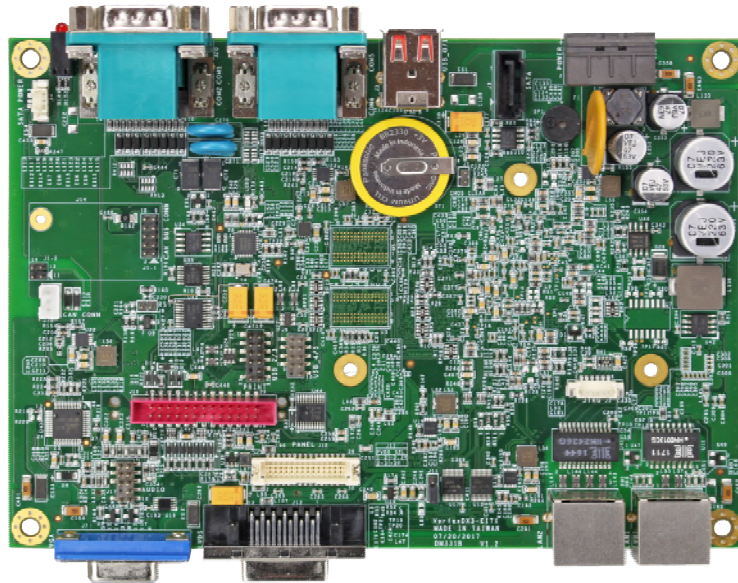




VDX3-EITX

with
DM&P Vortex86DX3
1GHz processor

Version 1.0

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Revision History

Revision	Date	Remark
1.0	June 21, 2018	First version release

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1 General Information

1.1 Overview

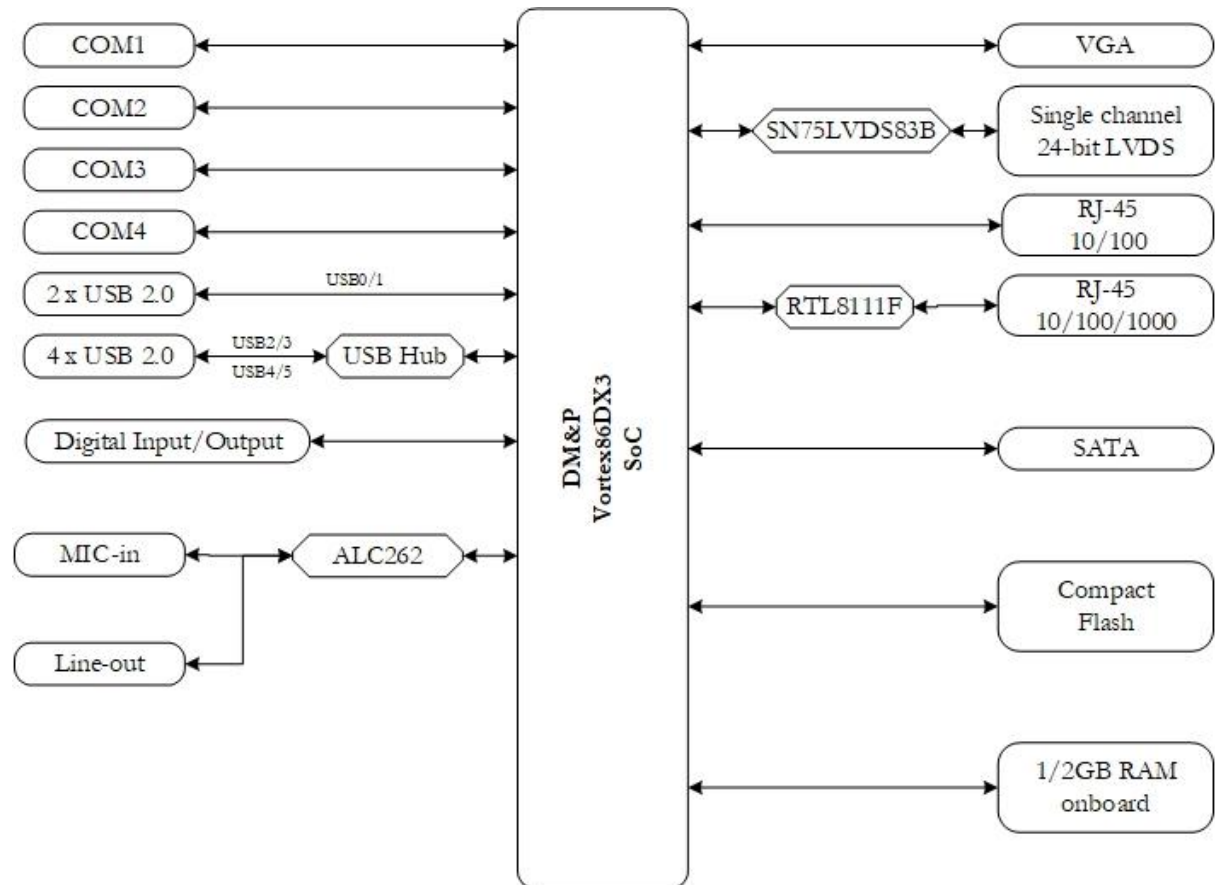
Designed with load dump protection circuit, VDX3-EITX is protected from large voltage spikes effect and passed ISO7637-2 and ISO16750-2 tests (standard tests for passenger and commercial vehicle usage).

The VDX3-EITX from ICOP features DM&P SoC Vortex86DX3 1GHz processor, supporting onboard 2GB DDR3 memory plus SATA DoM and Compact Flash as default storage. The industrial I/O of VDX3-EITX features LAN, Giga LAN, VGA, 24-bit LVDS, 3x RS232, RS485, 6x USB, CAN Bus, Audio, and DIO. The VDX3-EITX operates in a range of -20°C to +70°C and supports +12 to +24VDC input.

This feature-rich VDX3-EITX is not only configured for in-vehicle usage, but also for industrial automation, automotive controller, intelligent vehicle management device, data acquisition, robotics, and machine control, etc.

Recommended operating systems on the VDX3-EITX are Windows 7 (or previous version of Windows systems), Windows real-time operating system, Ubuntu, Debian, VxWorks, and QNX.

1.2 Block Diagram



1.3 Specifications

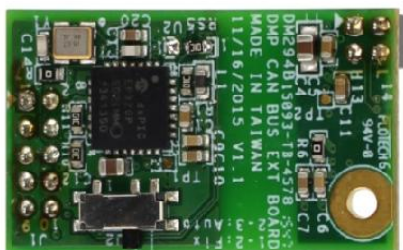
CPU	DM&P SoC CPU Vortex86DX3 - 1GHz L1:32K I-Cache, 32K D-Cache, L2 Cache:512KB	
RAM	1GB/2GB DDR3 Onboard	
BIOS	AMI BIOS	
Display	Integrated 2D VGA chip with dual display support (VGA + LVDS) VGA: Maximum resolution up to 1920x1080 @ 60Hz LVDS: Maximum resolution up to 1024x768 @ 60Hz Single channel 24-bit LVDS	
LAN	Integrated 10/100Mbps Ethernet x1 Realtek 8111F 10/100/1000Mbps Ethernet x`	
I/O Interface	RS232 x3 RS485 x1 USB x6	CAN x1 (Optional) Audio x1 DIO x1
Connectors	1.25mm 30-pin wafer for LCD Panel x1 2.0mm 10-pin header for USB x1 2.0mm 4-pin header for CAN Bus module x1 2.0mm 10-pin header for CAN Bus module x1 2.0mm 10-pin header for Audio x1 2.0mm 26-pin box header for DIO x1 2.54mm 3-pin box header for CAN Bus x1 26-pin SCSI II D-type female connector for LVDS x1 D-Sub 9-pin male connector for RS485 x1 D-Sub 15-pin female connector for VGA x1 SATA 7P for SATA x1 USB connector x2 RS45 connector x2 Compact Flash slot x1 Power terminal block x1	
Power Requirement	+12 to +24V	
Operating Temp.	-20°C to +70°C	
O/S Support	Windows 7 Windows Embedded Standard 7 Windows Embedded Compact 7	Linux DOS POS Ready (WePOS)

	Windows Embedded CE6.0	QNX
	Windows XP Professional	VxWorks
	Windows Embedded 2009	Free BSD
Dimensions	170mm x 120mm	
Weight	210g	

1.4 Ordering Information

1.4.1 VDX3-EITX

Part Number	Description
VDX3-EITX-7S4E1	Vortex86DX3 1GHz with onboard 1GB RAM and SATA/CF/LAN/GLAN/LAN/4COM/6USB/CAN(Optional)/Audio/DIO
VDX3-EITX-7S5E1	Vortex86DX3 1GHz with onboard 2GB RAM and SATA/CF/LAN/GLAN/LAN/4COM/6USB/CAN(Optional)/Audio/DIO
CABLE-SET-EITX	USB(2.0) x2 and Audio Cable x1
SERIALCAN	RS232 to isolated CAN bus adapter with (1 Mbaud) CAN 2.0B support



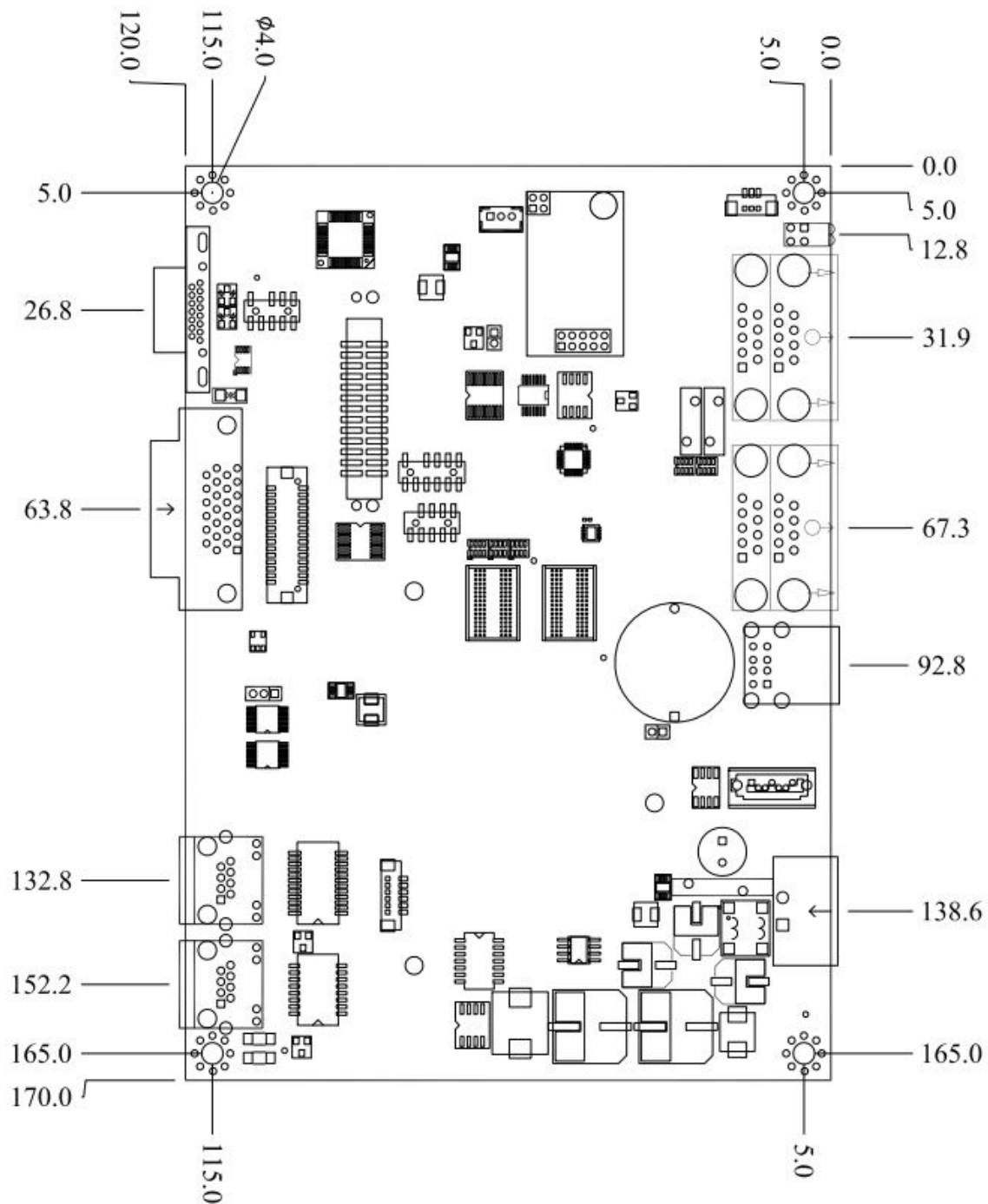
SERIALCAN

1.4.2 SATA DOM

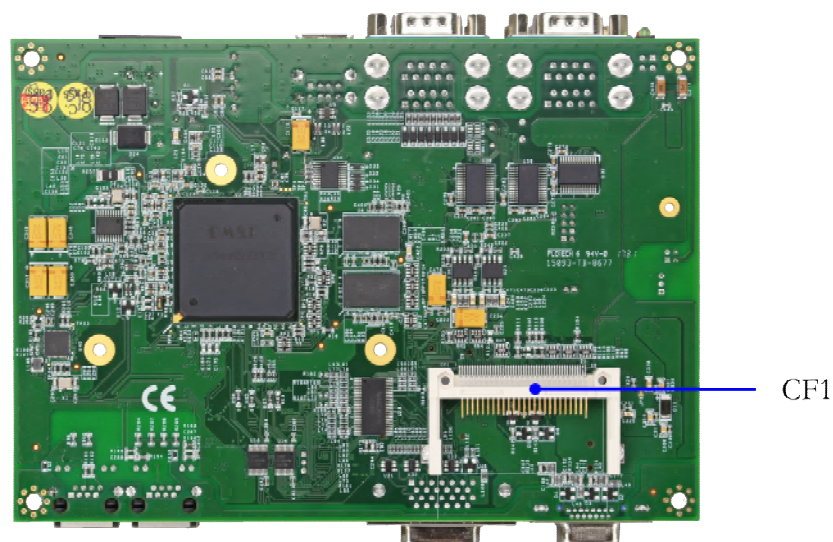
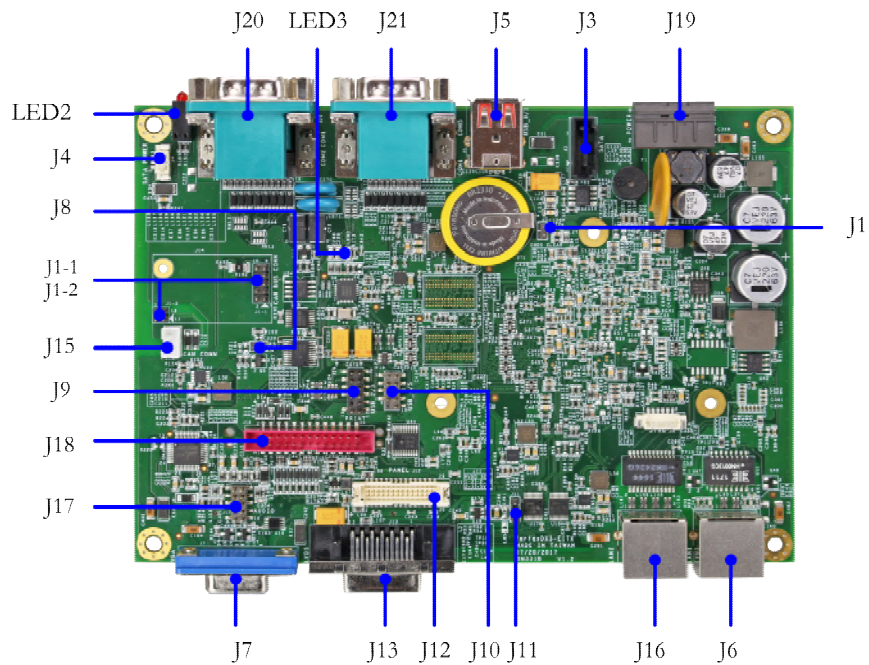
Product Name	MLC	SLC	0°C ~ +70°C	-40°C ~ +85°C
SDM-SST-2G-H-M	V		V	
SDM-SST-4G-H-M	V		V	
ISATA-8G-H-M	V		V	
ISATA-16G-H-M	V		V	
ISATA-32G-H-M	V		V	
ISATA-4G-H-M-X	V			V
ISATA-8G-H-M-X	V			V
ISATA-16G-H-M-X	V			V
ISATA-32G-H-M-X	V			V
ISATA-1G-H-S		V	V	
ISATA-2G-H-S		V	V	
ISATA-4G-H-S		V	V	
ISATA-8G-H-S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

2 Hardware Information

2.1 Dimension



2.2 Board Outline and Jumper Location



2.3 Connector and Jumper Summary

Nbr.	Name	Type of Connector	Nbr of Pin
J1	BIOS Clear Jumper	Pin Header, 2.0mm, 2x1	2
J1-1	CAN Bus Module Connector (for SerialCAN only)	Pin Header, 2.0mm, 5x2	10
J1-2	CAN Bus Module Connector (for SerialCAN only)	Pin Header, 2.0mm, 5x2	4
J3	SATA DOM Connector	SATA 7P Connector, 7x1	7
J4	DC 5V Output	Wafer, 1.25mm, 3x1	3
J5	USB0/1	Type A USB Connector	
J6	LAN	RJ45 Connector	
J7	VGA	D-Sub 15-pin Female Connector	
J8	Reset Jumper	Pin Header, 2.0mm 2x1	2
J9	USB4/5	Pin Header, 2.0mm, 5x2	10
J10	USB2/3	Pin Header, 2.0mm, 5x2	10
J11	Panel Power Selection	Pin Header, 2.0mm, 3x1	3
J12	LVDS Connector	Wafer, 1.25mm, 15x2	30
J13	SCSI LVDS Connector	SCSI II D Type Connector	
J15	CAN Bus	Wafer, 2.0mm, 3x1	3
J16	GLAN	RJ45 Connector	
J17	Audio	Pin Header, 2.0mm, 5x2	10
J18	Digital Input/Output	Box Header, 2.0mm, 13x2	26
J19	Power Input	Terminal Block, 5.08m, 2x1	2
J20A	COM1 (RS485)	D-Sub 9-pin Male Connector	Lower Part
J20B	COM2 (RS232/TTL Optional)		Upper Part
J21A	COM3 (RS232/TTL Optional)	D-Sub 9-pin Male Connector	Lower Part
J21B	COM4 (RS232/TTL Optional)		Upper Part
CF1	Compact Flash Slot		
LED2	Power Active LED (Red) Hard Disk LED (Green)	SMD LED	
LED3	Mode LED (Green)	SMD LED	

2.4 Pin Assignments & Jumper Settings

J1: BIOS Clear Jumper

Pin#	Signal Name	Pin#	Signal Name
1.	+3.3V	2	+3.3V

J1-1: CAN Bus Module Connector (for SerialCAN only)

Pin#	Signal Name	Pin#	Signal Name
1.	NC	2	RX
3	TX	4	NC
5	GND	6	NC
7	GND	8	NC
9	NC	10	VCC

J1-2: CAN Bus Module Connector (for SerialCAN only)

Pin#	Signal Name	Pin#	Signal Name
1.	CANH	2	CANL
3	GND	4	NC

J3: SATA DOM Connector

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

J4: DC 5V Output

Pin#	Signal Name
1.	GND
2	VCC
3	VCC

J8: Reset Jumper

Pin#	Signal Name
1.	RESET
2	GND

J9: USB4/5

Pin#	Signal Name	Pin#	Signal Name
1.	VCC	2	VCC
3	LUSBD4-	4	LUSBD5-
5	LUSBD4+	6	LUSBD5+
7	GND	8	GND
9	KEY	10	NC

J10: USB2/3

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

J12: LVDS Connector

Pin#	Signal Name	Pin#	Signal Name
1.	VCC	2	PVDD*
3	VCC	4	PVDD*
5	GND	6	GND
7	NC	8	Y0M
9	NC	10	Y0P
11	GND	12	GND
13	FPENBLT	14	Y1M
15	PWM	16	Y1P
17	GND	18	GND
19	NC	20	Y2M
21	NC	22	Y2P
23	GND	24	GND
25	CLKOUTM	26	Y3M
27	CLKOUTP	28	Y3P
29	GND	30	GND

*Please refer to J11 for PVDD value

J11: Panel Power Selection

(for J12 Pin 2 & Pin 4)

(for J13 Pin 10 & Pin 23)

Pin#	Signal Name
1	3.3V
2	PVDD
3	5V

J13: SCSI LVDS Connector

Pin#	Signal Name	Pin#	Signal Name
1	CLK+	14	GND
2	CLK-	15	Y3+
3	GND	16	Y3-
4	Y2+	17	GND
5	Y2-	18	GND
6	GND	19	Y1+
7	Y0+	20	Y1-
8	Y0-	21	GND
9	DDC1CLK	22	DDC1DAT
10	PVDD*	23	PVDD*
11	NC	24	NC
12	FPENBLT	25	PWM_L
13	VCC	26	VCC

*Please refer to J11 for PVDD value

J19: Power Input

Pin#	Signal Name
1.	+12 to +24V
2	GND

J18: Digital Input/Output

Pin#	Signal Name	Pin#	Signal Name
1	GPO_40	2	GPO_42
3	GPI_10	4	GPI_16
5	GPI_11	6	GPO_43
7	GPI_12	8	GPO_45
9	GPI_13	10	GND
11	GPI_14	12	GND
13	GPI_15	14	GND
15	GPO_22	16	GND
17	GPO_23	18	GND
19	GPI_27	20	GND
21	GPI_17	22	GND
23	GPO_25	24	GND
25	GPO_46	26	KEY

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 Windows Embedded Compact 7, Windows Embedded CE 6.0, Windows Embedded CE 5.0, and Windows Embedded 2009. For details, please kindly visit the following link:
<http://tech.icop.com.tw/>

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 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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