

WB-1750-KIT AC1750 Wireless Gaming Bridge

User Manual Version A1.0, August 2020



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 support@nexuslinkusa.com

For product update, new product release, manual revision, or software upgrades, please visit our website at http://nexuslinkusa.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.



- 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 center and processed separately 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 WB-1750 is an 802.11ac 4T4R Wireless Gaming Bridge, with two Giga Ethernet ports. WB-1750 performs AP to transmission package TCP/UDP to client, also supporting Station mode, receiving packets and forwarding to the Ethernet port.

The WB-1750 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 autosensing 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
	ODEEN	On	Power on
POWER	GREEN	Off	Power off
		On	Ethernet connected
ETH1	GREEN	Off	Ethernet not connected
		Blink	Ethernet is transmitting/receiving
		On	Ethernet connected
ETH2	GREEN	Off	Ethernet not connected
		Blink	Ethernet is transmitting/receiving
		On	Wi-Fi enabled
WiFi	GREEN	Off	Wi-Fi disabled
		Blink	[AP] When no client connected [Station] When not connected to the AP
		On	WPS connection successful
WPS	GREEN	Off	No WPS (5G) association process ongoing
		Blink	WPS (5G) connection in progress
		On	WB-1750 working in AP mode
AP	GREEN	Off	WB-1750 working in Station mode
Station	CREEN	On	WB-1750 working in Station mode
Station	GREEN	Off	WB-1750 working in AP mode

2.3 Initial Device Setup

AP Device Setup

- 1. Setup the first Wireless Gaming Bridge by plugging in the power adapter and press the **Power Button** to the ON position (IN). Set the Wireless Gaming Bridge to AP Mode by sliding the **AP/Station Switch** to the up position.
- 2. Connect the Wireless Gaming Bridge to a Network Device (Gateway, Router, etc.) with an Ethernet (RJ-45) cable. You can use either Ethernet ports of the Wireless Gaming Bridge to make this connection.



Client Device Setup

- 3. Setup the additional Wireless Gaming 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 Gaming Bridge to Station mode by sliding the **AP/Station** to the down position.
- Connect the Wireless Gaming Bridge to an Internet Enabled Device (STB, DVR, etc.) with an Ethernet (RJ-45) cable. You can use either Ethernet ports of the Wireless Gaming 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**.



 Upon successful connection, the WPS LED and WiFi LED will light up solid GREEN on both of the Wireless Gaming Bridges. 8. Repeat steps 3-6 to add additional client devices.

2.3.2 Setup of Wireless Devices via Manual Connection

NOTE: If you do not wish to setup your Wireless Gaming 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 Gaming 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*	
root	
Password*	
••••	
	LOGIN

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

Device Vireless	Basic Advanced	
Config	Device Mode:	Station
Vireless NPS Networking ACS	ESSID: Channel:	Scan AP Scanning:153
rools	PMF:	Disabled V
Log Admin Restore	Encryption:	NONE-OPEN
ystem		Save Cancel
Jpgrade Reboot		

 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 Gaming Bridge. Next, click "connect."

1.1.1.1	and the second s	and the second s	A
SSID :	NexusLinkE221	WiFi Key :	265940E221

urrent 551	SSID	Mac Address	Channel	RSSI	Security
1	NexusLinkE221	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	iccflight-master5G	c4:a8:1d:8f:16:f6	149	15	Yes
5	D430ACS5G	80:1f:02:07:e3:4e	44	11	Yes
P:Comtre assphrase Connect	e: 265940E221 ×				

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

rrent SSII	D: NexusLinkE221				
	SSID	Mac Address	Channel	RSSI	Security
1	NexusLinkE221	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

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.

matically if o ask your illy	you net	r ne work	twork s admini	upport: strator
ally				
10 .	0	0	. 11	1
255 . 2	255	255	5.0	
4		_	ч.	
matically				
dresses:				
4		2	4	
-			a.	
		ĺ	Adva	inced
	10 . 255 . 2 matically dresses:	10 . 0 . 255 . 255 . matically dresses:	10 . 0 . 0 255 . 255 . 255 matically dresses: 	10 . 0 . 0 . 11 255 . 255 . 255 . 0 matically dresses: Adva

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 the default IP address 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.

Client Login	
Username*	
Password *	
LOGIN	- 1

Click **LOGIN** to continue.

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

Wireless Networking NDS MBSS	Device Name: Software Version: Uptime: Device Mode:	WB-1750-KIT EM51-3671361CTU-C01_R02 1min IXI Access Point (AP) 11 Station (STA)
Config	Device mode.	[N] Access (care (A)) [] callon (care)
Wireless WPS MAC Filter Networking WDS MBSS ACS		Refresh
Tools		
₋og Admin Restore		
System		
Jpgrade Reboot		

Chapter 4 Login

• (username: **root**, password: **12345**)

client	Login	
Username*		
Password*		
_	LOGIN	_

http://<address>/login.php

Please enter the user name and the password to login to the web page system of the device.

Chapter 5 Status

5.1 Status - Device

This screen shows the status of the device.

Device Name: Software Version: Uptime:	WB-1750-KIT EM51-3671361CTU-C01_R02 1min
Device Mode.	[A] Access Point (AP) [] Station (STA)
	Refresh
	Device Name: Software Version: Uptime: Device Mode:

http://<address>/status_device.php

Menu Item	Description	Options	Detail
Device Name	Name of the NexusLink 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.

5.2 Status – Wireless

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

5.2.1 AP Mode

Status	STATUS - WIRELE	SS
Device Wireless Networking	Wifi Interface:	wifi0(00:26:86:F0:3 ▼
MBSS	Device Mode:	Access Point (AP)
Config	Wireless Band:	802.11ac
Wireless WPS MAC Filter Networking WDS MBSS ACS	AP Mac Address (BSSID): Channel: Associated Devices Count: Packets Received Successfully: Bytes Received: Packets Transmitted Successfully:	00:26:86:F0:30:81 36 0 Association Table 0 0 4
Tools	Bytes Transmitted:	676
Log Admin Restore		Refresh
System		
Upgrade Reboot		

http://<address>/status_wireless.php

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	
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
		80MHz(11ac only)	80 MHz operation(11ac only)
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	36-64, 100-136, 149-161	5.125-5.825, 4.920-4.980 GHz are the supported frequency ranges
Associated Devices Count	The connected devices number		The number of the stations connecting to the AP. Clicking the "Association Table" will link to the Association Table page and display information of all the connected stations.
Packets Received	Wireless packets which are		

Successfully	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.

AS	SOCIATION	TA	BLE					
	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				

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.

http://<address>/assoc_table.php

5.2.2 STA Mode

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

Status	STATUS - WIRELES	S
Device Wireless Networking	Device Mode: Wireless Band:	Station (STA) 802.
Config	Bandwidth:	80 MHz
Wireless WPS Networking ACS	AP Mac Address (BSSID): Channel: Association Status: RSSI:	Not Associated 165 Not Associated <u>Association Table</u> Not Associated
Tools	Packets Received Successfully:	0
Log Admin Restore	Bytes Received: Packets Transmitted Successfully: Bytes Transmitted:	0 0 0
System Upgrade Reboot		Refresh

http://<address>/status_wireless.php

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	802.11n or 802.11ac	
Bandwidth	Per the 802.11n or 802.11ac standard	20 MHz	20 MHz operation
		40 MHz	40 MHz operation

		80MHz(11ac	80 MHz
		only)	operation(11ac
			only)
AP Mac Address	The current		In STA mode and
(BSSID)	associated BSSID		associated to an
	of the Wi-Fi		AP: this will be the
	system		value of the AP's
			MAC address.
			If the STA is not
			associated, this
			will state: "Not
			Associated".
Channel	Available 5Ghz	36-48, 149-165	5.180-5.240,
	channels based		5.745-5.825 GHz
	on region setting		are the supported
			frequency ranges
Association	The association		If the STA has
Status	status of the		connected with an
	device		AP, it will display
			"Associated".
			If the STA has not
			connected with an
			AP, it will display
			"Not Associated".
RSSI	Received Signal		A measurement of
	Strength		the power present
	Indication		in a received radio
			signal. The value
			is the current RSSI
			in dBm for the
			association.
Packets	Wireless packets		
Received	which are		
Successfully	received		
	successfully		

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

5.3 Status – Networking

This screen shows the status of the networking.

Status	STATUS - NETW	/ORKING
Device Wireless Networking WDS MBSS	IP Address: Netmask: Ethernet0 MAC Address: Ethernet1 MAC Address:	10.0.0.2 255.0.0.0 00:26:86:F0:2F:B9 02:26:86:F0:2F:B9
Config	Wireless MAC Address:	00:26:86:F0:30:81
Wireless WPS MAC Filter Networking WDS MBSS ACS	BSSID:	00:26:86:F0:30:81
Tools		
Log Admin Restore		
System		
Upgrade Reboot		

http://<address>/status_networking.php

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".

5.4 Status – WDS

This screen shows the status of the WDS links.

MDO	244.0		
WD5	MAC Address	RSSI(dBm)	
		Refresh	
			Refresh

http://<address>/ status_wds.php

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.

5.5 Status – MBSS

This option is not available on STA mode.

SSID	Broadcast Association	
	Refresh	
	SSID	SSID Broadcast Association

http://<address>/ status_mbssid.php

Menu Item	Description	Options	Detail
SSID	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.
Broadcast	Enabled or	TRUE	SSID will be
	disabled SSID		broadcasted

	broadcast		
		FALSE	Wi-Fi devices can't scan out this SSID
Association	Associated STA number	>=0	The number of STAs which are connected to the Virtual AP

Chapter 6 Config

6.1 Config - Wireless (AP WPA2-AES mode)

This screen has two tab pages, "Basic" and "Advanced".

http://<address>/config_wireless.php

Basic

Vetworking NDS	Device Mode:	Access point	7
MBSS		To a serie because	4
Config	ESSID:	NexusLink2FB9	
Vireless	Broadcast SSID:		
MPS	Channel:	Auto	Current Channel:36
Vetworking			
NDS	PMF:	Disabled	
MBSS	Encryption:	WPA2-AES	
400	Passphrase:	2686F02FB9	
Tools	Group Key interval(in sec):	3600	
og			
Admin			
testore		Save Cancel	
System			
Jpgrade			
Repool			

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	This will be the SSID of the

		name	wireless network. The STA must be configured to the same SSID and security (see below) to connect to the AP.
Channel	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
PMF	Protected Management Frames		Sets the 802.11w / PMF capability. Applies to AP
Encryption	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
Passphrase	The current		

	passphrase. Applies to AP only.		
Group Key	Group key	Group key	This is the interval
interval(in sec)	renewal interval	interval needs to	at which the group
	for enterprise	be between 0 and	key is renewed for
	security	43200	clients associated
			to this SSID

Advanced

Status	CONFIG - WIR	ELESS
Wireless	Basic Advanced	
Networking WDS MBSS	Wireless Band: Bandwidth:	802.11ac • 80MHz •
Config		
Wireless	NSS:	Auto 🔻
WPS	TX Rate:	Auto 🔻
Networking	Priority:	0 -
WDS	Beacon Interval (in ms):	100
ACS	DTIM Period:	2
Tools	Short GI:	
	VLAN:	
Admin		
Restore		Save Cancel
System		
Upgrade		
Repool		

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
Bandwidth	Per the 802.11a or 802.11an or	20 MHz	20 MHz operation

	802.11ac		
	Per the 802.11an	40 MHz	40 MHz operation.
	or 802.11ac standard		Will fall back automatically to 20Mhz if STA does not support 40Mhz. If STA is a NexusLink station device, it will also fall back to 20Mhz.
		80MHz(11ac only)	80 MHz operation(11ac only)
NSS	The maximum number of spatial streams	Auto 1 2 3 4	
Tx Rate	Transmitted data rate	Not support for 802.11a standard	Auto Rate Control, MCS 0-76
		Auto or MCS0 ~MCS76 for 802.11an standard	
		Only Auto for 802.11ac standard	
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 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	

6.2 Config – WPS

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

http:// <address>/co</address>	۰_nfig	wps.p	hp
--------------------------------	--------	-------	----

Device Wireless Networking	Wifi Interface:	wifi0(00:26:86:F0:3 -	
WDS MBSS	WPS State:	Configured -	
Config	WPS PBC:	WPS PBC	
Wireless	WPS PIN:		WPS PIN
WPS MAC Filter	WPS AP PIN:	12345670	Regenerate
Tools			
Log Admin			
Distant			
Restore			
Restore System			
Restore System Upgrade Reboot			
Restore System Upgrade Reboot			

Menu Item	Description	Options	Detail
WPS State	Set WPS states	Disabled	WPS disabled
		Not configured	WPS enabled Client can remotely change AP's wireless settingsSSID, 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. STA must have same pin.
WPS AP PIN			STA must have same PIN and press same Web UI button within 2 minutes. Recommend to use external WPS push button on the enclosure.

6.3 Config – MAC Filter

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

Wireless Networking	Wifi Interface:	wifi0(00:26:86:F	0:30:81] -		
MBSS	MAC Address Filtering:	None	•	Save	
Config	MAC Address:			Add	Remove
WPS MAC Filter Networking WDS MBSS ACS	No results	R	efresh		
Tools					
Log Admin Destere					
Restore					
System					

http://<address>/config_macfilter.php

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. Click the "Config MAC Filter" button link to the MAC ADDRESS LIST page.
		Authorize if not denied	Accept a STA association request unless the MAC address for that STA has been blocked
		Deny if not authorized	Block a STA association request unless the MAC address for that STA has been authorized
MAC Address	Verify the MAC address		Checks whether the MAC address can be connected
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.
		4

6.4 Config – Networking

These screens show the networking configuration.

http://<address>/ config_networking.php

DHCP

Status	CONFIG - NETWORKING			
Device Wireless Networking WDS MBSS	IP Address:	DHCP: ● Static IP: ● 10.0.0.2		
Config	Ethernet0 MAC Address:	00:26:86:E0:2E:B9		
Wireless WPS	Ethernet1 MAC Address:	02:26:86:F0:2F:B9		
MAC Filter Networking WDS	BSSID:	00:26:86:F0:30:81 00:26:86:F0:30:81		
MBSS ACS		Save		
Tools				
Log Admin Restore				
System				
Upgrade Reboot				

Static IP

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
		01 58551011.
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.	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".

6.5 Config – WDS

This screen shows the configuration of the WDS links.

WDS WDS0: WDS1: WDS2: WDS3: WDS3: WDS4: WDS5: WDS5: WDS6: WDS7:	Vireless	WDS	MAC Address	Passphrase	VLAN	
MBSS Config WDS1: WDS2: WDS3: WDS3: WDS4: WDS5: WDS5: WDS6: WDS7: Tools Log Admin Restore System	WDS	WDS0:				
Config Wireless WPS WDS3: WDS4: WDS5: WDS5: WDS6: WDS7: Fools Og Admin Restore System	MBSS	WDS1:	1			
Wireless WPS MAC Filter Networking WDS4: WDS5: WDS5: WDS6: WDS6: WDS7: Tools Log Admin Restore System	Config	WDS2:	1			
WPS MAC Filter Networking WDS MBSS ACS WDS6: ACS WDS7: Tools Log Admin Restore System	Wireless	WDS3:	1			
Networking WDS MBSS ACS WDS6: WDS7: Tools Log Admin Restore System	MAC Filter	WDS4:	1			
WDS MBSS ACS WDS6: WDS7: Tools Log Admin Restore System	Networking	WDS5:				
ACS WDS7: Cancel	MBSS	WDS6:				
Tools Log Admin Restore System	ACS	WDS7:				
Log Admin Restore System	Tools					
System	Log Admin Restore		0	Save Cano	el	
	System					
Upgrade Reboot	Upgrade Reboot					

http://<address>/ config_wds.php

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

Menu Item	Description	Options	Detail
WDS checkbox	To determine if	Checked	The WDS link will

	the WDS link is enabled		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	

6.6 Config – MBSS

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

Status	COI	NFIG - MBSS			
Device Wireless Networking WDS MBSS	1: 🗖	SSID: PMF: Disabled	VLAN: Encryption:	Broadcast:	Priority: 0 •
Config					
Wireless WPS MAC Filter	2: 🗖	SSID:	VLAN:	Broadcast:	Priority:
Networking		PMF:	Encryption:	Passphrase:	
WDS		Disabled 🔻	NONE-OPEN -		
ACS	3: 🗖	SSID:	VLAN:	Broadcast:	Priority:
		PMF:	Encryption:	Passphrase:	
Admin Restore		Disabled 🗸	NONE-OPEN -		
System	4: 🔲	SSID:	VLAN:	Broadcast:	Priority:
Upgrade		PMF:	Encryption:	Passphrase:	
		Disabled 🔻	NONE-OPEN -		
	5: 🗖	SSID:	VLAN:	Broadcast:	Priority:
		PMF:	Encryption:	Passphrase:	
		Disabled •	NONE-OPEN -		
	6: 🔲	SSID:	VLAN:	Broadcast:	Priority:
		PMF:	Encryption:	Passphrase:	
		Disabled •	NONE-OPEN -		
	7: 🗖	SSID:	VLAN:	Broadcast:	Priority:
		PMF:	Encryption:	Passphrase:	
		Disabled •	NONE-OPEN -		
			Save Cancel		

http://<address>/ config_mbss.php

Menu Item	Description	Options	Detail
SSID	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.
VLAN	Virtual Lan for different interface	1-4096	
Broadcast	Enabled or disabled SSID broadcast	TRUE	SSID will be broadcast
		FALSE	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.	
РМҒ	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	The STA must use WPA2 encryption. This mode is recommended.
		WPA2+WPA (mixed mode)	The STA can use WPA or WPA2

		encryption
Passphrase	The passphrase	
	applies to this	
	MBSS SSID	

Chapter 7 Tools

7.1 Tools – Log

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

	St	art		-	Stop																								
Jan	1	00	:07:	42	5001	user	.debu	g ke	ernel	: [462.	69500	001	453	10	60		0 -10	01.5	0	0	0		0	14	16	0	OM	OM
Jan	1	00	:07:	43	3001	daem	on.no	tice	: iwe	vent	: 00:	07:43	. 52	6696	wifi0	- 1	00:07	1:43.5	626696	wifi	0	Scan	request	t co	mpleted	Scan	request	comp	leted
lan	1	00	:07:	44	soc1	user	.debu	g k	ernel	: [464.	78000	001	454	22	60		8 -10	01.5	14	0	0	1.1	0	185	16	0	D	0
Jan	1	00	:07:	44	5001	user	.debu	g ke	ernel	: [464.	78000	100	455	13	60		0 -10	01.6	4	1	0	6 C	0	60	4	0	OM	OM
Jan	1	00	:07:	46	soci	user	.debu	g k	ernel	:[466.	82500	001	456	10	60		0 -10	01.6	0	0	0		0	19	23	0	0	0
Jan	1	00	:07:	46	soci	user	.debu	g k	ernel	: (466.	82500	001	457	10	60	100	0 -10	01.6	0	0	9	1	0	13	17	0	OM	OM
Jan	. 3	00	:07:	48	3001	daem	on.no	tice	: iwe	vent	: 00:	07:48	.53	7134	WITIO		00:07	:48.5	537134	WITI	0	Set E	SSID:"	Quan	tenna"	Set ES	SID: "Qu	anten	na"
Jan	1	00	:07:	48	3001	user	.debu	g ki	rnel	: [468.	87000	101	458	9	60		0 -10	01.6	0	0			0	25	22	0	0	0
Jan	1	00	:07:	98	9001	user	. depu	g K	irnel	: [968.	87000	101	959		60		0 -10	1.0	0	0			0	20	33	0	MO	MO
Jan	1	00	1071	19	3001	daen	on.no	LIC	1 1we	vent	470	07193		1740	WIII0	Duc	00:07	149.	01/40	TuDles	Defer	Scan	reques	C CO	mpieced	Joan	request	- MCF	Leted
Tan	1	00	.07.	50	1008	user	.debu	g ki	inel		470	91500	01	1 scamp	RXPRC	26	C.P	E -10	11.4	INPRC	Derei	8 100	Ca Rec.	ries	160	LGPM	DI SCAL	e mcs	-(14/)
Tan	1	00	107.	50	soci	user	debu		ernel	: ;	470	91500	001	461	15	60		0 -10	1.4	8	0			0	196	17	0	OM	OM
Tan	1	00	.07.	53	1000	user	debu		ernel	: :	472	97500	101	462	10	60		0 -10	11.4	õ	ŏ			ŏ	26	33	0	0	0
Jan	5	00	:07:	53	eoc1	user	, debu		ernel		472	97500	001	463	8	60		0 -10	1.4	õ	0			0	14	16	ő	OM	OM
Jan	1	00	:07:	54	soc1	daem	on.no	Lice	e ive	vent	: 00:	07:54	.77	2120	WITIO		00:07	1:54.	72120	WIEL	0	Set F	SSID: "	Quan	tenna"	Set ES	SID: "Ou	anten	na"
Jan	1	00	:07:	55	1008	user	, debu	g ke	ernel	1 :	475.	02000	001	464	9	60		0 -10	1.4	0	0	0		0	4	7	0	0	0
Jan	1	00	:07:	55	soc1	user	.debu	a ke	arnel	: (475.	02000	001	465	10	60		1 -10	01.4	0	0	0		0	23	27	0	OM	OM
Jan	1	00	:07:	56	soc1	daem	on.no	tic	: iwe	vent	: 00:	07:56	5.00	6737	wifio	(00:07	1:56.0	06737	WITI	0	Scan	request	t co	mpleted	Scan	request	comp	leted
Jan	13	00	:07:	57	1008	user	.debu	g k	ernel	: [477.	06500	101	466	15	60		2 -10	1.1	6	0	0		0	107	31	0	0	0
Jan	1	00	:07:	57	soc1	user	.debu	g ke	ernel	: [477.	06500	001	467	23	60	1	4 -10	01.2	12	6	0	Sec. 11	0	608	57	0	OM	OM
Jan	1	00	:07:	59	soc1	user	.debu	g ke	ernel	: [479.	10500	001 1	Tstamp	RxPkt	RxG	CF	C No	ise	TxPkt	Defer	s Tou	ts Ret:	ries	ShPmb1	LgPm	bl Scale	e MCS	- (TX/I
Jan	1	00	:07:	59	soc1	user	.debu	g k	trnel	: [479.	10500	101	468	9	60		0 -10	01.4	0	0	0		0	37	35	0	0	0
Jan	1	00	:07:	59	soc1	user	.debu	g k	ernel	: [479.	10500	01	469	10	60		0 -10	01.4	0	0	0	1000	0	53	42	0	OM	OM
Jan	1	00	:08:	01	5001	daem	on.no	tice	: iwe	vent	: 00:	08:01	.01	7141	wif10		00:08	:01.0	017141	WITI	0	Set E	SSID:"	Quan	tenna"	Set ES	SID: "Qu	anten	na"
Jan	- 3	00	:08:	01	3001	user	.debu	g k	arnel	: [481.	16000	001	470	10	60		1 -10	91.4	0	0			0	15	15	0	0	0
Jan	-	00	:08:	01	3001	user	. debu	a k	irnel	: [981.	16000	101	971	10	60		0 -10	1.4	0	0			0	0	0	0	OM	MO
Jan	1	00	:08:	02	3001	daem	on.no	tice	: iwe	vent	: 00:	08:02	.30	1093	WILIO		00:08	1:02.3	301693	WITI	0	scan	reques	t co	mpieted	Scan	request	comp	Teted
Jan	1	00	:08:	03	soci	user	.debu	g k	ernel	: (483.	20500	100	473	24	60	1	7 -10	1.2	14	ō	0		0	548	49	o	OM	OM
		_		_		_		_																					

http://<address>/tools_log.php

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 currently not used	

7.2 Tools – Admin

This page is for administration of the user passwords.

Wireless Networking WDS MBSS	User Name: Old Passphrase: New Passphrase:	root	
Config	New Passphrase Again:		
Wireless WPS MAC Filter Networking WDS MBSS ACS		Save	
Tools			
Log Admin Restore			
System			
Upgrade Reboot			

http://<address>/tools_admin.php

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	Enter the new passphrase	It should be the same as

Again	again	the "New Passphrase"
-------	-------	----------------------

7.3 Tools – Restore

The Tools Restore page is for users to restore all the configurations of the device to factory defaults.

http://<address>/tools_restore.php

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

Chapter 8 System

8.1 System – Upgrade

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

Choose a file:	Browse No file selected.	
Upgrade		
	Upgrade	Upgrade

http://<address>/system_upgrade.php

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 update webpage.**

Status	SYSTEM	YSTEM - UPGRADE		
Device Wireless Networking WDS MBSS	Choose a file:	C01_R02\WAP-5940-EM51-3671361CTU-C01_R02.bin Browse		
Config	Upgrade			
Wireless WPS MAC Filter Networking WDS MBSS ACS				
Tools				
Log Admin Restore				
System				
Upgrade Reboot				

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

8.2 System – Reboot

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

Device	
Networking WDS MBSS	Are you sure to reboot?
Config Wireless WPS MAC Filter Networking WDS MBSS ACS	YES
Tools	
Log Admin Restore	
System	
Upgrade Reboot	

http://<address>/system_reboot.php

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 \sim 40 degrees Celsius

NOTE: Specifications are subject to change without notice.