

# *PR126g*

## *Power Line Router*

*User Guide*



## Table of Contents

TABLE OF CONTENTS .....	2
FCC CAUTION .....	4
CHAPTER 1 INTRODUCTION.....	5
1.1 THE MAIN INSTRUCTION OF PR 126G .....	5
1.2 MAIN FEATURES .....	5
1.3 THE INTRODUCTION OF FUNCTION OF THREE MODES QUICK SETUP.....	6
1.3.1 <i>The introduction of Quick Setup of Router mode</i> .....	6
BASIC SETUP.....	6
SERVER SETUP .....	6
1.3.2 <i>The introduction of Quick Setup of AP mode</i> .....	7
BASIC SETUP.....	7
APPLICATION SETUP .....	7
1.3.3 <i>The introduction of Quick Setup of Client mode</i> .....	7
BASIC SETUP.....	8
APPLICATION SETUP .....	8
1.3.4 <i>The main introduction of PC Utility</i> .....	8
1.4 HARDWARE SPECIFICATION .....	9
1.4.1 <i>Hardware Features</i> .....	9
1.4.2 <i>Hardware Block Diagram</i> .....	10
1.4.3 <i>LED Feature SPEC</i> .....	11
1.5 SOFTWARE SPECIFICATION.....	12
1.5.1 <i>Router Mode</i> .....	12
1.5.2 <i>AP Mode</i> .....	13
1.5.3 <i>Client Mode</i> .....	15
1.6 NECESSARY APPROVALS.....	16
1.7 APPENDIX .....	16
1.7.1 <i>MFP</i> .....	17
1.7.2 <i>Web Camera</i> .....	18
1.7.3 <i>USB HDD</i> .....	20
1.8 OPERATION SYSTEM.....	21
1.9 BROWSER .....	21
1.10 UTILITY .....	21
CHAPTER 2 TECHNOLOGY OVERVIEW .....	21
2.1 INTRODUCTION OF INT5500 CHIP SET (HOME PLUG1.0 WITH TURBO) .....	22

<b>CHAPTER 3 THE MAIN FRAME OF FAMILY APPLICATIONS .....</b>	<b>23</b>
<b>3.1 FAMILY APPLICATIONS.....</b>	<b>23</b>
<b>3.2 TARGET APPLICATIONS .....</b>	<b>24</b>

---

## Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- . Reorient or relocate the receiving antenna.
- . Increase the separation between the equipment and receiver.
- . Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- . Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution:** To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

## FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

## Chapter 1 Introduction

### 1.1 The Main Instruction of PR 126g

The Mini Router of PR126g is a portable and convenient wireless solution for the traveling business person, which features with router, bridge, AP and USB port, and it can connect with USB MFP, provide with the shared of scanner, printer and card reader to the users of local area network. Also, monitor your home with a Webcam via Mini Router. Additionally, it can also be connected with the USB hard disk or flash, and then it will be the FTP server. When it's connected with USB Audio Adapter, it can play the audio file of PC port remotely via internet for broadcast. Navi PR126g also features with the Power Line, which can replace with Ethernet line, is very easy to use and much convenient for the users.

### 1.2 Main Features

#### 1. Function of auto setup

The unique design of Utility can help the beginners easily log on internet and complete the server setup.

#### 2. Three operation modes

It Features with Router, AP and Client, and it's used with the hardware switch for three modes changing.

#### 3. Interface of webpage style

The interface of webpage style is very friendly to east to use, you can just open the browser then go to setup to use the function.

#### 4. MFP Server

Support the sharing of MFP, such as the card reader, scanner, printer.

#### 5. Webcam Server

Support the function of webcam record, and it can be the monitoring system for you home.

#### 6. Samba Server

It's such as the network to share the file and printer.

#### 7. FTP Server

It can be used with the USB hard disk or flash as the net disk.

#### 8. Audio Server

It's used with the attached transferor to connect with the audio equipment, and play music directly via local area network.

#### **9. Encryption and authentication system**

It has the encryption and authentication system of WEP, WPA, WPA2, and 802.11x, provide the users with more data protection.

#### **10. In-time monitoring function**

It can record the video of webcam for home safety monitoring.

#### **11. Function of Power Line**

It's used with the family power line to transmit the data, and it doesn't require additional setup, you can just play and plug any time.

### **1.3 The introduction of function of three Modes Quick Setup**

#### **1.3.1 The introduction of Quick Setup of Router mode**

This Quick Setup function is aimed to provide the beginning users with the easy and quick way to set up this router, and then use it conveniently. The items of this Quick Setup are as the followings:

- **Basic Setup**

- 1. WAN Setup** – necessary default setup
- 2. LAN Setup** – necessary default setup
- 3. Wireless Setup** – necessary default setup
- 4. Time Server Setup** – necessary default setup
- 5. Password Setup** – necessary default setup

- **Server Setup**

- 1. USB Disk Management Setup**– necessary default setup
- 2. User Account Management Setup** – necessary default setup
- 3. Firewall Setup** – optional
- 4. Qos Setup** – optional
- 5. Web Camera Setup** – optional
- 6. MFP Server Setup** – optional
- 7. Samba Server Setup** – optional

## 8. Audio Server Setup – optional

### 1.3.2 The introduction of Quick Setup of AP mode

When the slide switch turn to AP mode, Navi PR126g will become the Bridge with two LAN ports. Navi PR126g can connect with the up Router or AP via LAN port, Wireless(WDS) or Powerline, and attain the IP via up DHCP.

- **Basic Setup**

1. **LAN Setup** – necessary default setup
2. **Wireless Setup** – necessary default setup
3. **Time Server Setup** – necessary default setup
4. **Password Setup** – necessary default setup

- **Application Setup**

1. **USB Disk Management Setup**– necessary default setup
2. **User Account Management Setup** – necessary default setup
3. **FTP Server Setup** – optional
4. **Web Camera Setup** – optional
5. **MFP Server Setup** – optional
6. **Samba Server Setup** – optional
7. **Audio Server Setup** – optional

### 1.3.3 The introduction of Quick Setup of Client mode

When the slide switch turn to Client mode, Navi PR126g will become a network adapter, and it will be automatically shown the WAN port, LAN port, Wireless and bridge together, the PC client can connect to internet via wireless.

- **Basic Setup**

1. **Site Survey Setup** – necessary default setup
2. **Wireless Setup** – necessary default setup
3. **Time Server Setup** – necessary default setup
4. **Password Setup** – necessary default setup

- **Application Setup**

1. **USB Disk Management Setup**– necessary default setup
2. **User Account Management Setup** – necessary default setup
3. **FTP Server Setup** – optional
4. **Web Camera Setup** – optional
5. **MFP Server Setup** – optional
6. **Samba Server Setup** – optional
7. **Audio Server Setup** – optional

### 1.3.4 The main introduction of PC Utility

Navi PR126g provides with the utility program, which can automatically detect the operation mode of Router and its connected USB device, so that it will help the users can easily and quickly do the setup step-by-step without entering GUI; after completing the quick setup of utility, you can log on internet and use the function of server.



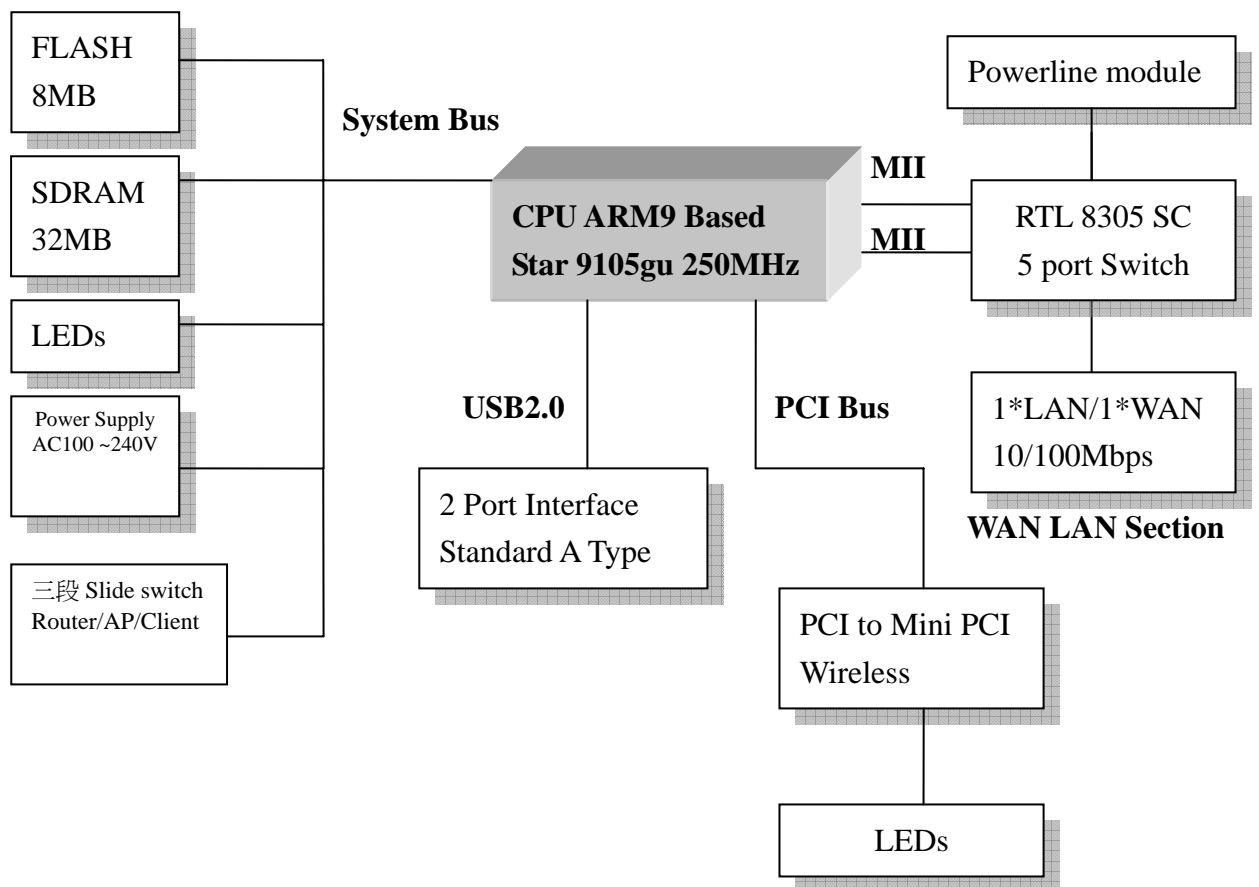
## 1.4 Hardware specification

### 1.4.1 Hardware Features

Item	Specification
<b>Key Components</b>	
• CPU	Star 9105gu
• Flash ROM	8MBytes (NAND Gate)
• DRAM	32Mbytes
<b>Communication Interfaces</b>	
WAN Port	1 x 10/100 Mbps RJ45, with auto MDI/MDIX
LAN Port	1 x 10/100 Mbps RJ45, with auto MDI/MDIX
USB Port	2 x USB2.0 Host Interface, for USB Printer, Webcam, HDD, Flash, Speaker, All in One Printer...etc.
Wireless	Ralink 2661 IEEE802.11g MIMO
Power Line	<b>Intellon 5500</b>
<b>USB Support List</b>	
USB Webcam	OV511,OV511+,OV518,OV518+, SAA8115HL, SAA8116HL
USB Printer	Support LPR protocol
USB MFP	See Chapter 8.1
USB Audio	Optional item, for play stream audio
<b>Others</b>	
Operation Requirement	Operating Temp.0 to 40 degrees Centigrade (32 to 104 degrees Fahrenheit) Storage Temp.-20 to 70 degrees Centigrade (-4 to 158 degrees Fahrenheit) Operating Humidity 10% to 85% Non-Condensing Storage Humidity 5% to 90% Non-Condensing
Peak Gain of the Antenna	<u>2dBi @ 2.45GHz</u>
Transmitted Power	TYP. 15dBm @ Normal Temp Range

<b>Receive Sensitivity</b>	Nominal Temp Range: 11Mbps: 10-5 BER @ -83 dBm, TYP.
<b>Dimensions</b>	91mm(L) x 78mm(W) x 30mm(H)
<b>Button</b>	Reset button – Press one second for device reset and press over 5 second for restore to factory default setting
<b>Slide switch</b>	Switch to Router, AP or Client mode.
<b>Power supply</b>	Internal Power Supply Input AC 100 ~ 240 V, DC 5V/3.3V

### 1.4.2 Hardware Block Diagram



### 1.4.3 LED Feature SPEC

LED	Function	Color	Status	Description
Power	Power indication	Green	On	Power is being applied to this product
Status	System status	Green	On	Active status
			Blinking 120ms	Reset/Firmware updates in progress
WAN	WAN port activity	Green	On	Connected at 100Mbps
			Blinking 30ms	10Mbps TX/RX Activity
		Green	On	Connected at 10Mbps
			Blinking 120ms	10Mbps TX/RX Activity
LAN	LAN port activity	Green	On	Connected at 100Mbps
			Blinking 30ms	100Mbps TX/RX Activity
		Green	On	Connected at 10Mbps
			Blinking 120ms	10Mbps TX/RX Activity
Powerline	Powerline activity	Red	Blinking	TX/RX Packet Activity
WLAN	WLAN port activity	Green	On	WLAN active
			Blinking	WLAN data transmit/receiving

## 1.5 Software Specification

### 1.5.1 Router Mode

Item	Specification
<b>Major Modules</b>	
<b>Kernel</b>	ucLinux 2.4.x
<b>Protocol</b>	TCP/IP v4
<b>Functions</b>	
<b>WAN connection</b>	Dynamic IP PPPoE Static IP PPTP
<b>Routing</b>	DHCP server/client, DNS server UPnP (Universal plug and play)
<b>NAT</b>	Virtual Server: 20 sets virtual server DMZ Host: One DMZ host
<b>Firewall</b>	URL blocking: 20 sets rule based URL blocking Mac Address Filtering SPI firewall Block ICMP from WAN DoS (Denial of Service)
<b>Qos</b>	3-level priority for each application port
<b>Wireless</b>	1. IEEE802.11g MIMO and backward compatible IEEE802.11b 2. Authentication: Open System, Share Key, WPA, WPA-PSK, 802.1x. 3. WEP Encryption: 64/128 bit 4. WDS ( peer to peer , peer to multi) 5. Hide SSID
<b>MFP Server</b>	Printing via USB printer Support LPR protocol Provide the all in one printer sharing including scanner, printer and card reader. Support NPAP(Networking Printer Alliance Protocol)

<b>WebCamera Server</b>	Webcam View Via Browser By Internet Real Time Video / Picture monitor and record from LAN/WAN PC Picture recording to FTP server or USB HDD Motion Detection and Send E-mail Alert.
<b>FTP Server</b>	User account create assign folder path Anonymous login User login Supervisor login
<b>Audio Server</b>	Support audio streaming
<b>User Authentication</b>	Password protected browser-based UI
<b>Samba Server</b>	Provide share folder and printer on LAN.
<b>Configuration &amp; Management</b>	
<b>Log</b>	Network configuration Event Log User Account List
<b>Web</b>	Web-based interface, accessible from IE, Mozilla and Netscape. Wizard supported.
<b>Software Upgrade</b>	
<b>Remote upgrade</b>	Upgradeable from Web, checksum supported
<b>Driver upload</b>	<a href="#">Upload USB MFP Scanner Driver</a>

### 1.5.2 AP Mode

Item	Specification
<b>Major Modules</b>	
<b>Kernel</b>	uClinux 2.4.x
<b>Protocol</b>	TCP/IP v4
<b>Functions</b>	

<b>Web Camera Server</b>	Webcam view via browser by internet real time Video/Picture monitor and record to LAN/WAN PC Picture recording to FTP server or USB HDD Motion detection and send e-mail alert.
<b>FTP Server</b>	User account create assign folder path Anonymous login User login Supervisor login
<b>Wireless</b>	1. IEEE802.11g MIMO and backward compatible IEEE802.11b 2. Authentication: Open System, Share Key, WPA, WPA-PSK. 3. WEP Encryption: 64/128 bit 4. WDS ( peer to peer , peer to multi) 5. Hide SSID
<b>Audio Server</b>	Support audio streaming
<b>MFP Server</b>	Printing via USB printer Support LPR protocol Provide the all in one printer sharing including scanner, printer and card reader. Support NPAP(Networking Printer Alliance Protocol)
<b>Samba Server</b>	Provide share folder and printer on LAN.
<b>Configuration &amp; Management</b>	
<b>Log</b>	Network configuration Event Log User Account List
<b>Web</b>	Web-based interface, accessible from IE and Netscape. Wizard supported.
<b>Software Upgrade</b>	
<b>Remote upgrade</b>	Upgradeable from Web, checksum supported
<b>Driver upload</b>	<a href="#">Upload USB MFP Scanner Driver</a>

### 1.5.3 Client Mode

Item	Specification
<b>Major Modules</b>	
<b>Kernel</b>	uc Linux 2.4.x
<b>Protocol</b>	TCP/IP v4
<b>Functions</b>	
<b>Site Survey</b>	Searching and connecting wireless access point (AP)
<b>Wireless</b>	1. IEEE 802.11g and backward compatible IEEE802.11b 2. Authentication: Open System, Share Key, WPA, WPA-PSK. WEP Encryption: 64/128 bit 3. WDS ( peer to peer , peer to multi) 5. Hide SSID
<b>Web Camera</b>	Webcam View Via Browser By Internet Real Time Video / Picture monitor and record from LAN/WAN PC Picture recording to FTP server or USB HDD
<b>FTP Server</b>	Anonymous login User login
<b>MFP Server</b>	Printing via USB printer Support LPR protocol Provide the all in one printer sharing including scanner, printer and card reader. Support NPAP(Networking Printer Alliance Protocol) Two-way communication
<b>Samba Server</b>	Provide share folder on LAN.
<b>Audio Server</b>	Provide share music on LAN.
<b>User Authentication</b>	Password protected browser-based UI
<b>Configuration &amp; Management</b>	
<b>Log</b>	Network configuration Even Log User Account List

<b>Web</b>	Web-based interface, accessible from IE, Mozilla and Netscape. Wizard supported.
<b>SNMP</b>	Embedded SNMP agent, standard and proprietary MIBs. HP Open View compatible.
<b>Software Upgrade</b>	
<b>Remote upgrade</b>	Upgradeable from Web and TFTP, checksum supported
<b>Driver upload</b>	<a href="#">Upload USB MFP Scanner Driver</a>

The followings are the system requirements:

1. Requires the PC of Pentium 166 MHz MMX processor at least, or higher level.
2. Requires 32 Mbytes memory at least or more.
3. Requires 50 Mbytes disk space at least or more.

## 1.6 Necessary Approvals

Category	Region	Standard	Will Comply
<b>Safety</b>		UL 60950	Yes
<b>EMC</b>	North America	FCC Part15B Class B FCC Part 15 C	Yes
<b>Electromagnetic Susceptibility</b>		CE/EN 300328 CE/EN 301489-17 CE/EN 60950-1	Yes

## 1.7 Appendix



The following points are the Navi PR126g USB Device Support List:

### 1.7.1 MFP

Navi PR126g support LPR protocol, ie if the printer driver could install on Windows 98/2000/XP. The printer can work on Navi PR126g product series.

**MFP List**

Printer's Brand	Printer's Type	Card Reader	LPR Printer	Scanner	Samba File Sharing	Samba Printer
HP	F380	N/A	Pass	Pass	N/A	Pass
HP	C3180	Y	Pass	Pass	Pass	Pass
HP	C4180	Y	Pass	Pass	Pass	Pass
HP	C5180	Y	Pass	Pass	Pass	Pass
HP	C6180	Y	Pass	Pass	Pass	Pass
HP	5610	N/A	Pass	Pass	N/A	Pass
HP	6310	Y	Pass	Pass	Pass	Pass
HP	3310	Y	Pass	Pass	Pass	Pass
EPSON	CX2900	N/A	Pass	Pass	N/A	Pass
EPSON	CX3700	N/A	Pass	Pass	N/A	Pass
EPSON	CX3900	N/A	Pass	Pass	N/A	Pass
EPSON	CX4100	N/A	Pass	Pass	N/A	Pass
EPSON	CX4700	Y	Pass	Pass	Pass	Pass
EPSON	CX4900	Y	Pass	Pass	Pass	Pass
EPSON	CX5700F	Y	Pass	Pass	Pass	Pass
EPSON	CX5900	Y	Pass	Pass	Pass	Pass
EPSON	CX6900F	Y	Pass	Pass	Pass	Pass
EPSON	RX530	Y	Pass	Pass	Pass	Pass
EPSON	RX590	Y	Pass	Pass	Pass	Pass
EPSON	RX630	Y	Pass	Pass	Pass	Pass
EPSON	RX650	Y	Pass	Pass	Pass	Pass

- If you need to check the support list, Please visit the 2 websites in below.

<http://www.sane-project.org/sane-mfgs.html>

<http://hplip.sourceforge.net/>

## 1.7.2 Web Camera

Navi PR126g support OV511、OV511+ and SAA8115HL、SAA8116HL web cam chipset only.

Vendor name	Product name	Chipset	Tested
Aiptek	HyperVcam Mobile	OV511+	
Aiptek	HyperVcam Fun	OV511+	
Aiptek	HyperVcam Home	OV511+	
Askey	VC010	SAA8115HL	
Alpha Vision Tech.	AlphaCam SE (model AC-520)	OV511	
Avaks	AvCam USB-600	OV511	
AverMedia	InterCam Elite	OV511	
BestBuy	EasyCam U	OV511	
Creative Labs	WebCam (model PD1001, alternate version)	OV518	
Creative Labs	WebCam 3	OV511	
Creative Labs	WebCam 5 (PID=400c)	SAA8116HL	
Creative Labs	WebCam Plus (Model CT6840)	OV511+	
Creative Labs	WebCam Plus ("WebCam Mini"; model PD0040)	OV518	
Creative Labs	WebCam Pro (model PD1030)	OV511+	
Creative Labs	Webcam Pro Ex	OV511	
D-Link	DSB-C100	OV511+	
D-Link	DSB-C310	OV518 +	
D-Link	DU-C300	OV511	
Elecom	UCAM-C1C30	OV511+	
Elta	WEBCam 8211 PCC	OV511/OV511+	
Ezonics	EZPhone Cam	OV518+	
Ezonics	EZ USB Cam II	OV511+	
Genius	VideoCam Express	OV511+	
Hawking Tech.	PD-300	OV511	

Hawking Tech.	UC-110	OV511+	
Hawking Tech.	UC-300	OV511	
Hawking Tech.	UC-310	OV511	
I-View	NetView NV300M	OV511	
Intel	Me2Cam	OV511+	
LG Electronics	LPC-UM10	OV511+	
LG Electronics	LPC-UM15	OV511+	
Lifeview	USB CapView	OV511+	
Lifeview	RoboCam	OV511	
Lifetec	LT 9388	OV511	
Logitech	QuickCam 3000 Pro	SAA8116HL	
Logitech	QuickCam 4000 Pro	SAA8116HL	
Logitech	QuickCam Orbit/Sphere	SAA8116	
Maitech	AWK-300	OV511+	
Maxxtro	CAM22U	OV511	
Maxell	Maxcam (MPCC-1)	OV511	
Medion	MD9388	OV511+	
MediaForte	MV300	OV511	
MediaForte	PC Vision 300	OV511	
Mustek	WCam 3X	OV511	
Mtekvision	Zeca MV402	OV511+	
OmniVision	OV7110 Eval Board	OV511	
OmniVision	OV511+/OV7120 Eval Board	OV511+	
OmniVision	OV511+/OV7620 Eval Board	OV511+	
Pretec	PCC-600	OV511	
Prochips	PCA-3100	OV511+	
Puretek	PT-6007	OV511	
Philips	PCVC675K "Vesta"	SAA8115HL	
Philips	PCVC680K "Vesta Pro"	SAA8115HL	
Philips	PCVC690K "Vesta Scan"	SAA8115HL	
Philips	PCVC720K/40 "ToUCam XS"	OV511	
Philips	PCVC730K "ToUCam Fun"	SAA8116HL	
Philips	PCVC740K "ToUCam Pro"	SAA8116HL	
Philips	PCVC750K "ToUCam Scan"	SAA8116HL	
Sotec	Sotec Afine Eye	SAA8115HL	
Suma	EON	OV511+	
Samsung	MPC-C10	SAA8115HL	

Samsung	MPC-C30	SAA8115HL	
Samsung	Anycam MPC-M10	OV511+	
TRENDNet	TV-PC100	OV511+	
TRENDNet	TV-PC300	OV511+	
TRENDNet	TV-PC301	OV511+	
Trust	Sp@ceC@m USB	OV511	
Trust	Sp@ceC@m 150	OV511+	
Trust	Sp@ceC@m 200	OV511+	
Trust	Sp@ceC@m 300	OV511+	
Typhoon	WebShot 350	OV518+	
TEVion	MD9308	OV511+	
TCE	NetCam 310u	OV511	
Terratec	TerraCam PRO	OV511+	
Terratec	TerraCam USB PRO	OV511+	
Waytech	I-Pac VIC-30	OV511+	
Webeye	2000B	OV511+	

### 1.7.3 USB HDD

Navi PR126g support FAT16 and FAT32 format file system.

Below list is tested product

Flash

Vendor	Model Name	Chipset	Note	Tested
Panram	MEMORY BLOCK 積木碟		USB2.0	
威剛	情人碟		USB2.0	
威剛	My Flash PD1 (512MB)		USB2.0	
獨創電子	PD-A2		USB 2.0	
Maxtor	DiamondMax Plus8		USB 2.0	
Kingston	Data Traveler 2.0			
Shuttle	SFD-0128			
Apacer	HandyDrive			
勁永	I-Ststick 32MB			
Apacer	Handy Steno 64MB		USB 1.1	
ASUS	碩碩碟二代 64MB			
ASUS	32MB			

捷元	32MB			
昕威電子	黑麻吉 SD 讀卡 MP3			
Transcend	JetFlash 128 MB		USB 2.0	
SanDisk	Curzer Mini Flash 256MB		USB 2.0	
勁永	Cool Drive(U339) 128 MB		USB 2.0	
KingMax	128MB		USB 1.0	
Kinggaroo	跳鼠王 風行 SONA 128MB		USB 2.0	

#### USB HDD

Vendor	Model Name	Chipset	Note	Tested
		Ali m5621 a1		V
		Ali m5637 a1		V
Hi-Speed	HD-D14-U2	Ali m5642 a1	FUJI 5400 轉 60G	V
		GL811E		V
		GL811USB		V
MySon Century		CS88186_107		V
Cypress		CY7C68300-56PVC		V

### 1.8 Operation System

- MicroSoft: Windows 2000, XP (Chinese & English version), Vista
- Apple: Mac OS X 10.4.7

### 1.9 Browser

- Internet Explorer ver. 5 and above
- Safari ver. 2.03 and above

### 1.10 Utility

- MicroSoft: Windows 2000, XP (Chinese & English version), Vista

## Chapter 2 Technology Overview

## **2.1 Introduction of INT5500 Chip Set (Home Plug1.0 with Turbo)**

Intellon's high speed powerline chipset INT5500CS is comprised of the INT5500, an integrated powerline MAC/ PHY transceiver, and its companion INT1200, an analog front end IC. The INT5500CS is fully compatible with the HomePlug1.0 with Turbo specifications, and capable of delivering up to 85 Mbps over the power line.

The INT5500CS provides a highly integrated and optimized solution for networking adapters and embedded products. It offers the higher bandwidth performance necessary to drive next-generation home entertainment applications, including standard definition (SD) video distribution, TV over IP (IPTV), digital video recorder (DVR) networking and media center PCs. Other applications include whole house audio, extension and bridging of higher speed wireless technologies such as 802.11x and UWB, and higher data-rate broadband sharing based on technologies such as ADSL2 and fiber to the home.

The MAC implements a CSMA/CA scheme with prioritization and automatic repeat request (ARQ) for reliable delivery of Ethernet packets via packet encapsulation. Built-in Quality of Service (QoS) features provide the necessary bandwidth for multimedia payloads including voice, data, audio, and video. A four-level prioritized random access method exists with strict adherence to priority. Segment bursting on the power line minimizes the demands on the receiver resources and maximizes the throughput of the network, while still providing excellent latency response and jitter performance. The contention-free access capability extends this concept of segment bursting to allow the transmission of multiple frames over the power line without relinquishing the control of the medium.

Intellon offers a complete solution for powerline applications using the INT5500CS, including data sheets, reference manuals, configuration utility software and production test capabilities, together with a proven technical support team to shorten customer time to market.

The INT5500CS provides two types of host interface for maximum system flexibility:

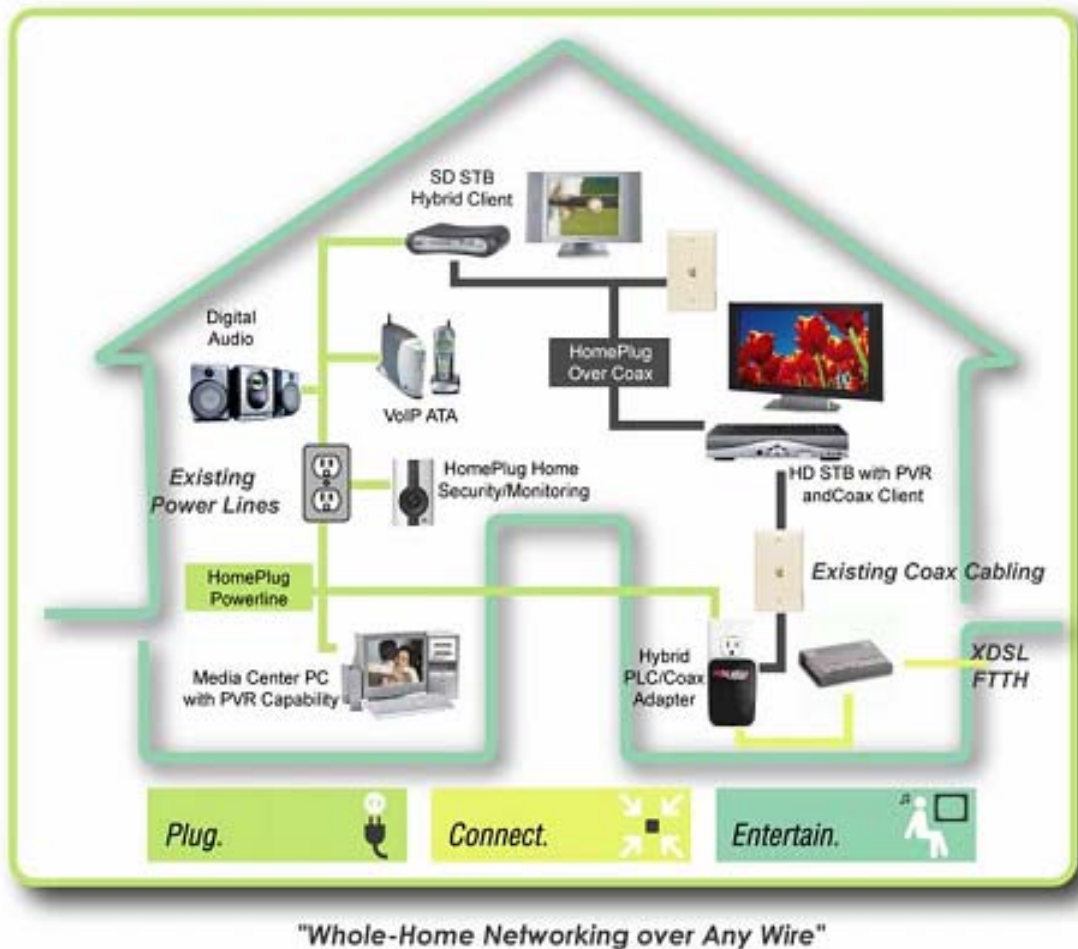
- An MII PHY (IEEE 802.3u) interface for interconnection to Ethernet controllers
- An MII Host / DTE interface (IEEE 802.3u) for direct connection to an Ethernet PHY

The INT5500CS implements Intellon's patented OFDM technology, which forms the basis for the HomePlug1.0 with Turbo specification. Tailored to reliably deliver up to 85 Mbps over the difficult power line communication environment, the chipset combats deep attenuation notches, noise sources, and multi-path fading by allocating usable frequencies according to the signal to noise ratio (SNR). Synchronization is achieved in low SNR channels without the use of pilot carriers. Inclusion of additional modulation schemes (QAM 256/64/16) increases the chipset's capability to attain higher throughput performance.

## **Chapter 3 The Main Frame of Family Applications**

### **3.1 Family Applications**

The following picture is the main frame of family applications:



### 3.2 Target Applications

The following main points are the target family applications:

- High Definition (HD) and Standard Definition (SD) video distribution
- TV over IP (IPTV)
- Backbone for WiFi, UWB and Wireless USB
- Higher data rate broadband sharing
- Shared broadband internet access
- Audio and video streaming and transfer
- Expanding the coverage of wireless LANs
- Voice Over IP (VoIP)
- PC files and applications sharing
- Printer and peripheral sharing
- Network and online gaming
- Security cameras