

# 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](mailto: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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|   |
|---|
| <b>NOTE:</b> This document is subject to change without notice. |
|---|

## 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.

# Table of Contents

|  |           |
|--|-----------|
| <b>CHAPTER 1 INTRODUCTION.....</b>                                 | <b>4</b>  |
| <b>CHAPTER 2 INSTALLATION.....</b>                                 | <b>5</b>  |
| 2.1 HARDWARE SETUP.....  | 5         |
| 2.2 LED INDICATORS.....  | 7         |
| 2.3 INITIAL DEVICE SETUP .....                                     | 9         |
| 2.3.1 Setup of Wireless Devices via WiFi Protected Setup .....     | 11        |
| 2.3.2 Setup of Wireless Devices via Manual Connection .....        | 12        |
| 2.3.3 Setup Complete .....   | 14        |
| <b>CHAPTER 3 WEB USER INTERFACE.....</b>                           | <b>15</b> |
| 3.1 DEFAULT SETTINGS .....   | 15        |
| 3.2 IP CONFIGURATION.....  | 16        |
| 3.3 LOGIN PROCEDURE.....   | 17        |
| <b>CHAPTER 4 STATUS.....</b>                                       | <b>19</b> |
| 4.1 STATUS - DEVICE .....  | 19        |
| 4.2 STATUS – WIRELESS .....  | 21        |
| 4.2.1 AP Mode.....   | 21        |
| 4.2.2 STA Mode.....  | 24        |
| 4.3 STATUS – NETWORKING.....                                       | 27        |
| 4.4 STATUS – WDS .....   | 29        |
| 4.5 STATUS – MBSS .....  | 30        |
| <b>CHAPTER 5 CONFIG.....</b>                                       | <b>32</b> |
| 5.1 CONFIG – WIRELESS .....  | 32        |
| 5.2 CONFIG – WPS .....   | 37        |
| 5.3 CONFIG – MAC FILTER .....                                      | 39        |
| 5.4 CONFIG – NETWORKING .....                                      | 41        |
| 5.5 CONFIG – WDS .....   | 44        |
| 5.6 CONFIG – MBSS.....   | 46        |
| 5.7 CONFIG – ACS.....  | 48        |
| <b>CHAPTER 6 TOOLS.....</b>  | <b>51</b> |
| 6.1 TOOLS – LOG .....  | 51        |
| 6.2 TOOLS – ADMIN.....   | 54        |
| 6.3 TOOLS – RESTORE .....  | 55        |
| <b>CHAPTER 7 SYSTEM.....</b>                                       | <b>56</b> |
| 7.1 SYSTEM – UPGRADE .....   | 56        |
| 7.2 SYSTEM – REBOOT .....  | 58        |
| <b>APPENDIX A - SPECIFICATIONS .....</b>                           | <b>59</b> |
| <b>APPENDIX B - WAP-5940 WDS CONFIGURATION USING AP MODE .....</b> | <b>60</b> |

## 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.

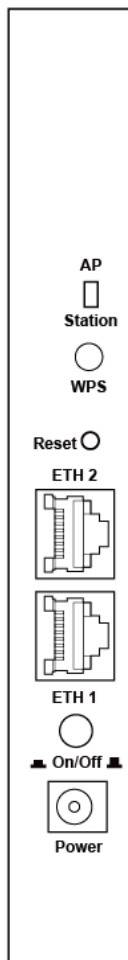
## Chapter 2 Installation

### 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**

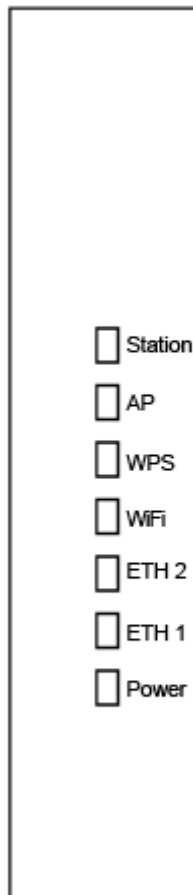
Press and release the WPS button to start the WPS connection process with the other device. The connection duration is 2 minutes during which the WPS LED will blink. If there is no client connection the WPS led will turn off. If connection is successful the WPS LED will stay on.

**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 | [AP] When no client connected<br>[Station] When not connected to the AP |

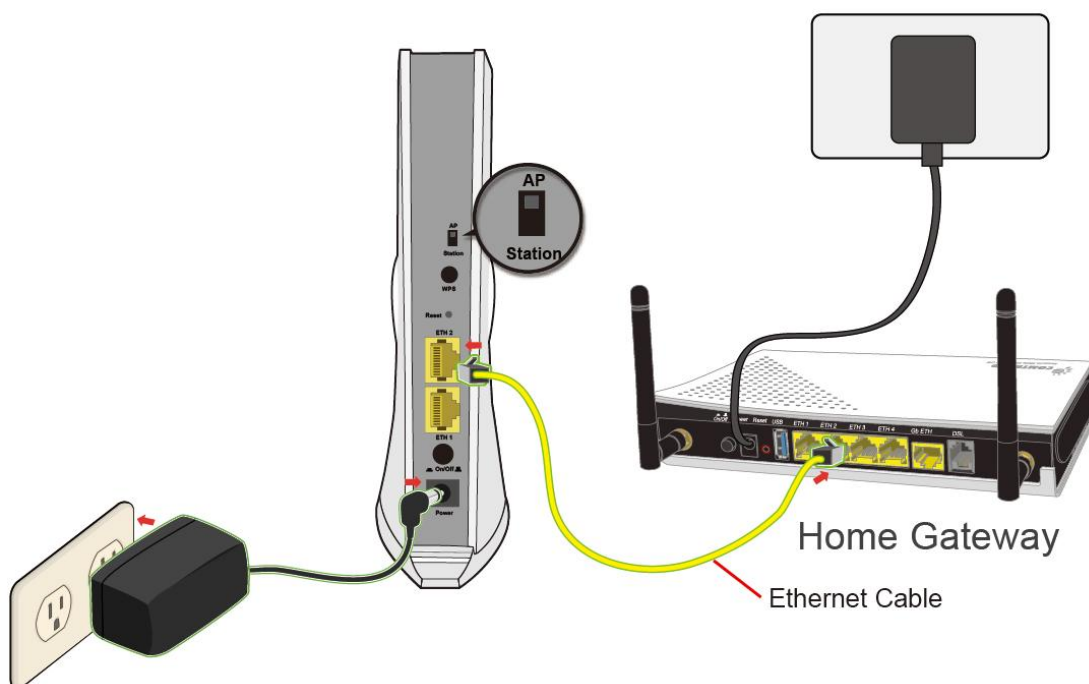


|         |       |       |   |
|---------|-------|-------|---|
| WPS     | GREEN | On    | WPS connection successful               |
|         |       | Off   | No WPS (5G) association process ongoing |
|         |       | Blink | WPS (5G) connection in progress         |
| AP      | GREEN | On    | 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

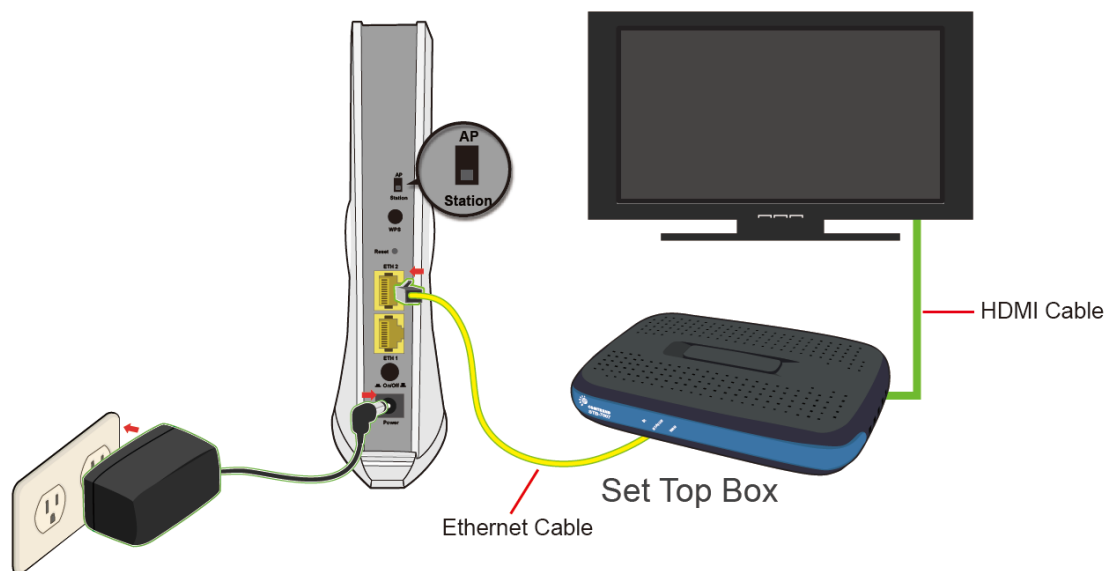
### AP Device Setup

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.



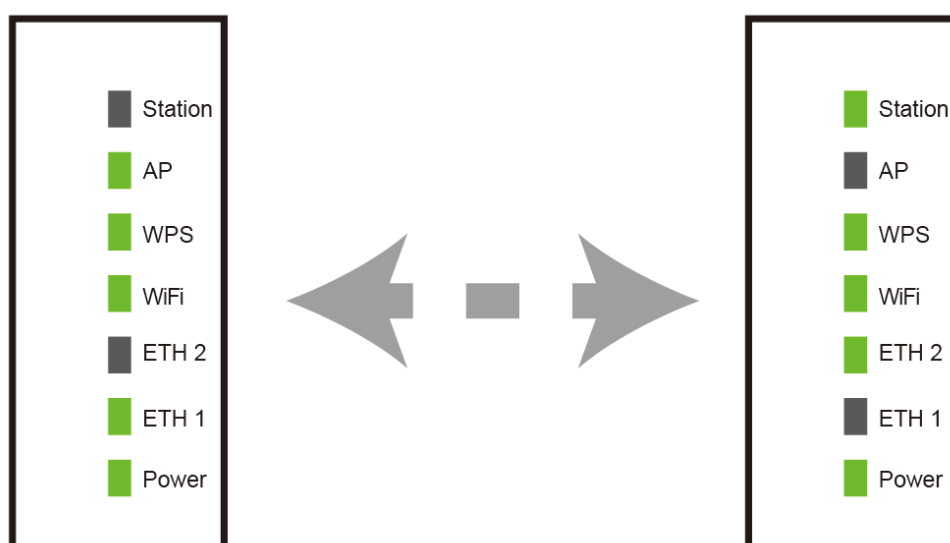
## **Station Device Setup**

3. Setup the additional Wireless Video Bridge closest to the location you want to directly connect the Internet Enabled Device (STB, DVR, etc.). Plug in the power adapter and press the **Power Button** to the ON position (IN). Set the Wireless Video Bridge to Station Mode by sliding the **AP/Station Switch** to the down position.
4. Connect the Wireless Video Bridge to an Internet Enabled Device (STB, DVR, etc.) with an Ethernet (RJ-45) cable. You can use either Ethernet ports of the Wireless Video Bridge to make this connection.



### 2.3.1 Setup of Wireless Devices via WiFi Protected Setup

5. Press and release the WPS button on the device setup in AP Mode and the **WPS LED** will start to blink **GREEN**.
6. Within two minutes press and release the WPS button on the device setup in Station Mode the **WPS LED** will start to blink **GREEN**.

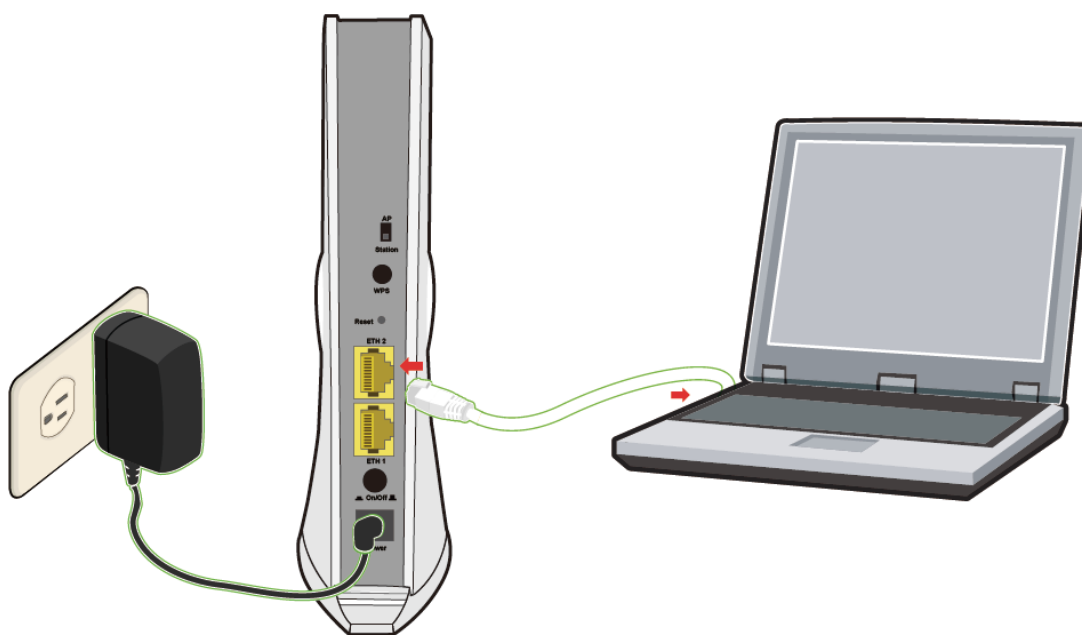


7. Upon successful connection, the **WPS LED** and **WiFi LED** will light up solid **GREEN** on both of the Wireless Video Bridges.
8. Repeat steps 3-7 to add additional station devices.

### 2.3.2 Setup of Wireless Devices via Manual Connection

**NOTE:** If you do not wish to setup your Wireless Video Bridges via WPS you can set it up manually.

1. Plug one end of the Ethernet cable into the LAN port of a Notebook/PC (setup with a fixed IP 10.0.0.11 and subnet mask 255.255.255.0) and the other end into the Ethernet port of the Wireless Video Bridge that is in Station Mode.



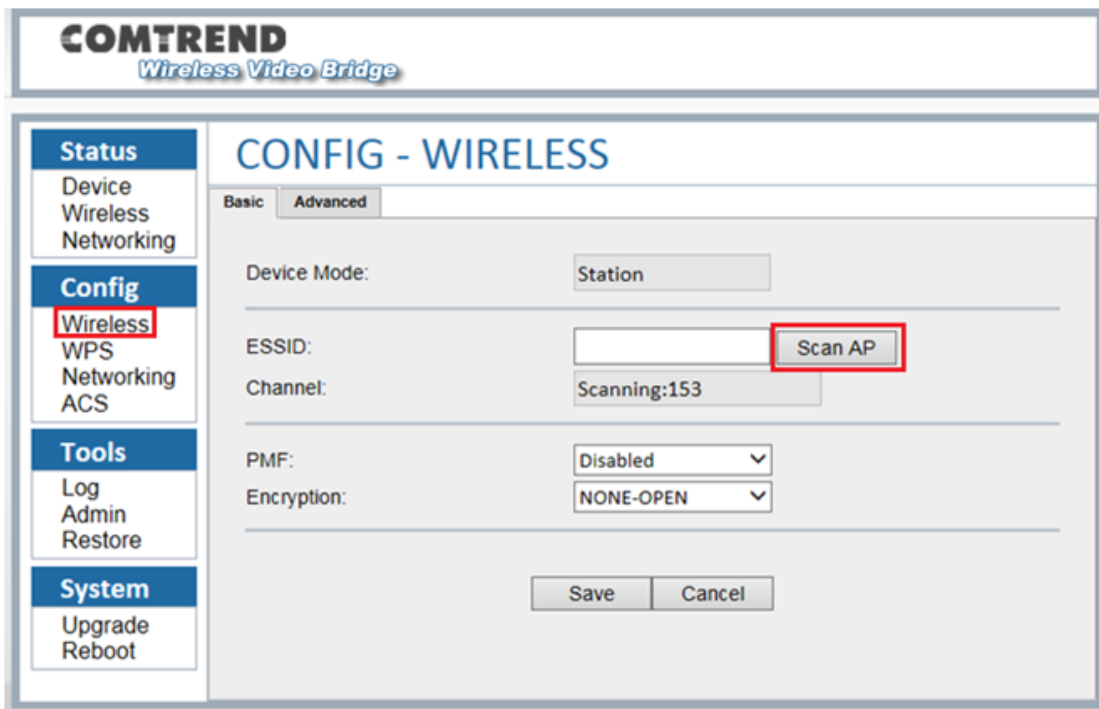
2. Open your Internet browser to access 10.0.0.10 and input the Username: root and Password: 12345

Username\*

Password\*

LOGIN

- Once you have accessed the Web UI, click Config> Wireless (as shown below). Next, click "Scan AP."

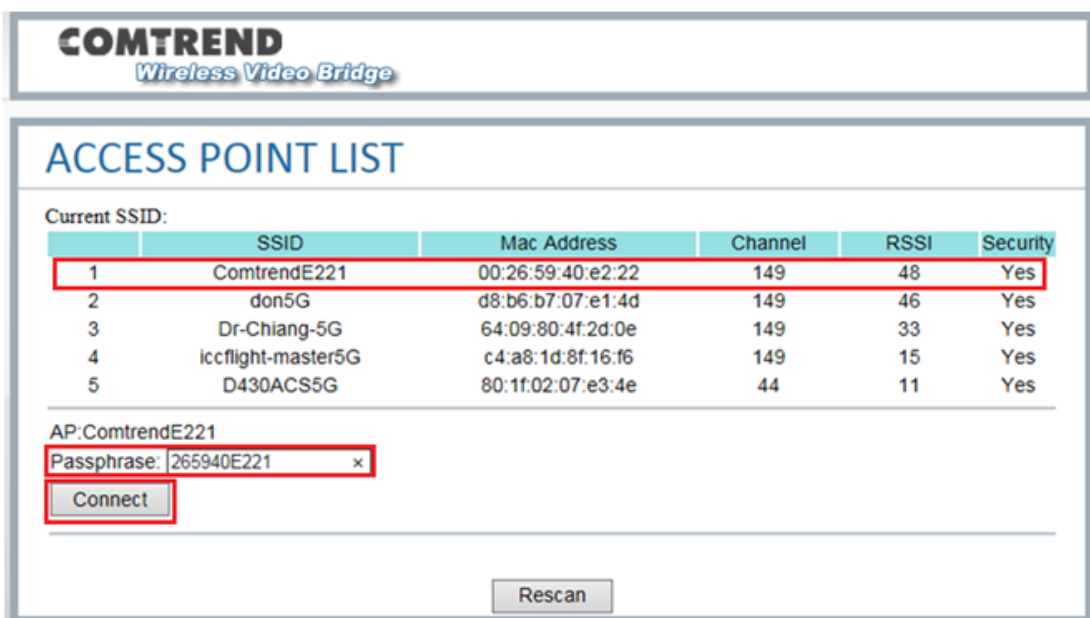


The screenshot shows the 'CONFIG - WIRELESS' page of the COMTREND Wireless Video Bridge. The left sidebar has a 'Wireless' tab highlighted. The main area has two tabs: 'Basic' and 'Advanced'. Under 'Basic', the 'Device Mode' is set to 'Station'. The 'ESSID' field is empty, and the 'Channel' is set to 'Scanning:153'. A 'Scan AP' button is highlighted. Below these, 'PMF' is set to 'Disabled' and 'Encryption' is set to 'NONE-OPEN'. 'Save' and 'Cancel' buttons are at the bottom.

- Select an SSID (AP unit) and input the passphrase. The SSID and passphrase (**WiFi Key**) can be found a label on the bottom on the Wireless Video Bridge. Next, click "connect."

SSID : ComtrendE221

WiFi Key : 265940E221



The screenshot shows the 'ACCESS POINT LIST' page of the COMTREND Wireless Video Bridge. It displays a table of detected access points. The first entry, 'ComtrendE221', is highlighted. Below the table, the 'Current SSID' is 'ComtrendE221', and the 'Passphrase' is '265940E221'. A 'Connect' button is highlighted. A 'Rescan' button is at the bottom.

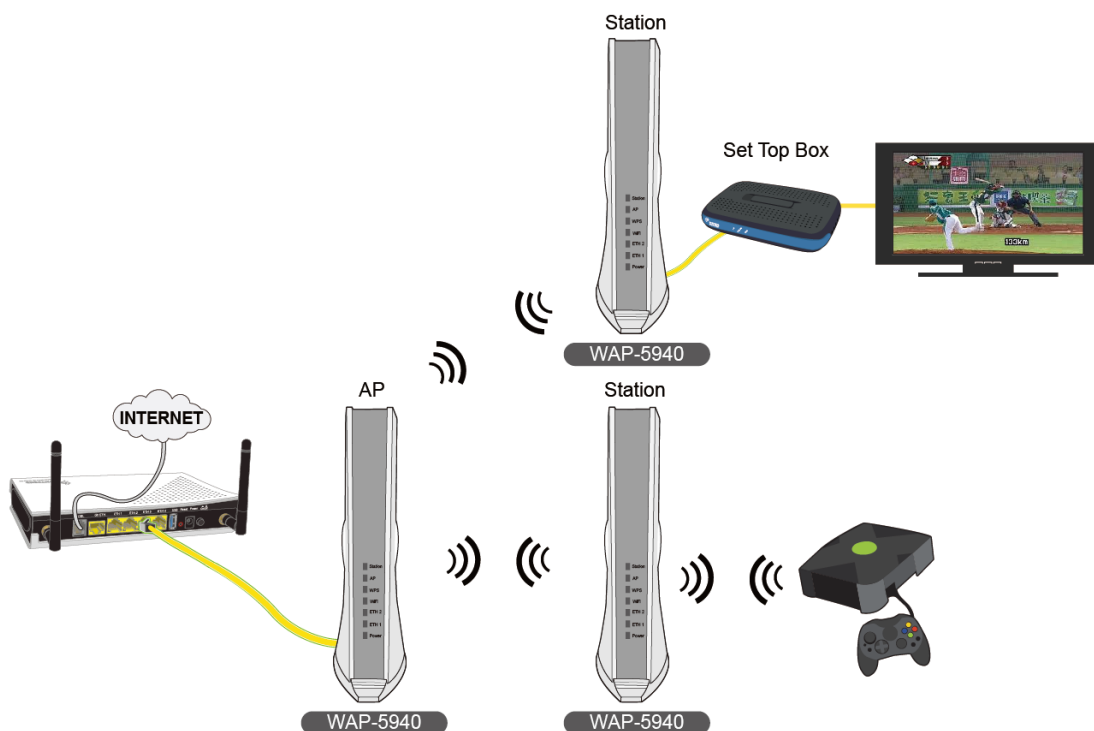
|   | SSID              | Mac Address       | Channel | RSSI | Security |
|---|-------------------|-------------------|---------|------|----------|
| 1 | ComtrendE221      | 00:26:59:40:e2:22 | 149     | 48   | Yes      |
| 2 | don5G             | d8:b6:b7:07:e1:4d | 149     | 46   | Yes      |
| 3 | Dr-Chiang-5G      | 64:09:80:4f:2d:0e | 149     | 33   | Yes      |
| 4 | icflight-master5G | c4:a8:1d:8f:16:f6 | 149     | 15   | Yes      |
| 5 | D430ACS5G         | 80:1f:02:07:e3:4e | 44      | 11   | Yes      |

- To confirm that the connection is successful, check that the current SSID is the same as the one that you tried to connect to in the previous step.

| COMTREND<br>Wireless Video Bridge |                    |                   |         |      |          |
|-----------------------------------|--------------------|-------------------|---------|------|----------|
| ACCESS POINT LIST                 |                    |                   |         |      |          |
| Current SSID: ComtrendE221        |                    |                   |         |      |          |
|                                   | SSID               | Mac Address       | Channel | RSSI | Security |
| 1                                 | ComtrendE221       | 00:26:59:40:e2:22 | 149     | 50   | Yes      |
| 2                                 | don5G              | d8:b6:b7:07:e1:4d | 149     | 46   | Yes      |
| 3                                 | Dr-Chiang-5G       | 64:09:80:4f:2d:0e | 149     | 31   | Yes      |
| 4                                 | iccflight-master5G | c4:a8:1d:8f:16:f6 | 149     | 14   | Yes      |
| 5                                 | D430ACS5G          | 80:1f:02:07:e3:4e | 44      | 10   | Yes      |
| 6                                 | CTMIS-INT-5G       | 74:da:38:40:e0:f3 | 153     | 54   | No       |
| 7                                 | CTMIS-INT-5G       | d8:b6:b7:07:dd:d1 | 36      | 21   | No       |
| 8                                 | CTMIS-INT-5G       | 74:da:38:40:e0:ed | 149     | 13   | No       |
| 9                                 | CTMIS-INT-5G       | d8:b6:b7:07:dd:d3 | 161     | 10   | No       |
| 10                                | CTMIS-INT          | 80:1f:02:57:22:aa | 161     | 10   | No       |
| Rescan                            |                    |                   |         |      |          |

### 2.3.3 Setup Complete

Your Wireless Video Bridges are now setup! Enjoy your video streaming!



## 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.

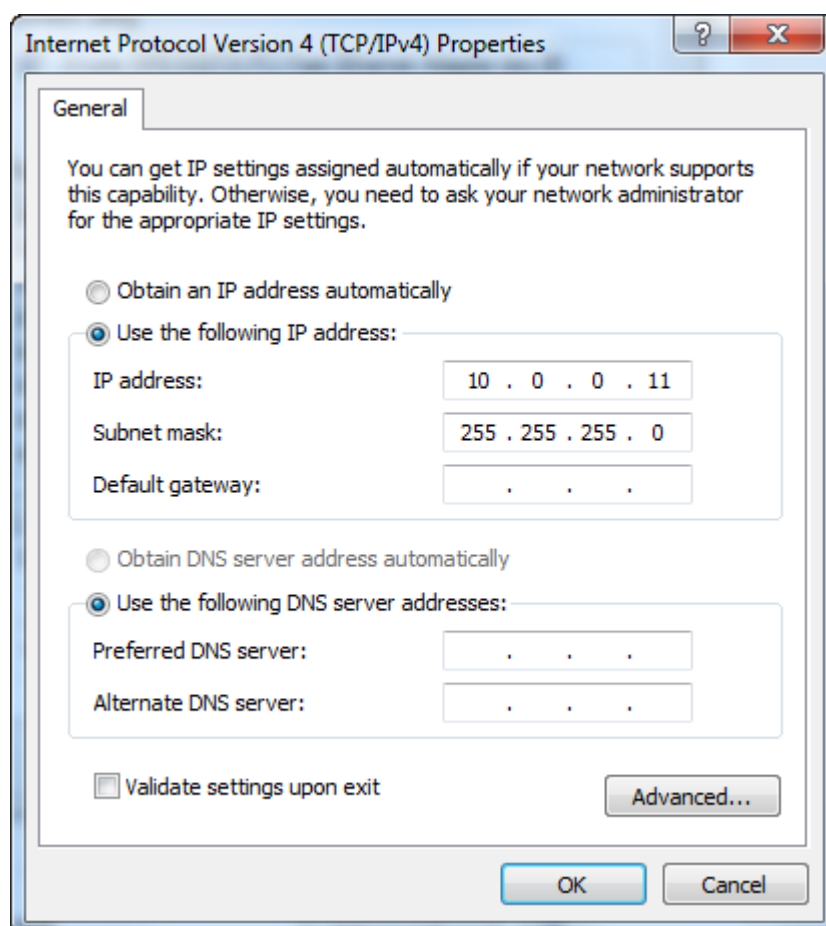
Follow these steps to configure your PC IP address to use subnet 10.0.0.x.

**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.

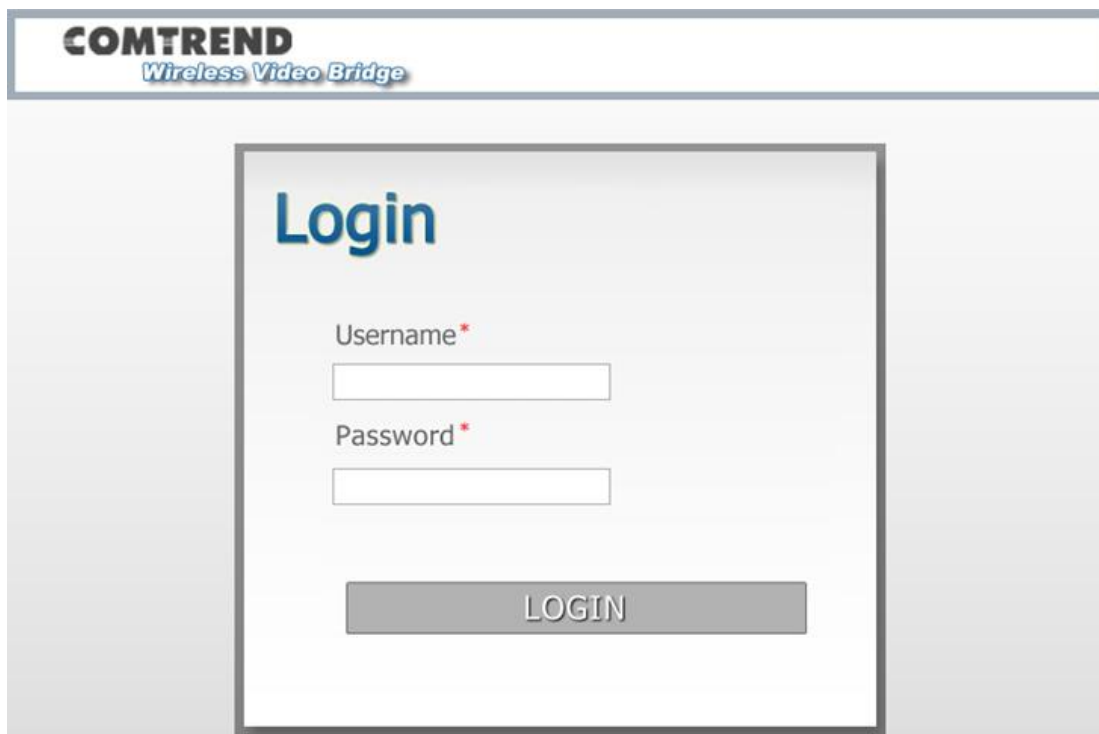
## 3.3 Login Procedure

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. The window has a title bar with the text "COMTREND Wireless Video Bridge". Inside the window, there is a central box with the heading "Login" in a large blue font. Below the heading, there are two input fields: "Username\*" and "Password\*", each followed by a red asterisk. Below these fields is a gray button labeled "LOGIN".

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  
MBSS  
ACS

**Tools**

Log  
Admin  
Restore

**System**

Upgrade  
Reboot

## STATUS - DEVICE

|                   |  |
|-------------------|--|
| Device Name:      | WAP-5940                                       |
| Software Version: | EM51-3671361CTU-C01_R03                        |
| Uptime:           | 1min   |
| Device Mode:      | <b>[X] Access Point (AP)</b> [ ] Station (STA) |

Refresh

## Chapter 4 Status

### 4.1 Status - Device

This screen shows the status of the device.

**COMTREND**  
*Wireless Video Bridge*

**Status**

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

**Config**

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

**Tools**

[Log](#)  
[Admin](#)  
[Restore](#)

**System**

[Upgrade](#)  
[Reboot](#)

### 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                                     |
|-------------------------|---|---------|--|
| <b>Device Name</b>      | Name of the Comtrend device                     |         |  |
| <b>Software Version</b> | Gets the software version of the current system |         | The version number of the current firmware |

|                    |                                   |                                  |  |
|--------------------|-----------------------------------|----------------------------------|--|
| <b>Uptime</b>      | 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) |
| <b>Device Mode</b> | AP or STA mode                    | Access Point(AP)<br>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

**COMTREND**  
*Wireless Video Bridge*

**Status**

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

**Config**

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

**Tools**

[Log](#)  
[Admin](#)  
[Restore](#)

**System**

[Upgrade](#)  
[Reboot](#)

### 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                                 |
|-----------------------|--|-----------------------------------|--|
| <b>WiFi Interface</b> | Real wireless device name and MAC Address in CPE |                                   |  |
| <b>Device Mode</b>    | AP or STA mode                                   | Access Point(AP)<br>Station (STA) | Device Acts as Access Point or Station |

|                                      |  |                                 |   |
|--------------------------------------|--|---------------------------------|---|
| <b>Wireless Band</b>                 | Current system Band                              | 802.11a or 802.11an or 802.11ac | 802.11an supports 802.11n and is backward compatible with 802.11a   |
| <b>Bandwidth</b>                     | 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  |
| <b>AP Mac Address (BSSID)</b>        | The current associated BSSID of the Wi-Fi system |                                 | In AP mode, it will be the same as the Wireless MAC address   |
| <b>Channel</b>                       | Available 5Ghz channels based on region setting  | 36-48, 149-165                  | 5.125-5.825, 4.920-4.980 GHz are the supported frequency ranges   |
| <b>Associated Devices Count</b>      | The connected devices number                     |                                 | The number of devices connecting to the AP.<br>Clicking the "Association Table" will link to the Association Table page and display information of all the connected devices. |
| <b>Packets Received Successfully</b> | Wireless packets which are received successfully |                                 |   |
| <b>Bytes Received</b>                | The total bytes received successfully            |                                 |   |

|   |                                      |  |  |
|---|--------------------------------------|--|--|
| <b>Packets Transmitted Successfully</b> | Wireless packets transmitted         |  |  |
| <b>Bytes Transmitted</b>                | Total bytes transmitted successfully |  |  |

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

| <b>COMTREND</b><br><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             |
| <input type="button" value="Refresh"/>          |                   |       |         |          |          |    |                 |

In above example, STA with MAC address 00:26:86:F0:30:83 and 00:26:86:01:14:43 are currently associated to the primary interface (wifi0), If more MACs are listed, more STA are connected with the wifi0.



## 4.2.2 STA Mode

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

**COMTREND**  
*Wireless Video Bridge*

**Status**

Device  
Wireless  
Networking

**Config**

Wireless  
WPS  
Networking  
ACS

**Tools**

Log  
Admin  
Restore

**System**

Upgrade  
Reboot

### STATUS - WIRELESS

|                                   |  |
|-----------------------------------|--|
| Device Mode:                      | Station (STA)  |
| Wireless Band:                    | 802.   |
| Bandwidth:                        | 80 MHz   |
| AP Mac Address (BSSID):           | Not Associated   |
| Channel:                          | 165  |
| Association Status:               | Not Associated <a href="#" style="border: 1px solid #ccc; padding: 2px 5px;">Association Table</a> |
| RSSI:                             | Not Associated   |
| Packets Received Successfully:    | 0  |
| Bytes Received:                   | 0  |
| Packets Transmitted Successfully: | 0  |
| Bytes Transmitted:                | 0  |

[Refresh](#)

| Menu Item            | Description  | Options                               | Detail  |
|----------------------|--|---------------------------------------|---|
| <b>Device Mode</b>   | AP or STA mode   | Access Point(AP)<br>Station (STA)     | Device Acts as<br>Access Point or<br>Station                                  |
| <b>Wireless Band</b> | Current system<br>Band                                 | 802.11a or<br>802.11an or<br>802.11ac | 802.11an supports<br>802.11n and is<br>backward<br>compatible with<br>802.11a |
| <b>Bandwidth</b>     | Per the 802.11a or<br>802.11an or<br>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   |
| <b>AP Mac Address (BSSID)</b>        | The current associated BSSID of the Wi-Fi system |                | In STA mode and associated to an AP: this will be the value of the AP's MAC address.<br>If the STA is not associated, this will state: "Not Associated". |
| <b>Channel</b>                       | Available 5Ghz channels based on region setting  | 36-48, 149-165 | 5.180-5.240, 5.745-5.825 GHz are the supported frequency ranges  |
| <b>Association Status</b>            | The association status of the device             |                | If the STA has connected with an AP, it will display "Associated".<br>If the STA has not connected with an AP, it will display "Not Associated".         |
| <b>RSSI</b>                          | 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.                                 |
| <b>Packets Received Successfully</b> | Wireless packets which are received successfully |                |  |

|   |                                       |  |  |
|---|---------------------------------------|--|--|
| <b>Bytes Received</b>                   | The total bytes received successfully |  |  |
| <b>Packets Transmitted Successfully</b> | Wireless packets transmitted          |  |  |
| <b>Bytes Transmitted</b>                | Total bytes transmitted successfully  |  |  |

## 4.3 Status – Networking

This screen shows the status of the networking.

**COMTREND**  
*Wireless Video Bridge*

**Status**

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

**Config**

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

**Tools**

[Log](#)  
[Admin](#)  
[Restore](#)

**System**

[Upgrade](#)  
[Reboot](#)

### 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:

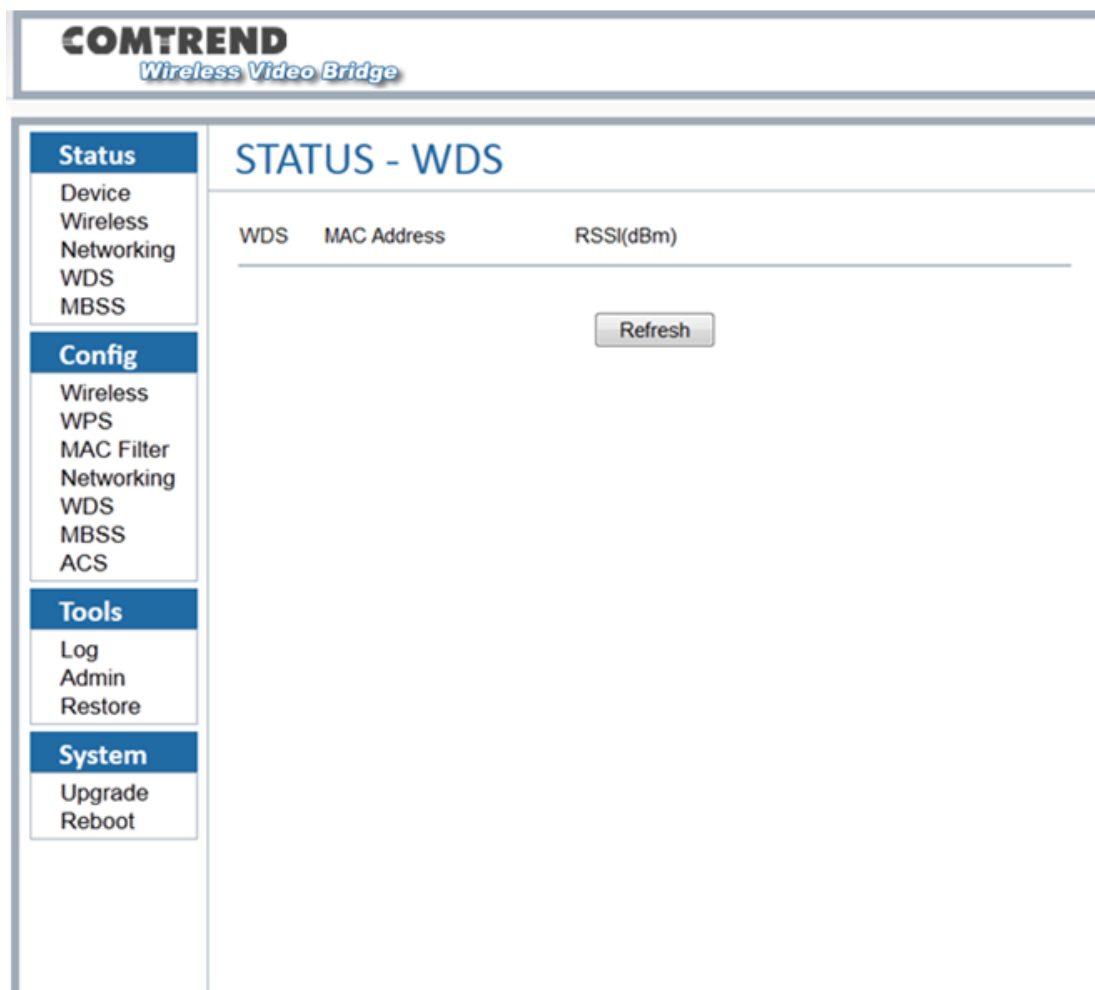
00:26:86:F0:30:81

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

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

## 4.4 Status – WDS

This screen shows the status of the WDS links.



The screenshot shows the COMTREND Wireless Video Bridge web interface. The top header displays the COMTREND logo and the product name "Wireless Video Bridge". The left sidebar contains a navigation menu with the following sections:

- Status**
  - Device
  - Wireless
  - Networking
  - WDS
  - MBSS
- Config**
  - Wireless
  - WPS
  - MAC Filter
  - Networking
  - WDS
  - MBSS
  - ACS
- Tools**
  - Log
  - Admin
  - Restore
- System**
  - Upgrade
  - Reboot

The main content area is titled "STATUS - WDS". It features a table with the following headers: "WDS", "MAC Address", and "RSSI(dBm)". Below the headers, there is a large empty space, likely for displaying WDS link data. A "Refresh" button is located in the center of the table area.

This option is not available on STA mode, the 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](#).

**COMTREND**  
*Wireless Video Bridge*

**Status**

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

**Config**

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

**Tools**

[Log](#)  
[Admin](#)  
[Restore](#)

**System**

[Upgrade](#)  
[Reboot](#)

### STATUS - MBSS

| SSID  | Broadcast | Association |
|---|-----------|-------------|
| <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 10px; display: inline-block;">Refresh</div> |           |             |

| Menu Item   | Description      | Options | Detail  |
|-------------|------------------|---------|---|
| <b>SSID</b> | SSID of the MBSS |         | This will be the SSID of the wireless network. The other STA must be configured to the same SSID and security to connect to the Virtual AP. |

|                    |                                       |          |   |
|--------------------|---------------------------------------|----------|---|
| <b>Broadcast</b>   | Enabled or disabled<br>SSID broadcast | TRUE     | SSID will be<br>broadcasted                                       |
|                    |                                       | FALSE    | Wi-Fi devices can't<br>scan out this SSID                         |
| <b>Association</b> | Associated STA<br>number              | $\geq 0$ | The number of<br>STAs which are<br>connected to the<br>Virtual AP |

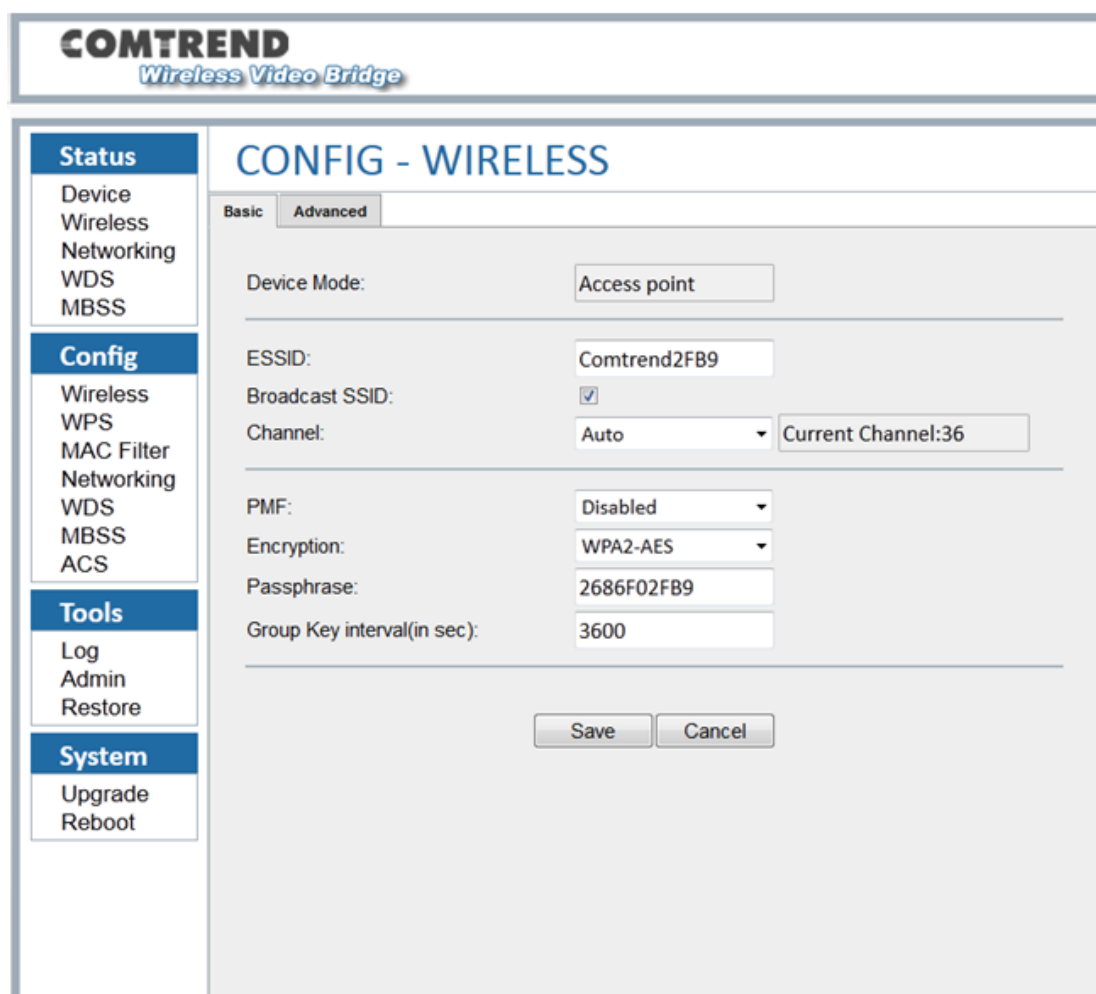


## Chapter 5 Config

### 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

**Status**  
Device  
Wireless  
Networking  
WDS  
MBSS

**Config**  
Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**  
Log  
Admin  
Restore

**System**  
Upgrade  
Reboot

| Menu Item          | Description    | Options      | Detail                      |
|--------------------|----------------|--------------|-----------------------------|
| <b>Device Mode</b> | AP or STA mode | Access Point | Device Acts as Access Point |
|                    |                | Station      | Device Acts as Station      |

|                   |   |                                 |   |
|-------------------|---|---------------------------------|---|
| <b>ESSID</b>      | SSID of the AP                                  | Can be set to desired SSID name | This will be the SSID of the wireless network. The STA must be configured to the same SSID and security (see below) to connect to the AP. |
| <b>Channel</b>    | Available 5Ghz channels based on region setting | 36-48, 149-165                  | 5.180-5.240, 5.745-5.825 GHz are the supported frequency ranges   |
| <b>PMF</b>        | Protected Management Frames                     |                                 | Sets the 802.11w / PMF capability. Applies to AP  |
| <b>Encryption</b> | 802.11 compliant authentication and encryption  | WPA2/AES                        | The STA must use WPA2 encryption. This mode is recommended.   |
|                   |   | NONE-OPEN                       | Disables encryption (OPEN mode)   |
|                   |   | WPA2 + WPA (Mixed mode)         | The STA can use WPA or WPA2 encryption  |
|                   |   | WPA2/AES Enterprise             | The STA must use WPA2 encryption, and authentication via RADIUS server  |
|                   |   | WPA2 + WPA Enterprise           | The STA can use WPA or WPA2 encryption, and authentication via RADIUS server  |

|                                   |  |  |  |
|-----------------------------------|--|--|--|
| <b>Passphrase</b>                 | The current passphrase.<br>Applies to AP only.     |  |  |
| <b>Group Key interval(in sec)</b> | 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

**COMTREND**  
*Wireless Video Bridge*

**Status**  
Device  
Wireless  
Networking  
WDS  
MBSS

**Config**  
Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**  
Log  
Admin  
Restore

**System**  
Upgrade  
Reboot

## CONFIG - WIRELESS

Basic
Advanced

Wireless Band: 802.11ac  
Bandwidth: 80MHz  


---

NSS: Auto  
TX Rate: Auto  
Priority: 0  
Beacon Interval (in ms): 100  
DTIM Period: 2  
Short GI: ☒  
VLAN:   


---

Save
Cancel

| Menu Item            | Description               | Options  | Detail                   |
|----------------------|---------------------------|----------|--------------------------|
| <b>Wireless Band</b> | 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    |
| <b>Bandwidth</b> | 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 standard   | 80MHz   | 80 MHz operation            |
| <b>NSS</b>       | The maximum number of spatial streams                                 | Auto<br>1<br>2<br>3<br>4  |                             |
| <b>Tx Rate</b>   | 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. |                             |
| <b>Priority</b>  | The priority is used to differentiate traffic between different SSIDs | 0~3   |                             |

|                        |                                     |         |  |
|------------------------|-------------------------------------|---------|--|
| <b>Beacon Interval</b> | 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.   |
| <b>DTIM Period</b>     | 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. |
| <b>Short GI</b>        | Guard Intervals                     | Checked | The 802.11n draft specifies two guard intervals: 400ns (short) and 800ns (long). The GI is 400ns.  |
| <b>VLAN</b>            | Virtual Lan for different interface | 1-4096  |  |

## 5.2 Config – WPS

Connect to AP or STA without selecting an SSID and inputting a Passphrase.

**COMTREND**  
*Wireless Video Bridge*

Status

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

Config

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

Tools

[Log](#)  
[Admin](#)  
[Restore](#)

System

[Upgrade](#)  
[Reboot](#)

### 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  |
|------------------|----------------|----------------|---|
| <b>WPS State</b> | Set WPS states | Disabled       | WPS disabled  |
|                  |                | Not configured | WPS enabled<br>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  |
| <b>WPS PBC</b>    | WPS push button                |                  | Push button to start WPS connection  |
| <b>WPS PIN</b>    | For Web UI pin<br>WPS pin mode | Character string | This will be the PIN used for Web UI WPS pin mode. STA must have same pin.   |
| <b>WPS AP PIN</b> |                                |                  | STA must have same PIN and press same Web UI button 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.

**COMTREND**  
*Wireless Video Bridge*

Status

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

Config

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

Tools

[Log](#)  
[Admin](#)  
[Restore](#)

System

[Upgrade](#)  
[Reboot](#)

### 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  |
|------------------------------|--|---------|---|
| <b>Wifi Interface</b>        | Real wireless device name and MAC Address in CPE |         |   |
| <b>MAC Address Filtering</b> | 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 STA association request unless the MAC address for that STA has been blocked   |
|                         |   | Black list mode | Block a STA association request unless the MAC address for that STA has been authorized   |
| <b>MAC Address</b>      | Verify the MAC address                      |                 | Checks whether the MAC address can be validated   |
| <b>MAC Address List</b> | List the authorized or denied MAC addresses |                 | <p>According to the MAC address filter</p> <p>"Authorize if not denied" filter lists the denied MAC addresses.</p> <p>"Deny if not authorized" filter lists the authorized MAC addresses.</p> |

## 5.4 Config – Networking

These screens show the networking configuration.

### DHCP

**COMTREND**  
*Wireless Video Bridge*

**Status**  
Device  
Wireless  
Networking  
WDS  
MBSS

**Config**  
Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**  
Log  
Admin  
Restore

**System**  
Upgrade  
Reboot

### CONFIG - NETWORKING

DHCP: ☒ Static IP: ☐

IP Address:

Netmask:

Ethernet0 MAC Address:

Ethernet1 MAC Address:

Wireless MAC Address:

BSSID:

## Static IP

**COMTREND**  
*Wireless Video Bridge*

Status

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

Config

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

Tools

[Log](#)  
[Admin](#)  
[Restore](#)

System

[Upgrade](#)  
[Reboot](#)

### 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:

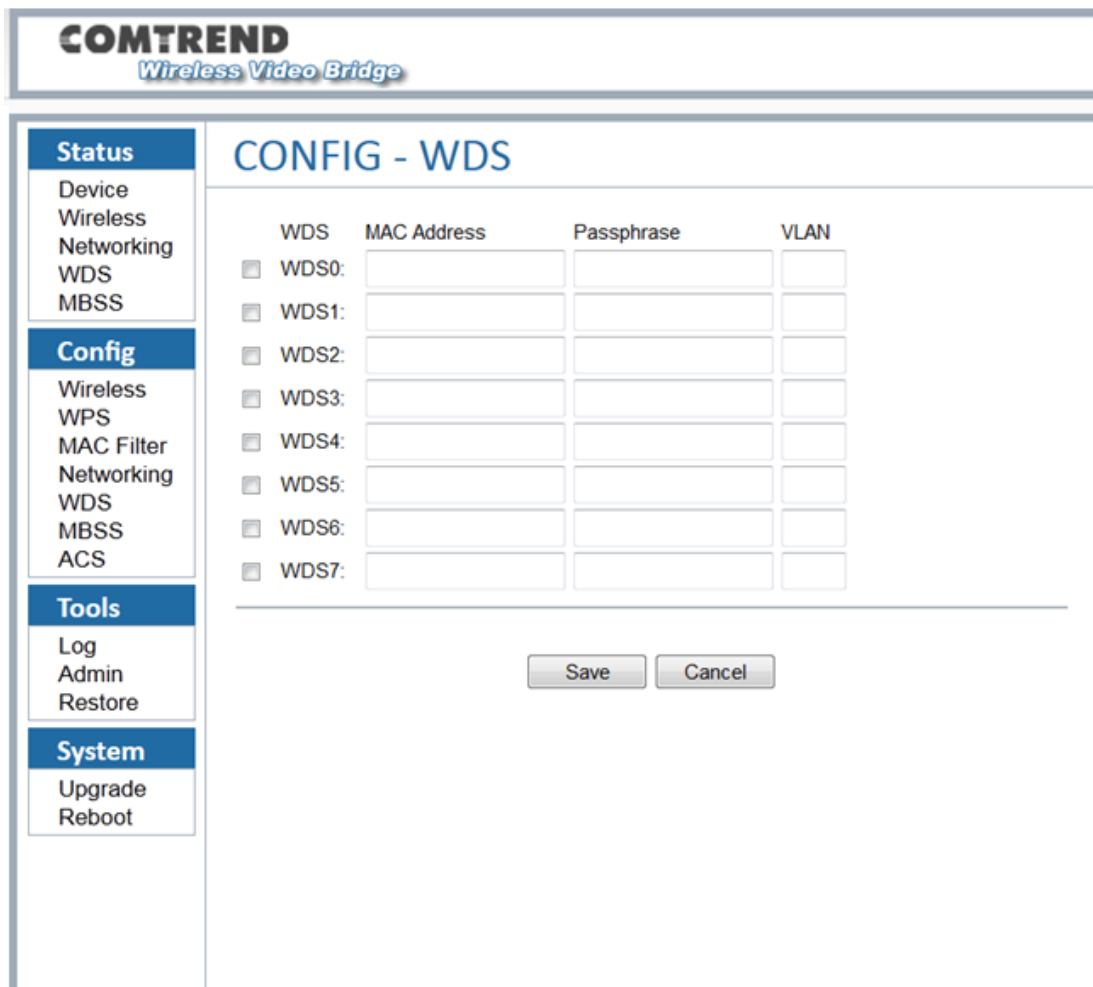
00:26:86:F0:30:81

| Menu Item                | Description  | Options   | Detail  |
|--------------------------|--|-----------|---|
| <b>DHCP or Static IP</b> | 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   |
| <b>IP Address</b>        | 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. |

|                             |  |  |   |
|-----------------------------|--|--|---|
|                             |  |  | <b>CAUTION:</b> 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.   |
| <b>Netmask</b>              | Netmask of the IP address  |  |   |
| <b>Ethernet MAC Address</b> | This is the IEEE compliant MAC address of the Ethernet interface |  | The internal network bridge uses this MAC address. This cannot be changed.  |
| <b>Wireless MAC Address</b> | This is the IEEE compliant MAC address of the Wi-Fi interface.   |  | The WLAN MAC address. This cannot be changed.   |
| <b>BSSID</b>                | The current associated BSSID of the Wi-Fi system.                |  | In AP mode: this will be the SAME as the Wireless MAC address.<br>In STA mode and associated to an AP: this will be the value of the AP's MAC address.<br>If the STA is not associated, this will state:<br>"Not-Associated". |

## 5.5 Config – WDS

This screen shows the configuration of the WDS links.



| WDS                            | MAC Address | Passphrase | VLAN |
|--------------------------------|-------------|------------|------|
| <input type="checkbox"/> WDS0: |             |            |      |
| <input type="checkbox"/> WDS1: |             |            |      |
| <input type="checkbox"/> WDS2: |             |            |      |
| <input type="checkbox"/> WDS3: |             |            |      |
| <input type="checkbox"/> WDS4: |             |            |      |
| <input type="checkbox"/> WDS5: |             |            |      |
| <input type="checkbox"/> WDS6: |             |            |      |
| <input type="checkbox"/> WDS7: |             |            |      |

Save Cancel

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

| Menu Item           | Description                             | Options     | Detail   |
|---------------------|---|-------------|--|
| <b>WDS checkbox</b> | 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        |

|                    |                                     |                   |  |
|--------------------|-------------------------------------|-------------------|--|
| <b>MAC Address</b> |                                     | 48bit MAC address | The WDS peer MAC address on the opposite side  |
| <b>Passphrase</b>  |                                     | 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  |
| <b>VLAN</b>        | 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.

**COMTREND**  
*Wireless Video Bridge*

Status

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

Config

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

Tools

[Log](#)  
[Admin](#)  
[Restore](#)

System

[Upgrade](#)  
[Reboot](#)

### CONFIG - MBSS

|                             |  |  |   |
|-----------------------------|--|--|---|
| 1: <input type="checkbox"/> | SSID: <input style="width: 100%;" type="text"/><br>PMF: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">Disabled</div> | VLAN: <input style="width: 100%;" type="text"/><br>Encryption: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">NONE-OPEN</div> | Broadcast: <input type="checkbox"/> Priority: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">0</div><br>Passphrase: <div style="border: 1px solid #ccc; height: 20px; width: 100%;"></div> |
|                             |  |  |   |
| 2: <input type="checkbox"/> | SSID: <input style="width: 100%;" type="text"/><br>PMF: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">Disabled</div> | VLAN: <input style="width: 100%;" type="text"/><br>Encryption: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">NONE-OPEN</div> | Broadcast: <input type="checkbox"/> Priority: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">0</div><br>Passphrase: <div style="border: 1px solid #ccc; height: 20px; width: 100%;"></div> |
|                             |  |  |   |
| 3: <input type="checkbox"/> | SSID: <input style="width: 100%;" type="text"/><br>PMF: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">Disabled</div> | VLAN: <input style="width: 100%;" type="text"/><br>Encryption: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">NONE-OPEN</div> | Broadcast: <input type="checkbox"/> Priority: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">0</div><br>Passphrase: <div style="border: 1px solid #ccc; height: 20px; width: 100%;"></div> |
|                             |  |  |   |
| 4: <input type="checkbox"/> | SSID: <input style="width: 100%;" type="text"/><br>PMF: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">Disabled</div> | VLAN: <input style="width: 100%;" type="text"/><br>Encryption: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">NONE-OPEN</div> | Broadcast: <input type="checkbox"/> Priority: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">0</div><br>Passphrase: <div style="border: 1px solid #ccc; height: 20px; width: 100%;"></div> |
|                             |  |  |   |
| 5: <input type="checkbox"/> | SSID: <input style="width: 100%;" type="text"/><br>PMF: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">Disabled</div> | VLAN: <input style="width: 100%;" type="text"/><br>Encryption: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">NONE-OPEN</div> | Broadcast: <input type="checkbox"/> Priority: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">0</div><br>Passphrase: <div style="border: 1px solid #ccc; height: 20px; width: 100%;"></div> |
|                             |  |  |   |
| 6: <input type="checkbox"/> | SSID: <input style="width: 100%;" type="text"/><br>PMF: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">Disabled</div> | VLAN: <input style="width: 100%;" type="text"/><br>Encryption: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">NONE-OPEN</div> | Broadcast: <input type="checkbox"/> Priority: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">0</div><br>Passphrase: <div style="border: 1px solid #ccc; height: 20px; width: 100%;"></div> |
|                             |  |  |   |
| 7: <input type="checkbox"/> | SSID: <input style="width: 100%;" type="text"/><br>PMF: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">Disabled</div> | VLAN: <input style="width: 100%;" type="text"/><br>Encryption: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">NONE-OPEN</div> | Broadcast: <input type="checkbox"/> Priority: <div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">0</div><br>Passphrase: <div style="border: 1px solid #ccc; height: 20px; width: 100%;"></div> |

Save

Cancel

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

**COMTREND**  
*Wireless Video Bridge*

Status

[Device](#)  
[Wireless](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)

Config

[Wireless](#)  
[WPS](#)  
[MAC Filter](#)  
[Networking](#)  
[WDS](#)  
[MBSS](#)  
[ACS](#)

Tools

[Log](#)  
[Admin](#)  
[Restore](#)

System

[Upgrade](#)  
[Reboot](#)

### CONFIG - ACS

Enable: ☐
Disable: ☒

URL:

Username:

Password:

Periodic Inform:

Enable: ☒
Disable: ☐

Interval:

Connection Request URL:

Connection Request Username:

Connection Request Password:

---

STUN: Enable: ☐ Disable: ☒

Server Address:

Server Port:

Username:

Password:

Maximum Keep Alive Period:

Minimum Keep Alive Period:

| Menu Item      | Description                             | Options           | Detail |
|----------------|---|-------------------|--------|
| <b>Enable</b>  | Enable TR-069 daemon connection to ACS  | Select to enable  |        |
| <b>Disable</b> | Disable TR-069 daemon connection to ACS | Select to disable |        |

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

|                                  |  |  |                   |
|----------------------------------|--|--|-------------------|
| <b>Server Address</b>            | IP address of device used to connect to the ACS which support STUN |  |                   |
| <b>Server Port</b>               | Port of device used to connect to the ACS which support STUN       |  |                   |
| <b>Username</b>                  | Username used to authenticate on ACS which support STUN            |  |                   |
| <b>Password</b>                  | Password used to authenticate on ACS which support STUN            |  |                   |
| <b>Maximum Keep Alive Period</b> | The maximum connect duration to the ACS server                     |  | Unit is second(s) |
| <b>Minimum Keep Alive Period</b> | 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.

**COMTREND**  
 Wireless Video Bridge

#### TOOLS - LOG

```

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 DHCP OFFERS 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   |
|---------------|---|--|
| <b>Tstamp</b> | This is the system time of the measurement taken from the internal system clock   |  |
| <b>RxPkts</b> | This represents the number of packets that were successfully received over 1 second intervals. Each line represents 1 second of time.   |  |
| <b>RxGain</b> | 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  |
| <b>CRC</b>    | 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. |
| <b>Noise</b>  | 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.   |
| <b>TxPkts</b> | This is the number of successfully transmitted packets over the last 1 second interval.   |  |

|                |   |  |
|----------------|---|--|
| <b>Defers</b>  | This number counts the number of times an attempted transmission was deferred due to the medium being busy.<br>This is helpful in determining if an environment is very busy. | Defers are common in busy WiFi environments  |
| <b>Tout</b>    | This is an indicator of Tx packet timeout   | Timeouts are not common.<br>The Packet could not find a time slot to transmit.   |
| <b>Retries</b> | This counts the number of transmission retries that have occurred over the last one second.<br>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:<br><br>Defer<br>Retry<br>Timeout  |
| <b>ShPre</b>   | This counts the number of Short Preamble Detection Errors   | These are very common in high throughput conditions  |
| <b>LgPre</b>   | 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. |
| <b>Rate</b>    | 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.

**COMTREND**  
*Wireless Video Bridge*

**Status**

Device  
Wireless  
Networking  
WDS  
MBSS

**Config**

Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**

Log  
Admin  
Restore

**System**

Upgrade  
Reboot

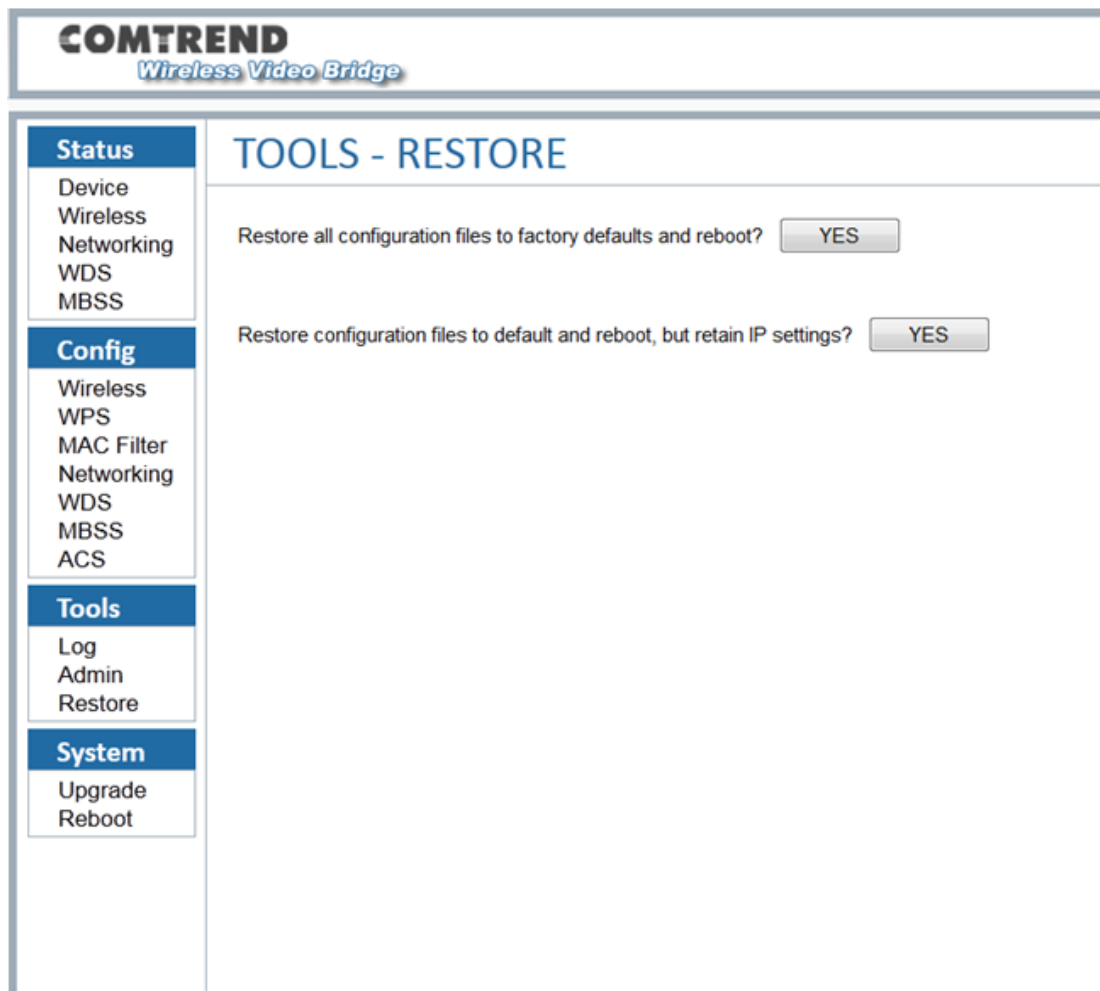
### TOOLS - ADMIN

User Name:   
Old Passphrase:   
New Passphrase:   
New Passphrase Again:

| Menu Item                   | Description                                  | Notes   |
|-----------------------------|--|---|
| <b>User Name</b>            | The user name for login                      | Only for the login privilege                  |
| <b>Old Passphrase</b>       | Enter the original password of the user name |   |
| <b>New Passphrase</b>       | Enter the new passphrase                     |   |
| <b>New Passphrase Again</b> | 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 "Wireless Video Bridge". On the left side, there is a navigation menu with four main categories: Status, Config, Tools, and System. The "Tools" category is currently selected, and it contains three sub-items: Log, Admin, and Restore. The main content area is titled "TOOLS - RESTORE" and contains two restore options, each with a "YES" button:

- Restore all configuration files to factory defaults and reboot?
- Restore configuration files to default and reboot, but retain IP settings?

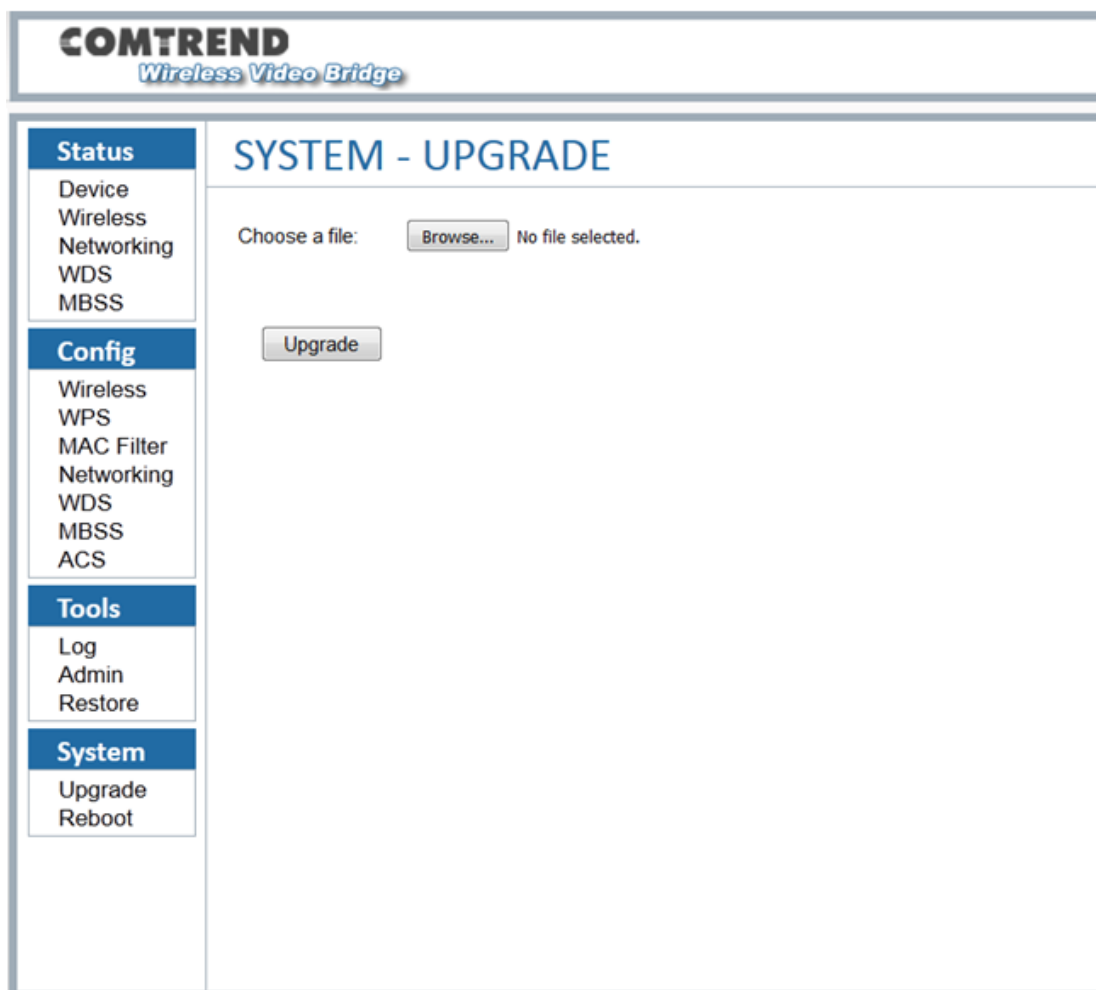
The Restore function also restores the password of the login user.



## Chapter 7 System

### 7.1 System – Upgrade

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



**COMTREND**  
Wireless Video Bridge

**Status**  
Device  
Wireless  
Networking  
WDS  
MBSS

**Config**  
Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**  
Log  
Admin  
Restore

**System**  
Upgrade  
Reboot

### 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.**

**COMTREND**  
*Wireless Video Bridge*

**Status**

Device  
Wireless  
Networking  
WDS  
MBSS

**Config**

Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**

Log  
Admin  
Restore

**System**

Upgrade  
Reboot

## 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.

**COMTREND**  
*Wireless Video Bridge*

**Status**  
Device  
Wireless  
Networking  
WDS  
MBSS

**Config**  
Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**  
Log  
Admin  
Restore

**System**  
Upgrade  
Reboot

### 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

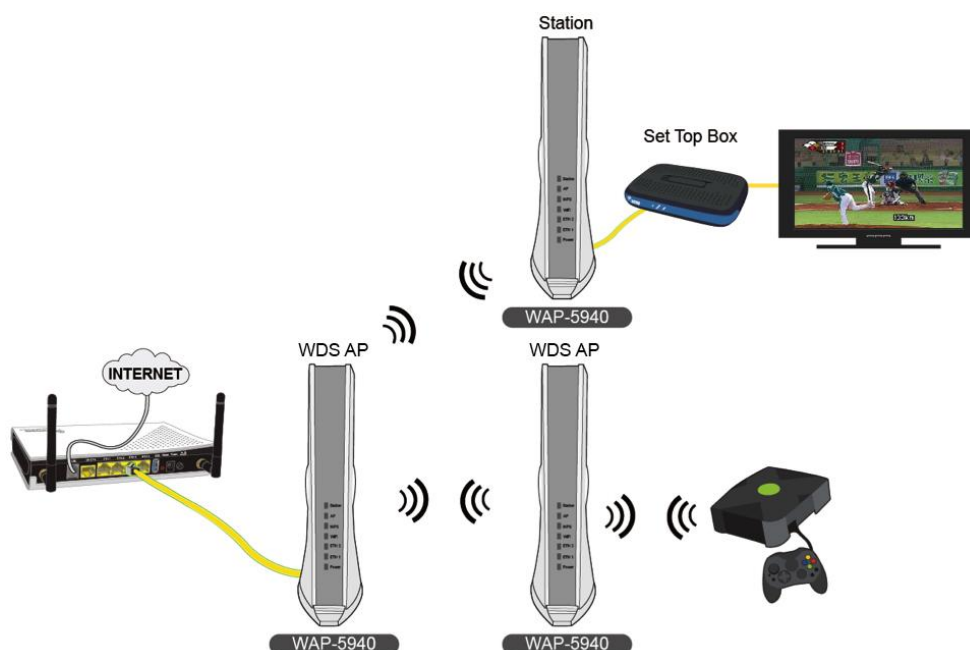
### Environment Condition

Operating temperature .....0 ~ 40 degrees Celsius

|   |
|---|
| <b>NOTE:</b> Specifications are subject to change without notice. |
|---|

## Appendix B - WAP-5940 WDS configuration using AP mode

- I. A **Wireless Distribution System (WDS)** is a system that enables the wireless interconnection of access points in an IEEE 802.11 network. It allows a wireless network to be expanded using multiple access points without the traditional requirement for a wired backbone to link them.
- II. **Network topology:**



- III. **WAP-5940** is a high power Quantenna 4x4 AC chipset that delivers premium wireless capabilities for video streaming to remote locations at home and office. In this document, it will explore the key benefit of WDS feature to expand wireless coverage.

**Note:** The default IP address of the device, if not connected to a network with a DHCP server, is <http://10.0.0.2> for an Access Point configuration.

If the device is going to have static IP address, do not forget to change the other WAP-5940 IP address to avoid IP conflicts in the network. This will also give you the ability to reach each WAP-5940 individually. By default, WAP-5940 is configured to use DHCP to obtain its IP address.

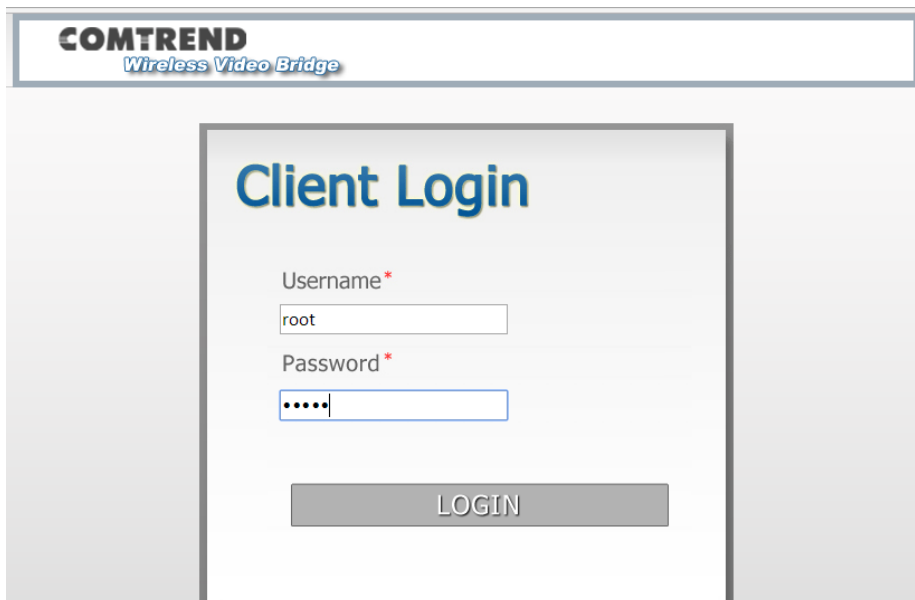
#### IV. **Configuration:**

Log into the WAP-5940 using the default IP and username/password below. You will need to set a static IP address on your PC to connect. You can assign IP 10.0.0.10 on your PC to connect to the WAP-5940.

<http://10.0.0.2>

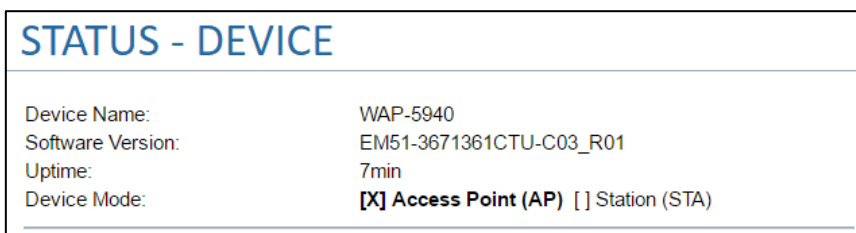
Username: root

Password: 12345



The image shows the 'Client Login' page of a COMTREND Wireless Video Bridge. The page has a header with the COMTREND logo and the text 'Wireless Video Bridge'. The main content area is titled 'Client Login' and contains two input fields: 'Username\*' with the value 'root' and 'Password\*' with masked characters '....'. Below the password field is a 'LOGIN' button.

- a. Make sure the device mode is set to "Access Point (AP)" under device status.



The image shows the 'STATUS - DEVICE' page. It displays the following information:

|                   |  |
|-------------------|--|
| Device Name:      | WAP-5940                                       |
| Software Version: | EM51-3671361CTU-C03_R01                        |
| Uptime:           | 7min   |
| Device Mode:      | <b>[X] Access Point (AP)</b> [ ] Station (STA) |

- b. Go to the WDS tab and enable WDS link by checking the box then entering the MAC Address of the other WAP-5940. Click "Save" once done.

**Note:** you must enter the VLAN ID (for best practice enter the native VLAN = 1) and not necessity to use Passphrase (if you do, minimum passphrase ASCII character is 64).

**COMTREND**  
Wireless Video Bridge

**Status**  
Device  
Wireless  
Networking  
WDS  
MBSS

**Config**  
Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**  
Log  
Admin  
Restore

**System**  
Upgrade  
Reboot

### CONFIG - WDS

| WDS                                       | MAC Address       | Passphrase | VLAN |
|---|-------------------|------------|------|
| <input checked="" type="checkbox"/> WDS0: | d8:b6:b7:a4:09:54 | *****      | 1    |
| <input type="checkbox"/> WDS1:            |                   |            |      |
| <input type="checkbox"/> WDS2:            |                   |            |      |
| <input type="checkbox"/> WDS3:            |                   |            |      |
| <input type="checkbox"/> WDS4:            |                   |            |      |
| <input type="checkbox"/> WDS5:            |                   |            |      |
| <input type="checkbox"/> WDS6:            |                   |            |      |
| <input type="checkbox"/> WDS7:            |                   |            |      |

Save
Cancel

c. Do the same on the other WAP-5940. Click "Save" once done.

**COMTREND**  
Wireless Video Bridge

**Status**  
Device  
Wireless  
Networking  
WDS  
MBSS

**Config**  
Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**  
Log  
Admin  
Restore

### CONFIG - WDS

| WDS                                       | MAC Address       | Passphrase | VLAN |
|---|-------------------|------------|------|
| <input checked="" type="checkbox"/> WDS0: | d8:b6:b7:a4:09:bc | *****      | 1    |
| <input type="checkbox"/> WDS1:            |                   |            |      |
| <input type="checkbox"/> WDS2:            |                   |            |      |
| <input type="checkbox"/> WDS3:            |                   |            |      |
| <input type="checkbox"/> WDS4:            |                   |            |      |
| <input type="checkbox"/> WDS5:            |                   |            |      |
| <input type="checkbox"/> WDS6:            |                   |            |      |
| <input type="checkbox"/> WDS7:            |                   |            |      |

Save
Cancel

d. Reboot both devices.

e. Check the Status of the WDS link:

- First WAP-5940 status:

### STATUS - WDS

| WDS   | MAC Address       | RSSI(dBm) |
|-------|-------------------|-----------|
| WDS0: | d8:b6:b7:a4:09:54 | -21       |

Refresh

- Second WAP-5940 status:

| STATUS - WDS                           |                   |           |
|--|-------------------|-----------|
| WDS                                    | MAC Address       | RSSI(dBm) |
| WDS0:                                  | d8:b6:b7:a4:09:bc | -20       |
| <input type="button" value="Refresh"/> |                   |           |

- f. Configure the wireless setting on both WAP-5940 before connecting to your network.

**COMTREND**  
Wireless Video Bridge

**Status**  
Device  
Wireless  
Networking  
WDS  
MBSS

**Config**  
Wireless  
WPS  
MAC Filter  
Networking  
WDS  
MBSS  
ACS

**Tools**  
Log  
Admin  
Restore

**System**  
Upgrade  
Reboot

## CONFIG - WIRELESS

Basic
Advanced

Device Mode:

ESSID:

Broadcast SSID: ☒

Channel:  Current Channel:36

PMF:

Encryption:

Passphrase:

Group Key interval(in sec):