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Chapter 1 VR-110A Introduction

1-1. VR-110A Characteristics

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- Support MPEG-4 VOD Server
- EVDO mobile phone with RTSP player installed can use it with VOD service
- Full support on Static IP, external xDSL modem, and dynamic IP such as Cable modem
(Cf. VR-110A does not support ADSL service with internal modem)
- Easily managed by remote control and firmware upgrade through network
- With additional PCMCIA card, it is fully adaptable to 802.11b, wireless LAN
- Easily configured by using Internet Brower
- With built in DHCP function, it can manage maximum number of 254 private IP address for PCs under HUB

For your Information :

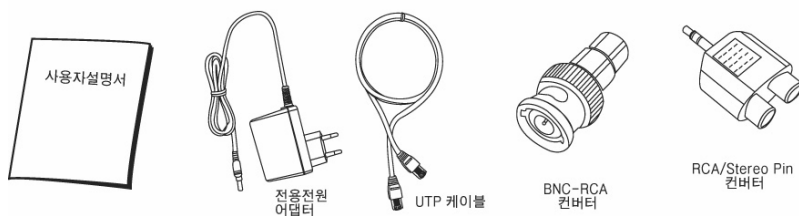
This equipment has passed for EMI testing, and can be used residential and other areas.

서식 있음: 글머리 기호 및
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1-2. Product package description

Please check the follow before installation.

Listings	EA	용도
VR-110A	1	VR-110A
User Manual	1	Explain spec, function and feature
Power Adapter (DC 6)	1	Power supply
UTP cable	1	Cable for LAN and VR-110A
BNC-RCA Converter	1	Converter between RCA and BNC
RCA/Stereo Pin Converter	1	Audio Jack Type change



1-3. Parts Description

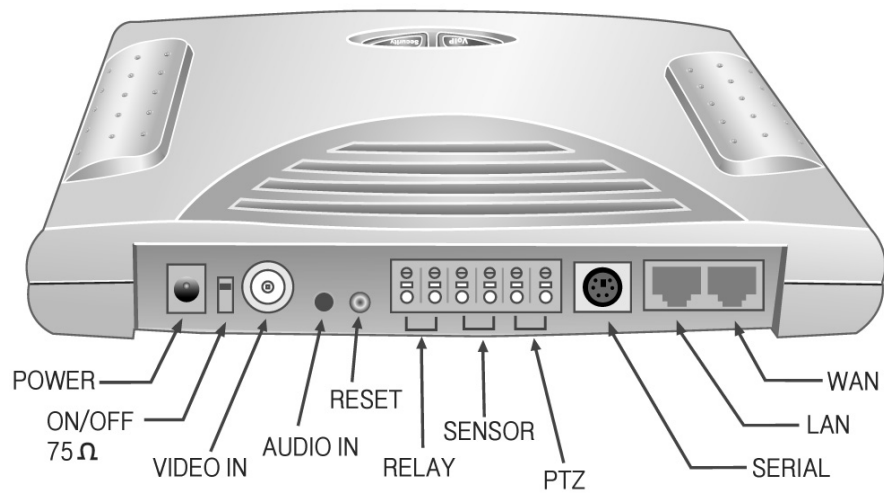
- [Power] Connect your 6V power adaptor here.
- [WAN Port] Connect ADSL or Cable Modem here.
- [LAN Port] Connect to your PC with LAN cable here.

[Reset button] Press this button for reset VR-110A to default value.

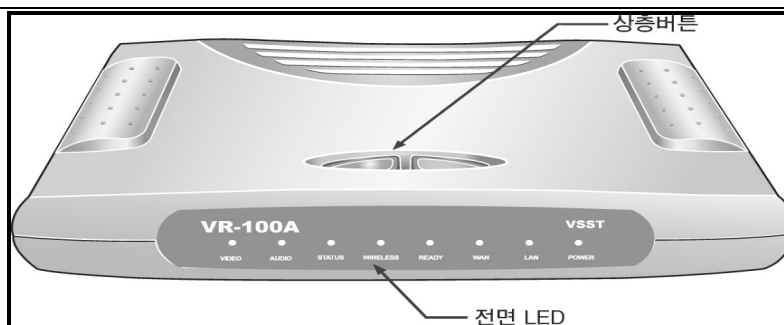
[Video Port] Video Input for receiving Video data

[Audio Port] Audio input with RCA / Stereo connection

[On/Off] 75 Ω Impedance resistor On/OFF switch



1-4. Front LED



Name	Color	Status	Description
VIDEO	Green	OFF	No Video Streaming
		Blinking	Video Streaming in progress
AUDIO	Green	OFF	No Audio Streaming
		Blinking	Audio Streaming in progress
STATUS	Green	OFF	No client access
		ON	More than one client access
		Blinking	Firmware upgrade in progress
WIRELESS	Green	OFF	No PCMCIA Wireless LAN
		ON	PCMCIA Wireless LAN is inserted and working properly
		Blinking	Wireless LAN communication in progress
READY	Green	ON	IP setting is done property and ready for streaming
		Blinking	Streaming now ready and there is problem
WAN	Green	OFF	No connection in WAN port
		ON	Connection established in WAN port
		Blinking	Communication in progress in WAN port
LAN	Green	OFF	No connection in LAN port
		ON	Connection established in LAN port
		Blinking	Communication in progress in LAN port
POWER	Red	OFF	No DC power supply
		ON	DC power supply

1-5. Product Specification

	List	Description
Interface Spec	Video Interface	Support standard NTSC / PAL analog video signal with 1 channel through BNC connector
	Audio Interface	Support Standard analog stereo audio signal(RCA connector)
	Network Interface	2 10/100Base-T Ethernet interface to access LAN/WAN (RJ-45 ports)
	Remote Interface	2 relay inputs for remote control
	Sensor Interface	2 sensor inputs to receive event through detecting sensor
	Camera Interface	Remote Pan/Tilt/Zoom control through RS-232/485 interface
	WLAN Interface	Wireless LAN support with WLAN PCMCIA card(IEEE 802.11b)
Video & Audio Server Spec	Video 압축 방식	MPEG-4 Simple Profile Level 1
	Audio 압축 방식	MPEG-4 AAC(Advanced Audio Coding)
	Image Resolution	176 x 144(QCIF)
	Frame Rate	Max frame @ 15 fps(frames per second)
	Bit Rate	Max rate @ 500 kbp
	Streaming Protocol	TCP/UDP/IP based RTSP/RTP/RTCP
	Multi client support	Intelligent rate control and channel adaptation for multi user connection
Network spec	IP setting	Supports both static IP and DHCP based Dynamic IP
	Network connection	Supports PPPoE based ADSL and cable Modem
	IP sharing	2 RJ-45 port setting support NAT, port forwarding based IP router / switching Hub
	Remote control	Embedded HTTP server for remote control
	Firmware Upgrade	Firmware upgrade support using FTP, serial port or UTP cable
Platform	Processor	32-bit RISC CPU와 TMS320C54x DSP
	Memory	2MB FLASH ROM과 8MB DRAM
	OS	Precise/MQX Real-time OS
Physical spec	Power	DC 6V 1.0A
	Size	200 mm x 140 mm x 33 mm
	Weight	380 g

Chapter 2 VR-110A network

2-1. Windows 98/me configuration

- ① Select Windows menu [Start] → [Setting] → [Control Panel]
- ② Select [Network]
- ③ In the Network Window, select the LAN card being used among [TCP/IP] list, and click on [Property]
- ④ In [TCP/IP Property], in [IP address], select [Obtain DNS server address automatically]
- ⑤ Click on [OK]
- ⑥ Restart your computer.

2-2. Windows 2000 configuration

- ① Select Windows menu [Start] → [Setting] → [Control Panel]
- ② Select [Network connection]
- ③ Click right mouse button to select [Property]
- ④ In the Property Window, select [Internet Protocol(TCP/IP)] and click [Property]
- ⑤ Select [Obtain an IP address automatically] and [Obtain DNS server address automatically]
- ⑥ Select OK

2-3. Windows XP configuration

- ① Select Windows menu [Start] → [Setting] → [Control Panel]
- ② Select [Network connection]
- ③ Click right mouse button to select [Property]
- ④ In the Property Window, select [Internet Protocol(TCP/IP)] and click [Property]
- ⑤ Select [Obtain an IP address automatically] and [Obtain DNS server address automatically]
- ⑥ Select OK

← 서식 있음: 글머리 기호 및
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Chapter 3 VR-110A setup

3-1. VR-110A setup

By using embedded web interface, system configuration to use VR-110A can be set. When you start VR-110A for the first time, or do not know the IP address that is given to VR-110A, you can use the following method. By default, VR-110A has IP address of "192.168.120.1" Since this IP will not change no matter what, you can change settings by accessing to this IP address directly.

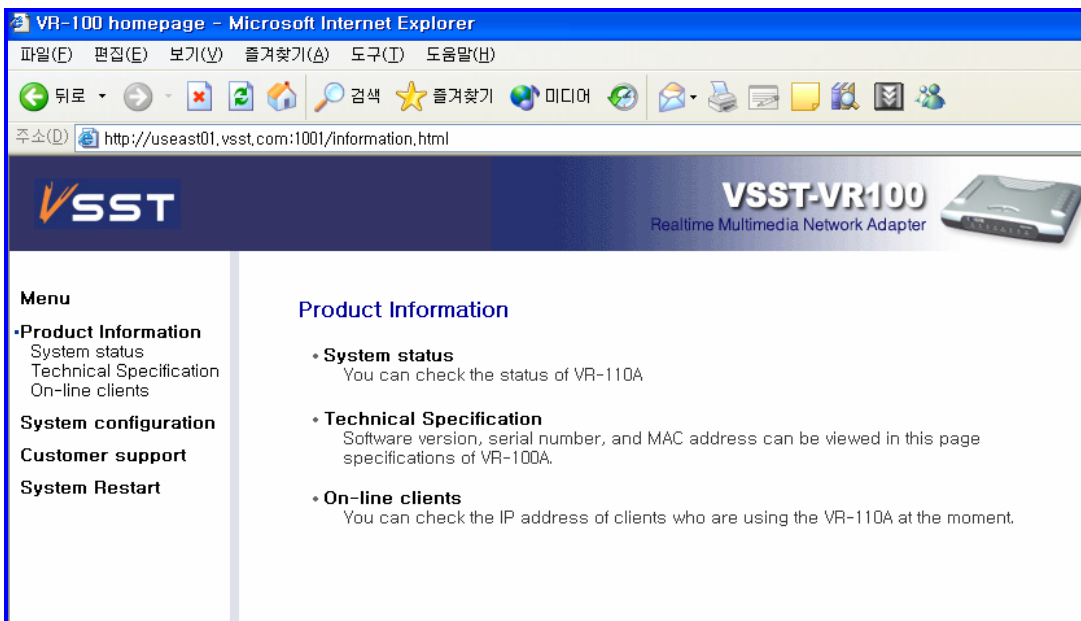
- Connect PC and VR-110A's LAN port using LAN cable.
- Check the Local Network status, and if you have following screen, the connection is established properly.

3-2. Product Information

From internet browser of PC, access the following address

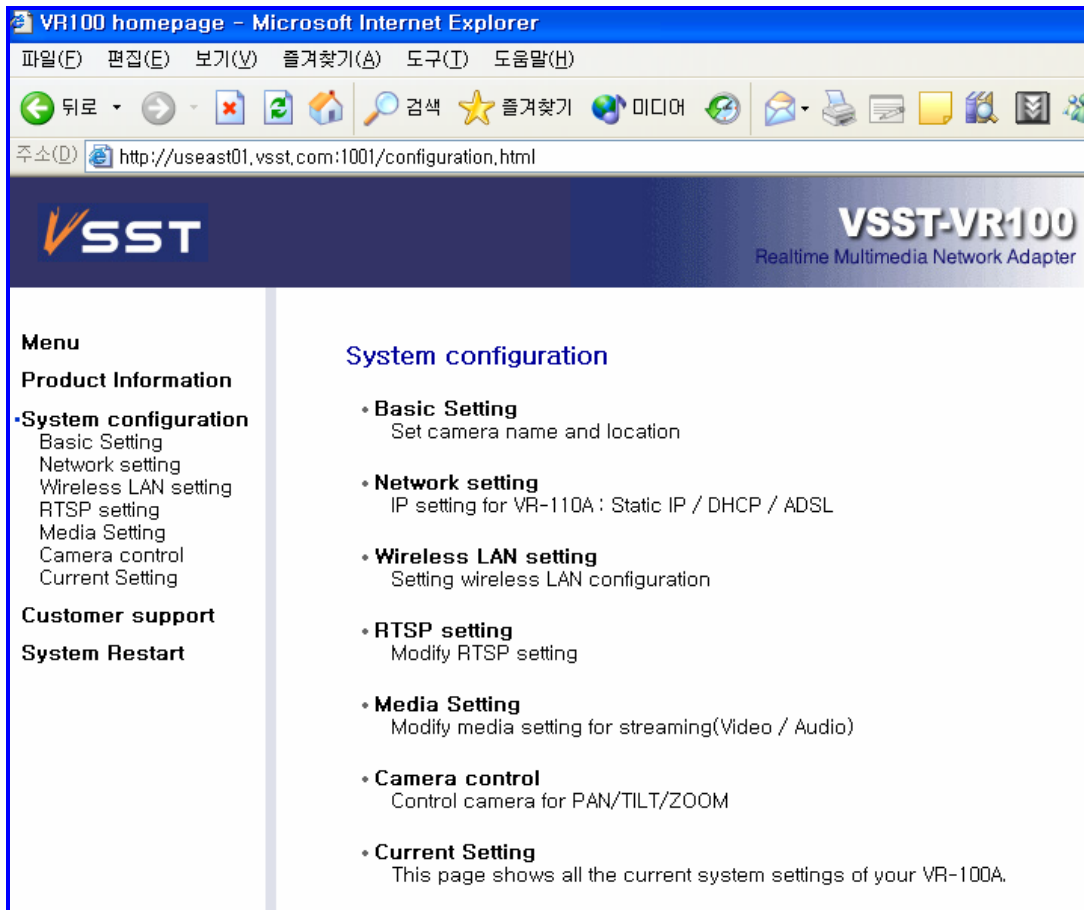
"http://192.168.120.1:1001/"

- System Status : You can check the status of VR-110A.
- Technical Specification : Software version, serial number, and MAC address can be viewed in this page
- On-line clients : You can check the IP address of clients who are using the VR-110A at the moment.



3-3. System Configuration

- **Basic Setting:** Set camera name and location.
- **Network Setting :** IP setting for VR-110A : Static IP / DHCP / ADSL.
- **Wireless LAN setting:** Setting wireless LAN configuration
- **RTSP setting :** set RTSP port number, time out, concurrent user
- **Media setting :** Modify media setting for streaming(Video / Audio)
- **Camera Control :** Control camera for PAN/TILT/ZOOM relay, sensor input..
- **Current setting :** Show the current setting of VR-110A



VR100 homepage - Microsoft Internet Explorer

주소(D) http://useast01.vsst.com:1001/configuration.html

VSST VSST-VR100
Realtime Multimedia Network Adapter

Menu

- Product Information
- System configuration**
 - Basic Setting
 - Network setting
 - Wireless LAN setting
 - RTSP setting
 - Media Setting
 - Camera control
 - Current Setting
- Customer support
- System Restart

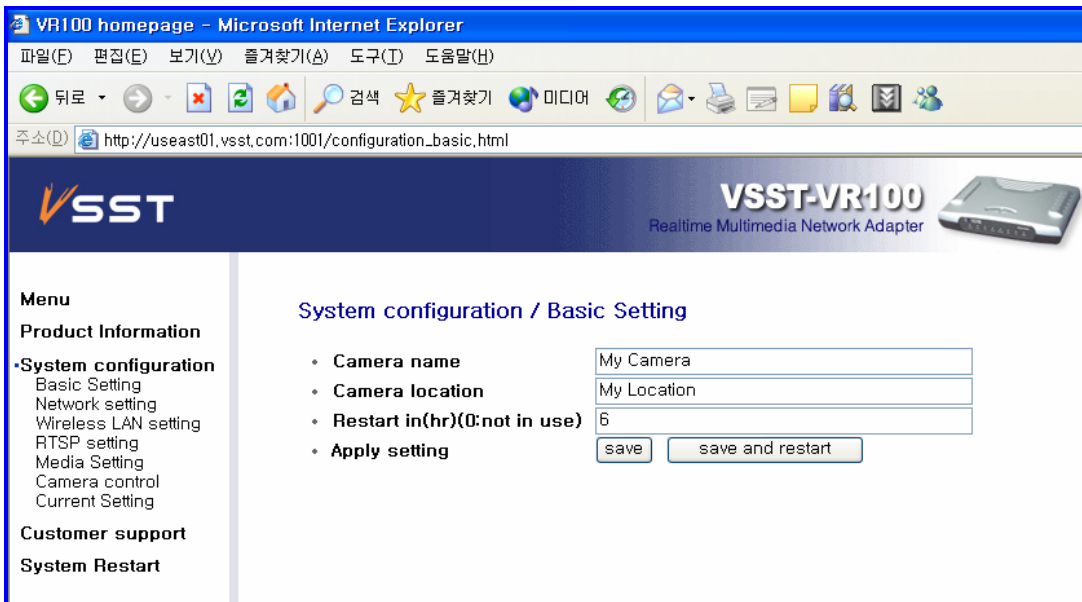
System configuration

- **Basic Setting**
Set camera name and location
- **Network setting**
IP setting for VR-110A : Static IP / DHCP / ADSL
- **Wireless LAN setting**
Setting wireless LAN configuration
- **RTSP setting**
Modify RTSP setting
- **Media Setting**
Modify media setting for streaming(Video / Audio)
- **Camera control**
Control camera for PAN/TILT/ZOOM
- **Current Setting**
This page shows all the current system settings of your VR-100A.

3-4. Basic Setting

Select Basic Setting and fill in the camera name and location

Select either "save" or "save and restart" button to apply changed setting.



3-5. VR-110A Network Setting

From the menu in the left, select network setting and fill in the information.

Select "save and restart" button to reset VR-110A automatically and apply changed setting

※ 서식 있음: 글머리 기호 및
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- Static IP : click here if you use static IP address
- DHCP user : click here if you use dynamic IP address.
- DNS server : Address of DNS server that service provider runs
- ADSL (PPPoE): In case of external ADSL modem, select "ADSL (PPPoE)"
 - User ID: ADSL ID
 - Password: ADSL Password
- Time server: IP address of server that sets, and manages time
- DDNS server : Once registered with VSST through phone or e-mail, your ID and password will be given.
- NAT : When using router before VR-110A, click here.

VR100 homepage - Microsoft Internet Explorer

파일(F) 편집(E) 보기(V) 즐겨찾기(A) 도구(T) 도움말(H)

뒤로 - - - - - 검색 - - - - - 미디어 - - - - -

주소(D) http://useast01.vsst.com:1001/configuration_network.html

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Realtime Multimedia Network Adapter

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- Customer support
- System Restart

System Configuration / Network setting

- IP Setting
 - ☐ Static IP

IP	151.197.57.59
Gateway	10.7.98.1
Subnet mask	0.0.0.0
DNS Server	168.126.63.1
 - ☐ DHCP
 - ☒ ADSL(PPPoE)

DHCP Server IP	0.0.0.0
ID	donaldkim
Password	
- DDNS server
- DDNS ID
- DDNS password
- time server
- Ethernet address
- NAT ☒ enable ☐ disable
- Timezone
- Apply setting
- Port mapping

Direction	Protocol	Client IPAddress	Client Port	NAT Port	Action
Outgoing	TCP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="insert"/>

3-6. VR-110A Wireless LAN setting

From the menu in the left, select WLAN setting, and fill in the information

Select "save and restart" button to reset VR-110A automatically and apply changed setting

- Uplink Port : This option decide whether to use Wireless LAN or Ethernet.
- ESSID : Fill in the ESSID information
- Channel : use this option when using specified channel.

The screenshot shows a web browser window with the address bar displaying `http://useast01.vsst.com:1001/configuration_wlan.html`. The page header includes the VSST logo and the product name **VSST-VR100** with the tagline "Realtime Multimedia Network Adapter" and an image of the device. On the left, a "Menu" sidebar lists options: Product Information, System configuration (selected), RTSP setting, Media Setting, Camera control, Current Setting, Customer support, and System Restart. The main content area is titled "System Configuration / Wireless LAN setting" and contains the following settings:

- Uplink port**: Radio buttons for ☐ WirelessLAN and ☒ Ethernet.
- Operating Mode**: Station(client).
- Device address**: N/A (PC card was not inserted).
- ESSID**: A text input field containing "clip".
- Channel**: A dropdown menu showing "Channel 1".
- Apply setting**: Two buttons, "save" and "save and restart".

3-7. VR-110A RTSP setting

From the menu in the left, select RTSP setting, and fill in the information

Select "save and restart" button to reset VR-110A automatically and apply changed setting

- RTSP number : Port number of RTSP which clients access
- RTSP timeout : Set the idle time to stop streaming when no response from clients
- Maximum number of concurrent user. : maximum number of concurrent user that RTSP server allows
- Maximum Bit rate : Maximum range of Bit rate that RTSP server allows
- Other values should follow the setting value from mobile carrier.

삭제됨:

VR100 homepage - Microsoft Internet Explorer

파일(F) 편집(E) 보기(V) 즐겨찾기(A) 도구(T) 도움말(H)

주소(D) http://useast01.vsst.com:1001/configuration_rtsp.html

VSST VSST-VR100 Realtime Multimedia Network Adapter

Menu

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- System configuration**
 - Basic Setting
 - Network setting
 - Wireless LAN setting
 - RTSP setting
 - Media Setting
 - Camera control
 - Current Setting
- Customer support
- System Restart

System configuration / RTSP setting

- RTSP port number 554
- UDP port number 2000
- RTSP timeout(sec) 0:Off 60
- Simultaneous user 10
- Maximum bandwidth 100000
- CPID 81100
- CTSID 000001
- RR Duration 40 sec
- SR Duration 10 sec
- ANNOUNCE IP 0.0.0.0
- ANNOUNCE PORT 0
- ANNOUNCE INTERVAL 60 sec
- Apply setting saver save and restart

삭제됨:

3-8. VR-110A Media setting

From the menu in the left, select Media setting, and fill in the information

Select "save and restart" button to reset VR-110A automatically and apply changed setting

- **Frame rate** : fps-frame per second
- **Image quality** : Decides quality of image. Lower value gives higher quality, but requires more bandwidth.
- **Image Bandwidth** : Bandwidth for Video Stream
- **Standard Frame** : Decide how many frame to send as standard
- **Audio on** : Click here to use AAC audio.
- **Sampling frequency** : Decide audio sampling frequency. Determine audio quality
- **Bit rate per channel** : Decide transmission rate per audio channel. Determine audio quality
- **Audio channel**: Audio option for Stereo and Mono
- **ADTS header option** : for compatibility, you can select to use ADTS header or not.

삭제됨:

VR100 homepage - Microsoft Internet Explorer

주소(D) http://useast01.vsst.com:1001/configuration_media.html

VSST-VR100
Realtime Multimedia Network Adapter

Menu

- Product Information
- System configuration
 - Basic Setting
 - Network setting
 - Wireless LAN setting
 - RTSP setting
 - Media Setting
 - Camera control
 - Current Setting
- Customer support
- System Restart

System configuration / Media Setting

- **SDP setting**
 - Video / Audio ☐
 - Audio Only ☐
 - Video Only ☒
- **Video setting**
 - VGA(640*480) ☐
 - CIF(352*288) ☐
 - QCIF(176*144) ☒
 - Frame rate(2~15fps)
 - Target Bitrate
 - Average Period
 - Reaction Period
 - Reaction Ratio
 - Default Quality
 - Intra Frame(1~8)
- **Audio setting**
 - Audio use ☐
 - Sampling frequency Hz
 - Bit rate per channel (Kbps)
 - Audio Channels ☒ Stereo ☐ Mono
 - ADTS header ☐
 - Cut Off Freq. (Hz) ('0' means not 0 Hz, but default Hz)
 - A/V Tunning
- **Apply setting**
 -

3-9. VR-110A Camera setting

From the menu in the left, select camera setting, and fill in the information

Select "save and restart" button to reset VR-110A automatically and apply changed setting

- PAN value can be in the range of 0-350. Tilt value can be in the range of 0-90 and Zoom value can be in the range of 1-230
- Choose on/off for relay
- Choose enable / disable for sensor
- Sensor type can be either NC(normally connected) or NO(Normally Open)

Menu

Product Information

• **System configuration**

Basic Setting

Network setting

Wireless LAN setting

RTSP setting

Media Setting

Camera control

Current Setting

Customer support

System Restart

System configuration / Camera control

- **PAN**
- Left ☐
- Right ☐
- **Tilt**
- Up ☐
- Down ☐
- **Zoom**
- Zoom-in ☐
- Zoom-out ☐
- **Relay**
- On ☒
- Off ☐
- **Sensor**
- Enable ☒
- Disable ☐
- **Sensor Type**
- NC(Normally Connected) ☒
- NO(Normally Open) ☐
- **Apply setting**

3-10. VR-110A Current Setting

VR-110A's current value and setting can be viewed by selecting "Current Setting"

http://useast01.vsst.com:1001/configuration_current.html



VSST-VR100
 Realtime Multimedia Network Adapter



Menu

Product Information

- **System configuration**
 - Basic Setting
 - Network setting
 - Wireless LAN setting
 - RTSP setting
 - Media Setting
 - Camera control
 - Current Setting
- Customer support**
- System Restart**



System configuration / Current Setting

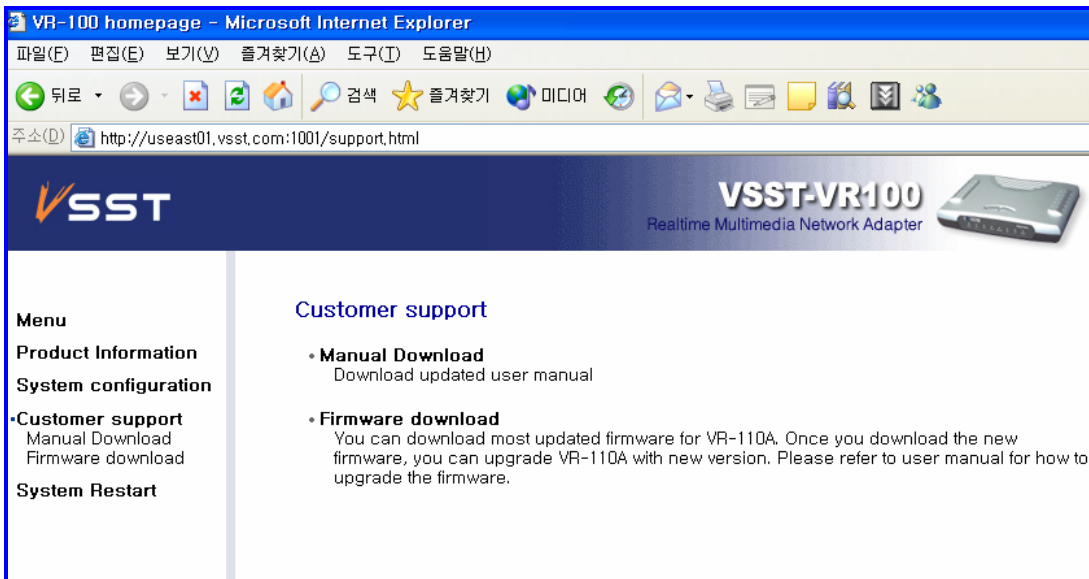
Basic Configuration	Parameter	Value
Network	Camera Name	My Camera
	Camera Location	My Location
	Current	ADSL(PPPoE)
	IP	151.197.57.59
	Gateway	10.7.98.1
	Netmask	0.0.0.0
	DNS	168.126.63.1
	Time Server	time.bora.net
	Time Zone	-05:00
	ADSL(PPPoE) ID	donaldkim
	ADSL(PPPoE) Password	ab12cd
	ADSL(PPPoE) Service	ETC
	External Ethernet Address	00:13:29:00:01:6c
	Internal Ethernet Address	00:13:29:00:01:6d
	NAT Mode	enabled
RTSP	HUB Mode	disabled
	RTSP Port	554
	RTP Port	2000
	RTSP Timeout(s)	60
	Max users	10
CODEC	Max bandwidth	100000
	Video Size	QCIF(176*144)
	Frame per sec	8
	Video Quality	5
	Video Bandwidth	200
PTZ	Intra frame	2
	PAN	0
	TILT	0
	ZOOM	1
	RELAY	On
Server Parameter	SENSOR	Enabled
	SENSOR TYPE	Normally Connected
	MAN	KTF
	SPV	0x0101
	IBT	0x50
	RRP	0x20
	RSV	0x0000

3-11. VR-110A Customer Support

Manual Download : Download online Manual

Firmware download : download updated firmware

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3-12. Advanced setting

When connecting VR-110A in a single internet line, set up your system in the order of Internet line > Modem > VR-110A > PC

System diagram – No IP router

System diagram – Using IP router

- When using IP router, set up your system in the order of Internet line > modem > Router > PC and VR-110A
- VR-11A can be considered as a client, and by having DMZ setting for VR-110A, you can access from external network with public IP address. Internally, you can access through private IP.

Chapter 4 MediaWings setup

4-1. MediaWings Setting

In the system setting(F2 key), check open URL for default

Replay track must be set on Video replay

4-1. MediaWings Setting

1. start Mediawings player
2. In the play screen, click right mouse button, then select open video
3. type in the url address (ex : rtsp://192.168.120.1/)
4. You can check the IP address in current setting of VR-110A set up
5. play ok to start playing
6. Press record button to select the folder that you would like to store

Chapter 5 VR-110A advanced setup

5-1. Firewall / IP router Setting

[TCP]

1001 : Port that connects to VR-110A

Ex) `http://192.168.1201.:1001 /` when you type in IP address of Vr-110A, you will go to setting page.(IP and setting screen, and no log-in required)

554 : RTSP Port(Real Time Streaming Port) This is player only port for video play. For example, quicktime player uses example below to run video replay.

Ex) access the IP address `RTSP://192.168.1201.:554/`

21 : this port is used to upgrade firmware or upload file in Dos mode with FTP.

[UDP]

2000 : port that does initial socket opening

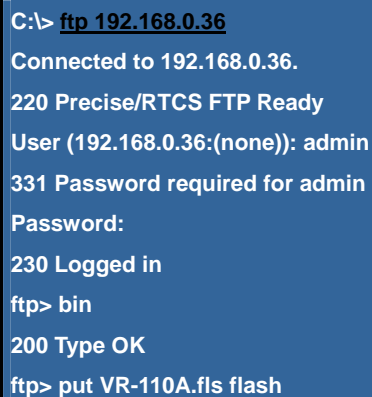
2001 : This port checks on the connection continuously by sending data periodically.

5-2. Firmware Upgrade

When VR-110A is connected normally to the network, firmware can be upgraded with FTP. This method will update in high speed, but can be used only when the system is normal, and connected to the network.

The screenshot below example of firmware upgrade where IP address is 192.168.0.36 and file name is "VR-110A.fls" When connecting with FTP, user name is 'admin' and password is same as password of VR-110A(4 digit number). The default password is '0000'

)



```
C:\> ftp 192.168.0.36
Connected to 192.168.0.36.
220 Precise/RTCS FTP Ready
User (192.168.0.36:(none)): admin
331 Password required for admin
Password:
230 Logged in
ftp> bin
200 Type OK
ftp> put VR-110A.fls flash
```

200 Port command okay

150 Opening data connection for STOR (192.168.0.14,1161)

226 File received OK – 1053136 bytes in 10.640 sec

ftp: 1053136 bytes sent in 10.55Seconds 99.82Kbytes/sec.

- × **Warning** : Do not change setting or turn off the power of VR-110A during firmware upgrade
- × It takes about 1-2 min to finish upgrade. After upgrade,. VR-110A will restart automatically.

Product Warranty

According to customer protection policy, VSST guarantees the product as followed :

Warranty Period : 1 year after the purchase

Product	Multimedia Network Adaptor	Model	VR-110A
Distributor	VSST	Manufacturer	VSST
Date of Purchase		Serial No.	

1. Free A/S

As long as the A/S is within guarantee period, and was used in normal usages, we will repair or exchange for free.

2. Paid A/S

- If the guarantee period is over
- If user modified or repaired on his/her own
- When used wrong power connection
- Natural disaster, fire, flood, or thunder caused malfunction or damage of product
- When parts wear out

FCC Information

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 interface, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for CLASS B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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 correct the interference by one or more of the following measures:

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

WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.



MPEG-4 Video/Audio Streaming Network Adaptor

Streaming Solutions for Scalable VOD System

- Real-time multimedia network adaptor
- Streaming with standard RTSP/RTP/RTCP
- Video: MPEG-4 Simple Profile Level 1, 15 fps@QCIF
- Audio: MPEG-2 Advanced Audio Coding, AMR
- Rate control for elastic traffic
- PAN / Tilt / Zoom functions for external camera control
- DHCP, PPPoE, HTTP, SNMP and NAT support
- Dual switched 10/100Base-T Ethernet interfaces
- IEEE 802.11b extensibility for Wireless LAN station function



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