



# PRODUCT SPECIFICATION

**PRODUCT NAME:** AVEL LINK PLAYER (2<sup>nd</sup>)

**PART NUMBER:** AVLP2/DVDG

**PRODUCT DESCRIPTION:** **Network Media Player with DVD**

This document consists of a total of **14** pages.

Author: Documentation of I-O DATA Device Entertainment Unit

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Specifications No.	AVLP2/DVDG
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## Revision History

Version No.	Revision Date	Description	Checked by	In charge
1.0J	09/01/2004	ENGLISH VERSION OF SPEC	Kaneda	Jack

 <b>Caution</b>	<p>This product is not intended for use as a medical appliance, nuclear power equipment or apparatus, aerospace apparatus, equipment or apparatus related to human life such as transport equipment or apparatus, or equipment or apparatus requiring a high level of reliability, nor is it intended for use in combination with this kind of equipment or apparatus. In cases where this product is used in conjunction with such equipment or apparatus, or in a control system, I-O Data Device, Inc. assumes no responsibility for personal injury, fire, social harm, or other damage that occurs due to trouble with this product. For this kind of equipment, apparatus, or control system, be sure to take extra precautions regarding safety plans such as redundant design, plans to prevent the spread of fire, and plans for preventing improper operation.</p>
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## Overview

"AVeL LinkPlayer2" is I-O DATA unique DVD player with network. A user can watch a normal DVD movie playback on TV, also watch the digital contents inside a PC via LAN. Also this is a newer 2nd model, which supports not only DivX/MPEG also Microsoft Windows Media® Video (WMV9), and has USB2.0 and WiFi 11g/b.

And this player supports HDTV (High Definition: 1280x720) output with Sigma Design's new chip "EM8620L." Also it should be compatible with UPnP AV network.

### 1.1 Product Features

- **Slim Box and Easy to Control**

- ✧ The thin box with 55mm height (D430 x W290 x H55 mm)
- ✧ Available to control all functions by a remote controller

- **Full Digital Spec**

- ✧ Resolution: High Definition Non-Scaling Display (up to 1080p: EM8620L basis)
- ✧ AUDIO: Dolby-Digital, MP3, AAC, WMA, PCM, and Ogg Vorbis
- ✧ VIDEO: MPEG-1/2/4, DivX, XviD
- ✧ DVI mounted: Digital Video Output Available

- **Direct Display**

- ✧ Available to read any USB mass storage class devices via the front USB2.0
- ✧ Available to use DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-ROM, CD-R, CD-RW, and CD-ROM

- **Wireless High Bit Rate Streaming Play Back**

- ✧ Available to play back a video streaming via IEEE802.11b and 11g (default)
- ✧ Intel UPnP AV (NMPR validated) and Apple Rendezvous Compatible

### 1.2 Product Basic Functions

- Playback from a server computer & a network-attached storage (NAS) connected a wired LAN (IEEE802.3 and IEEE802.3u) and also a WiFi LAN (IEEE802.11 a/b/g): It must support I-O DATA LANDISK.
- Playback from any disk media (DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-ROM, CD-R, CD-RW, and CD-ROM)
- Playback DVD-Video / Video CD / CD-DA / DVD-ROM / CD-ROM
- Playback any files from any USB mass storage class devices via the front USB2.0

## 2 Functional Specifications

### 2.1 Basic Spec

Disk Type	DVD-VIDEO/VCD/SVCD/CD-DA		Yes
	DVD-RAM	VR Mode	-
	DVD-R/RW	Video Mode	Yes
		VR Mode	-
	DVD+R/RW		Yes
	CD-RW/R	VCD/SVCD/CD-DA	Yes
	Picture CD		Yes
Disk Size	8cm/12cm		Yes
Format / File	Video		MPEG-1/2/4, DivX, XviD, WMV
	Audio		MP3, AAC, WMA, OGG, PCM
	Photo		JPEG, BMP, GIF, PNG
Video Quality	Progressive Scan		Yes (1080i/720p/480p/480i)
	Video DAC		Max80MHz/10bit
Music Quality	Audio DAC		96KHz 24bit
	Dolby Digital (Digital Audio Out)		Yes
	DTS (Digital Audio Out)		Yes
Network	IP Address		Auto / Manual Selectable
Wired Network	IEEE802.3 & IEEE802.3u		Yes
	Speed		10Mbps/100Mbps
	Connector		RJ-45 x1
Wireless Network (WiFi)	IEEE802.11b		1/2/5.5/11Mbps
	IEEE802.11g		6/9/12/18/24/36/48/54Mbps
	Communication		Antenna x1 (DS-SS & OFDM Supported)
USB	Spec		USB Specification Ver.2.0 Standard
	Connector		USB Type A x1
	Support Format		USB2.0 mass storage class (FAT16/32)
	Connector Position		Right Front
Media Processor			Sigma Designs EM8620L
DVD Loader	Access Mode		PIO MODE4 (16.6Mbit/s)
	Interface		IDE 40pin

	Data Speed	CD-ROM	X4 (600KB/sec) to X10 (1500KB/sec)
		DVD-ROM	X2 (2800KB/sec)
Video Signal Method			JEITA Standard NTSC Color Method *PAL Available (FW Disable Setting)
Output Connectors	Component Video		D Connector *Changeable for D4&DVI-I 1port (1080i/720p/480p/480i)
	S-Video		1port
	Composite Video		1port
	DVI-I		1port 640x480(VGA)/800x600(SVGA)/1024x768(XGA)/ 852x480/ DVI 480p/DVI 720p/DVI 1080i
	Stereo Audio (L/R)		2ports
	5.1 ch Analog Audio		-
	Optical Digital Audio		1port
	Coaxial Digital Audio		1port
Rating Power Voltage			AC100V (50Hz/60Hz) *Up to 240V capacity
Box Size			430(W)×291(D)×55(H) mm
Mass			7.7 LBS (3.5 KG)
Region Code			"2" Japanese *Changeable for oversea customers

## 2.2 Main Processor

- Sigma Designs Inc. "EM8620L", Decoder single chip DVD player with MPEG2/4, Microsoft Windows Media® Video (WMV9), and DivX playback

## 2.3 Video Resolutions & Frame Rate

Format	LAN	WiFi 11g	WiFi 11b	DVD	CD	USB 2.0	USB 1.1
<b>MPEG-1</b>	12Mbps	10Mbps	3Mbps	10Mbps	4Mbps	10Mbps	3Mbps
<b>MPEG-2</b>	12Mbps	10Mbps	3Mbps	10Mbps	4Mbps	10Mbps	3Mbps
<b>DivX</b>	1.5Mbps	1.5Mbps	1.5Mbps	1.5Mbps	1.5Mbps	1.5Mbps	1.5Mbps
<b>XviD</b>	1.5Mbps	1.5Mbps	1.5Mbps	1.5Mbps	1.5Mbps	1.5Mbps	1.5Mbps
<b>WMV9</b>	8Mbps	8Mbps	3Mbps	8Mbps	4Mbps	8Mbps	3Mbps

#### 2.4 Video Size Limitation

- Up to 2 Giga Byte: AVI (DivX and Xvid)
- Up to 4 Giga Byte: MPEG/WMV (FAT32)

#### 2.5 Audio Bit Rate & Sampling Rate

Format	Bit Rate	Sampling Rate
<b>MP3</b>	64K to 192Kbps	32K / 44.1K / 48KHz
<b>WMA (not WMA Pro)</b>	64K to 192Kbps	44.1K / 48KHz
<b>PCM (WAVE)</b>	As the sampling rate	32K / 44.1K / 48KHz
<b>Ogg Vorbis</b>	64K to 192Kbps	-
<b>AAC</b>	64K to 192Kbps	32K / 44.1K / 48KHz

#### 2.6 Picture Resolutions & Playback

Format	Max Resolutions	Playback	Note
<b>JPEG</b>	2048 x 1532	Network, CD/DVD, USB, Landisk	1600 x 1200 max by no network
<b>BMP</b>			
<b>GIF</b>		Network Only	-
<b>PNG</b>			-

#### 2.7 Environment Required

- Operation Temperatures: 5 to 35 deg C
- Operation Humidity: 20 to 80% Non-condensation
- Storage Temperatures: -20 to 65 deg C
- Storage Humidity: 5 to 95% Non-condensation

#### 2.8 Options (Bundled)

- User's Guide x 1
- Warranty Card x 1
- Video/Audio Cable x 1 (Y/W/R Composite)
- LAN Cable x 1 (C5/Straight)
- Remote Controller x 1
- CD-ROM x 1
- WiFi Antenna x 1



## 2.9 Visual Appearance (Front View)



## 2.10 Connectors Position at the back side



## 2.11 Remote Controller (Visual Appearance)



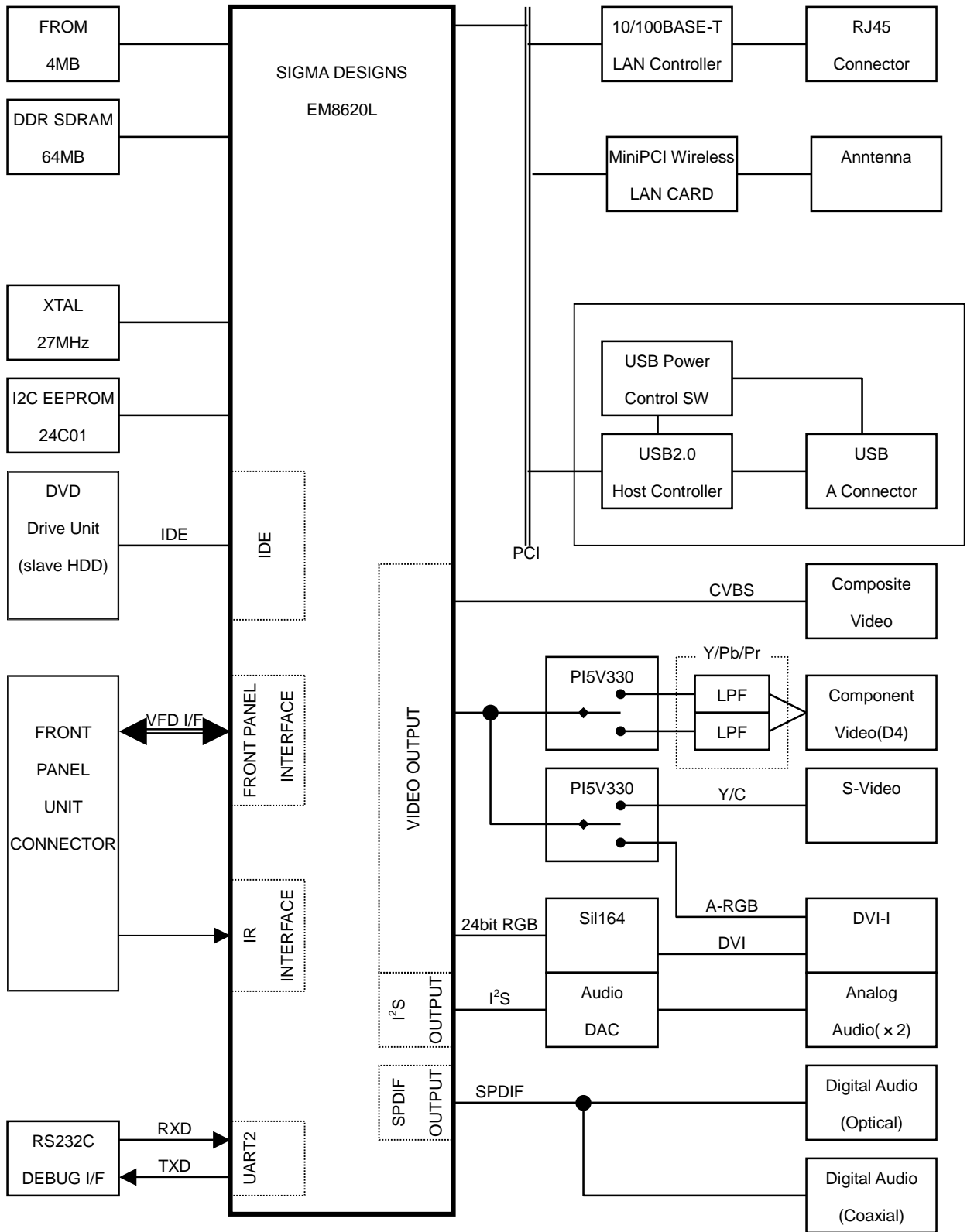
## 2.12 Supported System

- NEC PC98-NX Series, DOS/V PC, and Macintosh
- Windows XP, Windows2000, Windows Me, Windows98 SE, Mac OS X 10.3, and Linux

## 2.13 Safety Standard

- PSE (ELECTRICAL APPLIANCE AND MATERIAL SAFETY LAW OF JAPAN)
- FCC, UL, CE and others are needed the certifications (on customers' demand)

2.14 Block Diagram



### 3 Internal Functional Specification

#### 3.1 Control Buttons

##### 3.1.1 Remote

	FUNCTION
Basic	Power (Standby) / Tray Open (or Close) / Setup / Refresh / Back
Switch	Video Output / Audio Volume
Control	0 to 9 (and alphabets) / Cursors (up/down/left/right) / Clear / Enter
Special	URL/Code (Update FW or DRM encrypted)
Playing	Play/Stop/Forward/Reverse/Pause/Next/Previous/Mute
DVD Playing	Title / Chapter Select / Time Search / Repeat Play / Slow Play Multi Angle / Language / Subtitle

##### 3.1.2 Box Front Buttons

NAME	FUNCTION	NOTE
POWER	Power On/Off	Mechanical connect switch. It's available to move stand-by / resume on "power on".
OPEN/CLOSE	Tray Open/Close	
PLAY	Playback	On opening the tray, it will close the tray and continue to playback.
PAUSE/PLAY	Pause/Stop	On opening the tray, it will close the tray and continue to "pause".
PREV	Go back to the previous file	
NEXT	Go to the next file	
STOP	Stop Playback	

#### 3.2 DVD Loader Drive

##### 3.2.1 Part Number

- ✧ UDMA33 ATAPI INTERFACE
- ✧ Supports 8cm/12cm DISC
- ✧ 512KB DATA BUFFERS

##### 3.2.2 DATA TRANSFER RATE

- ✧ CD: X4 (600KB/sec) --- x10 (1500KB/sec)
- ✧ DVD: X2 (2800KB/sec)

##### 3.2.3 Power Supply

- ✧ 5V/12V

#### 4 Requested Safety / Quality Testing

- Temperature / Humidity Cycle Test (Operation)
- Temperature / Humidity Cycle Test (Storage)
- High Temperature / High Humidity Storage Test
- Low Temperature / Low Humidity Storage Test
- High Temperature / High Humidity Operating Test
- Low Temperature / Low Humidity Operating Test
- Current Consumption Test
- Power Voltage Change Test / Static Electrical Charge Test
- Working Test
- View Transmogrification, discoloration, scarring and etc.
- Work Good working at all functions, and no-degradation for electronic functions

#### 5 Software Functional Specification

##### 5.1 Switching DVD Player & Network Media Player

- Just push one button at DVD player and a Remote Controller, it's available to switch both players (DVD <-> Network)

##### 5.2 Additional Functions

- Supports file extensions (VOB, VRO and M2P) in default
- Available to add file extensions
- Available to choose two or more paths (Default Video, Music, and Image Path)

##### 5.3 DVD Player

- Supported Media: DVD, Video CD, and CD-DA. (Photo CD not supported)
- Copy Protection: DVI out disable on DVD playback (CGMS-A & Macrovision)
- Region Protection: No Play DVD which is not an assigned region code

##### 5.4 Network Media Player

- An I-O DATA Special GUI (Server: Windows, Linux & Mac / Client: Player side's OSD)
- A player side can control to boot a server via network (Wake On LAN)
- I-O DATA "Landisk" is native compatible as NAS
- Disable Internet browsing/radio and Yahoo Messenger/News (Customer Demand)
- Multi Client Available Capacity (Real Time)

	MPEG2 6Mbps	MPEG1 1Mbps	MPEG4 1Mbps
Wired 100Mbps	15 clients	60 clients	60 clients
Wired 10Mbps	1 clients	8 clients	8 clients

WiFi 802.11b	1 clients	5 clients	5 clients
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- Multi Server Selectable Function (Just show all files. No question to select all servers.)
  - ✧ Available servers (Max) 250 servers
  - ✧ Available files on network (Max) 9,999 files

#### 5.5 USB2.0 Media Player

- Play back any files in any flash medias with USB Card reader via USB2.0 I/F

Category	Tested Manufacturer	Note	
MP3 Player	Apple, Creative, RIO	N/A	
MP3 + HDD "Grandisk"	I-O DATA		
MP3 + Cam "MotionPix"	I-O DATA		
Storage devices	I-O DATA, Maxtor, YE DATA	Any USB HDD/MO/FDD	
USB thumb memory	Anyone's	I-O DATA's Tested	
Category	Tested Manufacturer	Tested USB Reader	
Compact Flash	Hitachi, Samsung	I-O DATA USB Memory Reader Recommended	
Micro Drive	IBM		
Magicstor xxx CF-II	GS Magicstor		
Smart Media	Samsung		
xD Picture Media	Fuji Film, Olympus		
Memory Stick	Sony (256MB also)		
Memory Stick Pro	Sony		
Memory Stick Duo	Sony		
Memory Stick Pro Duo	Sony		
Multi Media Card (MMC)	Hitachi (2 <sup>nd</sup> MMC)		
Secure Disk Card (SD)	Panasonic, Toshiba		
Mini SD	Panasonic		
iVDR	Hitachi		iVDR-20
SRAM PC Card	Hitachi		I-O DATA MODS-U640
Flash ATA PC Card	Fujitsu	I-O DATA USB2-PCADP	
HDD PC Card 1.8"	Toshiba		

5.6 Special Features: Additional Support File Details (Network Only)

Video	Audio	Picture
<ul style="list-style-type: none"> <li>◆ MPEG1 (Video CD)</li> <li>◆ MPEG2 (MP@ML 12Mbps)</li> <li>◆ MPEG4 (SP or ASP, AAC or MP3)</li> <li>◆ AVI (DivX 3.11, 4, 5, RMP4, XviD + MP3 or AC3 (2ch) )</li> <li>◆ QuickTime, MOV (3ivX + MP3)</li> <li>◆ <b>ASF with Advanced LinkServer</b></li> <li>◆ <b>XVD with Advanced LinkServer</b></li> <li>◆ <b>DV-AVI with Advanced LinkServer</b></li> </ul>	<ul style="list-style-type: none"> <li>◆ MPEG1 Layer2</li> <li>◆ MP3</li> <li>◆ Ogg Vorbis,</li> <li>◆ WMA</li> <li>◆ AAC</li> <li>◆ PCM (16bit 2ch 44.1/48Khz)</li> </ul>	<ul style="list-style-type: none"> <li>◆ JPEG</li> <li>◆ TIFF</li> <li>◆ BMP</li> <li>◆ PNG</li> <li>◆ GIF (87)</li> <li>◆ Animated GIF (89a)</li> </ul>

6 Display (GUI)

6.1 OSD Video On Demand Display (Client side on the display monitor)



6.2 Control Panel Display (Server side on PC)

