

ERS-CDV

Fanless Intel® Atom™ D2550 Rugged Embedded
System with Intel® NM10 Express Chipset

Quick Reference Guide



1st Ed – 1 June 2012

1. Getting Started

1.1 Safety Precautions

Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

- 1 x ERS-CDV Fanless Intel® Atom™ D2550 Rugged Embedded System with Intel® NM10 Express Chipset
- 1 x Quick Reference Guide
- 1 x DVD-ROM contains the followings:
 - User's Manual (this manual in PDF file)
 - Ethernet driver and utilities
 - VGA drivers and utilities
 - Audio drivers and utilities
- Other major components include the followings:
 - AC/DC adapter
 - Screw kit for 2.5" SSD/HDD fixing
 - Power cord



If any of the above items is damaged or missing, contact your retailer.

1.3 System Specifications

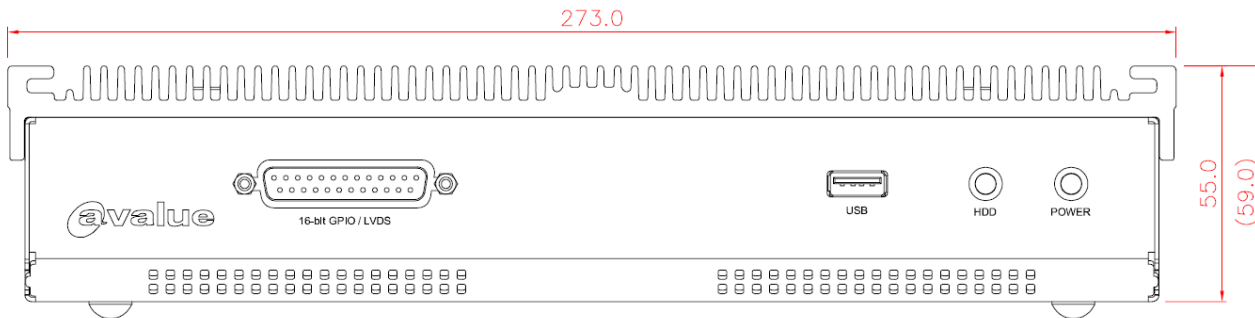
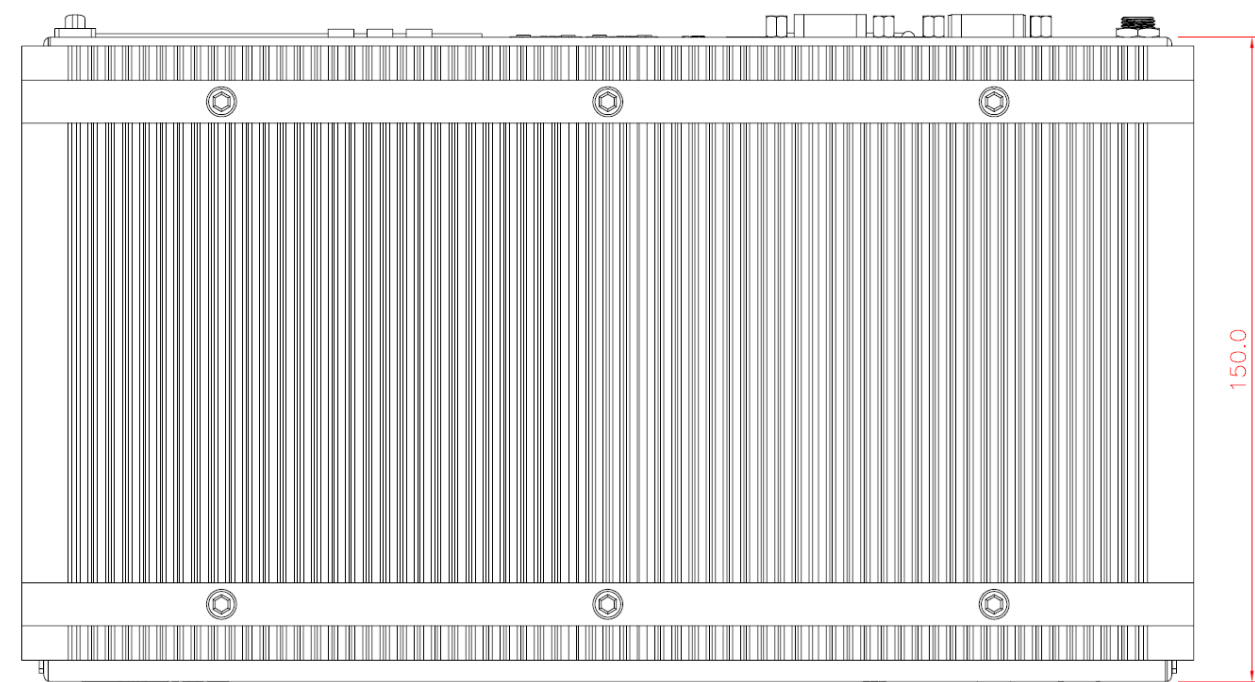
Specifications	
System	
Board	ECM-CDV
CPU	Onboard Intel® Atom™ D2550 1.86GHz CPU
BIOS	AMI 16Mbit SPI BIOS
System Chipset	Intel® NM10 Express Chipset
I/O Chip	Nuvoton W83627DHG-P
System Memory	One 204-pin DDR3 SODIMM Socket Up to 4GB DDR3 800/ 1066 SDRAM
SSD	1 x CompactFlash Type I/II Socket
Hard Disk	1 x 2.5" SATA HDD/ SSD
Watchdog Timer	Reset: 1sec. ~ 65535sec./min. and 1sec. or 1min./step
H/W Status Monitor	Monitoring System Temperature and Voltage with Auto Throttling Control
External I/O	
COM	1 x RS-232, 1 x RS-232/ 422/ 485
LAN	2 x RJ45
Antenna	2 Knockouts for Antenna Mounting (Options to Add WiFi & 3G)
VGA	1 x VGA
HDMI	1 x HDMI
LVDS	1 x LVDS (Dual-channel 18/24-bit LVDS, Optional with GPIO Port)
Multiple Display	CRT + LVDS, HDMI + LVDS, CRT + HDMI
Audio Port	Mic-in, Line-in, Line-out
GPIO	8-bit GPI and 8-bit GPO (LPT DB 25pin Connector)
USB Port	6 x USB 2.0 (Rear 5; Front 1)
Expansion	1 x Mini-PCIe Socket (mSATA Supported)
Display	
Chipset	Intel® Cedarview Integrated Graphics
Resolution	CRT Mode: 1920 x 1200 @ 60Hz
Audio	
Audio Chipset	Realtek ALC892 supports 5.1-CH Audio
Audio Interface	Line-in, Line-out and Mic-in
Ethernet	
LAN Chip	2 x Intel® 82574L Gigabit Ethernet
Ethernet Interface	10/ 100/ 1000 Base-Tx Gigabit Ethernet Compatible
Environment	

ERS CDV

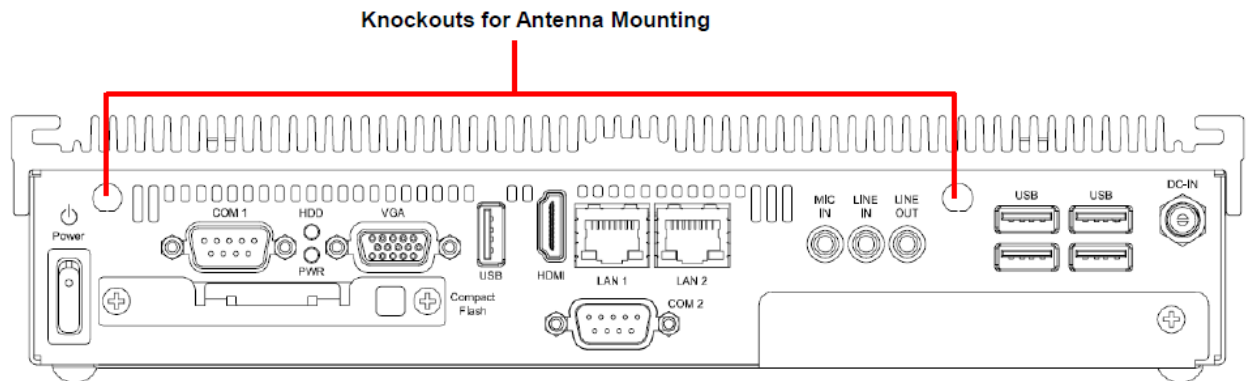
&Mechanical	
Power Requirement	+12V~+26V (+12V/ 5A Lockable DC Plug Adapter is an Accessory to This System)
ACPI	Single Power ATX Support S0, S3, S4, S5 and ACPI 3.0 Compliant
Power Type	AT/ ATX (ATX is the default setting)
Operating Temp.	-10 ~ 60°C (w/ CF and 2.5" SSD), Ambient w/ Air Flow
Storage Temp.	-40 ~ 75°C (-40 ~ 167°F)
Relative Humidity	0% ~ 90% Relative Humidity, Non-condensing
Vibration Protection	With CF/ SSD: 5Grms, IEC 60068-2-64, Random, 10 ~ 500Hz, 1hr/axis
Shock Protection	With CF/ SSD: 50G, IEC 60068-2-27, Half Sine,11ms
Dimension (W x D x H)	271mm x 150mm x 55mm
Weight	5.5lbs (2.5 Kgs)

1.4 System Overview

1.4.1 Front & Top View



1.4.2 Rear View



Connectors

Label	Function	Note
COM1~2	Serial port connector1~2	
DC-IN	DC power-in connector (Phoenix Type)	
HDD	HDD Indicator	
PWR	Power Indicator	
LAN1	RJ-45 Ethernet 1	
LAN2	RJ-45 Ethernet 2	
LINE IN	Line-in audio jack	
LINE OUT	Line-out audio jack	
MIC IN	Microphone-in audio jack	
Power	System power switch	
HDMI	HDMI connector	
COMPACT FLASH	CF card connector	
USB1~6	USB connector 1~6	
VGA	VGA connector	
16-bit GPIO/LVDS	General purpose I/O connector (Option Item : LVDS)	

2. Hardware Configuration

Jumper and Connector Setting, Driver and BIOS Installing

For advanced information, please refer to:

- 1- ECM-CDV Quick Installation Guide or User's Manual



Note: If you need more information, please visit our website:

<http://www.avalue.com.tw>

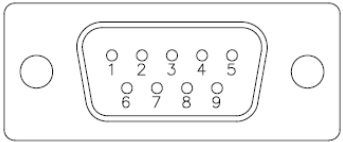
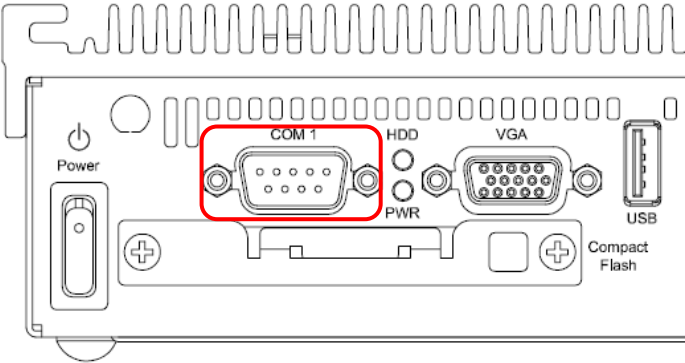
2.1 ERS-CDV connector list

Connectors

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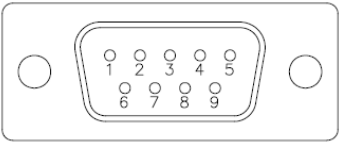
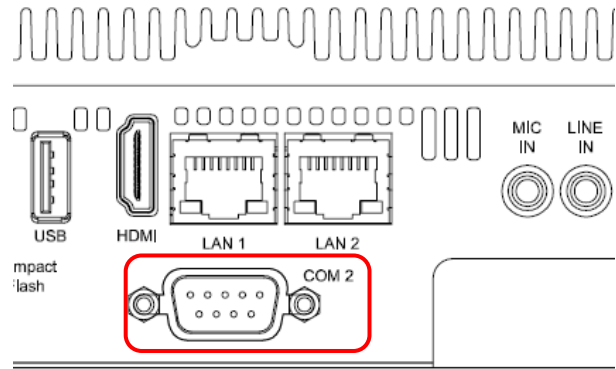
2.2 ERS-CDV connector mapping

2.2.1 External Serial Port 1 connector (COM1)



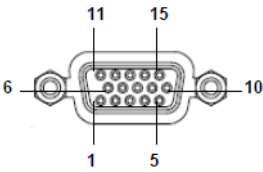
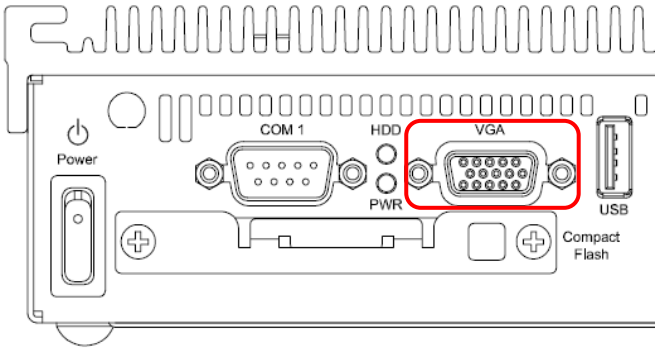
Signal	PIN	PIN	Signal
DCDA#	1	2	RxDA
TxDA	3	4	DTRA#
GND	5	6	DSRA#
RTSA#	7	8	CTSA#
RIA#	9	10	NC

2.2.2 External Serial Port 2 connector (COM2)



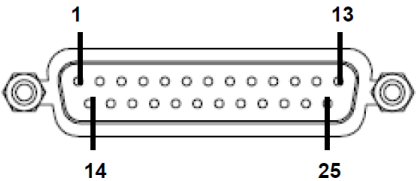
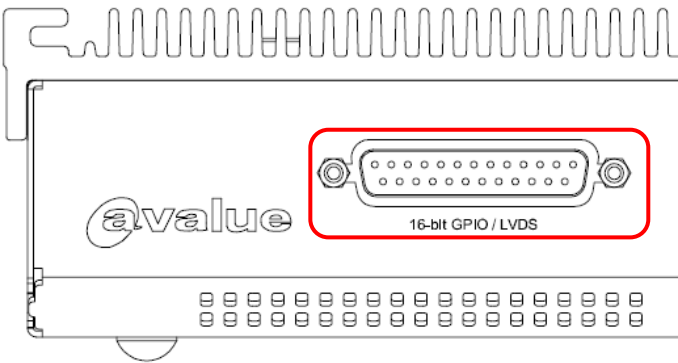
Signal	PIN	PIN	Signal
DCDB#	1	2	RxDB
TxDB	3	4	DTRB#
GND	5	6	DSRB#
RTSB#	7	8	CTSB#
RIB#	9	10	NC

2.2.3 VGA connector (VGA)



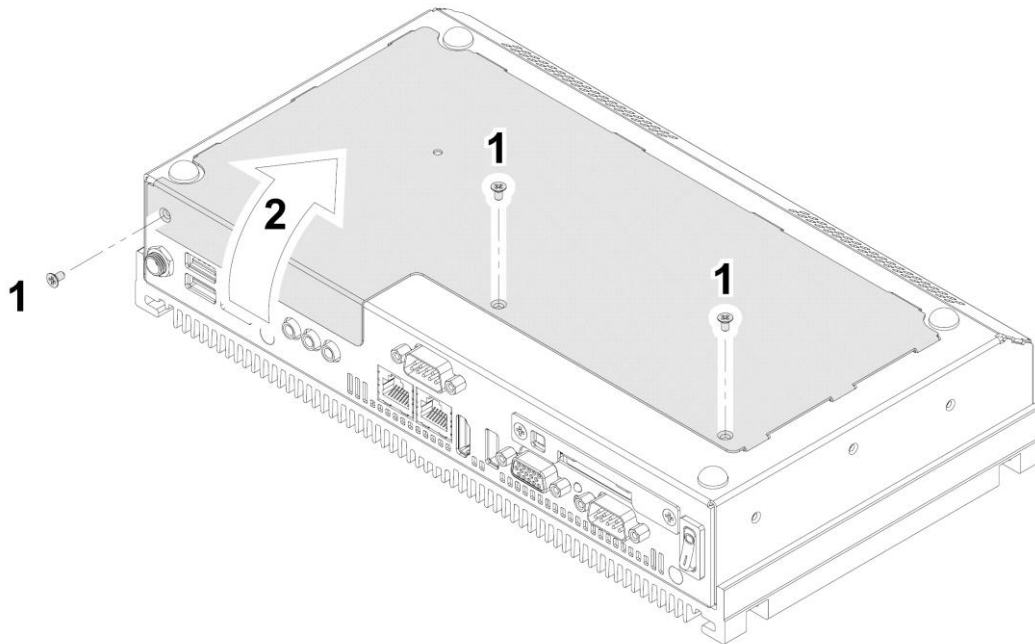
PIN	Signal	PIN	Signal	PIN	Signal
1	R	6	GND	11	NC
2	G	7	GND	12	DATA
3	B	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNC
5	GND	10	EN#	15	CLK

2.2.4 General purpose I/O connector (16-bit GPIO/LVDS)



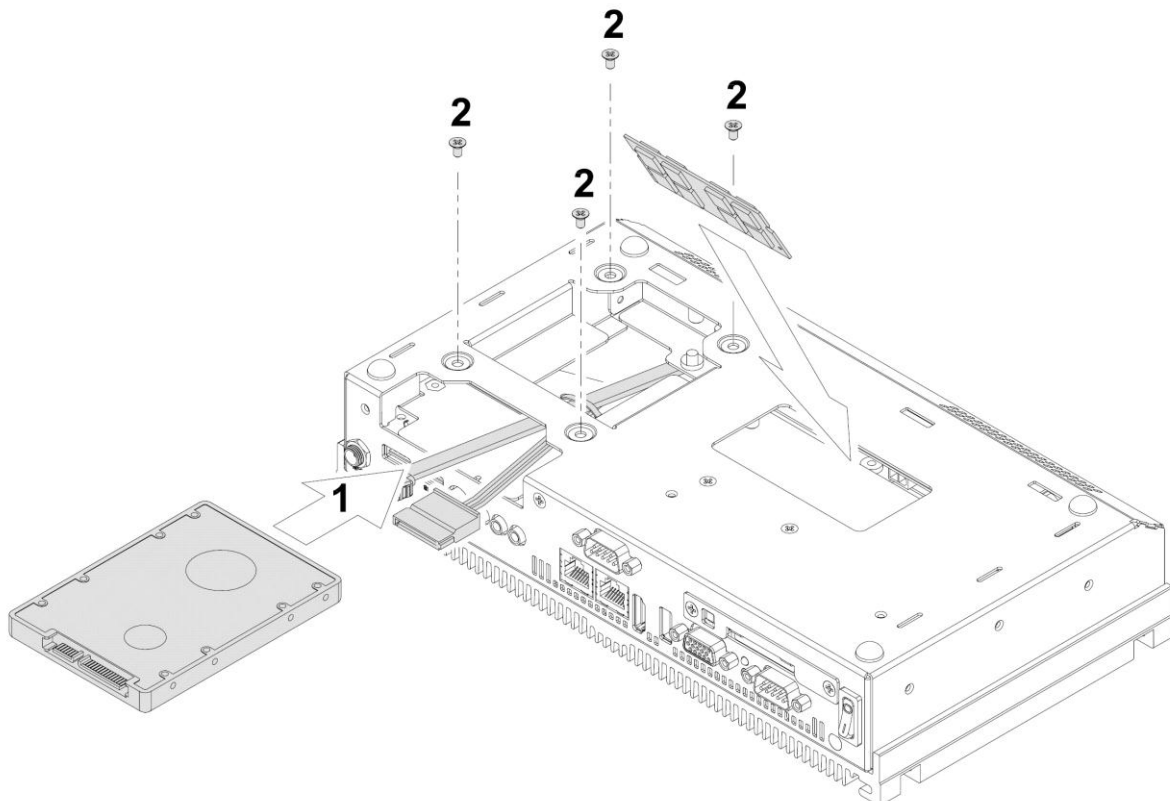
Signal	PIN	PIN	Signal
DI 0	1	14	DI 0
DI 1	2	15	DI 1
DI 2	3	16	DI 2
DI 3	4	17	DI 3
DI 4	5	18	DI 4
DI 5	6	19	DI 5
DI 6	7	20	DI 6
DI 7	8	21	DI 7
NC	9	22	NC
SMB_CLK	10	23	SMB_DATA
NC	11	24	NC
NC	12	25	+5V
GND	13		

2.3 Installing Hard Disk & Memory



Step 1. Unfasten 3 screws from bottom and rear side.

Step 2. Remove the chassis cover.

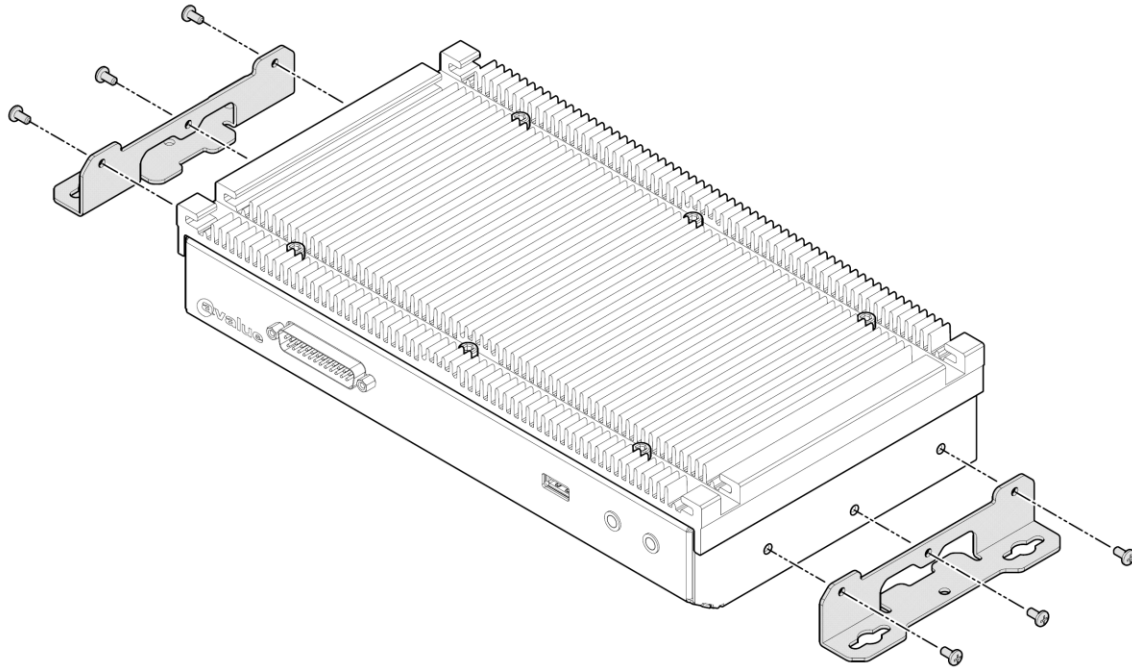


Step 3. Insert the drive into position, and secure with 4 screws.

Step 4. Insert DDR3 SODIMM into memory socket.

Step 5. Place back the cover and fasten 3 screws back to complete

2.4 Installing Mounting Bracket (Optional)



Step 1. Fasten 6 screws on both sides of ERS Rugged Embedded System.

