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# User Manual



## **VDX3-PCI**

with  
**DM&P Vortex86DX3**  
**1GHz processor**

Version 1.0

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# Revision History

Revision	Date	Remark
1.0	August 28, 2018	First version released

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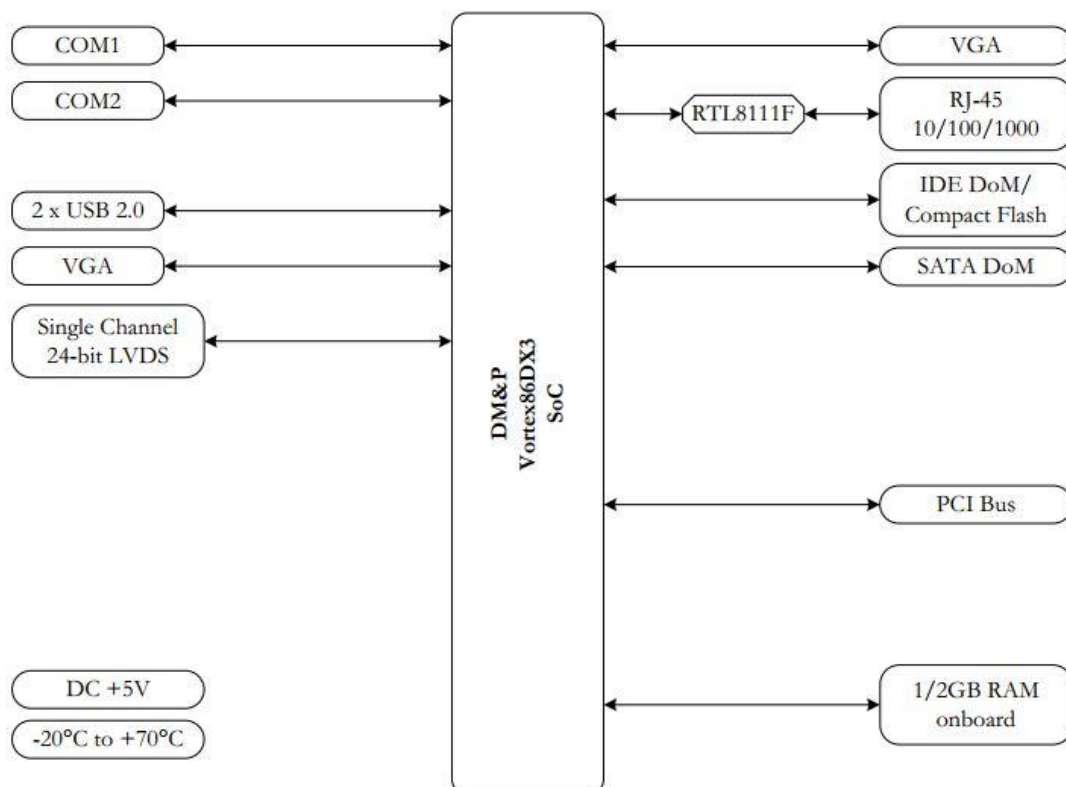
# 1 General Information

## 1.1 Overview

VDX3-PCI, featuring on Vortex86DX3 1GHz SoC and 2GB DDR3 RAM, is equipped with PCI Bus, 2x COM, 2x USB, VGA, LVDS and provides three different types of storages, IDE, SATA, and Compact Flash interface for user to develop applications based on application requirement.

VDX3 supports DC +5V and can operate in environment temperature of -20°C to +70°C. Also, VDX3-PCI is able to be booted up in subzero environment, which is a perfect solution for embedded application.

## 1.2 Block Diagram



## Specifications

CPU	DM&P Vortex86DX3 1GHz L1: 32K I-Cache, 32K D-Cache, L2 Cache: 512KB		
RAM	1/2GB DDR3 Onboard		
BIOS	AMI BIOS		
Bus	PCI		
Display	Integrated 2D VGA chip with Dual Display Support (VGA + LVDS) VGA: Maximum resolution up to 1920 x 1080 @60Hz LVDS: Maximum resolution up to 1024 x 768 @60Hz Single channel 24-bit LVDS		
LAN	RTL8111F GbE x1		
Disk Support	SATA DoM	IDE DoM	Compact Flash
I/O Interface	USB(ver. 2.0) x2	COM x2	
Connectors	2.54mm 40-pin box header for IDE DoM x1	RJ45 Connector x1	
	2.54mm 16-pin pin header for Front Panel x1	USB Connector x1	
	2.54mm 10-pin box header for COM x2	PS/2 Connector x1	
	2-pin box header for DC Output x1	Power Terminal Block x1	
	1.25mm 30-pin wafer for LCD Panel x1		
	7-pin SATA connector for SATA DoM x1		
	D-Sub 15-pin female connector for VGA x1		
	Type I/II Compact Flash Slot x1		
Power Requirement	DC +5V @ 110mA		
Operating Temperature	-20°C to +70°C (Single Core) -10°C to +60°C (Dual Core) -40°C to +85°C (Optional for Single Core) -20°C to +70°C (Optional for Dual Core)		
Dimension	185 x 121mm		
Weight	150g		
O/S Support	Windows 7	Linux	
	Windows Embedded Standard 7	DOS	
	Windows Embedded Compact7	POS Ready (WePOS)	
	Windows Embedded CE6.0	QNX	
	Windows XP Professional	VxWorks	
	Windows Embedded 2009	Free BSD	



## 1.3 Ordering Information

### 1.4.1 VDX3-PCI

PART NO.	VDX3-PCI-7S4E	VDX3-PCI-7S5E
CPU	1GH (Single Core)	1GHz (Single Core)
DRAM (DDR3)	1GB	2GB
Storage	SATA DoM IDE DoM Compact Flash	SATA DoM IDE DoM, Compact Flash
Bus	PCI Bus	PCI Bus
Display	VGA LVDS	VGA LVDS
GLAN	1	1
COM	2	2
USB	2	2

PART NO.	VDX3-PCI-7D4E	VDX3-PCI-7D5E
CPU	1GHz (Dual Core)	1GHz (Dual Core)
DRAM (DDR3)	1GB	2GB
Storage	SATA DoM IDE DoM Compact Flash	SATA DoM IDE DoM, Compact Flash
Bus	PCI Bus	PCI Bus
Display	VGA LVDS	VGA LVDS
GLAN	1	1
COM	2	2
USB	2	2

SATA DOM

Product Name	MLC	SLC	0°C to +70°C	-40°C to +85°C
SDM-SST-2G-H-M	V		V	
SDM-SST-4G-H-M	V		V	
SDM-SST-2G-H-S-X		V		V
SDM-SST-4G-H-S-X		V		V
SDM-SST-8G-H-S-X		V		V
ISATA-8G-H-M	V		V	
ISATA-16G-H-M	V		V	
ISATA-32G-H-M	V		V	
ISATA-64G-H-M	V		V	
ISATA-8G-H-M-X	V			V
ISATA-16G-H-M-X	V			V
ISATA-32G-H-M-X	V			V
ISATA-64G-H-M-X	V			V
ISATA-1G-H-S		V	V	
ISATA-2G-H-S		V	V	
ISATA-4G-H-S		V	V	
ISATA-8G-H-S		V	V	
ISATA-16G-H-S		V	V	
ISATA-16G-H-S-X		V		V

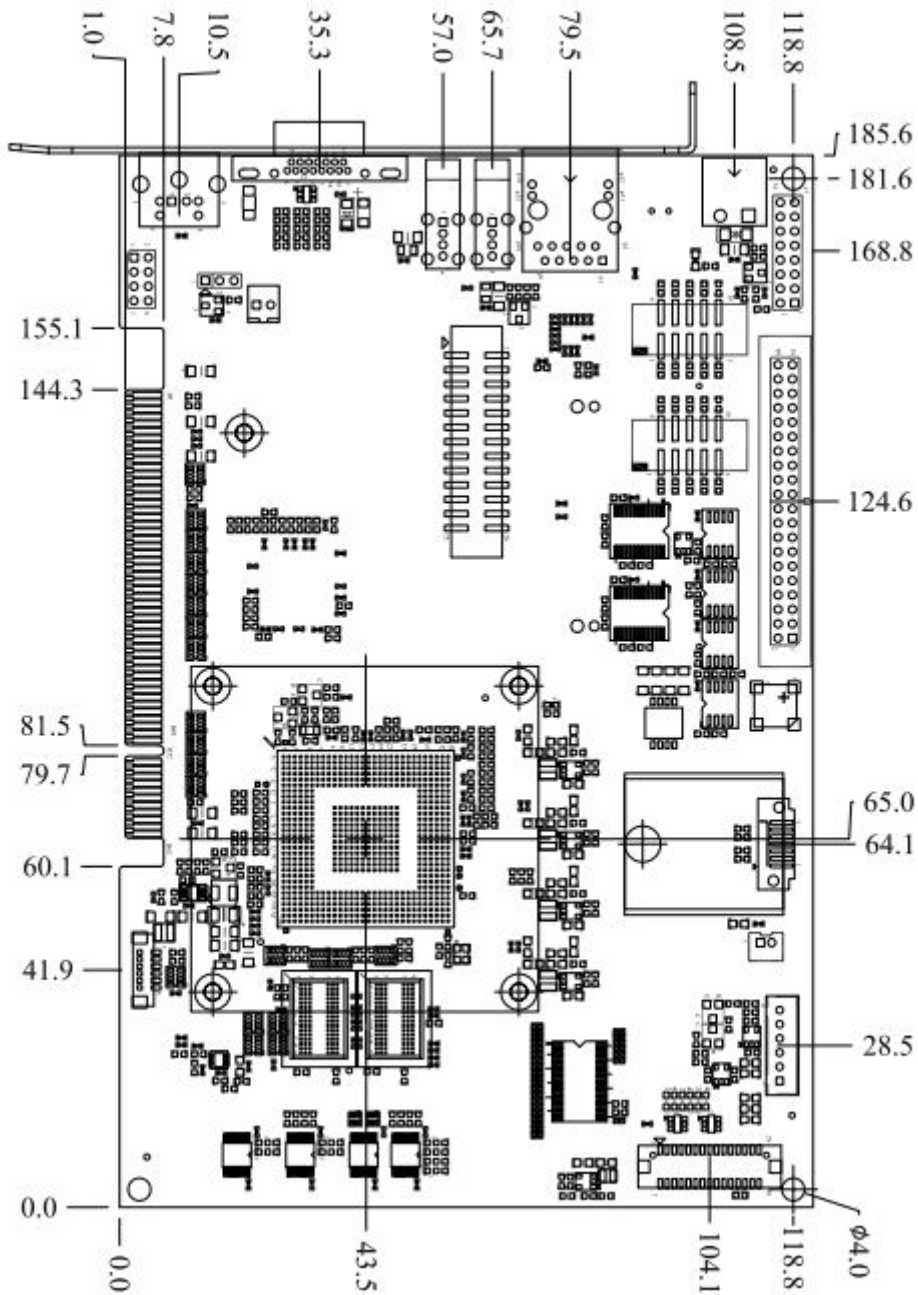
Compact Flash

Product Name	MLC	SLC	0°C to +70°C	-40°C to +85°C
ICF-128M		V	V	
ICF-256M		V	V	
ICF-512M		V	V	
ICF-1G		V	V	
ICF-2G		V	V	
ICF-4G		V	V	
ICF-8G		V	V	
ICF-128M-X		V		V
ICF-256M-X		V		V
ICF-512M-X		V		V
ICF-1G-X		V		V
ICF-2G-X		V		V
ICF-4G-X		V		V
ICF-8G-X		V		V
ICF-8G-M	V		V	
ICF-16G-M	V		V	
ICF-32G-M	V		V	
ICF-64G-M	V		V	
ICF-128G-M	V		V	
ICF-8G-M-X	V			V
ICF-16G-M-X	V			V
ICF-32G-M-X	V			V
ICF-64G-M-X	V			V
ICF-128G-M-X	V			V

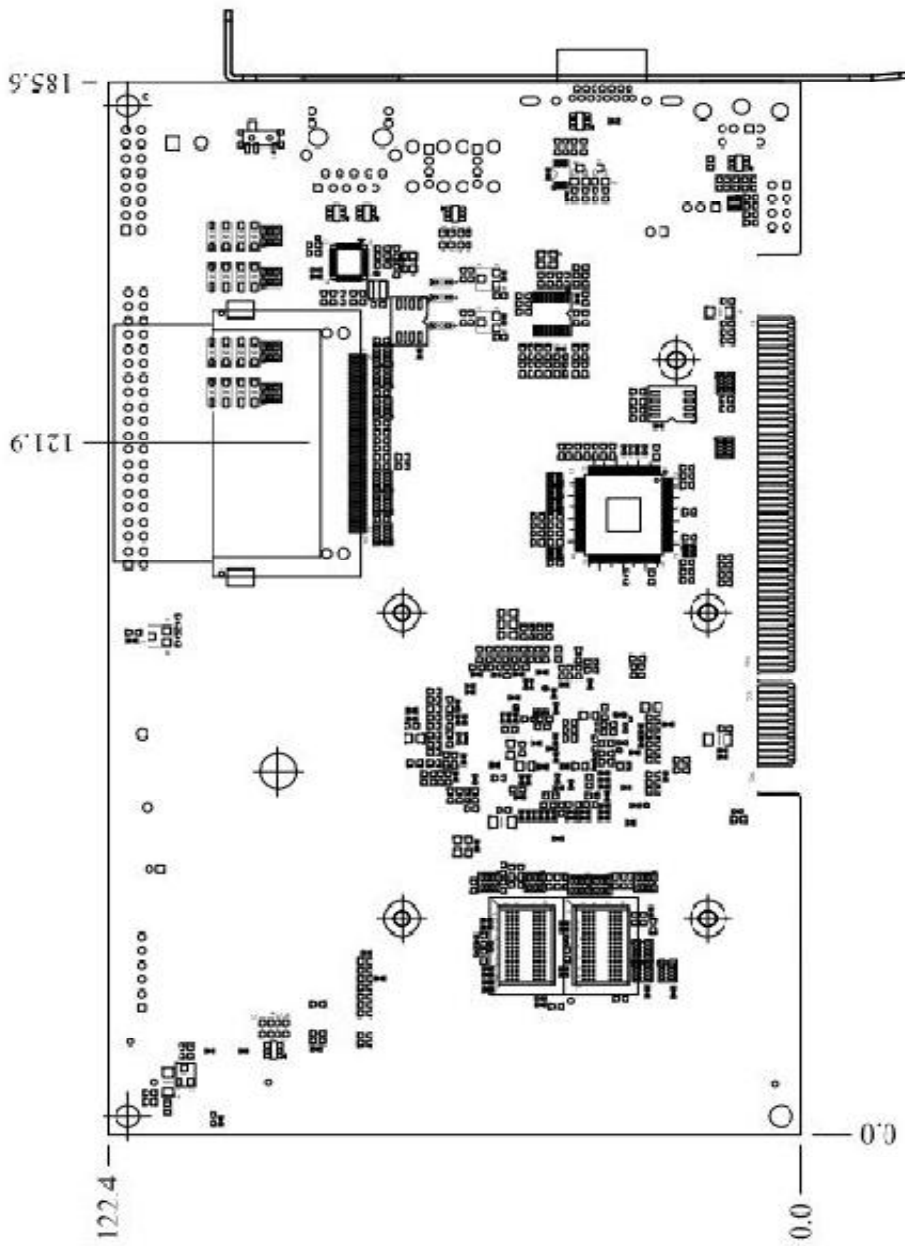
# 2 Hardware Information

## 2.1 Dimension

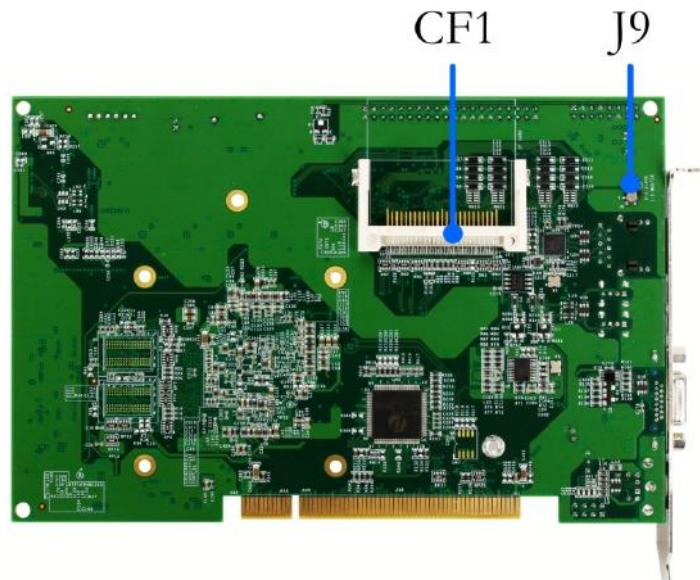
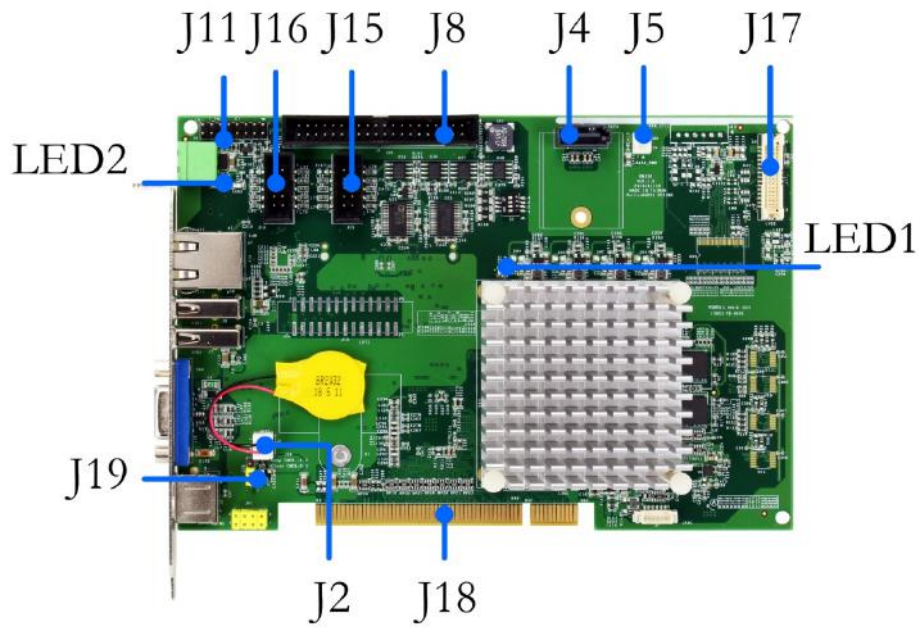
TOP



Bottom



## 2.2 Board Outline



## 2.3 Connector and Jumper Summary

Nbr.	Name	Type of Connections	Pin of Nbr.
J2	Battery Connector	Box Header, 2.5mm, 1x2	2
J3	PS/2 Keyboard/Mouse	Mini-DIN Female	6
J4	SATA DoM Connector	SATA 7P Connector, 7x1	7
J5	DC 5V Output	Box Header, 2.0mm, 1x2	2
J6	USB1	Type A USB Connector	4
J7	USB2	Type A USB Connector	4
J8	IDE Connector	Box Header, 2.54mm, 20x2	40
J9	Master/Slave Setting for Compact Flash	Dip Switch	
J11	Front Panel	Pin Header, 2.54mm, 2x8	16
J12	VGA	15-pin D-Sub Female Connector	15
J14	LAN (10/100/1000 Ethernet)	RJ45 Connector	8
J15	COM1	Box Header, 2.54mm, 5x2	10
J16	COM2	Box Header, 2.54mm, 5x2	10
J17	LVDS	Wafer, 1.25mm, 15x2	30
J18	PCI Goldfinger		124
J19	CMOS Setting	Pin Header, 2.0mm, 1x3	3
LED2	Power LED (Red)	LED-SMD	
P1	Power Input (for ICOP use only)	Terminal Block. 5.0mm, 2x1	2
CF1	Compact Flash Slot		

## 2.4 Pin Assignments & Jumper Settings

### J2: Battery Connector

Pin#	Signal Name
1.	VBATT
2	GND

### J4: SATA DOM Connector

Pin#	Signal Name
1.	GND
2	SATATX+
3	SATATX-
4	GND
5	SATARX-
6	SATATX+
7	GND

### J5: DC 5V Output

Pin#	Signal Name
1.	VCC
2	GND

### J8: IDE Connector

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	IDERDY	28	GND
29	IDEACK	30	GND
31	IDEINT	32	NC
33	IDESA1	34	IDECBLID
35	IDESA0	2	IDESA2
37	IDECS0	38	IDECS1
39	HDD_LED-	40	GND

### J9: Master/Slave Setting for Compact Flash

Pin#	Signal Name
1.	MASTER
2	Y_CSEL#
3	NC

Pin1 & 2 connected → Master Mode

Pin2 & 3 connected → Slave Mode



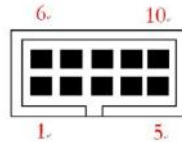
**J11: Front Panel**

Pin#	Signal Name	Pin#	Signal Name
1.	NC	2	HDD_LED+
3	GND	4	HDD_LED-
5	RESET-	6	NC
7	GND	8	PWR_LED+
9	SPK+	10	NC
11	NC	12	PWR_LED-
13	NC	14	NC
15	SPK-	16	NC

**J17: LVDS**

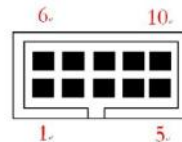
Pin#	Signal Name	Pin#	Signal Name
1.	Y0+	2	Y1+
3	Y0-	4	Y1-
5	GND	6	GND
7	Y2+	8	Y3+
9	Y2-	10	Y3-
11	GND	12	GND
13	CLK+	14	LCD_VDD
15	CLK-	16	LCD_VDD
17	GND	18	GND
19	DDC1CLK	20	DDC1DAT
21	NC	22	NC
23	NC	24	FPENBLT_L
25	PWM_L	26	+5V
27	GND	28	+12V
29	GND	30	+12V

**J15: COM1**



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

**J16: COM2**



Pin#	Signal Name	Pin#	Signal Name
1.	DCD2	6	DSR2
2	RXD2	7	RTS2
3	TXD2	8	CTS2
4	DTR2	9	RI2
5	GND	10	VCC

## J19: CMOS Setting

Pin#	Signal Name
1.	VDDBAT
2	VBAT
3	GND

Pin1 & 2 connected → Keep CMOS

Pin2 & 3 connected → Clear CMOS

## P1: Power Connector

Pin#	Signal Name
1.	VCC
2	GND

## 3 Software Resources

### 3.1 ICOP Technical Resource Website

In the following website, you will find our latest user manuals, including OS support resources systems such as evaluation images for 32-bit Window operating systems. For details, please kindly visit the following link: <http://tech.icop.com.tw/>

For resource of 32-bit Linux operating systems, please directly contact us at [info@icop.com.tw](mailto:info@icop.com.tw) or contact your ICOP contact window.

# Technical Support Directly from ICOP

To offer you more accurate and specific solutions for the technical situations you have, please prepare the information below before contacting ICOP:

- Product name and serial number
  
- Description of the H/W environment ( i.e.: working temperature, I/O board information, information of connection between main board and IO boards, and/or other devices, etc)
  
- Description of the S/W environment (i.e: operating system, version, application software, and/or other related information, etc.)
  
- A detailed description and photos of the technical situation
  
- Any complement or technical situations you want ICOP more focusing on

## User Manual Feedback

To make this user manual more complete, if you have any comments or feedbacks to this manual, please feel free to write to [info@icop.com.tw](mailto:info@icop.com.tw) or contact your ICOP sales representative.

# Warranty

This product is warranted to be in good working order for a period of one year (12 months) from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it without additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster. Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, originality to use this product. Vendor will not be liable for any claim made by any other related party. Return authorization must be obtained from the vendor before returned merchandise is accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description. Should you have questions about warranty and RMA service, please contact us directly.

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