



IEI Technology Corp.



MODEL:

iSignager-800WL-N270

**Video Output, Audio Output, S-Video,
HDMI, VGA, Wireless LAN, USB 2.0
Remote Control**

User Manual

(Hardware)

Rev. 1.01 – 9 July, 2009





Revision

Date	Version	Changes
9 July, 2009	1.01	Changed composite video to component video
24 June, 2009	1.00	Initial release

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Chapter

1

Introduction

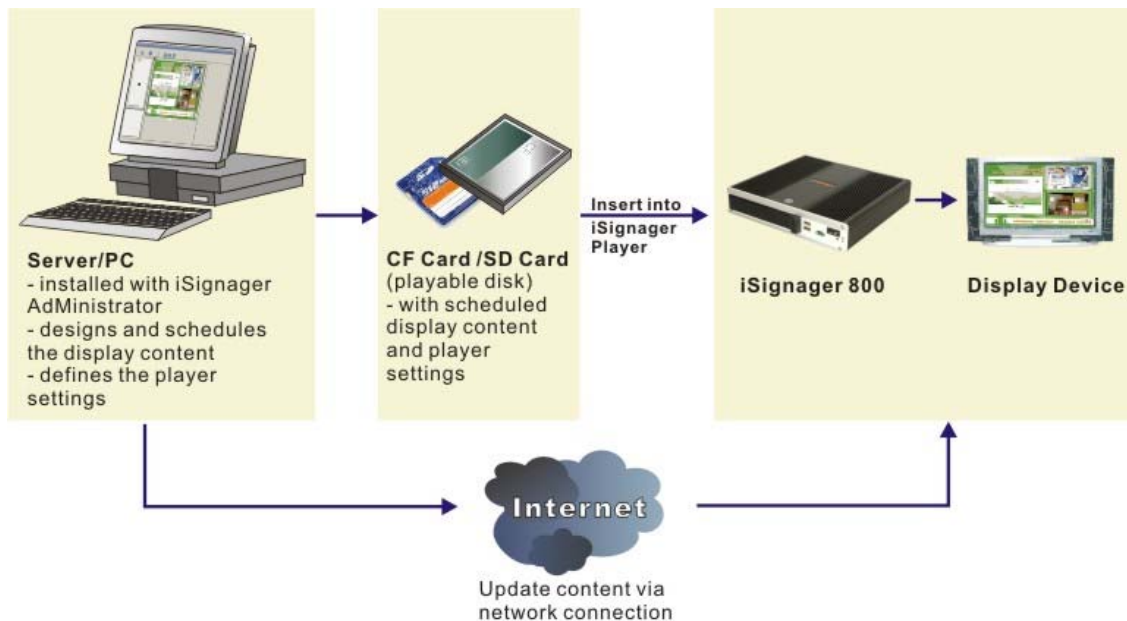
1.1 Important Notice



This iSignager-800WL-N270 user manual only contains the hardware information. For the detailed information of the iSignager AdAdministrator software, please refer to the iSignager AdAdministrator user manual.

1.2 iSignager-800WL-N270 Overview

The iSignager-800WL-N270 is a multimedia device developed by IEI to design and display dynamic, visual and audio contents for a target audience. The user can update the display sources anytime anywhere. With the iSignager-800WL-N270 an advertising station is easily established and promotes the product and services in the simplest way.



iSignager-800WL-N270 Digital Signage Player

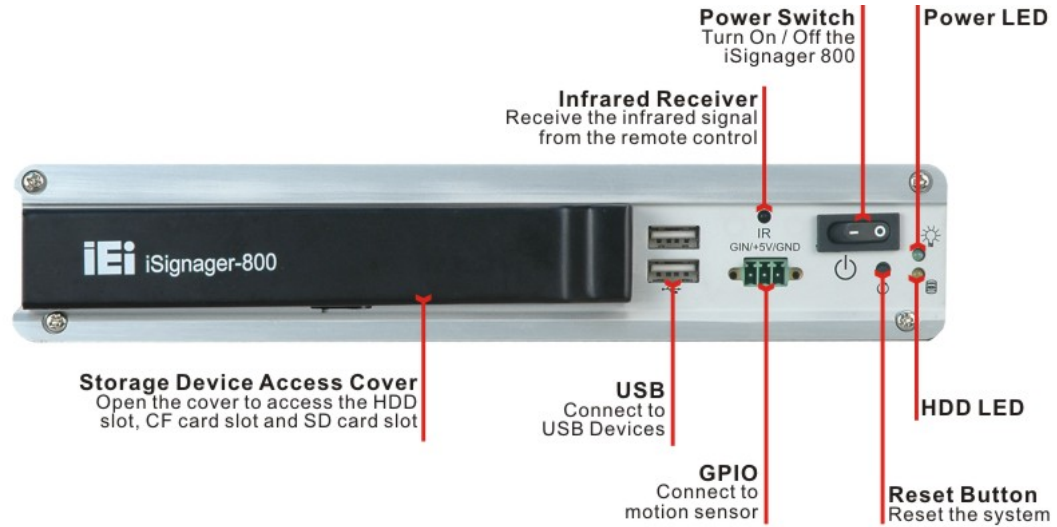
1.3 Features

Some of the iSignager-800WL-N270 features are listed below.

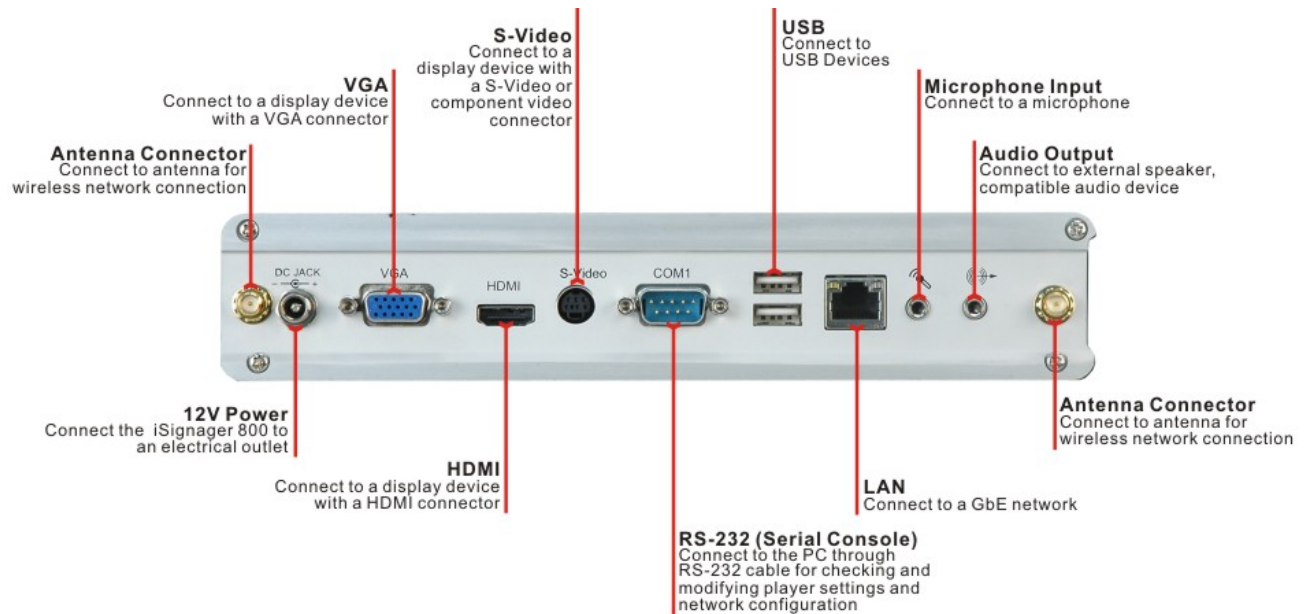
- PC-based structure allows low power consumption and provides superior reliability
- Fanless and slim design
- Preinstalled with the following components:
 - Intel® Atom™ N270 processor
 - 1.0 GB DDR2 SO-DIMM
 - 4.0 GB CF card
 - 2.5" 160 GB SATA HDD
 - Wireless LAN module
- Digital and analog TV card support
- High-resolution displays, HDTV, to produce the best advertising results
- Variety output interface, including HDMI, VGA, S-Video and component (through cable)
- Contents can be stored in CompactFlash® card, SD card, USB 2.0 flash drive or SATA hard disk drive
- VESA mount MIS-D 75 and MIS-D 100 supported
- Infrared remote control for player setting
- Multi-zone layout supports full spectrum of media formats
- Flexible schedule management showing customized contents

1.4 System Overview

1.4.1 iSignager-800WL-N270 System Overview (Front View)



1.4.2 iSignager-800WL-N270 System Overview (Rear View)



iSignager-800WL-N270 Digital Signage Player

1.5 iSignager-800WL-N270 Specifications

The iSignager-800WL-N270 specifications are listed below.

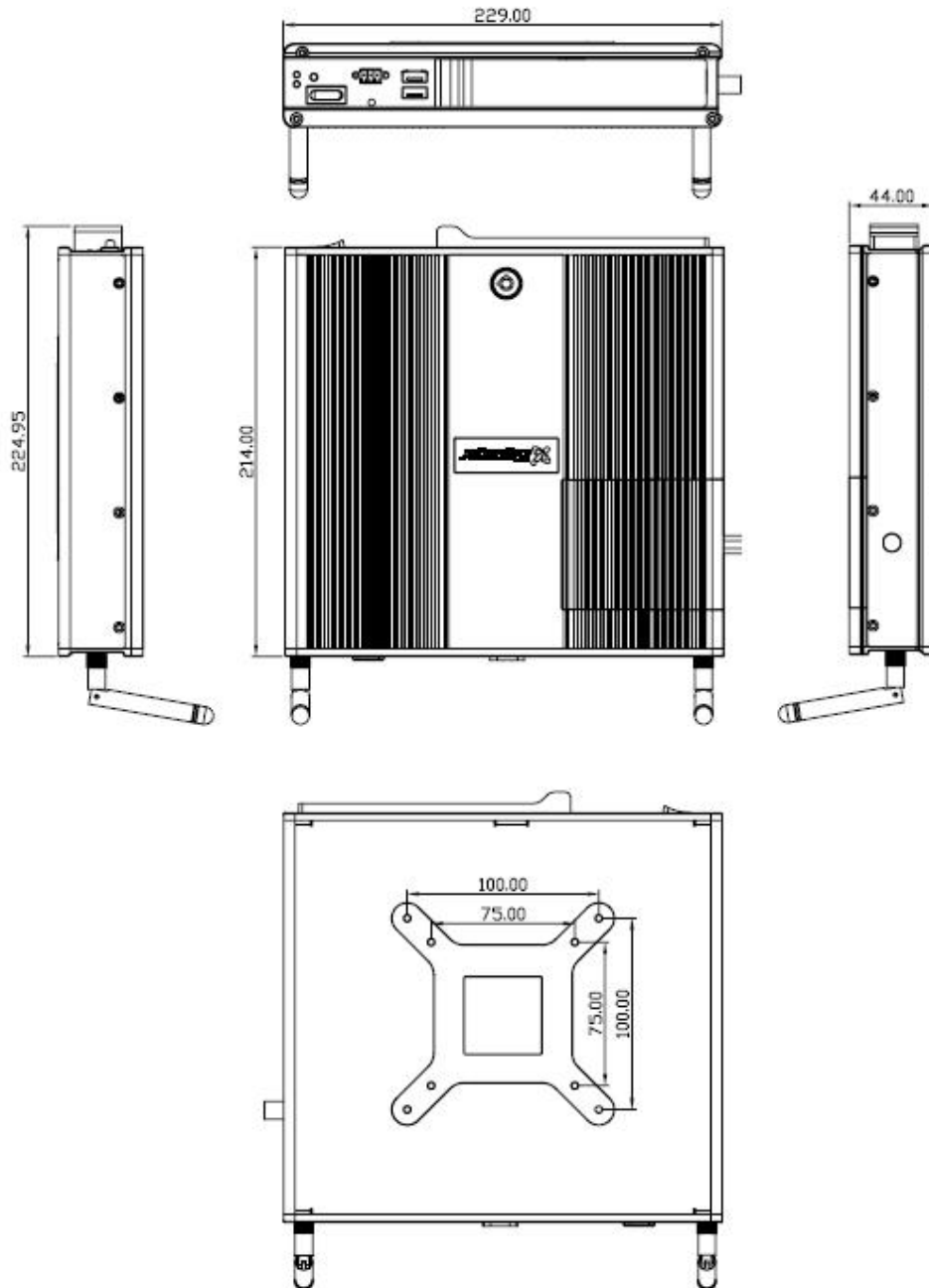
	iSignager-800WL-N270
Processor	Intel® Atom™ N270 CPU preinstalled
Chipset	Intel® 945GSE + ICH7-M
Memory	1.0 GB DDR2 SO-DIMM preinstalled
Video Output	1 x VGA 1 x HDMI 1 x S-Video (also supports component video through S-Video to component cable)
Audio Output	1 x Mic-in 1 x Line-out
Audio Controller	Realtek ALC883 High Definition Audio controller
LAN	One RJ-45 GbE connector by Realtek RTL8111CP Ethernet controller
Wireless LAN	802.11 b/g PCIe mini card
USB	Four USB ports (two on the front, two on the rear)
COM	One RS-232 port
HDD	Preinstalled one 2.5" 160 GB SATA HDD
Storage	Two CF card slots - Built-in 4.0 GB CF card as C drive - One CF card slot on the front panel One SD card slot on the front panel
Expansion	One PCIe mini card slot for digital or analog TV card
Mounting	VESA MIS-D 75 and MIS-D 100
Infrared	Infrared receiver for remote control
Power Input	12 V input

Table 1-1: iSignager-800WL-N270 Specifications

1.6 Dimensions

The dimensions of the iSignager-800WL-N270 are shown below.








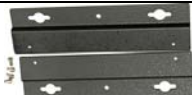
- **Height:** 44.00 mm
- **Width:** 229.00 mm
- **Length:** 214.00 mm



iSignager-800WL-N270 Digital Signage Player

1.7 Packing List

The iSignager-800WL-N270 is shipped with the following components. Should there be any missing parts or defects in the package, please contact IEI immediately.

Quantity	Item	Image
1	iSignager-800WL-N270	
1	AC power adaptor	
1	Power cord	
1	TV-out to S-Video and component video cable	
2	Wireless antennas	
2	Keys	
1	Remote control	
1	VESA wall-mount kit	
2	Wall mount brackets	


1	Companion CD	
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Table 1-2: Packing List

1.8 Before Start

1.8.1 Understand the Display Device

Various types of display devices are supported including,

- CRT TV
- LCD monitors
- LCD TV
- HDTV

Different devices support different input interfaces and resolutions. Please refer to the user guide of the display device for detailed information.

The iSignager-800WL-N270 has various output interfaces including HDMI, TV-out (to S-Video and component video), and VGA, but **only one output port can be used to deliver content at a time.**

The exact output destination and output resolution has to be configured in the iSignager AdMinistrator. Please refer to **Section 2.2** to see the connection between an iSignager-800WL-N270 and a display device.

1.8.2 Choose Mass Storage Device - CF Card, SD Card or HDD

Before using the iSignager-800WL-N270, choose either a CF card, SD card or a HDD as the mass storage device for the iSignager-800WL-N270. Device settings and display content are saved in the mass storage device.

1.8.3 The Concept of the iSignager AdMinistrator

The iSignager AdMinistrator is the software the user can use to design display contents for the iSignager-800WL-N270. Two essential components of the display content are the

iSignager-800WL-N270 Digital Signage Player

layout and the sequence. The following descriptions help the user to understand the concepts of the iSignager AdMinistrator. For the detailed information of the iSignager AdMinistrator, please refer to the iSignager AdMinistrator user manual.

Layout

To design a layout is to arrange what and where the content is displayed. A layout can contains several display items, including:

- Pictures
- Crawling banners
- Rolling banners
- A video
- A digital clock

Multiple files can be added into each display item.

Sequence

A sequence decides the broadcast sequence and the broadcast time of the created layout. After creating a layout, the layout must be added into a sequence. A sequence can include several layouts.

Player

A player refers to an iSignager-800WL-N270. Before transferring the sequence to the iSignager-800WL-N270 for broadcast, a new player must be added and configured correctly in the Player Manager of the iSignager AdMinistrator. More than one player can be added in the Player Manager of the iSignager-800WL-N270.

Export Layout/Sequence

To copy the individual layout or sequence to another directory or computer, please use the “Export Layout/Sequence” function to export the file.

1.9 Supported Formats

The iSignager-800WL-N270 supports many kinds of video, audio and graphic formats. The supported formats are listed in **Table 1-3**. Detailed descriptions of each format can be found in **Appendix A**.



NOTE:

The video in .mpe format can be run by iSignager-800WL-N270, but the video length information will not be available.

iSignager-800WL-N270 Supported Formats	
Video	MPEG-1 VCD format (1.15 Mbps CBR) [.mpg, .mpe, .mpeg, .dat, .m1v] SD and HD MPEG-2 up to 15 Mbps [.mpg, .mpe, .mpeg, .m2v, .vob, .vro] SD and HD MPEG-4 (OpenDivX, XviD, RMP4) [.avi, .divx, .mp4] AVI audio codec: MP3, AC3, PCM, WMA
Audio	MPEG-1 Layer 1 (MP1) [.mp1, .mpa] MPEG-1 Layer 2 (MP2) [.mp2] MPEG-1 Layer 3 (MP3) [.mp3] Microsoft® PCM Wave (WAV) [.wav] Advanced Audio Coding (AAC, ADIF, ADTS) [.aac] Apple MPEG-4 AAC Audio (M4A) [.m4a] Microsoft® Windows® Media Audio version 1 and version 2 (WMA) [.wma, .asf] Microsoft® Windows® Media Audio Professional (WMA Pro) [.asf]
Graphic	16/24/32-bit color BMP, GIF, PNG, JPEG

Table 1-3: iSignager-800WL-N270 Supported Formats

Chapter

2

Installation

2.1 Hardware Installation

2.1.1 iSignager-800WL-N270 Set-Up

To set up the iSignager-800WL-N270, follow the steps below:

Step 1: Connect the player to the display device. Please refer to **Section 2.2** for connection of various kinds of video and audio output signals. To be able to configure various display devices, please install the iSignager AdAdministrator first and add a new player in the player setting.

Step 2: Install the TV card (refer to **Section 2.1.4**) and connect video input to the player (if available).

Step 3: Connect the iSignager-800WL-N270 to the network.

LAN: connect the LAN cable to the RJ-45 connector of the iSignager-800WL-N270.

Wireless LAN: connect the antenna to the antenna connectors of the iSignager-800WL-N270.

Step 4: Mount the iSignager-800WL-N270. (Refer to **Section 2.1.6**)

Step 5: Connect the player to the power supply and turn on the iSignager-800WL-N270.



NOTE:

After the hardware installation, a formatted CF card/SD card with display content and player settings generated by iSignager AdAdministrator has to be installed in the iSignager-800WL-N270 for broadcasting.

iSignager-800WL-N270 Digital Signage Player

2.1.2 CF Card Installation

The iSignager-800WL-N270 series has one CF Type II slot on the front panel. To install the CF card with display content and player settings generated by iSignager AdAdministrator, follow the instructions below.

- Step 1:** Generate a playable disk to the CF card. Follow the steps described in *Generate a Playable Disk Section* of the iSignager AdAdministrator user manual to copy the player settings and the sequence to the CF card. Disconnect the CF card from the computer.
- Step 2:** Open the protection cover from the front panel of the iSignager-800WL-N270. Unlock the cover first if it is locked.
- Step 3:** Locate the CF slot on the front panel.
- Step 4:** Insert the playable CF card into the slot (**Figure 2-1**).



Figure 2-1: CF Card Location (Front Panel)

- Step 5:** Close the plastic cover.

2.1.3 SD Card Installation

The iSignager-800WL-N270 series has one SD card slot on the front panel. To install the SD card with display content and player settings generated by iSignager AdAdministrator, follow the instructions below.

- Step 1:** Generate a playable disk to the SD card. Follow the steps described in *Generate a Playable Disk Section* of the iSignager AdAdministrator user manual to copy the player settings and the sequence to the SD card. Disconnect the SD card from the computer.
- Step 2:** Open the protection cover from the front panel of the iSignager-800WL-N270. Unlock the cover first if it is locked.
- Step 3:** Locate the SD card slot on the front panel.
- Step 4:** Insert the playable SD card into the slot (**Figure 2-2**).



Figure 2-2: SD Card Location (Front Panel)

- Step 5:** Close the plastic cover.

iSignager-800WL-N270 Digital Signage Player

2.1.4 Wireless LAN Antenna Installation

The iSignager-800WL-N270 is preinstalled with a PCIe mini wireless module to support wireless network connection.

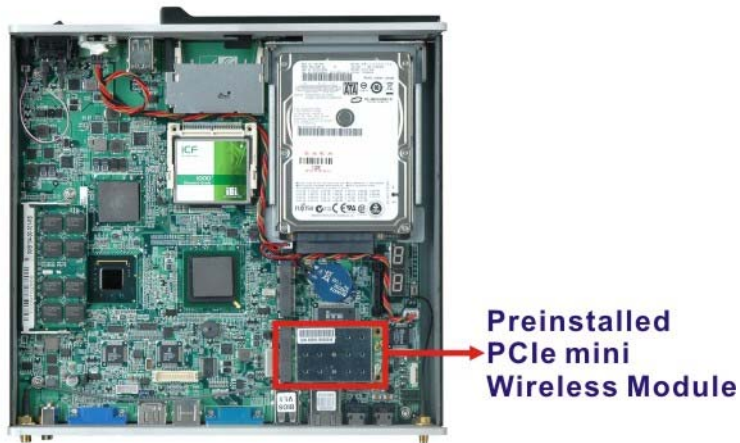


Figure 2-3: PCIe mini Wireless Module

To ensure the uninterrupted connection, the antenna must be installed. Please follow the steps below to install the antenna.

Step 1: Locate the antenna connectors on the rear of the iSignager-800WL-N270.

Step 2: Install the antenna to the connectors.



Figure 2-4: Wireless Antenna Installation

2.1.5 PCIe mini TV Card Installation (Optional)

The iSignager-800WL-N270 has one PCIe mini socket for installing TV card to support TV input signal. To install the PCIe mini TV card and antenna, follow the steps below.

Step 1: Remove the PCIe mini socket access panel from the iSignager-800WL-N270. To remove the access panel, remove the retention screw of the side panel of the iSignager-800WL-N270 and lift the panel off. (**Figure 2-5**)



Figure 2-5: PCIe mini Socket Access Panel Removal

Step 2: Use a screw driver to open the hole for installing antenna connector (**Figure 2-6**).



Figure 2-6: Open Antenna Connector Hole

iSignager-800WL-N270 Digital Signage Player

- Step 3:** Insert the antenna connector into the hole and secure it to the iSignager-800WL-N270 (**Figure 2-7**).
- Step 4:** Install the PCIe mini TV card to the PCIe mini socket.
- Step 5:** Connect the antenna cable to the PCIe mini TV card (**Figure 2-7**).

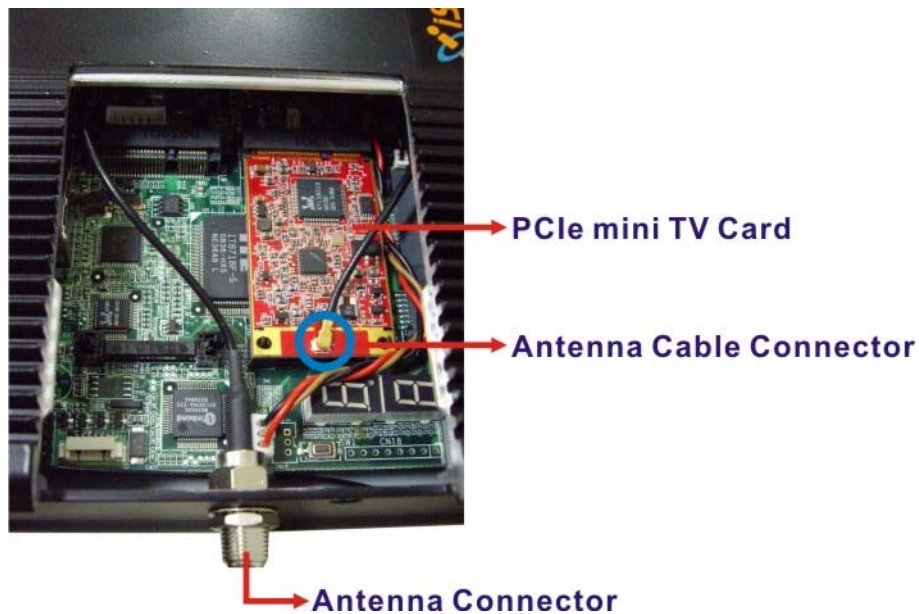


Figure 2-7: TV Card and Antenna Connector Installation

2.1.6 Mounting the iSignager-800WL-N270

2.1.6.1 Mounting the System with VESA Wall Mount Kit

To mount the iSignager-800WL-N270 onto a wall using the VESA MIS-D 75 or 100 wall mount kit, please follow the steps below.

- Step 1:** Select the location on the wall for the wall-mounting bracket.
- Step 2:** Carefully mark the locations of the four bracket screw holes on the wall.
- Step 3:** Drill four pilot holes at the marked locations on the wall for the bracket retention screws.

Step 4: Align the wall-mounting bracket screw holes with the pilot holes.

Step 5: Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them (**Figure 2-8**).

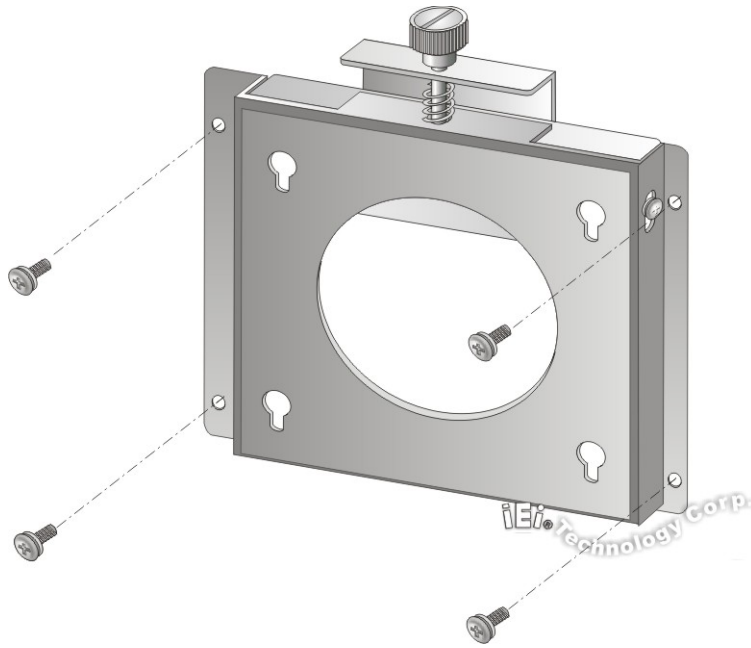


Figure 2-8: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws provided in the wall mounting kit into the four screw holes on the bottom panel of the system and tighten until the screw shank is secured against the bottom panel.

Step 7: Align the mounting screws on the iSignager-800WL-N270 bottom panel with the mounting holes on the bracket.

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the iSignager-800WL-N270 rests securely in the slotted holes. Ensure that all four of the mounting screws fit snugly into their respective slotted holes.

iSignager-800WL-N270 Digital Signage Player



NOTE:

In the diagram below the bracket is already installed on the wall.

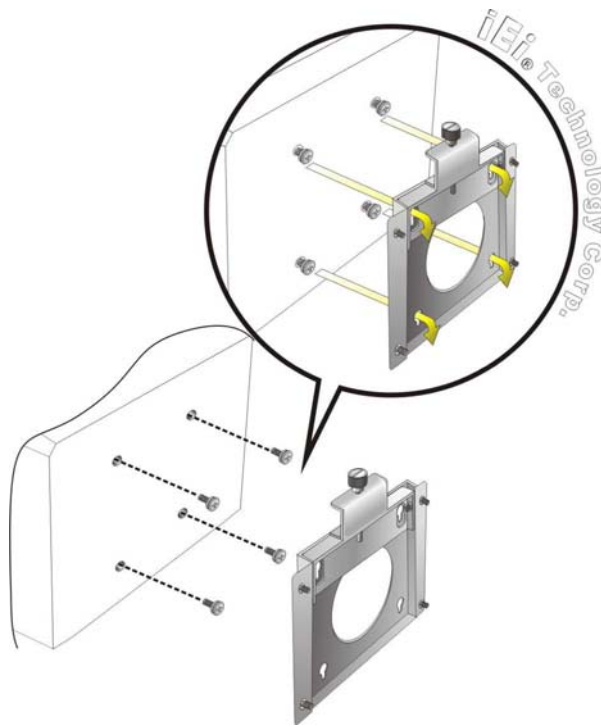


Figure 2-9: Chassis Support Screws

Step 9: Secure the embedded system by fastening the retention screw of the wall-mounting bracket.

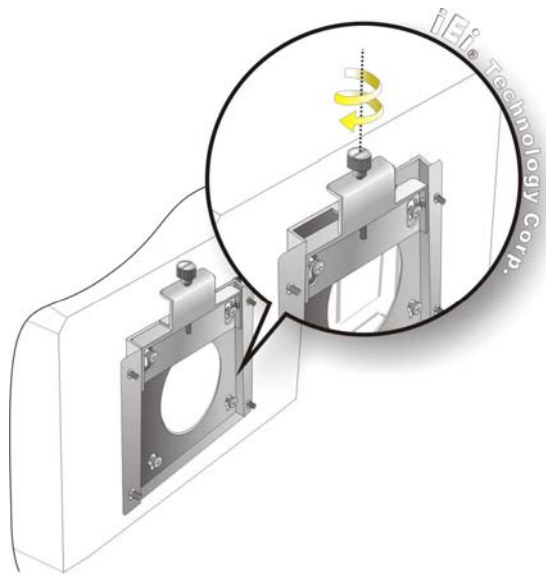


Figure 2-10: Secure the Panel PC

2.1.6.2 Mounting the System with Mounting Brackets

To mount the iSignager-800WL-N270 onto a wall or some other surface using the two mounting brackets, please follow the steps below.

- Step 1:** Turn the iSignager-800WL-N270 over.
- Step 2:** Align the two retention screw holes in each bracket with the corresponding retention screw holes on the sides of the bottom surface.
- Step 3:** Secure the brackets to the system by inserting two retention screws into each bracket.

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Figure 2-11: Mounting Bracket Retention Screws

- Step 4:** Drill holes in the intended installation surface.
- Step 5:** Align the mounting holes in the sides of the mounting brackets with the predrilled holes in the mounting surface.
- Step 6:** Insert four retention screws, two in each bracket, to secure the system to the wall.



Figure 2-12: Wall Mount

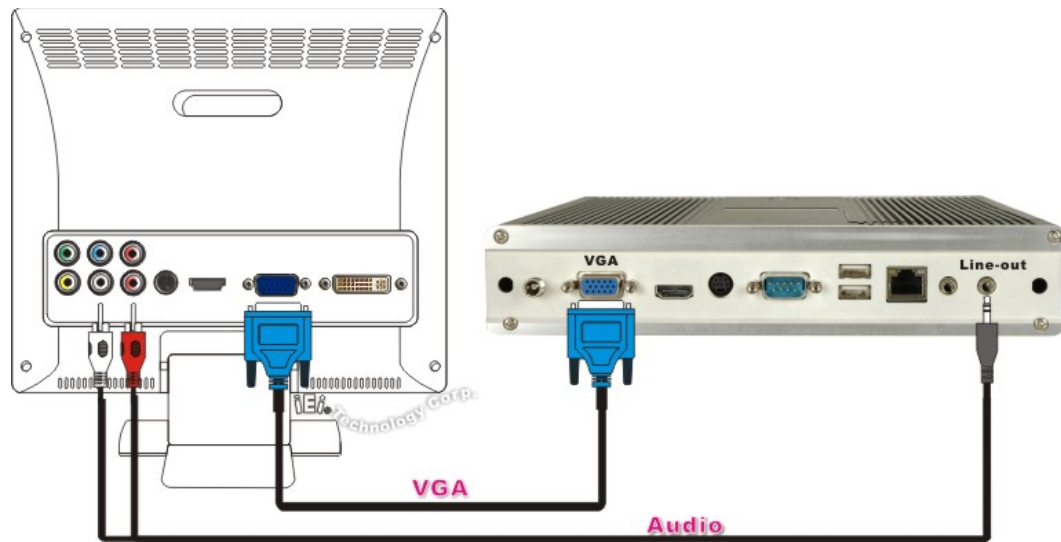
2.2 iSignager-800WL-N270 and Display Device Connection

2.2.1 VGA Connection

To connect the iSignager-800WL-N270 to a VGA display device, follow the instructions below.

Step 1: Connect the VGA cable to the VGA port on the rear panel of the iSignager-800WL-N270. Connect the other side of the VGA cable to the display device.

Step 2: Connect the audio cable to the audio output ports on the rear panel of the iSignager-800WL-N270. Connect the other side of the audio cable to the audio input ports of the display device.



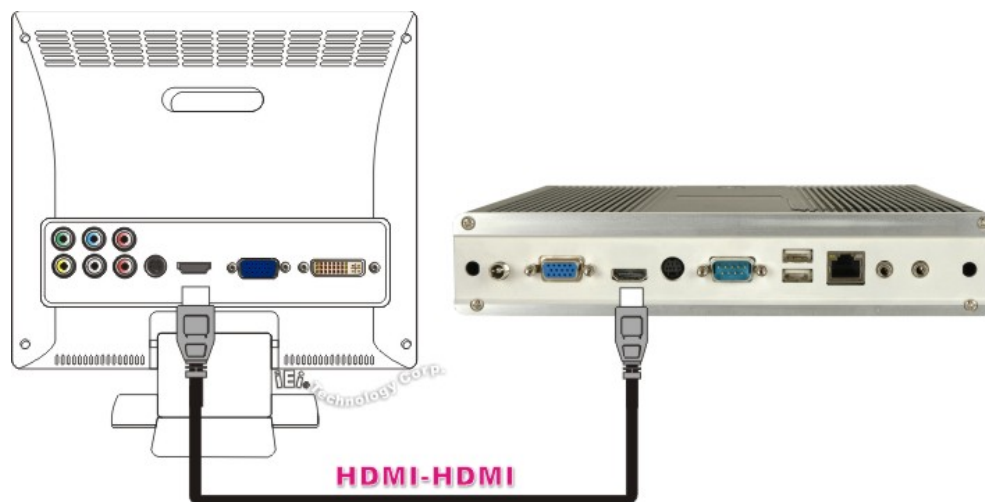
iSignager-800WL-N270 Digital Signage Player

2.2.2 HDMI Connection

To connect the iSignager-800WL-N270 to a HDMI display device, follow the instructions below.

Step 1: Connect the HDMI cable (optional item from IEI) to the HDMI port on the rear panel of the iSignager-800WL-N270. Connect the other side of the HDMI cable to the HDMI port of the display device.

Step 2: Connect the audio cable to the audio output port on the rear panel of the iSignager-800WL-N270. Connect the other side of the audio cable to the audio input port of the display device.



2.2.3 TV Connection

To connect the iSignager-800WL-N270 to a TV, please use the TV-out to component video/S-Video cable (**Figure 2-13**) that come with the iSignager-800WL-N270.



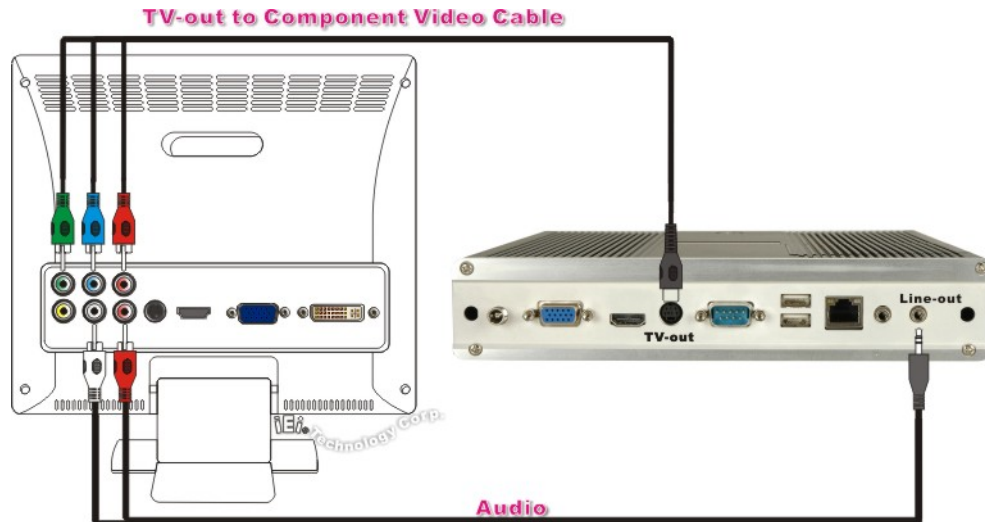
Figure 2-13: TV-out to Component Video/S-Video Cable

2.2.3.1 Component Video Connection

To connect the iSignager-800WL-N270 to a TV with component video interface, follow the instructions below.

- Step 1:** Connect the TV-out to component video/S-Video cable to the TV output port on the rear panel of the iSignager-800WL-N270. Connect the component video connectors on the other side of the cable to the component video ports of the display device.
- Step 2:** Connect the audio cable to the audio output port on the rear panel of the iSignager-800WL-N270. Connect the other side of the audio cable to the audio input ports of the display device.

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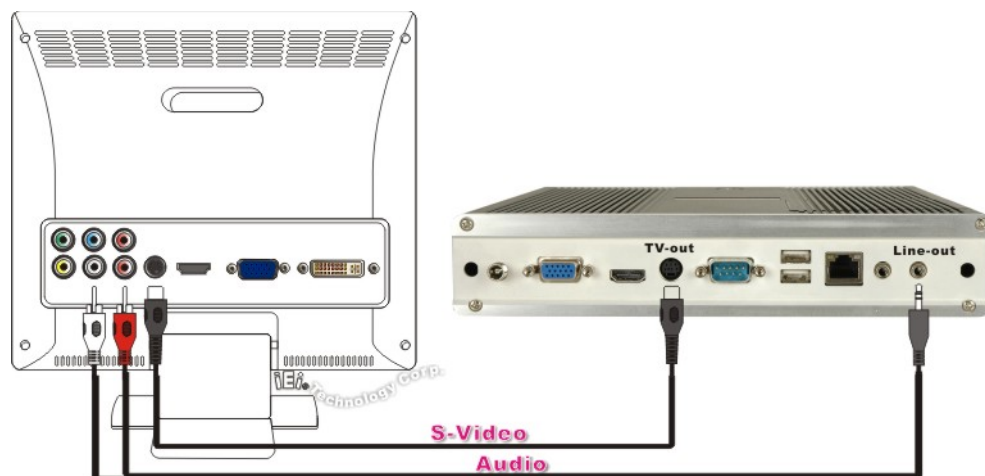


2.2.3.2 S-Video Connection

To connect the iSignager-800WL-N270 to a TV with S-Video interface, follow the instructions below.

Step 1: Connect the TV-out to component video/S-Video cable to the TV output port on the rear panel of the iSignager-800WL-N270. Connect the S-Video connector on the other side of the cable to the S-Video port of the display device.

Step 2: Connect the audio cable to the audio output port on the rear panel of the iSignager-800WL-N270. Connect the other side of the audio cable to the audio input ports of the display device.



2.2.4 Supported Output Ports and Resolutions

The iSignager-800WL-N270 supports multiple resolutions for different output ports. The supported output resolutions are listed in **Table 2-1**.

Output Port	Output Mode	Resolution
HDMI	DVI	640x480, 800x600, 1024x768, 1152x864, 1280x768, 1280x960, 1280x1024, 1360x768, 1400x1050, 1600x1200, 1920x1200
	HDMI	480p (720x480), 720p (1280x720), 1080i (1920x1080), 1080p (1920x1080)
VGA	VGA	640x480, 800x600, 1024x768, 1152x864, 1280x768, 1280x960, 1280x1024, 1360x768, 1400x1050, 1600x1200, 1920x1200
S-Video	TV	640x480(NTSC_M), 720x480(PAL_M)

Table 2-1: Output Resolution

Chapter

3

System Maintenance

3.1 System Maintenance Introduction

If the components of the iSignager-800WL-N270 series fail they must be replaced.

Components that can be replaced include:

- HDD
- CF Module
- SO-DIMM module
- Wireless LAN module

Please contact the system reseller or vendor to purchase the replacement parts. Top cover removal instructions for the iSignager-800WL-N270 series are described below.

3.2 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the maintenance of the iSignager-800WL-N270 may result in permanent damage to the iSignager-800WL-N270 and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the iSignager-800WL-N270. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the panel PC is accessed internally, or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- **Wear an anti-static wristband:** - Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- **Self-grounding:** - Before handling the board touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- **Use an anti-static pad:** - When configuring the iSignager-800WL-N270, place it on an anti-static pad. This reduces the possibility of ESD damaging the iSignager-800WL-N270.

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- **Only handle the edges of the PCB:** - When handling the PCB, hold the PCB by the edges.

3.3 Turn off the Power



WARNING:

Failing to turn off the system before opening it can cause permanent damage to the system and serious or fatal injury to the user.

Before any maintenance procedures are carried out on the system, make sure the system is turned off.

3.4 Opening the System

3.4.1 Removing the Top Panel

To access the iSignager-800WL-N270 internally the top panel must be removed. To remove the top panel, please follow the steps below.

Step 1: Follow all anti-static procedures. See **Section 3.2**.

Step 2: Turn off the power. See **Section 3.3**.

Step 3: Remove the retention screws on both side panels (Figure 3-1).



Figure 3-1: Top Cover Retention Screws (Side Panels)

Step 4: Remove the retention screws from the rear panel and front panel.



Figure 3-2: Top Cover Retention Screws (Front Panel and Rear Panel)

Step 5: Make sure the front cover is unlocked. If not, use the key to unlock the front cover.

Step 6: Lift the cover off the iSignager-800WL-N270.

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3.5 Replacing Components

3.5.1 HDD Replacement

The iSignager-800WL-N270 is preinstalled with a 160 GB SATA HDD. If the HDD is fail, follow the instructions below to replace the HDD.

Step 1: Open the protection cover from the front panel of the iSignager-800WL-N270 (Figure 3-3). Unlock the cover first if it is locked.



Figure 3-3: Front Panel Cover

Step 2: Remove the HDD bracket. The HDD bracket is secured to the iSignager-800WL-N270 with two retention screws (Figure 3-4). Remove the two retention screws and pull the bracket out of the iSignager-800WL-N270.



Figure 3-4: HDD Bracket Retention Screws

Step 3: Remove the HDD from the bracket by removing the four retention screws on both sides.

Step 4: Attach the HDD bracket to the new HDD. To do this, align the four retention screw holes on both sides of the HDD bracket with the retention screw holes on the sides of the HDD. Insert four retention screws into the HDD bracket. Connect the IDE cable to the rear of the HDD.



Figure 3-5: HDD Retention Screws

Step 5: Insert the HDD into the iSignager-800WL-N270.



Figure 3-6: HDD Installation

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Step 6: Secure the HDD to the iSignager-800WL-N270. Align the retention screw holes in the HDD bracket with the retention screw holes on the iSignager-800WL-N270. Insert the two previously removed retention screws.

Step 7: Close and lock the protection cover.

3.5.2 Memory Module Replacement

The flat panel PC is preinstalled with a 1.0 GB DDR2 memory module. If the memory module is fail, follow the instructions below to replace the memory module.

Step 1: Remove the top cover. See **Section 3.4.1** above.

Step 2: Locate the DDR2 SO-DIMM on the motherboard (**Figure 3-7**).

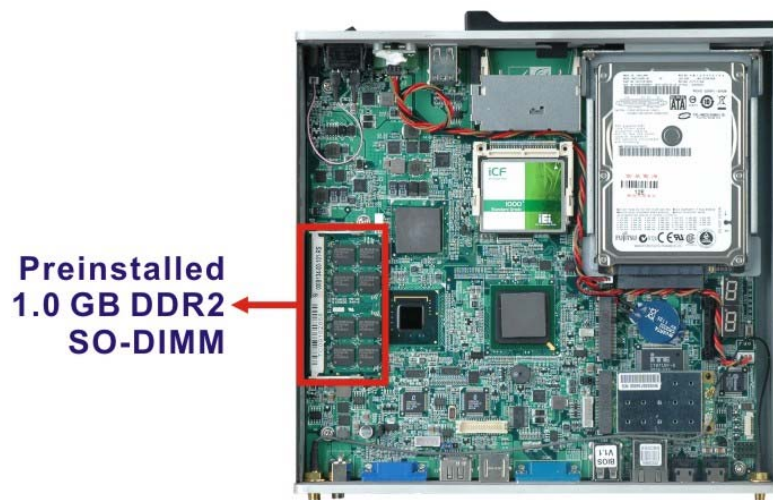


Figure 3-7: SO-DIMM Socket Location

Step 3: Remove the DDR memory module by pulling both the spring retainer clips outward from the socket.

Step 4: Grasp the DDR memory module by the edges and carefully pull it out of the socket.

Step 5: Install the new DDR memory module by pushing it into the socket at an angle (**Figure 3-8**).

Step 6: Gently pull the spring retainer clips of the SO-DIMM socket out and push the rear of the DDR memory module down (**Figure 3-8**).

Step 7: Release the spring retainer clips on the SO-DIMM socket. They clip into place and secure the DDR memory module in the socket.

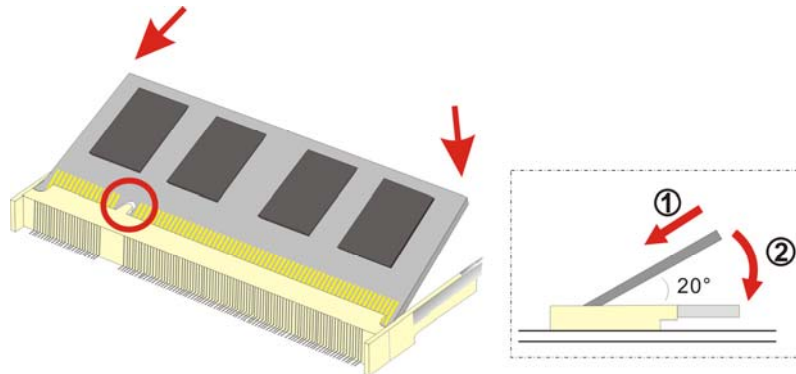


Figure 3-8: DDR SO-DIMM Module Installation

3.5.3 Internal CF Card Replacement

The iSignager-800WL-N270 series has one internal CF Type II slot on the motherboard. To replace the CF card internally, follow the instructions below.

Step 1: Follow all anti-static procedures. See **Section 3.2**.

Step 2: Turn off the power. See **Section 3.3**.

Step 3: Remove the top panel. See **Section 3.4.1**.

Step 4: Locate the CF card socket.

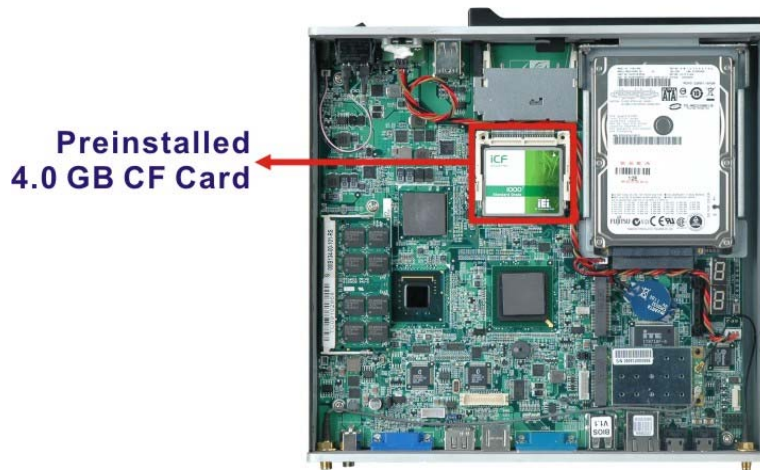


Figure 3-9: Internal CF Card Socket Location

Step 5: Remove the CF card from the socket.

Step 6: Align the new CF card. Make sure the CF card is properly aligned with the CF socket.

Step 7: Insert the new CF card. Gently insert the CF card into the socket making sure the socket pins are properly inserted into the socket. See **Figure 3-10**.

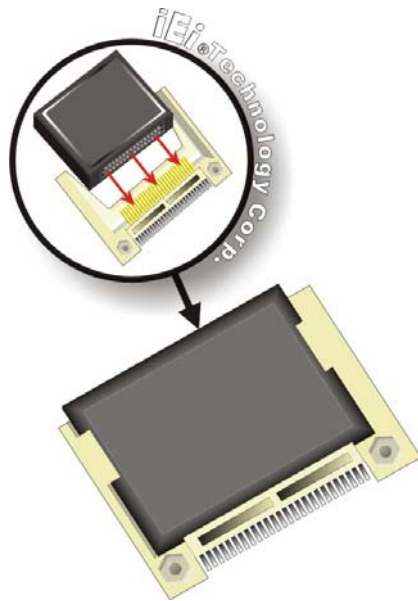


Figure 3-10: CF Card Installation



Appendix

A

Video, Audio and Graphic Formats

A.1 Overview of Video Formats

A.1.1 MPEG-1

MPEG-1 is a standard used to compress audio and video (AV) digital data. MPEG-1 defines a group of AV coding standards agreed upon by MPEG (Moving Picture Experts Group). MPEG-1 video is used by the Video CD format. The output quality at usual VCD bit rates is roughly that of a VCR. MPEG-1 audio layer 3 is the full name for the popular audio format MP3. The MPEG-1 AV format was later extended into the MPEG-2 and MPEG-4 formats. These extensions allow for greater compression for the same size of data.

A.1.2 MPEG-2

MPEG-2 is a standard used primarily to compress audio and video (AV) digital data. MPEG-2 is the designation for a group of coding standards for AV, agreed upon by MPEG (Moving Pictures Experts Group), and published as the ISO/IEC 13818 international standard. MPEG-2 is typically used to encode audio and video for broadcast signals, including direct broadcast satellite and Cable TV. MPEG-2, with some modifications, is also the coding format used by standard commercial DVD movies.

A.1.3 MPEG-4

MPEG-4 is a standard used primarily to compress audio and video (AV) digital data. It is the designation for a group of audio and video coding standards and related technology agreed upon by the ISO/IEC Moving Picture Experts Group (MPEG). The uses for the MPEG-4 standard are web (streaming media) and CD distribution, conversational (videophone), and broadcast television, all of which benefit from compressing the AV stream.

A.1.4 DivX[®] and XviD

DivX is a video codec created by DivX, Inc. which has become popular due to its ability to compress lengthy video segments into small sizes while maintaining relatively high visual quality. DivX uses lossy MPEG-4 Part 2 compression, where quality is balanced against file size for utility.

XviD is a free and open source MPEG-4 video codec. XviD features MPEG-4 Advanced Simple Profile features such as b-frames, global and quarter pixel motion compensation, lumi masking, trellis quantization, and H.263, MPEG and custom quantization matrices.

A.1.5 DVD .ISO

An ISO image (.iso) is an informal term for a disk image of an ISO 9660 file system. Most CD/DVD authoring utilities can deal with ISO images: Producing them either by copying the data from existing media or generating new ones from existing files, or using them to create a copy on physical media.

A.1.6 DVD .VOB and .IFO

A VOB file (DVD-Video Object) is a file type contained in DVD-Video media. It contains the actual Video, Audio, Subtitle and Menu contents in stream form. VOB files are encoded very much like standard MPEG-2 files. When the extension is renamed from .vob to .MPG or .MPEG the file is still readable and continues to hold all information, although most players supporting MPEG-2 don't support subtitle tracks.

IFO file is a DVD information file that stores information about chapters, subtitles and audio tracks. IFO files contain the formatting information of the VOB files, which tells the DVD player how the DVD should be played.

A.1.7 .TS

Transport stream (TS) is used in MPEG-1, MPEG-2, and MPEG-4 systems protocols. TS has features for error correction for transportation over imperfect media, and are used in broadcast applications. The MPEG-2 transport stream is defined in the ISO/IEC standard (13818-1).

A.2 Overview of Audio Formats

A.2.1 Dolby® Digital

Dolby® Digital, or AC-3, is the common version containing 6 total channels of sound, with 5 channels for normal-range speakers (right front, center, left front, right rear and left rear) and one channel for the LFE, or subwoofer. The Dolby Digital format supports Mono and Stereo usages as well.

A.2.2 MP3

MPEG-1 Audio Layer 3, more commonly referred to as MP3, is a popular digital audio encoding and lossy compression format. MP3 is compression format. It provides a representation of pulse-code modulation-encoded (PCM) audio data in a much smaller size by discarding portions that are considered less important to human hearing.

A.2.3 AAC

AAC (Advanced Audio Coding) is one of the audio compression formats defined by the MPEG-2 standard. AAC is a higher quality codec than the MP3, therefore requiring less data for the same audio reproduction. As a result, an AAC file encoded at 96kbps bit rate may actually sound better than an MP3 encoded at 128kbps bit rate.

A.2.4 WAV or WAVE

WAV (or WAVE), short for Waveform audio format, is a Microsoft® and IBM audio file format standard for storing audio on PCs. It is a variant of the RIFF bitstream format method for storing data in "chunks", and thus also close to the IFF and the AIFF format used on Macintosh computers. WAV files store digital music data in a lossless format, meaning the file is digitally identical to its source. However, the result is a very large, uncompressed file.

A.2.5 WMA

WMA, or Windows Media Audio, is proprietary audio codec of Microsoft®. WMA offers the same quality as MP3 for half the bit rate (i.e., half the file size). WMA is now positioning itself as the main competitor to AAC (Advanced Audio Codec), MP3's successor.

A.3 Overview of Graphic Formats

A.3.1 JPEG and JPG

JPEG (pronounced as jay-peg) is a commonly used standard method of lossy compression for photographic images. JPEG is designed for compressing full-color or gray-scale images of natural, real-world scenes. It works well on photographs, naturalistic artwork, and similar material; not so well on lettering, simple cartoons, or line drawings. The file format which employs this compression is commonly also called JPEG; the most common file extensions for this format are .jpeg, .jfif, .jpg, .JPG, or .JPE although .jpg is the most common on all platforms.

A.3.2 BMP

The name is short for bitmap and these files can be saved at various bit-depths. It is a bitmapped graphics format used internally by the Microsoft® Windows® graphics subsystem (GDI), and used commonly as a simple graphics file format on that platform. Images are generally stored with a color depth of 2 (1-bit), 16 (4-bit), 256 (8-bit), 65,536 (16-bit), or 16.7 million (24-bit, referred to as true-color) colors (the bits represent the bits per pixel). 8-bit images can also be gray scale instead of indexed color. 24-bit BMP files are lossless but are much larger in file size than JPEGs.

A.3.3 GIF

GIF (Graphics Interchange Format) is a bitmap image format for pictures with up to 256 distinct colors from the over 16 million representable in 24 bit RGB.

A GIF file employs lossless data compression so that the file size of an image may be reduced without degrading the visual quality, provided the image fits into 256 colors. Therefore GIF is normally used for diagrams, buttons, etc., that have a small number of colors, while the JPEG format is used for photographs.

A.3.4 PNG

PNG (Portable Network Graphics) is a lossless compressed bitmap image format. PNG was created to both improve upon and replace the GIF format with an image file format not requiring a patent license to use. PNG is officially pronounced "ping" and, like GIF and

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BMP, reduces file size by reducing the number of colors. PNG can also be 24-bit true-color and maintain all the original image information, but file sizes are large.

A.4 Standard Definition (SD) Introduction

A.4.1 SDTV

Standard-definition television or SDTV refers to television systems that have a lower resolution than HDTV systems. The term is usually used in reference to digital television, in particular when broadcasting at the same (or similar) resolution as analog systems.

In ATSC, SDTV can be broadcast in 704 pixels × 480 lines with 16:9 aspect ratio (40:33 rectangular pixel), 704 pixels × 480 lines with 4:3 aspect ratio (10:11 rectangular pixel) or 640 pixels × 480 lines with 4:3 ratio (and square pixels). The refresh rate can be any of 24, 30 or 60 pictures per second.

Digital SDTV in 4:3 aspect ratio has the same appearance as the regular analogue TV (NTSC, PAL, PAL2, SÉCAM) minus the ghosting, snowy images and static noises. However, if the reception is poor, the user may encounter various other artifacts such as blockiness and stuttering.

Standards that can broadcast digital SDTV include DVB, ATSC and ISDB. The latter two were originally developed for HDTV, but they have proved to be more often used for their ability to deliver multiple SD video and audio streams via multiplexing, than to use the entire bitstream for one HD channel.

A.5 High Definition (HD) Introduction

High-definition video or HDTV generally refers to any video system of higher resolution than standard-definition (SD), i.e. NTSC, SÉCAM and PAL. HDTV is broadcast digitally, and therefore its introduction sometimes coincides with the introduction of digital television (DTV). High-definition signals require a high-definition television or computer monitor in order to be viewed. High-definition video generally has an aspect ratio of 16:9 (1.78:1). The aspect ratio of regular widescreen film shot today is typically 1.85:1 or 2.40:1. Standard-definition television (SDTV) has a 4:3 (1.33:1) aspect ratio.

High-definition television (HDTV) resolution is 1080 or 720 lines. In contrast, regular digital television is 480 lines (NTSC-like) or 576 lines (PAL/SECAM-like).

A.5.1 Notation

In the context of HDTV, the formats of the broadcasts are referred to using a notation describing:

720p60

720: The number of lines in the display resolution.

P: Progressive frames (p) or interlaced fields (i).

60: Number of frames or fields per second.

For example, the format 720p60 is 1280x720 pixels, progressive encoding with 60 frames per second (60 hertz known as Hz). The format 1080i50 is 1920x1080 pixels, interlaced encoding with 50 fields (25 frames) per second. Often the frame or field rate is left out. It can then usually be assumed to be either 50 or 60, except for 1080p which is only supported as 1080p24, 1080p25 or 1080p30 by consumer HDTV displays.

A frame or field rate can also be specified without a resolution. For example 24p means 24 progressive frames per second and 50i means 50 interlaced frames per second.

A.5.2 Progressive Scan vs. Interlaced Scan

Interlaced scan is the way a television decodes an image—a frame is broken into two fields, odd (1, 3, 5, 7...) and even (2, 4, 6, 8...). A television scans 60 fields per second with 30 odd and 30 even fields created. By combining the two fields every 1/30 of a second, a frame is created thus creating 30 frames per second.

Progressive scan differs from interlaced scan in that the image is displayed on a screen by scanning each line (or row of pixels) in a sequential order rather than an alternate order. Therefore, in progressive scan, the image lines are scanned in numerical order (1, 2, 3) down the screen from top to bottom, instead of in an alternate order (lines or rows 1, 3, 5, etc. followed by lines or rows 2, 4, 6). By progressively scanning the image onto a screen every 60th of a second rather than "interlacing" alternate lines every 30th of a second.

Appendix

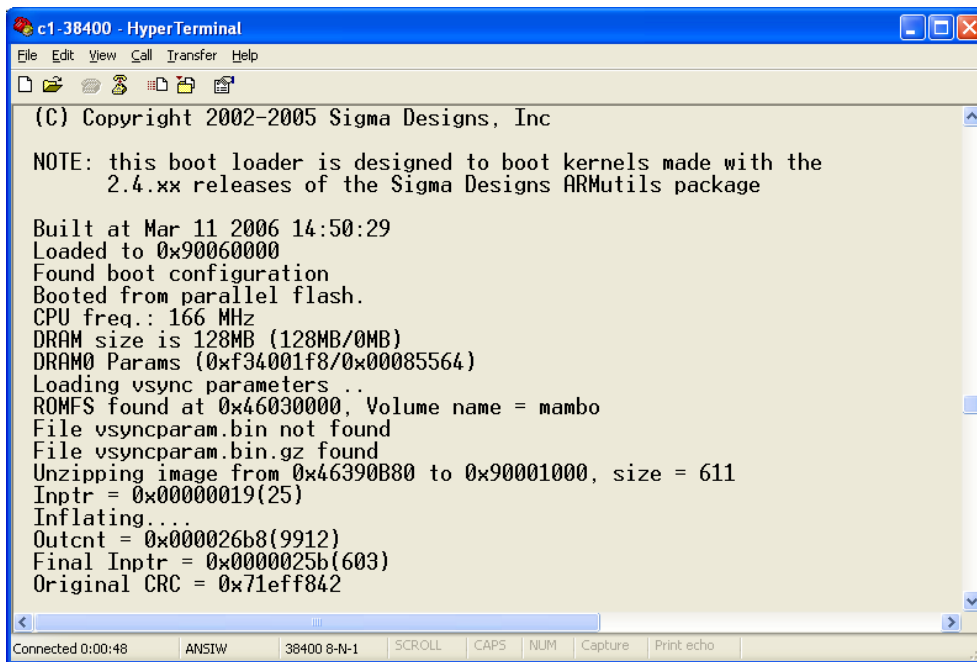
B

Check and Modify the Player Status by Serial Port

B.1 Check and Modify the iSignager-800WL-N270 Player Status by Serial Port

Follow the following steps and command to check and modify the iSignager-800WL-N270 status by RS-232 serial port.

Step 1: In Windows® XP/ Windows® 2000 OS, create a HyperTerminal session and prepare a null modem cable to connect the PC and the iSignager-800WL-N270.



```

c1-38400 - HyperTerminal
File Edit View Call Transfer Help
(C) Copyright 2002-2005 Sigma Designs, Inc

NOTE: this boot loader is designed to boot kernels made with the
      2.4.xx releases of the Sigma Designs ARMutils package

Built at Mar 11 2006 14:50:29
Loaded to 0x90060000
Found boot configuration
Booted from parallel flash.
CPU freq.: 166 MHz
DRAM size is 128MB (128MB/0MB)
DRAM0 Params (0xf34001f8/0x00085564)
Loading vsync parameters ..
ROMFS found at 0x46030000, Volume name = mambo
File vsyncparam.bin not found
File vsyncparam.bin.gz found
Unzipping image from 0x46390B80 to 0x90001000, size = 611
Inptr = 0x00000019(25)
Inflating...
Outcnt = 0x000026b8(9912)
Final Inptr = 0x0000025b(603)
Original CRC = 0x71eff842

Connected 0:00:48  ANSIW  38400 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
  
```

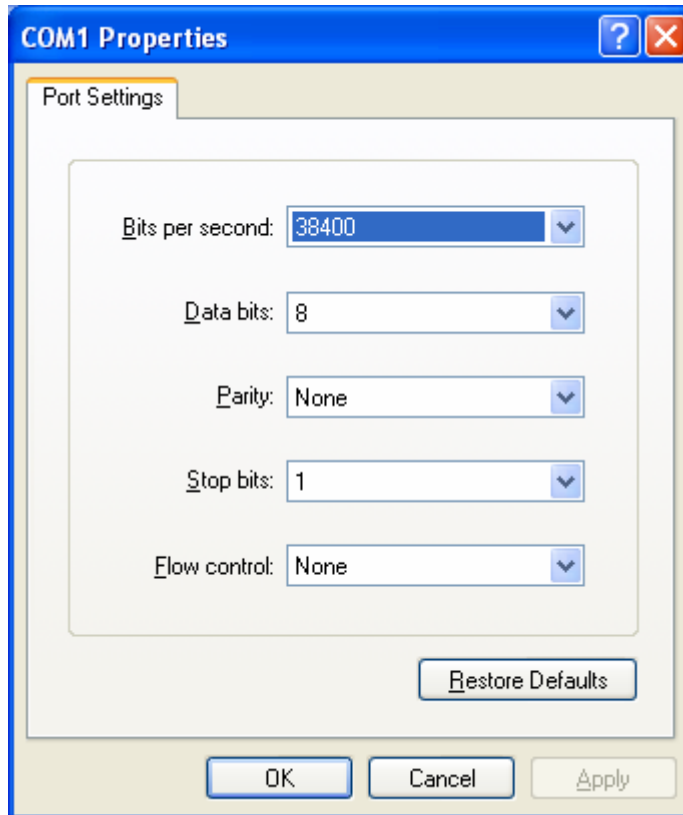


NOTE:

All these settings can be done in the iSignager AdMinistrator.

Step 2: Modify COM1 Settings as below.

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Step 3: Connect RS-232 cable to COM1 of iSignager-800WL-N270:

```
vick[/]#
run vick[/]# cd /bin
```

Step 4: Display Playerinfo function:

```
vick[/bin]# ./playerinfo
BINFMT_FLAT: Loading file: ./playerinfo
```

Usage:

```
./playerinfo -i: To display all information
./playerinfo -sh hostname: To change PC host name
./playerinfo -ch hostname: To change client host name
./playerinfo -ddev <val>: To change device type
./playerinfo -si ip: To change PC IP
./playerinfo -ci ip: To change client IP
./playerinfo -d 1/0: To enable DHCP(1) or to disable DHCP(0)
```

```
./playerinfo -pstop: To stop playlist  
./playerinfo -pstart: To start playlist  
./playerinfo -cstart: To restart client  
./playerinfo -time <val>: To change time  
./playerinfo -wal : To display wireless info  
./playerinfo -reboot : To reboot system
```

Step 5: Examples:

Example 1.1 Use command `playerinfo-i` and show the information of the player is connected via LAN:

```
Glob1[/]# playerinfo -i  
BINFMT_FLAT: Loading file: /new/part1/bin/playerinfo  
*****Information*****  
Romfs Version      : 107  
Client Hostname    : Glob1  
Client Ip eth0     : 10.10.19.253  
Server Hostname    : RD-VICKWU-NB  
Server Ip          : 10.10.18.37  
Display Device     : VGA 1024x768 60  
Apps Version       : 106  
  
WIFI :  
BINFMT_FLAT: Loading file: /new/part1/bin/playerinfo  
no wireless extensions
```

Example 1.1 Use command `playerinfo-i` and show the information of the player is connected via Wifi

```
vick[/]# playerinfo -i  
BINFMT_FLAT: Loading file: /new/part1/bin/playerinfo  
*****Information*****  
Romfs Version      : 200  
Client Hostname    : vick  
Client Ip eth0     : 192.168.10.7  
Server Hostname    : RD-VICKWU-NB  
Server Ip          : 192.168.10.5
```

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```
Dhcp                : disable
Display Device     : VGA 1360x768 60
Apps Version       : 200

WIFI :
BINFMT_FLAT: Loading file: /new/part1/bin/playerinfo
Client ra0 Ip      : 192.168.10.3
Access Point       : 00:13:46:87:EA:02
Encryption key     : 132-3334-3536-3738-3930-6162-63
ESSID              : "iei_sw2"
vick[/]#
```

Example 2. Set iDSServer hostname to client system

```
vick[/bin]# ./playerinfo -sh RD-VICKWU-NB

BINFMT_FLAT: Loading file: ./playerinfo
Changing server hostname
Done
```

Example 3. Set client hostname to client system

```
vick[/bin]# ./playerinfo -ch vick

BINFMT_FLAT: Loading file: ./playerinfo
Changing client hostname
```

Example 4. Set device display mode type

```
vick[/bin]# ./playerinfo -ddev VGA 1360x768 60

BINFMT_FLAT: Loading file: ./playerinfo
Display Device: VGA 1360x768 60
```

Example 5. Set iDSServer IP to client system

```
vick[/bin]# ./playerinfo -si 10.10.10.58

BINFMT_FLAT: Loading file: ./playerinfo
```

Changing server IP
Done

Example 6. Set client IP to client system

```
vick[/bin]# ./playerinfo -ci 10.10.10.74
```

```
BINFMT_FLAT: Loading file: ./playerinfo
```

```
Changing client IP 10.10.10.74
```

```
74
```

```
eth0: link up, 100Mbps, full-duplex, lpa 0x45E1
```

```
vick[/bin]# interface < eth0 > is up and running
```

```
=====
```

```
the systems IP address is :10.10.10.74
```

```
connecting to windows server.....
```

```
windows server ip address is : 10.10.10.58
```

```
windows server hostname is : RD-VICKWU-NB
```

```
connection = Y
```

```
CONNECTED TO WINDOWS SERVER!
```

```
=====
```

```
gateway: Unable to read gateway from interface
```

```
=====
```

```
Mac address of the board is: #00:0b:6a:36:a3:10
```

```
Default gateway of the board is: 0.0.0.0
```

```
Subnet mask is: 255.255.254.0
```

```
Host name is: vick
```

```
DNS of the board is: 172.16.2.6
```

```
=====
```

```
#00:0b:6a:36:a3:10#10.10.10.74#172.16.2.6#vick#0.0.0.0#255.255.254.0#0#0#0#0#0  
##
```


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Example 7. Set DHCP action

```
vick[/bin]# ./playerinfo -d 1

BINFMT_FLAT: Loading file: ./playerinfo
Changing dhcp.txt
Done
```

Example 8. Stop playing

```
vick[/bin]# ./playerinfo -pstop

BINFMT_FLAT: Loading file: ./playerinfo
killall: pictureplayer: no process killed
killall: play0: no process killed
killall: play1: no process killed
killall: play2: no process killed

munmap of non-mmapped memory by process 1811 (play_animate): 17e02000
munmap of non-mmapped memory by process 1812 (play_animate): 17e02000

killall: play_rotate: no process killed
killall: nano-X: no process killed
killall: audioplayer: no process killed
killall: audio: no process killed
killall: saver: no process killed

munmap of non-mmapped memory by process 1806 (banner): 17e02000
munmap of non-mmapped memory by process 1807 (banner): 17e02000
munmap of non-mmapped memory by process 1808 (banner): 17e02000

killall: mbanner: no process killed
killall: videoin: no process killed
```

Example 9. Restart Play action

```
vick[/bin]# ./playerinfo -pstart

BINFMT_FLAT: Loading file: ./playerinfo
vick[/bin]# *****PLAYING
```

```
/new/playlist5.txt*****Fading: disabled
```

```
Alpha0: 255
Alpha1: 255
D 0
Running check
iEi WCODE 1 0x05 0x02
iEi RCODE 1 0x05 0x02
```

Example 10. Restart client connect

```
vick[/bin]# ./playerinfo -cstart
```

```
BINFMT_FLAT: Loading file: ./playerinfo
```

```
vick[/bin]# interface < eth0 > is up and running
```

```
=====
the systems ip address is :10.10.10.74
```

```
connecting to windows server.....
```

```
windows server ip address is : 10.10.10.58
```

```
windows server hostname is : RD-VICKWU-NB
```

```
connection = Y
```

```
CONNECTED TO WINDOWS SERVER!
```

```
=====
Mac address of the board is :#00:0b:6a:36:a3:10
```

```
Default gateway of the board is :10.10.10.1
```

```
Subnet mask is :255.255.254.0
```

```
Host name is :vick
```

```
DNS of the board is :172.16.2.6
=====
```

```
#00:0b:6a:36:a3:10#10.10.10.74#172.16.2.6#vick#10.10.10.1#255.255.254.0#0#0#0#
0#
```

Example 11. Set system time

```
vick[/bin]# ./playerinfo -time 072211142006
```

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```

BINFMT_FLAT: Loading file: ./playerinfo
Setting the date
Sat Jul 22 11:14:00 MDT 2006

```

Example 12. Reboot the player

```
vick[/bin]# ./playerinfo -reboot
```

Step 6: Use the following command to modify LAN settings:

- `ifconfig eth0 IP : set client IP value`
- `ifconfig eth0 netmask : set client mask`
e.g. `ifconfig eth0 netmask 192.168.1.255`
- `ifconfig eth0 broadcast: set client broadcast`
e.g. `ifconfig eth0 broadcast 255.255.255.0`

Step 7: Use the following command to modify Wifi settings:

- `ifconfig ra0 IP : set client IP value`
- `ifconfig ra0 netmask : set client mask`
e.g. `ifconfig ra0 netmask 192.168.1.255`
- `ifconfig ra0 broadcast: set client broadcast`
e.g. `ifconfig ra0 broadcast 255.255.255.0`

B.1.1 Successful Message—LAN Connection

If LAN is successfully connected, the following messages are shown.

```

*****PLAYING/new/playlist7.txt*****
Fading : disabled
vick[/]# Alpha0 : 255
Found RT61 Wifi Card
Alpha1 : 255
D 0
Runing check
killall: rcli: no process killed
killall: client: no process killed

```

```
interface < eth0 > is up and running
=====
the systems ip address is :192.168.1.10
connecting to windows server.....
windows server ip address is : 192.168.1.5
windows server hostname is : RD-VICKWU-NB
error status-w: Contact iEi code=0x05 failed
connection = Y
CONNECTED TO WINDOWS SERVER!
=====
iEi WCODE 1 0x05 0x02
iEi RCODE 1 0x05 0x02
=====
Mac address of the board is :#00:9b:6b:36:a8:70
Default gateway of the board is :192.168.1.1
Subnet mask is :255.255.255.0
Host name is :vick
DNS of the board is :127.0.0.1
=====
#00:9b:6b:36:a8:70#192.168.1.10#127.0.0.1#vick#192.168.1.1#255.255.255.
0#0#0#0##read returned : 20
```

B.1.2 Successful Message—Wifi Connection

If Wifi is successfully connected, the following messages are shown.

```
eth0: link down
ra0
killall: udhcpc: no process killed
Found RT61 Wifi Card
12:34:56:78:90:00:00:00:00:00:00:00:00:00:00:00:
RT61: RfIcType= 3
Probing for Wifi Card.....
inf_name ra0
```

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```

WiFi IP                { 10.10.88.100 }
WiFi Encryption Enable { Y }
WiFi Key type          { open }
WiFi cipher type       { WEP }
WiFi key index         { 1 }
WiFi Key Length        { 128 }
WiFi Key               { 1234567890abc }
WiFi Essid            { iei_sw2 }
WiFi Network Type     { infra }

Setting WiFi Ip Address.....
Setting Network Type.....
Command :iwpriv ra0 set NetworkType=infra
Setting Authenticaion Mode....
Command :iwpriv ra0 set AuthMode=open
Setting Encryption Type....
Command :iwpriv ra0 set EncrypType=WEP
Setting Default Key ID....
Command :iwpriv ra0 set DefaultKeyID=1
Setting Key .....
Command :iwpriv ra0 set Key1=1234567890abc
31:32:33:34:35:36:37:38:39:30:61:62:63:00:00:00:
Setting SSID....
Command :iwpriv ra0 set SSID=iei_sw2

interface < eth0 > is Down
interface < ra0 > is up and running
new compiled on Sep 21 2006 19:02:59

```

B.2 Checking Connection

There are several ways to check if the connection exists between the iSignager-800WL-N270 and PC.

B.2.1 Check the LED

Check the LEDs on the top of the LAN port in the rear panel of the iSignager-800WL-N270. The green LED on the right side indicates LAN or Wifi is linked on the port. The orange LED on the left side indicates transmission activity.

B.2.2 Ping in DOS Environment or Hyper Terminal Session

B.2.2.1 PC

To check if the specific IP connection exists in the server side, check in DOS environment of the server. In DOS environment, type “ping” followed by the LAN IP or WLAN IP, e.g. ping 10.10.12.82. Press Enter. If the reply message is shown, the connection exists, e.g.

```
Reply from 10.10.12.82: bytes=32 time<10ms TTL=128
Reply from 10.10.12.82: bytes=32 time<10ms TTL=128
Reply from 10.10.12.82: bytes=32 time<10ms TTL=128
```

B.2.2.2 iSignager-800WL-N270

To check if the specific IP connection exists in the client side, check in a Hyper Terminal session of the iSignager-800WL-N270. To create a Hyper Terminal session, please refer to **Section B.1**. In Hyper Terminal session, type “ping” followed by the LAN IP or WLAN IP, e.g. ping 10.10.19.253. Press Enter. If the reply message is shown, the connection exists, e.g.

```
64 bytes from 10.10.19.253: icmp_seq=0 ttl=64 time=1.3 ms
64 bytes from 10.10.19.253: icmp_seq=1 ttl=64 time=0.7 ms
64 bytes from 10.10.19.253: icmp_seq=2 ttl=64 time=0.5 ms
```

B.2.3 Check the Status in the Player Manager

The iSignager AdMinistrator detects the player status automatically and shows the player status in the “Status” column in the Player Manager window. The status of the player is either On-Line, Off-Line or Playing.

B.3 iSignager-800WL-N270 Network Behavior

The user can setup LAN and Wifi settings in the iSignager-800WL-N270 at the same time. However, the iSignager-800WL-N270 takes LAN as the first priority by default when booting up. If the LAN is successfully activated, the iSignager-800WL-N270 does not activate the Wifi settings. The Wifi settings is activated only when the LAN activation process is failed.



Appendix

C

Hazardous Materials Disclosure

C.1 Hazardous Material Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	X	O	O	O	O	X
Display	X	O	O	O	O	X
Printed Circuit Board	X	O	O	O	O	X
Metal Fasteners	X	O	O	O	O	O
Cable Assembly	X	O	O	O	O	X
Fan Assembly	X	O	O	O	O	X
Power Supply Assemblies	X	O	O	O	O	X
Battery	O	O	O	O	O	O

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006

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此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有“环境友好使用期限”的标签，此期限是估算这些物质“不会有泄漏或突变”的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	X	○	○	○	○	X
显示	X	○	○	○	○	X
印刷电路板	X	○	○	○	○	X
金属螺帽	X	○	○	○	○	○
电缆组装	X	○	○	○	○	X
风扇组装	X	○	○	○	○	X
电力供应组装	X	○	○	○	○	X
电池	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。
 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。