

WAP-5940

Wireless Video Bridge

User Manual



Preface

This manual provides information related to the installation and operation of this device. The individual reading this manual is presumed to have a basic understanding of telecommunications terminology and concepts.

If you find the product to be inoperable or malfunctioning, please contact technical support for immediate service by email at INT-support@comtrend.com

For product update, new product release, manual revision, or software upgrades, please visit our website at <http://www.comtrend.com>

Important Safety Instructions

With reference to unpacking, installation, use, and maintenance of your electronic device, the following basic guidelines are recommended:

- Do not use or install this product near water, to avoid fire or shock hazard. For example, near a bathtub, kitchen sink or laundry tub, or near a swimming pool. Also, do not expose the equipment to rain or damp areas (e.g. a wet basement).
- Do not connect the power supply cord on elevated surfaces. Allow it to lie freely. There should be no obstructions in its path and no heavy items should be placed on the cord. In addition, do not walk on, step on, or mistreat the cord.
- Use only the power cord and adapter that are shipped with this device.
- To safeguard the equipment against overheating, make sure that all openings in the unit that offer exposure to air are not blocked.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightening. Also, do not use the telephone to report a gas leak in the vicinity of the leak.
- Never install telephone wiring during stormy weather conditions.

CAUTION:

- To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.
- Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.



WARNING

- Disconnect the power line from the device before servicing.
- Power supply specifications are clearly stated in [Appendix A - Specifications](#).

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Protect Our Environment



This symbol indicates that when the equipment has reached the end of its useful life, it must be taken to a recycling centre and processed
separate from domestic waste.

The cardboard box, the plastic contained in the packaging, and the parts that make up this router can be recycled in accordance with regionally established regulations. Never dispose of this electronic equipment along with your household waste; you may be subject to penalties or sanctions under the law. Instead, please be responsible and ask for disposal instructions from your local government.

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Chapter 1 Introduction

The WAP-5940 is an 802.11ac 4T4R wireless video bridge, with two Giga Ethernet ports. WAP-5940 performs AP to transmission package TCP/UDP to client, also supporting station mode, receiving packets and forwarding to the Ethernet port.

WAP-5940 has a high power wireless design which supports 802.11ac 5Ghz band 4T4R and is backward compatible 802.11n, 802.11a.

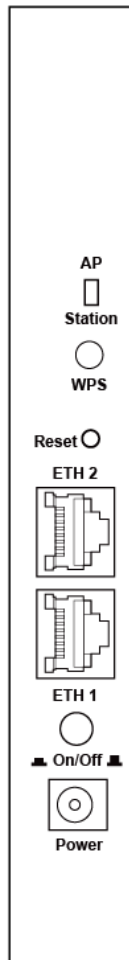
Chapter 2 Installation

2.1 Hardware Setup

Follow the instructions below to complete the hardware setup.

BACK PANEL

The figure below shows the back panel of the device.



Power ON

Press the power button to the OFF position (OUT). Connect the power adapter to the power port. Attach the power adapter to a wall outlet or other AC source. Press the power button to the ON position (IN). If the Power LED displays as expected then the device is ready for setup (see section [2.2 LED Indicators](#)).

Caution 1: If the device fails to power up, or it malfunctions, first verify that the power cords are connected securely and then power it on again. If the problem persists, contact technical support.

Caution 2: Before servicing or disassembling this equipment, disconnect all power cords and telephone lines from their outlets.

Ethernet (LAN) Ports

Use 1000-BASE-T RJ-45 cables to connect two network devices to a Gigabit LAN, or 10/100BASE-T RJ-45 cables for standard network usage. These ports are auto-sensing MDI/X; so either straight-through or crossover cable can be used.

Reset Button

To reboot the device press the Reset button for 1-5 seconds. Restore the default parameters of the device by pressing the Reset button for more than 5 seconds. After the device has rebooted successfully, the front panel should display as expected (see section [2.2 LED Indicators](#) for details).

WPS Button

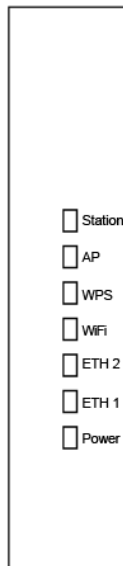
Press and release the WPS button to start the WPS connection process with the other device. The connection duration is 2 minutes during which the WPS LED will blink. If there is no client connection the WPS led will turn off. If connection is successful the WPS LED will stay on.

AP/Station Switch

Select the desired option.

2.2 LED Indicators

The front panel LED indicators are shown below and explained in the following table. This information can be used to check the status of the device and its connections.

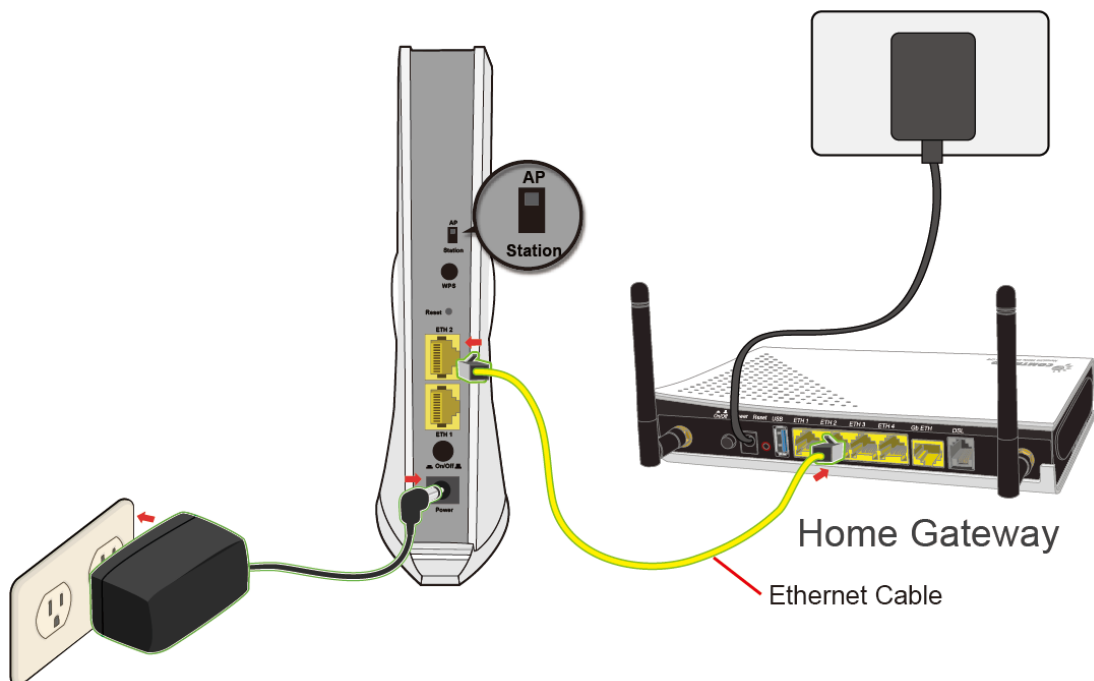


LED	Color	Mode	Description
POWER	GREEN	On	Power on
		Off	Power off
ETH1	GREEN	On	Ethernet connected
		Off	Ethernet not connected
		Blink	Ethernet is transmitting/receiving
ETH2	GREEN	On	Ethernet connected
		Off	Ethernet not connected
		Blink	Ethernet is transmitting/receiving
WiFi	GREEN	On	Wi-Fi enabled
		Off	Wi-Fi disabled
		Blink	When no client connected
WPS	GREEN	On	WPS connection successful
		Off	No WPS (5G) association process ongoing
		Blink	WPS (5G) connection in progress
AP	GREEN	On	WAP-5940 working in AP mode
		Off	WAP-5940 working in Station mode
Station	GREEN	On	WAP-5940 working in Station mode
		Off	WAP-5940 working in AP mode

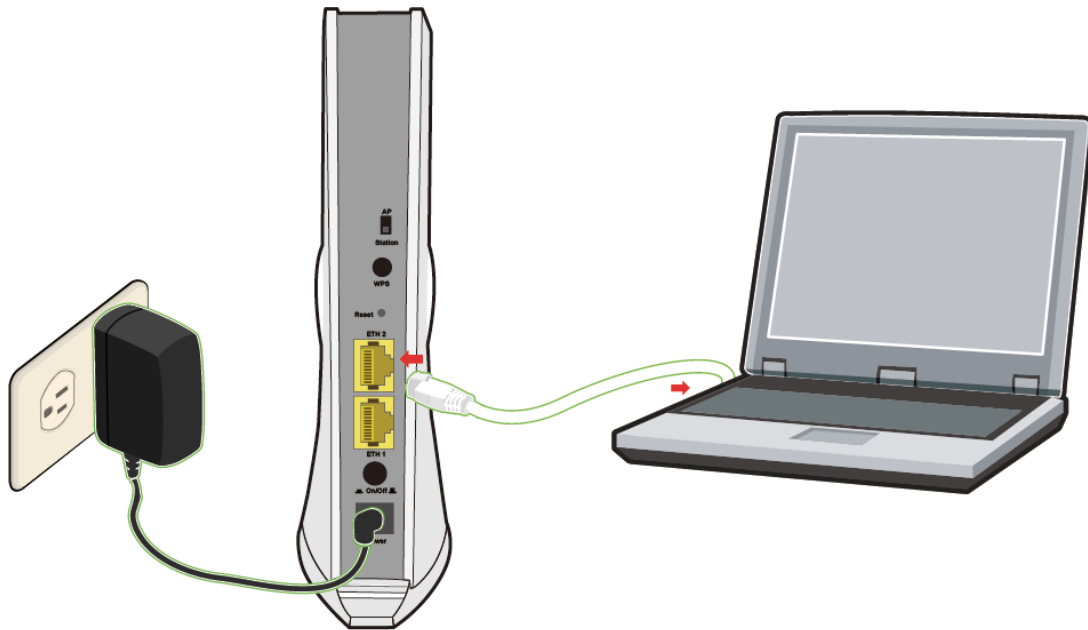
2.3 Initial Device Setup

Device Setup

1. Setup the first Wireless Video Bridge by plugging in the power adapter and press the **Power Button** to the ON position (IN). Set the Wireless Video Bridge to AP Mode by sliding the **AP/Station Switch** to the up position.
2. Connect the Wireless Video Bridge to a Network Device (Gateway, Router, etc.) with an Ethernet (RJ-45) cable. You can use either Ethernet ports of the Wireless Video Bridge to make this connection.
3. After you select AP mode thus the Ethernet port (ETH1) will be WAN port, another Ethernet port (ETH2) is LAN side.



4. After you select station mode thus two Ethernet ports (ETH1, ETH2) are LAN side.



Chapter 3 Web User Interface

This section describes how to access the device via the web user interface (WUI) using an Internet browser such as Internet Explorer (version 6.0 and later).

3.1 Default Settings

The factory default settings of this device are summarized below.

- LAN IP address AP: 10.0.0.2
- LAN IP address STA: 10.0.0.10
- LAN subnet mask: 255.255.255.0
- Administrative access (username: **root**, password: **12345**)

Caution: The LAN setting default is DHCP mode, if a device connects to the DHCP network, the LAN IP will be changed by the DHCP server assigned.

Technical Note

During power on, the device initializes all settings to default values. It will then read the configuration profile from the permanent storage section of flash memory. The default attributes are overwritten when identical attributes with different values are configured. The configuration profile in permanent storage can be created via the web user interface or telnet user interface, or other management protocols. The factory default configuration can be restored either by pushing the reset button for more than ten seconds until the power indicates LED blinking or by clicking the Restore Default Configuration option in the Restore Settings screen.

3.2 IP Configuration

STATIC IP MODE

In static IP mode, you assign IP settings to your PC manually.

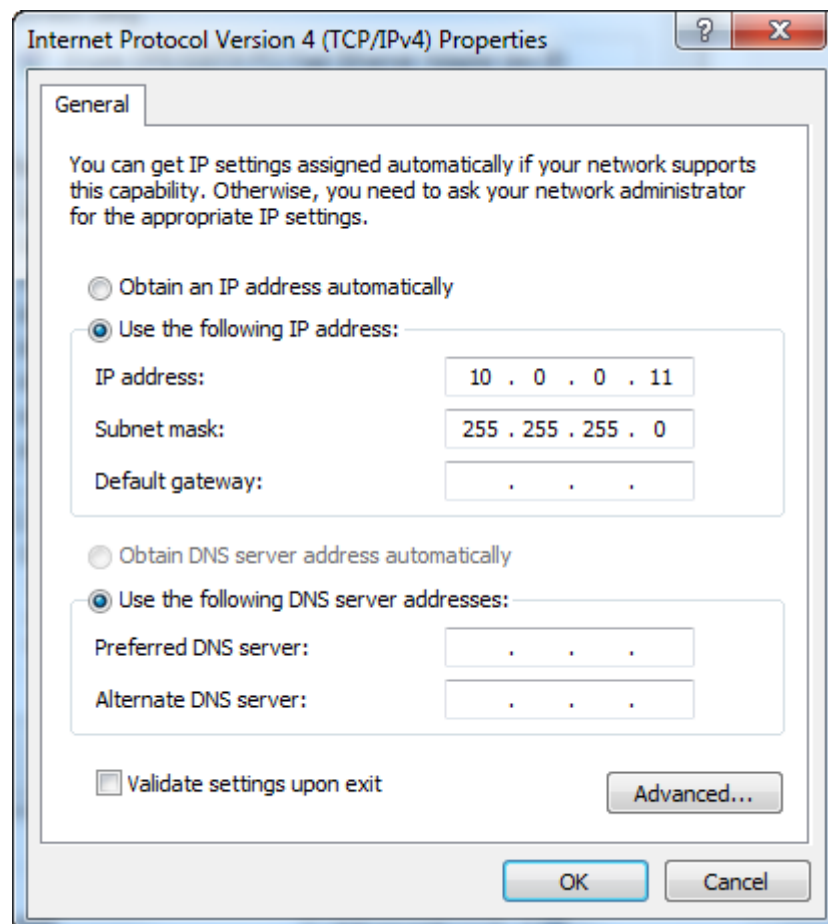
Follow these steps to configure your PC IP address to use subnet 10.0.0.x.

NOTE: The following procedure assumes you are running Windows. However, the general steps involved are similar for most operating systems (OS). Check your OS support documentation for further details.

STEP 1: From the Network Connections window, open Local Area Connection (You may also access this screen by double-clicking the Local Area Connection icon on your taskbar). Click the **Properties** button.

STEP 2: Select Internet Protocol (TCP/IP) **and click the** Properties button.

STEP 3: Change the IP address to the 10.0.0.x (10<x<254) subnet with subnet mask of 255.255.255.0. The screen should now display as shown below.



STEP 4: Click **OK** to submit these settings.

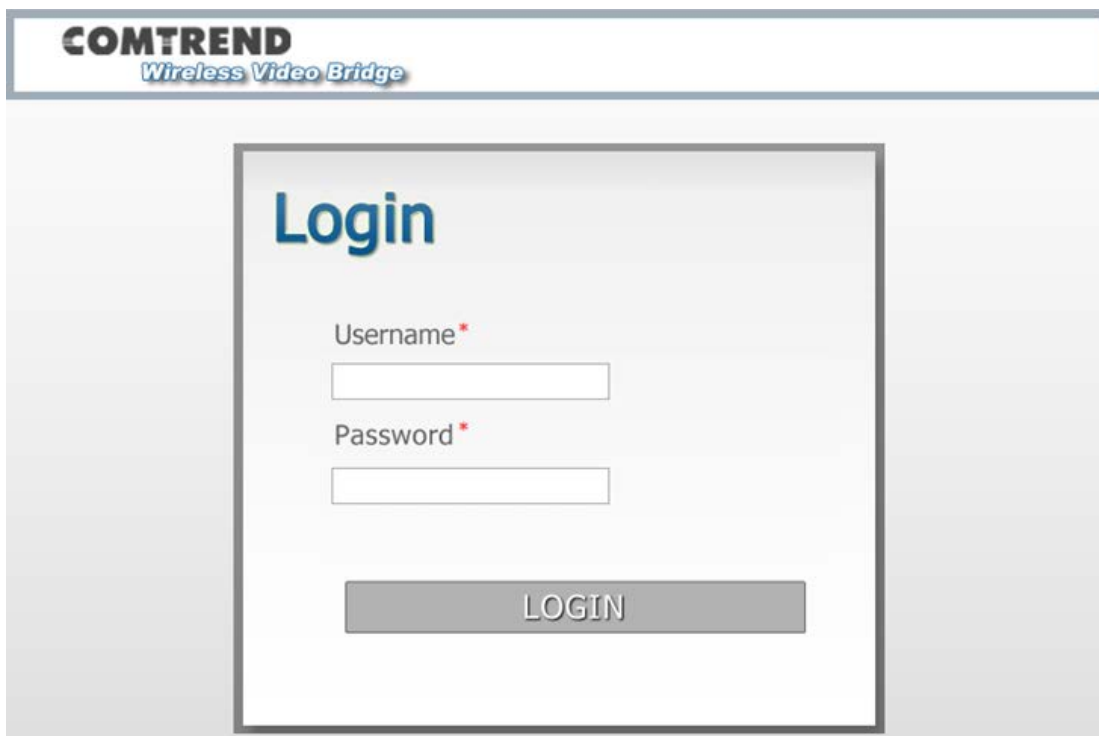
3.3 Login Procedure

Perform the following steps to login to the web user interface.

NOTE: The default settings can be found in section [3.1 Default Settings](#).

STEP 1: Start the Internet browser and enter the default IP address for the device in the Web address field. For example, if it is the AP device default IP is 10.0.0.2, type <http://10.0.0.2>

STEP 2: A dialog box will appear, such as the one below. Enter the default username and password, as defined in section [3.1 Default Settings](#).

The image shows a web browser window displaying the login interface for a COMTREND Wireless Video Bridge. At the top, there is a header bar with the COMTREND logo and the text "Wireless Video Bridge". Below this, a central dialog box titled "Login" is displayed. Inside the dialog box, there are two input fields: "Username*" and "Password*", each followed by a red asterisk. Below these fields is a large, grey "LOGIN" button.

Click **LOGIN** to continue.

STEP 3: After successfully logging in for the first time (AP device in this example), you will reach the Status - Device screen **AP** (Access Point) shown here.

COMTREND
Wireless Video Bridge

Status

Device
Wireless
Networking
WDS
MBSS

Config

Wireless
WPS
MAC Filter
Networking
WDS
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ACS

Tools

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Restore

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Reboot

STATUS - DEVICE

Device Name:	WAP-5940
Software Version:	EM51-3671361CTU-C01_R03
Uptime:	1min
Device Mode:	☒ Access Point (AP) ☐ Station (STA)

Refresh

Chapter 4 Status

4.1 Status - Device

This screen shows the status of the device.

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STATUS - DEVICE

Device Name:

WAP-5940

Software Version:

EM51-3671361CTU-C01_R03

Uptime:

1min

Device Mode:

☒ Access Point (AP)
 ☐ Station (STA)

Menu Item	Description	Options	Detail
Device Name	Name of the Comtrend device		
Software Version	Gets the software version of the current system		The version number of the current firmware

Uptime	Displays the uptime of the device		There are two types of display, one kind is minutes and days, another kind is XX:XX(hours:minutes)
Device Mode	AP or STA mode	Access Point(AP) Station(STA)	Device Acts as Access Point or Station. The [X] indicates the current device mode.

4.2 Status – Wireless

This screen shows the wireless status of the device in AP mode.

4.2.1 AP Mode

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Wireless Video Bridge

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STATUS - WIRELESS

Wifi Interface: wifi0(00:26:86:F0:30:81) ▼

Device Mode:
Wireless Band:
Bandwidth:
AP Mac Address (BSSID):
Channel:
Associated Devices Count:
Packets Received Successfully:
Bytes Received:
Packets Transmitted Successfully:
Bytes Transmitted:

Access Point (AP)
802.11ac
80 MHz
00:26:86:F0:30:81
36
0 Association Table
0
0
4
676

Refresh

Menu Item	Description	Options	Detail
WiFi Interface	Real wireless device name and MAC Address in CPE		
Device Mode	AP or STA mode	Access Point(AP) Station (STA)	Device Acts as Access Point or Station

Wireless Band	Current system Band	802.11a or 802.11an or 802.11ac	802.11an supports 802.11n and is backward compatible with 802.11a
Bandwidth	Per the 802.11a or 802.11an or 802.11ac standard	20 MHz	20 MHz operation
	Per 802.11an or 802.11ac standard	40 MHz	40 MHz operation
	Per the 802.11ac standard	80MHz	80 MHz operation
AP Mac Address (BSSID)	The current associated BSSID of the Wi-Fi system		In AP mode, it will be the same as the Wireless MAC address
Channel	Available 5Ghz channels based on region setting	36-48, 149-165	5.150-5.250, 5.725-5.850 GHz are the supported frequency ranges
Associated Devices Count	The connected devices number		The number of devices connecting to the AP. Clicking the "Association Table" will link to the Association Table page and display information of all the connected devices.
Packets Received Successfully	Wireless packets which are received successfully		
Bytes Received	The total bytes received successfully		

Packets Transmitted Successfully	Wireless packets transmitted		
Bytes Transmitted	Total bytes transmitted successfully		

This screen shows the information of all station devices which are connecting with the wifi0 of the AP.

COMTREND <i>Wireless Video Bridge</i>							
ASSOCIATION TABLE							
	Station	VAP	RSSI	Rx Bytes	Tx Bytes	Bw	Time Associated
1	00:26:86:F0:30:83	wifi0	-13 dbm	0	1029512	80	10
2	00:26:86:01:14:43	wifi0	-13 dbm	774	1105666	80	297
Refresh							

4.2.2 STA Mode

This screen shows the wireless status of the device that acts as a STA.

This STA mode is mainly with other client bridge, Not directly used as a client.

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STATUS - WIRELESS

Device Mode:	Station (STA)
Wireless Band:	802.
Bandwidth:	80 MHz
AP Mac Address (BSSID):	Not Associated
Channel:	165
Association Status:	Not Associated Association Table
RSSI:	Not Associated
Packets Received Successfully:	0
Bytes Received:	0
Packets Transmitted Successfully:	0
Bytes Transmitted:	0

Refresh

Menu Item	Description	Options	Detail
Device Mode	AP or STA mode	Access Point(AP) Station (STA)	Device Acts as Access Point or Station
Wireless Band	Current system Band	802.11a or 802.11an or 802.11ac	802.11an supports 802.11n and is backward compatible with 802.11a
Bandwidth	Per the 802.11a or 802.11an or	20 MHz	20 MHz operation

	802.11ac standard		
	Per 802.11an or 802.11ac standard	40 MHz	40 MHz operation
	Per the 802.11ac standard	80MHz	80 MHz operation
AP Mac Address (BSSID)	The current associated BSSID of the Wi-Fi system		In AP mode, it will be the same as the Wireless MAC address
Channel	Available 5Ghz channels based on region setting	36-48, 149-165	5.150-5.250, 5.725-5.850 GHz are the supported frequency ranges
Association Status	The connected devices number		The number of devices connecting to the AP. Clicking the "Association Table" will link to the Association Table page and display information of all the connected devices.
RSSI	Received Signal Strength Indication		A measurement of the power present in a received radio signal. The value is the current RSSI in dBm for the association.
Packets Received Successfully	Wireless packets which are received successfully		

Bytes Received	The total bytes received successfully		
Packets Transmitted Successfully	Wireless packets transmitted		
Bytes Transmitted	Total bytes transmitted successfully		

4.3 Status – Networking

This screen shows the status of the networking.

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Wireless Video Bridge

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STATUS - NETWORKING

IP Address:

10.0.0.2

Netmask:

255.0.0.0

Ethernet0 MAC Address:

00:26:86:F0:2F:B9

Ethernet1 MAC Address:

02:26:86:F0:2F:B9

Wireless MAC Address:

00:26:86:F0:30:81

BSSID:

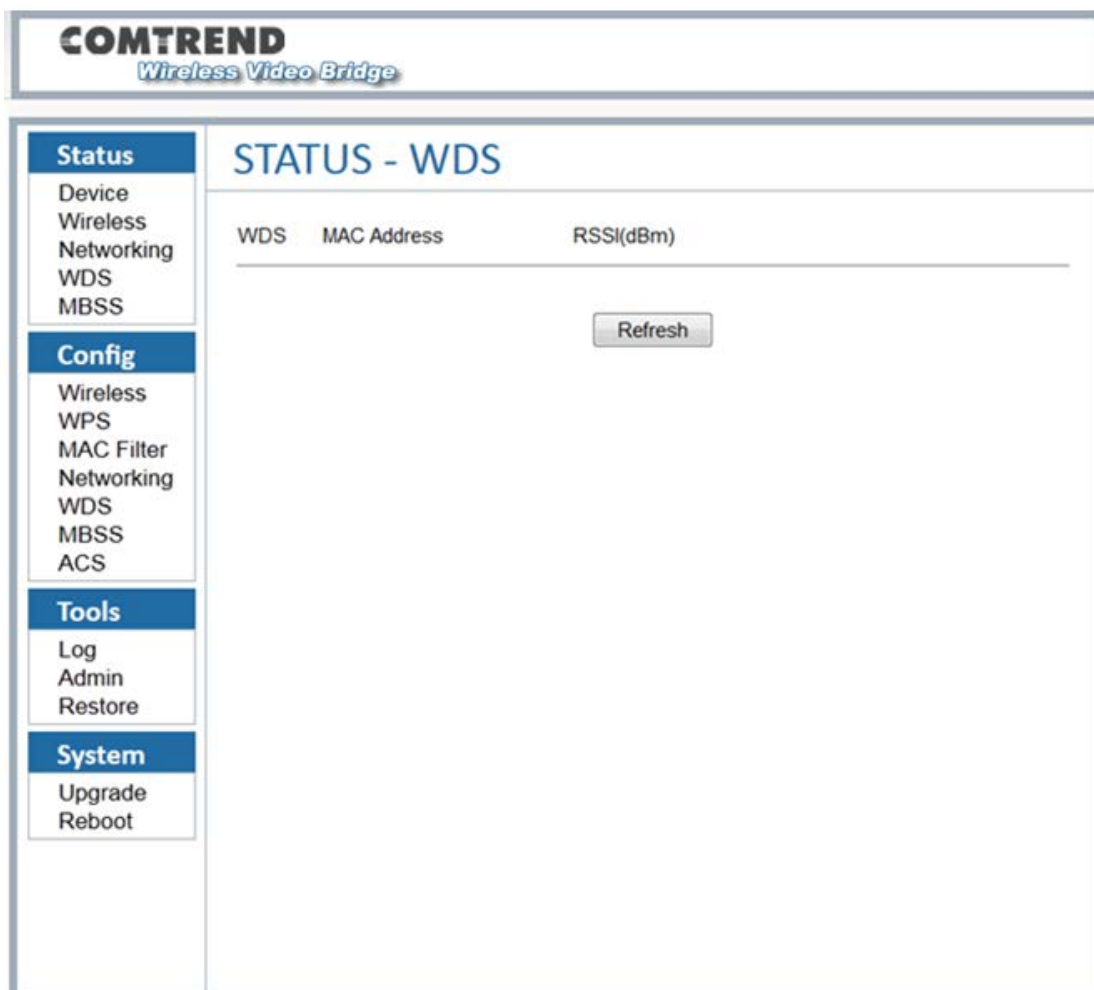
00:26:86:F0:30:81

Menu Item	Description	Options	Detail
IP Address	The IP Address of the system		Logged into the web GUI with this IP address. It can be changed in the Config Networking page.
Netmask	The netmask of the IP address		
Ethernet MAC Address	This is the IEEE compliant MAC address of the Ethernet interface		The internal network bridge uses this MAC address

Wireless MAC Address	This is the IEEE compliant MAC address of the Wi-Fi interface		The WLAN MAC address
BSSID	The current associated BSSID of the Wi-Fi system		In AP mode: this will be the SAME as the Wireless MAC address. In STA mode and associated to an AP: this will be the value of the AP's MAC address. If the STA is not associated, this will state: "Not-Associated".

4.4 Status – WDS

This screen shows the status of the WDS links.

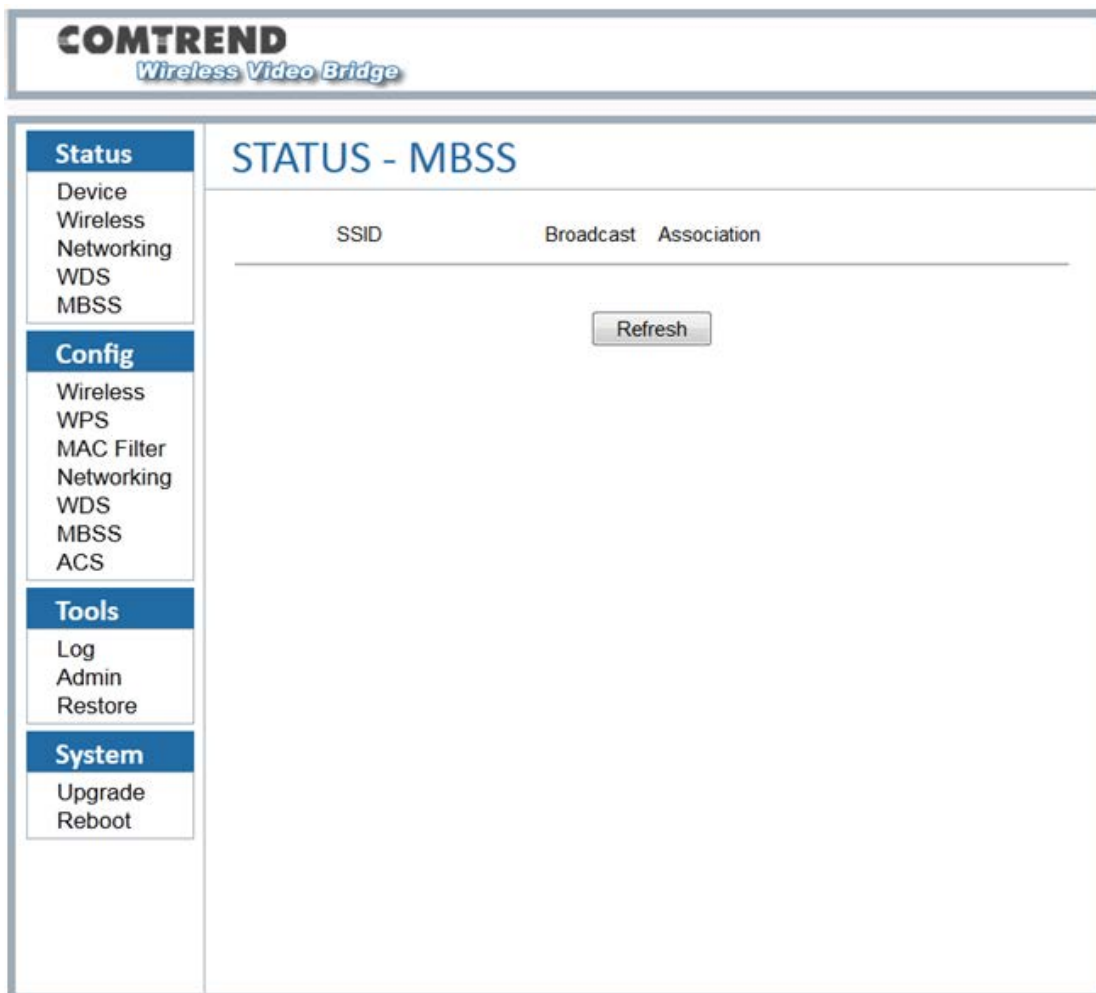


This typical WDS link status includes:

- The interface name of the WDS link, the name is managed by the system automatically, usually it is: WDS0/WDS1/WDS2...so on.
- The WDS peer MAC address of the opposite side, this MAC address is same as the address which you are using when creating WDS links.
- The WDS link quality.

4.5 Status – MBSS

Displays the information of multiple Basic Service Set Identifiers (BSSIDs) created on the device: SSID, Broadcast, Association count and details of the station connected. This option is not available if the device is configured as a STA. For instructions on setting up WAP-5940 as a WDS using AP mode, please refer to [Appendix B](#).



Menu Item	Description	Options	Detail
SSID	SSID of the MBSS		This will be the SSID of the wireless network.
Broadcast	Enabled or disabled SSID broadcast	TRUE	SSID will be broadcasted
		FALSE	Wi-Fi devices can't scan out this SSID
Association	Associated client	> = 0	The number of

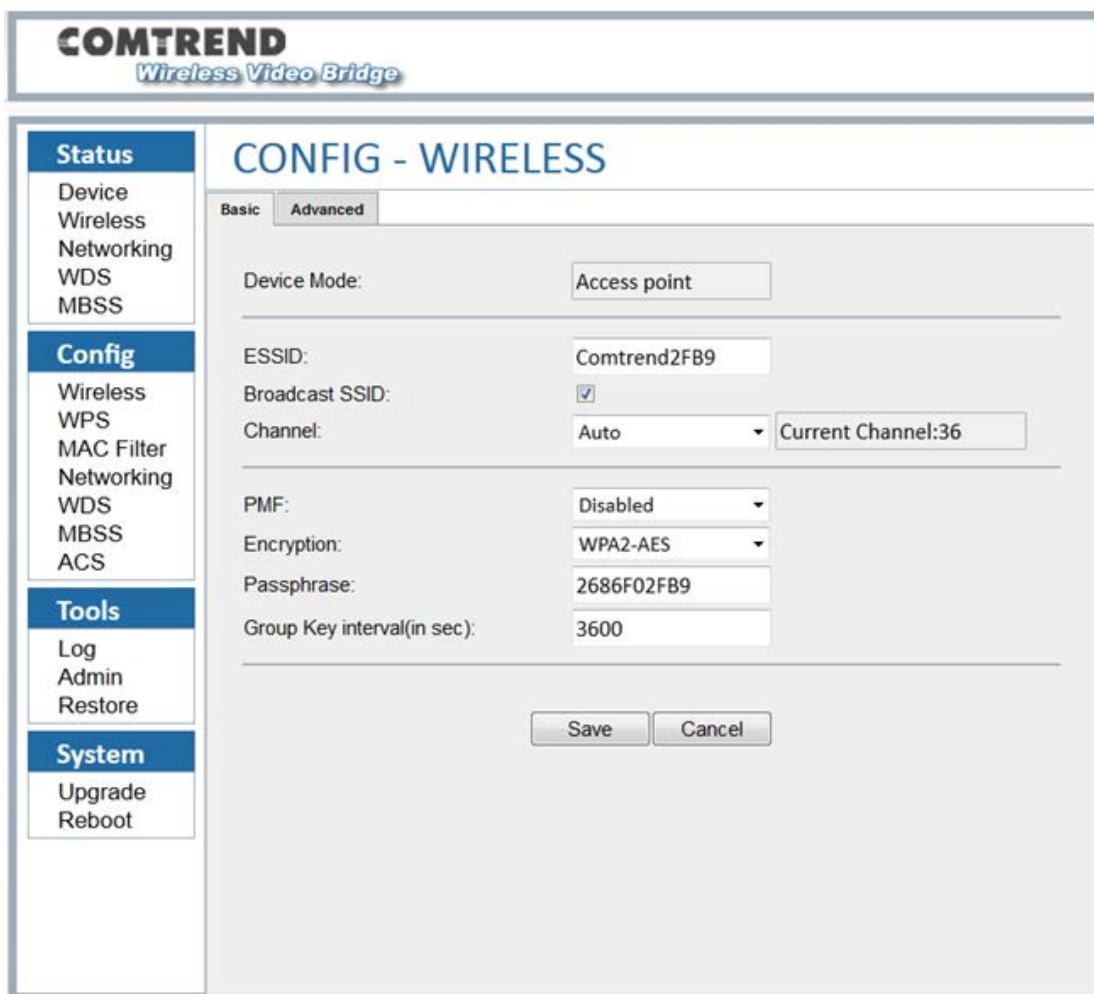
	number		client which are connected to the Virtual AP
--	--------	--	--

Chapter 5 Config

5.1 Config - Wireless

This screen has two tab pages, “Basic” and “Advanced”.

Basic



COMTREND
Wireless Video Bridge

CONFIG - WIRELESS

Basic Advanced

Device Mode: Access point

ESSID: Comtrend2FB9

Broadcast SSID: ☒

Channel: Auto Current Channel:36

PMF: Disabled

Encryption: WPA2-AES

Passphrase: 2686F02FB9

Group Key interval(in sec): 3600

Save Cancel

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Menu Item	Description	Options	Detail
Device Mode	AP or STA mode	Access Point	Device Acts as Access Point
		Station	Device Acts as Station

ESSID	SSID of the AP	Can be set to desired SSID name	This will be the SSID of the wireless network.
Channel	Available 5Ghz channels based on region setting	36-48, 149-165	5.150-5.250, 5.725-5.850 GHz are the supported frequency ranges
PMF	Protected Management Frames		Sets the 802.11w / PMF capability. Applies to AP
Encryption	802.11 compliant authentication and encryption	WPA2/AES	
		NONE-OPEN	Disables encryption (OPEN mode)
		WPA2 + WPA (Mixed mode)	
		WPA2/AES Enterprise	
		WPA2 + WPA Enterprise	
Passphrase	The current passphrase. Applies to AP only.		
Group Key interval(in sec)	Group key renewal interval for enterprise security	Group key interval needs to be between 0 and 43200	This is the interval at which the group key is renewed for clients associated to this SSID

Advanced

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CONFIG - WIRELESS

Basic

Advanced

Wireless Band:
Bandwidth:

NSS:
TX Rate:
Priority:
Beacon Interval (in ms):
DTIM Period:
Short GI:
VLAN:

802.11ac

▼

80MHz

▼

Auto

▼

Auto

▼

0

▼

100

2

☒

Save

Cancel

Menu Item	Description	Options	Detail
Wireless Band	Frequency Band to be used	802.11a	802.11a 5 GHz operation
		802.11an	802.11an 5 GHz operation
		802.11ac	802.11ac 5 GHz operation
Bandwidth	Per the 802.11a or 802.11an or 802.11ac standard	20 MHz	20 MHz operation
	Per the 802.11an or 802.11ac standard	40 MHz	40 MHz operation
	Per the 802.11ac	80MHz	80 MHz operation

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Leading the **Communication Trend**

	standard		
NSS	The maximum number of spatial streams	Auto 1 2 3 4	
Tx Rate	Transmitted data rate	Not supported for 802.11a standard	
		Auto or MCS0 ~MCS76 for 802.11an standard	Auto Rate Control, MCS 0-76
		Only Auto option available for 802.11ac standard when NSS is set to Auto. When NSS is not set to Auto, MCS0~MCS9 options are available.	
Priority	The priority is used to differentiate traffic between different SSIDs	0~3	
Beacon Interval	Set the interval of the beacon		How often the device sends a Beacon. The interval should be between 25 and 5000. The default value is 100.
DTIM Period	Delivery Traffic Indication Message		The DTIM period indicates how often clients serviced by the access point

			should check for buffered data awaiting pickup on the access point. The value should be between 1 and 15.
Short GI	Guard Intervals	Checked	The 802.11n draft specifies two guard intervals: 400ns (short) and 800ns (long). The GI is 400ns.
VLAN	Virtual Lan for different interface	1-4096	

5.2 Config – WPS

Connect to without selecting an SSID and inputting a Passphrase.

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CONFIG - WPS

Wifi Interface: wifi0(00:26:86:F0:3 ▾)

WPS State: Configured ▾

WPS PBC: WPS PBC

WPS PIN: WPS PIN

WPS AP PIN: 12345670 Regenerate

Save
Cancel

Menu Item	Description	Options	Detail
WPS State	Set WPS states	Disabled	WPS disabled
		Not configured	WPS enabled User can remotely change AP's wireless settings...SSID, Encryption and Passphrase for example.

		Configured	User needs to fill certain parameters to start WPS connection
WPS PBC	WPS push button		Push button to start WPS connection
WPS PIN	For Web UI pin WPS pin mode	Character string	This will be the PIN used for Web UI WPS pin mode.
WPS AP PIN			Client must have same PIN within 2 minutes. It is recommended to use the external WPS push button on the device.

5.3 Config – MAC Filter

This screen shows the MAC addresses filtering configurations that are used for the AP.

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MAC ADDRESS LIST

Wifi Interface: wifi0(00:26:86:F0:30:81) ▼

MAC Address Filtering: None ▼
Save

MAC Address:
Add
Remove

No results

Refresh

Menu Item	Description	Options	Detail
Wifi Interface	Real wireless device name and MAC Address in CPE		
MAC Address Filtering	The device filter MAC address	NONE	The AP can block a selected station from associating based on its MAC (hardware interface) address.

			"NONE" = Disable MAC address filtering.
		White list mode	Accept a client association request unless the MAC address for that client has been blocked
		Black list mode	Block a client association request unless the MAC address for that client has been authorized
MAC Address	Verify the MAC address		Checks whether the MAC address can be validated
MAC Address List	List the authorized or denied MAC addresses		According to the MAC address filter "Authorize if not denied" filter lists the denied MAC addresses. "Deny if not authorized" filter lists the authorized MAC addresses.

5.4 Config – Networking

These screens show the networking configuration.

DHCP

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CONFIG - NETWORKING

DHCP: ☒ Static IP: ☐

IP Address:

10.0.0.2

Netmask:

255.0.0.0

Ethernet0 MAC Address:

00:26:86:F0:2F:B9

Ethernet1 MAC Address:

02:26:86:F0:2F:B9

Wireless MAC Address:

00:26:86:F0:30:81

BSSID:

00:26:86:F0:30:81

Save

Cancel

Static IP

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CONFIG - NETWORKING

DHCP: ☐ Static IP: ☒

IP Address:

Netmask:

Ethernet0 MAC Address:

Ethernet1 MAC Address:

Wireless MAC Address:

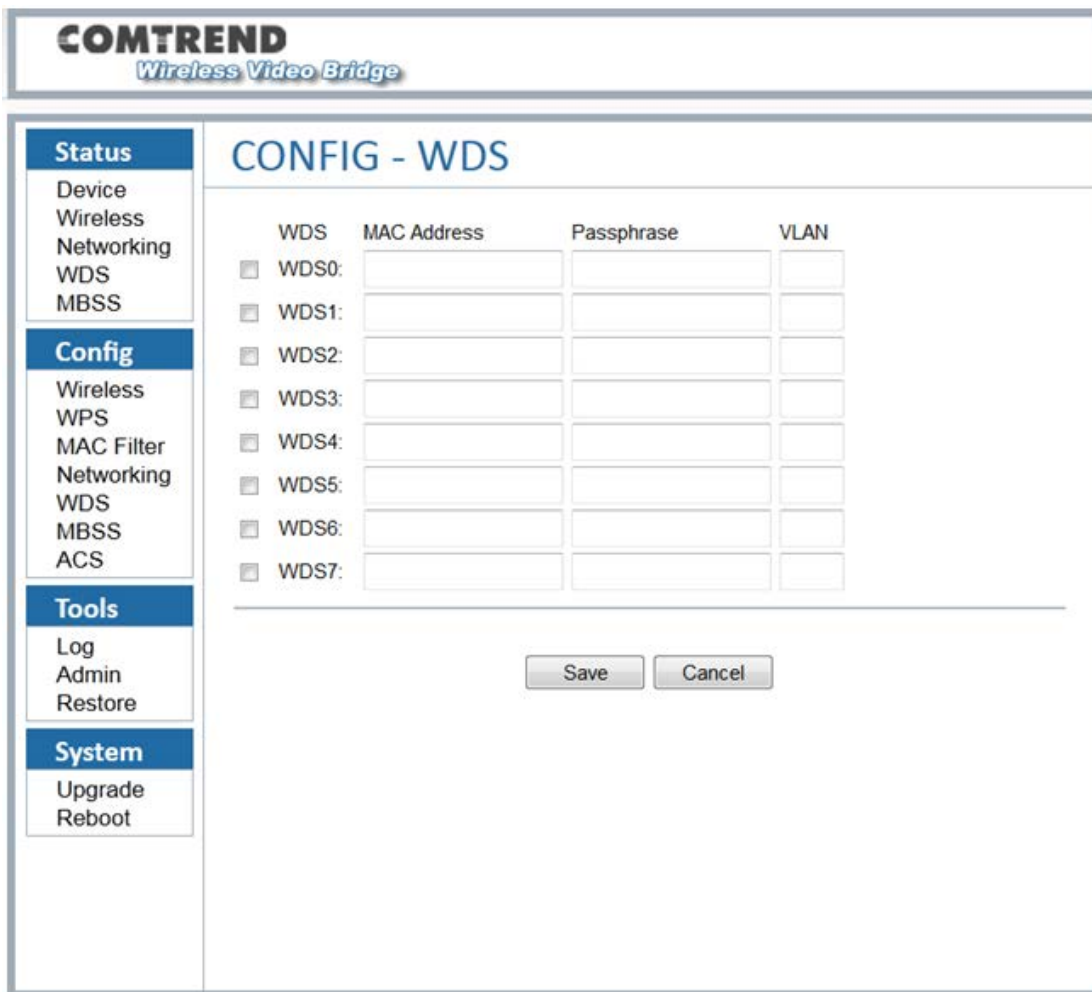
BSSID:

Menu Item	Description	Options	Detail
DHCP or Static IP	Set the network configuration to DHCP or Static IP	DHCP	The device will try to get its IP address with DHCP from a device like a router
		Static IP	The device will use the static IP address
IP Address	The IP Address of the system		This can be changed from this interface, by editing this field. If the device is using DHCP, the IP

			address is not allowed to change. CAUTION: After selecting “Save”, the IP Address will change IMMEDIATELY. The Web UI must be pointed at the new address in order to continue your Web UI Session.
Netmask	Netmask of the IP address		
Ethernet MAC Address	This is the IEEE compliant MAC address of the Ethernet interface		The internal network bridge uses this MAC address. This cannot be changed.
Wireless MAC Address	This is the IEEE compliant MAC address of the Wi-Fi interface.		The WLAN MAC address. This cannot be changed.
BSSID	The current associated BSSID of the Wi-Fi system.		this will be the SAME as the Wireless MAC address.

5.5 Config – WDS

This screen shows the configuration of the WDS links.



WDS	MAC Address	Passphrase	VLAN
☐ WDS0:			
☐ WDS1:			
☐ WDS2:			
☐ WDS3:			
☐ WDS4:			
☐ WDS5:			
☐ WDS6:			
☐ WDS7:			

Save Cancel

This option is not available if the device is configured as a STA.

Menu Item	Description	Options	Detail
WDS checkbox	To determine if the WDS link is enabled	Checked	The WDS link will be stored to a file after clicking the Save Button
		Not Checked	The WDS link will be discarded after clicking the Save Button
MAC Address		48bit MAC address	The WDS peer MAC

			address on the opposite side
Passphrase		64 ASCII PSK	Wi-Fi devices can see the SSID in scan. Now the passphrase string is displayed as "*****" instead.
		Empty	The WDS link does not have security
VLAN	Virtual Lan for different interface	1-4096	

5.6 Config – MBSS

One can create multiple Basic Service Set Identifiers (BSSIDs) on a device initially configured as an access point (AP). This capability is not available on a device configured as a STA. The first step in creating an additional BSSID is to create the wireless interface device for that BSSID.

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CONFIG - MBSS

1: ☐	SSID: PMF: Disabled ▾	VLAN: Encryption: NONE-OPEN ▾	Broadcast: ☐ Priority: 0 ▾	Passphrase:
2: ☐	SSID: PMF: Disabled ▾	VLAN: Encryption: NONE-OPEN ▾	Broadcast: ☐ Priority: 0 ▾	Passphrase:
3: ☐	SSID: PMF: Disabled ▾	VLAN: Encryption: NONE-OPEN ▾	Broadcast: ☐ Priority: 0 ▾	Passphrase:
4: ☐	SSID: PMF: Disabled ▾	VLAN: Encryption: NONE-OPEN ▾	Broadcast: ☐ Priority: 0 ▾	Passphrase:
5: ☐	SSID: PMF: Disabled ▾	VLAN: Encryption: NONE-OPEN ▾	Broadcast: ☐ Priority: 0 ▾	Passphrase:
6: ☐	SSID: PMF: Disabled ▾	VLAN: Encryption: NONE-OPEN ▾	Broadcast: ☐ Priority: 0 ▾	Passphrase:
7: ☐	SSID: PMF: Disabled ▾	VLAN: Encryption: NONE-OPEN ▾	Broadcast: ☐ Priority: 0 ▾	Passphrase:

Save

Cancel

Menu Item	Description	Options	Detail
SSID	SSID of the MBSS		This will be the SSID of the wireless network.
VLAN	Virtual Lan for different interface	1-4096	
Broadcast	Enabled or disabled SSID broadcast	Checked	SSID will be broadcast
		Unchecked	Wi-Fi devices can see the SSID in scan
Priority	The priority is used to differentiate traffic between different SSIDs	0 is highest priority. 3 is lowest priority.	
PMF	Protected Management Frames		Sets the 802.11w / PMF capability. Applies to AP
Encryption	802.11 compliant encryption	NONE-OPEN	Disables encryption (OPEN mode)
		WPA2/AES	
		WPA2+WPA (mixed mode)	
Passphrase	The passphrase applies to this MBSS SSID		

5.7 Config – ACS

WAN Management Protocol CWMP (TR-069) allows an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device. Select desired values and click **SAVE** to configure TR-069 options.

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CONFIG - ACS

URL:

Username:

Password:

Periodic Inform:

Interval:

Connection Request URL:

Connection Request Username:

Connection Request Password:

STUN:

Server Address:

Server Port:

Username:

Password:

Maximum Keep Alive Period:

Minimum Keep Alive Period:

Enable: ☐ Disable: ☒

Enable: ☒ Disable: ☐

Menu Item	Description	Options	Detail
Enable	Enable TR-069 daemon connection to ACS	Select to enable	
Disable	Disable TR-069 daemon connection to ACS	Select to disable	
URL	IP address and port the device uses to connect to the ACS		
Username	Username used to authenticate on ACS		

Password	Password used to authenticate on ACS		
Periodic Inform	Activate / Deactivate the info message to ACS server		Unit is second(s)
Interval	Periodic time interval of sending the info message		
Connection Request URL	The path for the connection from the ACS to the CPE. It is recommended to keep the default setting.		
Connection Request Username	Username used to authenticate an ACS making a Connection Request to the CPE		
Connection Request Password	Password used to authenticate an ACS making a Connection Request to the CPE		
STUN	Activate the TR-111 function	Select to enable	
	Deactivate the TR-111 function	Select to disable	
Server Address	IP address of device used to connect to the ACS which support STUN		
Server Port	Port of device used to connect to the		

	ACS which support STUN		
Username	Username used to authenticate on ACS which support STUN		
Password	Password used to authenticate on ACS which support STUN		
Maximum Keep Alive Period	The maximum connect duration to the ACS server		Unit is second(s)
Minimum Keep Alive Period	The minimum connect duration to the ACS server		Unit is second(s)

Chapter 6 Tools

6.1 Tools – Log

This page has the ability to directly view the PHY statistics of the device.

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TOOLS - LOG

Start
Stop

```

Jan 1 00:00:20 socl user.info kernel: [ 16.470000] MuC: WMM AC 0:3,4,6,0,0 1:7,4,10,0,0 2:1,3,4,188,0 3:1,2,3,188,0
Jan 1 00:00:20 socl user.info kernel: [ 17.600000] MuC: PMF set=0
Jan 1 00:00:20 socl user.info kernel: [ 18.395000] MuC: wmac_rx_pool timer is enable
Jan 1 00:00:20 socl user.warn kernel: [ 18.795000] [2]Comparing register set Global control
Jan 1 00:00:20 socl user.warn kernel: [ 18.815000] [6]Comparing register set BB Global regs
Jan 1 00:00:21 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 7
Jan 1 00:00:28 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 11
Jan 1 00:00:39 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 17
Jan 1 00:00:56 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 14
Jan 1 00:01:10 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 12
Jan 1 00:01:22 socl daemon.info dhclient: No DHCPPOFFERS received.
Jan 1 00:01:22 socl daemon.info dhclient: No working leases in persistent database - sleeping.
Jan 1 00:02:19 socl local.err qharvestd[989]: curl_easy_perform failed, error = Error
Jan 1 00:04:49 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 3
Jan 1 00:04:52 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 4
Jan 1 00:04:56 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 10
Jan 1 00:05:06 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 12
Jan 1 00:05:18 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 15
Jan 1 00:05:29 socl user.debug kernel: [ 329.175000] Tstamp RxPkt RxG CRC Noise TxPkt Defers Touts Retries ShPmb1 LgPmb1 Scale MCS-(TX/RX
Jan 1 00:05:29 socl user.debug kernel: [ 329.175000] 314 46 42 2 -92.4 0 0 0 0 0 22 0 0 0
Jan 1 00:05:29 socl user.debug kernel: [ 329.175000] 315 42 22 0 -92.5 0 0 0 0 0 19 0 OM OM -
Jan 1 00:05:29 socl user.debug kernel: [ 329.175000] 316 48 30 0 -92.6 1 2 0 0 0 2 14 1 0 0
Jan 1 00:05:29 socl user.debug kernel: [ 329.175000] 317 46 42 1 -92.6 0 0 0 0 0 0 30 0 OM OM -
Jan 1 00:05:29 socl user.debug kernel: [ 329.175000] 318 49 42 7 -92.5 1 0 0 0 0 0 16 1 0 0
Jan 1 00:05:29 socl user.debug kernel: [ 329.175000] 319 50 22 0 -92.5 0 0 0 0 0 14 10 0 OM OM -
Jan 1 00:05:31 socl user.debug kernel: [ 331.250000] 320 53 22 0 -92.4 0 0 0 0 0 3 6 0 0 0
Jan 1 00:05:31 socl user.debug kernel: [ 331.250000] 321 50 60 0 -92.3 0 0 0 0 0 0 37 0 OM OM -
Jan 1 00:05:33 socl user.debug kernel: [ 333.300000] 322 55 60 3 -92.3 0 0 0 0 0 0 10 0 0 0
Jan 1 00:05:33 socl user.debug kernel: [ 333.300000] 323 50 28 3 -92.3 1 0 0 0 0 0 16 1 OM OM -
Jan 1 00:05:33 socl daemon.info dhclient: DHCPDISCOVER on br0 to 255.255.255.255 port 67 interval 17

```

Pressing the “Start” button will start a 10 second polling log. This data can be useful to assist in debugging the system.

After selecting “Start”, the page will look similar to the image above. The logging will stop after pressing the “Stop” button. If the IP address is changed or if the device is shut off, this page will give an error message if logging was in progress. To recover the session, please press the “Start” button again.

This interface takes data from an internal OS file, so intermittently; there may be management messages that show up in this log.

Metric	Description	Comments
Tstamp	This is the system time of the measurement taken from the internal system clock	
RxPkts	This represents the number of packets that were successfully received over 1 second intervals. Each line represents 1 second of time.	
RxGain	This is the higher receiver gain value that was recorded on successfully received packets during this measurement interval. If no packets were received, this may be an invalid number.	The maximum value of RxGain is 62
CRC	This is the number of CRC errors received over the 1 second measurement interval	If (CRC/Rx Packets) > 10-20%, then the channel condition or link quality is poor. This is possibly due to interference, another Wi-Fi network or being too far for the current configuration to be reliable.
Noise	This is the MAX receiver noise floor as measured over this 1 second interval	This value is an internal noise calculation, not external. In normal operation it will vary between 20 and 70.
TxPkts	This is the number of successfully transmitted packets over the last 1 second interval.	

Defers	This number counts the number of times an attempted transmission was deferred due to the medium being busy. This is helpful in determining if an environment is very busy.	Defers are common in busy WiFi environments
Tout	This is an indicator of Tx packet timeout	Timeouts are not common. The Packet could not find a time slot to transmit.
Retries	This counts the number of transmission retries that have occurred over the last one second. This is primarily due to the lack of acknowledgements from the partner device.	On the transmit side, note that the general packet flow for error is as follows: Defer Retry Timeout
ShPre	This counts the number of Short Preamble Detection Errors	These are very common in high throughput conditions
LgPre	This counts the number of Long Preamble Detection errors	The wireless received a signal which passed the short preamble, but failed the more complex long preamble. These are less common than short preamble errors.
Rate	This is a legacy measurement for rate and is not currently used	

6.2 Tools – Admin

This page is for administration of the user passwords.

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TOOLS - ADMIN

User Name:

Old Passphrase:

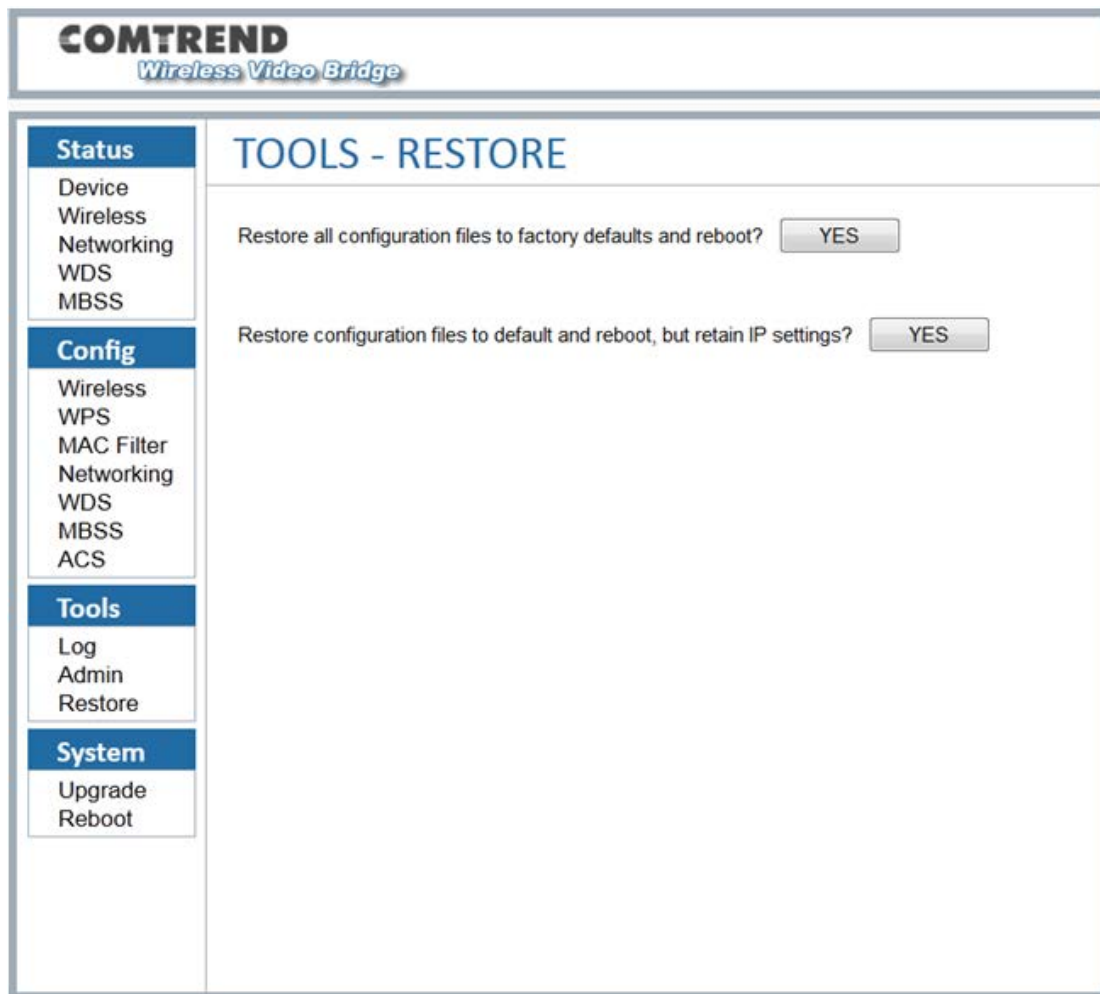
New Passphrase:

New Passphrase Again:

Menu Item	Description	Notes
User Name	The user name for login	Only for the login privilege
Old Passphrase	Enter the original password of the user name	
New Passphrase	Enter the new passphrase	
New Passphrase Again	Enter the new passphrase again	It should be the same as the "New Passphrase"

6.3 Tools – Restore

The Tools Restore page is for users to restore all the configurations of the device to factory defaults. There is also the option to restore the configuration files and reboot whilst retaining the IP settings.



The screenshot shows the COMTREND Wireless Video Bridge web interface. The top header displays the COMTREND logo and the product name. A left sidebar contains navigation menus for Status, Config, Tools, and System. The main content area is titled 'TOOLS - RESTORE' and contains two restore options, each with a 'YES' button.

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TOOLS - RESTORE

Restore all configuration files to factory defaults and reboot?

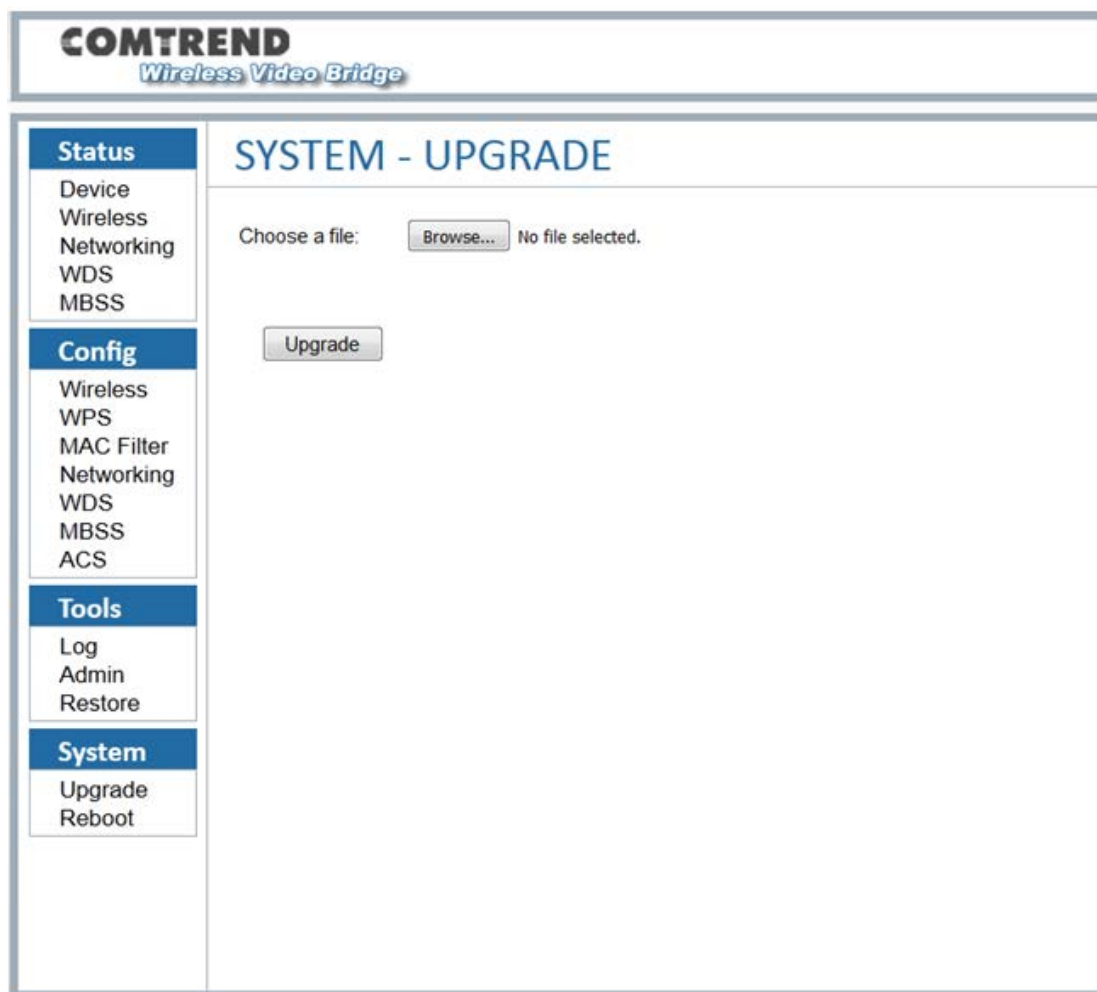
Restore configuration files to default and reboot, but retain IP settings?

The Restore function also restores the password of the login user.

Chapter 7 System

7.1 System – Upgrade

The System Upgrade page is for users to update the firmware on the device.



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SYSTEM - UPGRADE

Choose a file: No file selected.

This page will upload a binary image file. **Please use bin file to upgrade which is named like “WAP-5940-EM51-3671361CTU-CXX_RXX.bin”.**

When you select the file and click “Upgrade”, the “Upgrade” button will be disabled and the page will display “Loading the image file.....Please wait”, please wait for 2 minutes. **Please be patient and do not power off the unit during this process. Do not close the upgrade webpage.**

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SYSTEM - UPGRADE

Choose a file: C01_R02IWAP-5940-EM51-3671361CTU-C01_R02.bin

When the firmware has been upgraded successfully, you will be automatically directed to the reboot page.

7.2 System – Reboot

The System Reboot page is for users to reboot the device.

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SYSTEM - REBOOT

Are you sure to reboot?

SYSTEM - REBOOT

Rebooting....

Click **here** if you are not redirected automatically after 60s

Appendix A - Specifications

Hardware Interface

- AP/Station Switch x 1
- RJ-45 X 2 for Giga Ethernet port
- Reset Button X 1
- WPS button X 1
- 4x internal MIMO antenna
- Power switch X 1
- Power Jack X 1

Standard

- 802.11a/n/ac
- 802.11i (WEP, WPA/WPA2, RADIUS)
- 802.11d
- 802.11e (WMM, WMM-PS)
- 802.11w
- 802.11h
- 802.11k
- 802.11r
- 802.11s (Draft)

Rates are for 256 QAM

- 80MHz: 1.7Gbps
- 40MHz: 800Mbps
- 20MHz: 346.8Mbps

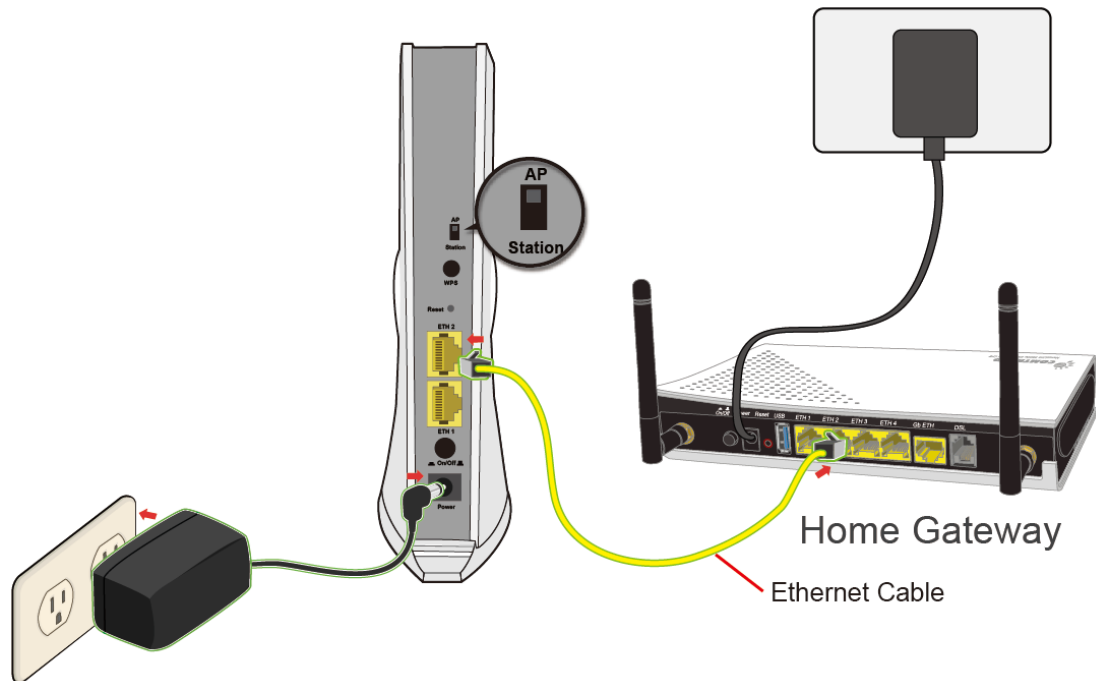
Environment Condition

Operating temperature0 ~ 40 degrees Celsius

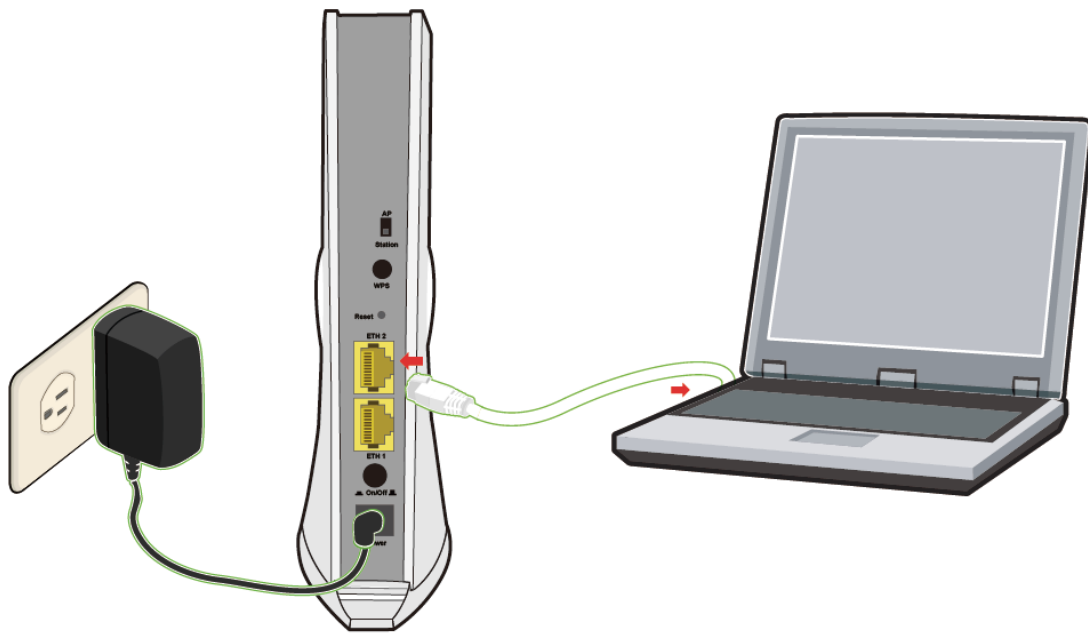
NOTE: Specifications are subject to change without notice.

Appendix B - AP / Station

After you select AP mode thus the Ethernet port (ETH1) will be WAN port, another Ethernet port (ETH2) is LAN side.



After you select station mode thus two Ethernet ports (ETH1, ETH2) are LAN side.



Warnings Guide

FCC Statements

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 or more 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: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

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

ISED Statements

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme à la norme RSSs Industrie Canada exempts de licence norme(s). Son fonctionnement est soumis aux deux conditions suivantes:

1. *Cet appareil ne peut pas provoquer d'interférences et*
2. *Cet appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement du dispositif.*

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Other Statements

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

This device is restricted to ***indoor*** use.