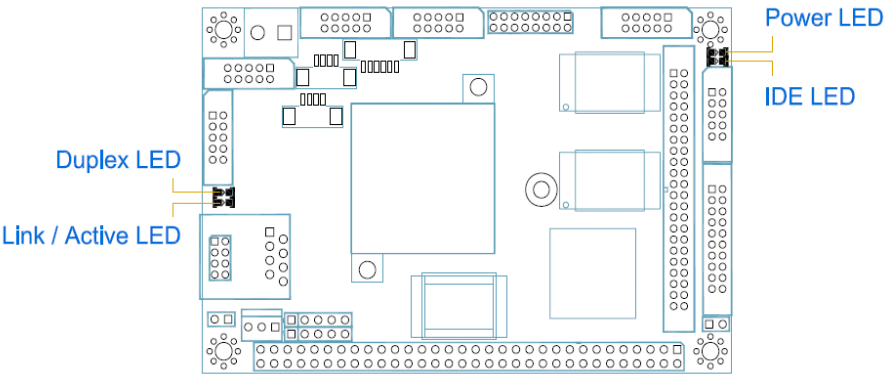
Connectors



(Note1: J4 pin header is optional)

(Note2: Audio is optional)

Jumpers & LEDs



2.3 Connectors & Jumpers Summary

Summary Table			
Nbr	Description	Type of Connections	Pin nbrs.
J1	IDE	Box Header, 2.0Ø ,22x2	44-pin
J2	USB	Box Header,2.0Ø , 5x2	10-pin
J4	LAN (Optional: Pin Header)	RJ45 Connector	8-pin
J5	JTAG	Wafer, 1.25Ø , 6x1	6-pin
J8	PS/2 Keyboard	Box Header, 2,54Ø,1x5	5-pin
J9	Buzzer	Pin Header, 2,54Ø,1x2	2-pin
J10	PS/2 Mouse	Pin Header, 2,54Ø,1x5	5-pin
J11	COM1(TTL/GPIO-P4/ PWMx8)	Box Header, 2.0Ø 5x2	10-pin
J12	COM2 (RS232/422/485)	Box Header, 2.0Ø 5x2	10-pin
J13	GPIO Port 0 / 1	Box Header, 2.0Ø ,10x2	20-pin
J15	RS-485	Molex Header,2.54Ø,3x1	3-pin
J16	Reset	Pin Header, 2,54Ø,1x2	2-pin
J17	Power Connector	Terminal Block 5.0Ø,2x1	2-pin
J18	COM3	Box Header, 2.0Ø 5x2	10-pin
J19	COM4	Box Header, 2.0Ø 5x2	10-pin
J20	x-ISA Connector – 64 pin	Box Header, 2,54Ø 32x2	64-pin
J21	VGA	Pin Header, 2.0Ø ,5x2	10-pin
J22	LVDS	Pin Header, 2.0Ø 8x2	16-pin
J23	LINE-OUT (Optional)	Wafer, 1.25Ø , 4x1	4-pin
J24	MIC-IN (Optional)	Wafer, 1.25Ø , 4x1	4-pin
PWR-LED	Power Active LED (Red)	LED-SMD	
IDE- LED	IDE Active LED (Green)	LED-SMD	
LED 3	LAN Link/Active LCD (Green)	LED-SMD	
LED 4	LAN Duplex LED (Yellow)	LED-SMD	

2.4 Pin Assignments & Jumper Settings

J1: IDE (44 Pins)

Pin #	Signal Name	Pin #	Signal Name
1	IDERST	2	GND
3	IDED7	4	IDED8
5	IDED6	6	IDED9
7	IDED5	8	IDED10
9	IDED4	10	IDED11
11	IDED3	12	IDED12
13	IDED2	14	IDED13
15	IDED1	16	IDED14
17	IDED0	18	IDED15
19	GND	20	NC
21	IDEREQ	22	GND
23	IDEIOW	24	GND
25	IDEIOR	26	GND
27	ICHRDY	28	GND
29	IDEACK	30	GND
31	IDEINT	32	NC
33	IDESA1	34	IDECBLID
35	IDESA0	36	IDESA2
37	IDECS-0	38	IDECS1
39	IDELED	40	GND
41	VCC	42	VCC
43	GND	44	NC

J2: USB

Pin #	Signal Name	Pin #	Signal Name
1	VCC	2	VCC
3	LUSBD3-	4	LUSBD2-
5	LUSBD3+	6	LUSBD2+
7	GND	8	GND
9	GGND	10	GGND

J5: JTAG

Pin #	Signal Name	Pin #	Signal Name
1	VCC	2	GND
3	TCK	4	TDO
5	TDI	6	TMS

J8: PS/2 Keyboard

Pin #	Signal Name	Pin #	Signal Name
1	KBCLK	2	KBDAT
3	NC	4	GND
5	VCC		

J9: Buzzer

Pin #	Signal Name	Pin #	Signal Name
1	Buzzer	2	VCC

J10: PS/2 Mouse

Pin #	Signal Name	Pin #	Signal Name
1	MSCLK	2	MSDATA
3	NC	4	GND
5	VCC		

J11: COM 1 (Optional: TTL/ GPIO-P4 / PWMx8)

Pin #	Signal Name	Pin #	Signal Name
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1	10	NC

J12: COM2 RS232 / 422 / 485 (Optional: TTL)

Pin #	Signal Name	Pin #	Signal Name
1	DCD2 / 422TX- / RS485-	2	RXD2 / 422TX+ / RS485+
3	TXD2 / 422RX+	4	DTR2 / 422RX-
5	GND	6	DSR2
7	RTS2	8	CTS2
9	RI2	10	NC

J13: GPIO (Port 0 / Port 1)

Pin #	Signal Name	Pin #	Signal Name
1	GND	2	VCC
3	GP00	4	GP10
5	GP01	6	GP11
7	GP02	8	GP12
9	GP03	10	GP13
11	GP04	12	GP14
13	GP05	14	GP15
15	GP06	16	GP16
17	GP07	18	GP17
19	VCC	20	GND

J15: RS-485 (Auto direction)

Pin #	Signal Name
1	RS485 +
2	RS485 —
3	GND

以上内容仅为本文档的试下载部分，为可阅读页数的一半内容。如要下载或阅读全文，请访问：<https://d.book118.com/478076012002006027>