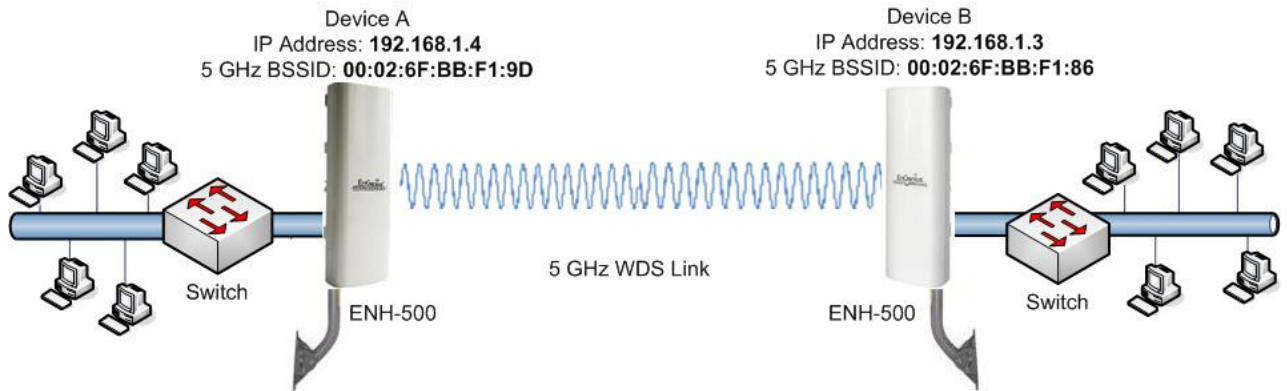


How to Set up WDS Bridge on a ENH-500 (P2P)

Point-to-Point WDS Bridge should have a physical topology similar to the picture below:



Please note that in order for the settings to save on this unit you need to click save/apply under the save/reload option under Status.

The screenshot displays the EnGenius web interface for a Wireless Access Point/Client Bridge. The page title is "Save/Reload". On the left, a yellow sidebar contains a navigation menu with categories: Status (with "Save/Reload:1" highlighted), System, Wireless, and Management. The main content area shows "Home" and "Reset" buttons at the top right. Below is an "Unsaved changes list" table with one entry: "network.sys.opmode=stawds". A red "Caution" message states: "Caution: Network Setting changed, redirect IP to 192.168.1.1". At the bottom of the main area, "Save & Apply" and "Revert" buttons are visible, with "Save & Apply" highlighted by a red box. The browser's taskbar at the bottom shows "Done", "Internet", and "100%" zoom.

Step #1:

Note the MAC address under the wireless MAC address field for each unit.

EnGenius® Wireless Access Point/Client Bridge

WDS Bridge

Main Home Reset

System Information

Device Name	ENH500
Ethernet Main MAC Address	00:02:6F:BB:F1:9C
Ethernet Secondary MAC Address	00:02:6F:BB:F1:9C
Wireless MAC Address	00:02:6F:BB:F1:9C
WDS MAC Address	00:02:6F:BB:F1:9C
Country	N/A
Current Time	Thu Jan 5 07:45:07 UTC 2012
Firmware Version	1.1.0

Status

- Save/Reload:0
- Main**
- System Log

System

Step #2:

Change the IP address of each unit to be in the same subnet as your network, outside the DHCP scope

EnGenius® Wireless Access Point/Client Bridge

WDS Bridge

IP Settings Home Reset

System Information

IP Network Setting Obtain an IP address automatically (DHCP) **Specify an IP address**

IP Address	192	168	1	4
IP Subnet Mask	255	255	255	0
Default Gateway	192	168	1	254
Primary DNS	0	0	0	0
Secondary DNS	0	0	0	0

Accept Cancel

Status

- Save/Reload:0
- Main
- System Log

System

- Operation Mode
- IP Settings**
- Spanning Tree Settings

Step #3:

Change the mode of operation to WDS Bridge.

EnGenius | **Wireless Access Point/Client Bridge**

WDS Bridge

System Properties Home Reset

System Properties

Device Name: ENH500 (1 to 32 characters)

Country/Region: Please Select a Country Code

Operation Mode:

- Access Point
- Client Bridge
- WDS
- Access Point
- Bridge
- Station
- Client Router

Save & Apply Cancel

Step #4:

Set the channels to be the same on all units in the WDS link.

EnGenius | **Wireless Access Point/Client Bridge**

WDS Bridge

Wireless Network Home Reset

Wireless Mode: 802.11 A/N Mixed

Channel HT Mode: 20/40MHz

Extension Channel: Upper Channel

Channel / Frequency: Ch36-5.18GHz

Accept Cancel

Step #5:

Here is WDS link settings of device A with the Wireless MAC address of device B in the MAC address field.

EnGenius® Wireless Access Point/Client Bridge

WDS Bridge

WDS Link Settings Home Reset

Security: None

WEP Key: 40/64-bit(10 hex digits)

AES Passphrase: (8-63 ASCII characters or 64 hexadecimal digits)

ID	MAC Address	Mode
1	00 : 02 : 6F : BB : F1 : 86	Enable
2	<input type="text"/>	Disable
3	<input type="text"/>	Disable
4	<input type="text"/>	Disable

Accept Cancel

Step #6:

Here is device B WDS link settings page with Device's A wireless MAC address entered.

EnGenius® Wireless Access Point/Client Bridge

WDS Bridge

WDS Link Settings Home Reset

Security: None

WEP Key: 40/64-bit(10 hex digits)

AES Passphrase: (8-63 ASCII characters or 64 hexadecimal digits)

ID	MAC Address	Mode
1	00 : 02 : 6F : BB : F1 : 9C	Enable
2	<input type="text"/>	Disable
3	<input type="text"/>	Disable
4	<input type="text"/>	Disable

Accept Cancel

Step #7:

To test the link ping across the link

The screenshot shows the EnGenius web interface for a Wireless Access Point/Client Bridge. The left sidebar contains a menu with categories: Status, System, Wireless, and Management. The 'Diagnostics' item under Management is highlighted with a red box. The main content area is titled 'Diagnostics' and has 'Home' and 'Reset' buttons. Under 'Ping Test Parameters', the 'Target IP' is 192.168.1.3, 'Ping Packet Size' is 64 Bytes, and 'Number of Pings' is 4. The 'Start Ping' button is highlighted with a red box. Below this is the 'Traceroute Test Parameters' section with a 'Start Traceroute' button.

Step #8:

Your ping should have zero packet loss

Diagnostics Results

```

PING 192.168.1.3 (192.168.1.3): 64 data bytes
72 bytes from 192.168.1.3: seq=0 ttl=64 time=26.355 ms
72 bytes from 192.168.1.3: seq=1 ttl=64 time=1.416 ms
72 bytes from 192.168.1.3: seq=2 ttl=64 time=1.377 ms
72 bytes from 192.168.1.3: seq=3 ttl=64 time=1.384 ms

--- 192.168.1.3 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 1.377/7.633/26.355 ms

```

Optional:

If you want encryption on your WDS link, then select the encryption method under the security drop down menu, then the WEP key or WPA passphrase. Note the unit will revert to G speeds when using WEP, N speeds is only supported by AES. This has to match on both units if you chose to enable it on one unit:

EnGenius® Wireless Access Point/Client Bridge

WDS Bridge

WDS Link Settings Home Reset

Security: AES

WEP Key: 40/64-bit(10 hex digits)

AES Passphrase: (8-63 ASCII characters or 64 hexadecimal digits)

ID	MAC Address	Mode
1	00 : 02 : 6F : BB : F1 : 86	Enable
2	: : : : : :	Disable
3	: : : : : :	Disable
4	: : : : : :	Disable

Accept Cancel

If you have trouble with your WDS Bridge link then try changing both units channel HT from 40 Mhz to 20 Mhz.

EnGenius® Wireless Access Point/Client Bridge

WDS Bridge

Wireless Network Home Reset

Wireless Mode: 802.11 A/N Mixed

Channel HT Mode: 20MHz

Extension Channel: Upper Channel

Channel / Frequency: Ch36-5.18GHz

Accept Cancel

If you are still experiencing problems with your WDS link, then try changing to a non-DFS channel, and then lastly try changing the band of the units from A/N to A only.

The screenshot displays the EnGenius web interface for configuring a Wireless Access Point/Client Bridge. The main heading is "Wireless Network". The configuration table is as follows:

Wireless Mode	802.11 A/N Mixed
Channel HT Mode	20MHz
Extension Channel	Upper Channel
Channel / Frequency	Ch36-5.18GHz

Below the table are "Accept" and "Cancel" buttons. The left sidebar contains a menu with the following items:

- WDS Bridge
- Status
 - Save/Reload:0
 - Main
 - System Log
- System
 - Operation Mode
 - IP Settings
 - Spanning Tree Settings
- Wireless**
 - WDS Link Settings
 - Wireless Network**
 - Wireless Advanced Settings

Use the following chart to determine non DFS channels. Use the FCC column.

Please keep in mind if using the 5GHz band that channels 52-140 are UNI –2 channels which radar systems commonly operate on. There is an FCC mandated function called DFS that automatically changes the channel of any 5GHz WiFi radio including any and all EnGenius radios if radar is detected as to avoid interference to radar systems.

The best channels to use are 34-48 and 149-165.

Frequency Band	Channel ID	FCC (GHz)	ETSI (GHz)	MKK (GHz)	SG (GHz)	ASIA (GHz)	TW (GHz)
Lower Band (36 = default)	34	—	—	5.170 ¹	—	—	—
	36	5.180	5.180	—	5.180	—	—
	38	—	—	5.190	—	—	—
	40	5.200	5.200	—	5.200	—	—
	42	—	—	5.210	—	—	—
	44	5.220	5.220	—	5.220	—	—
	46	—	—	5.230	—	—	—
	48	5.240	5.240	—	5.240	—	—
Middle Band (52 = default)	52	5.260	5.260	—	—	—	5.260
	56	5.280	5.280	—	—	—	5.280
	58	5.300	5.300	—	—	—	5.300
	60	5.320	5.320	—	—	—	5.320
H Band	100	—	5.500	—	—	—	—
	104	—	5.520	—	—	—	—
	108	—	5.540	—	—	—	—
	112	—	5.560	—	—	—	—
	116	—	5.580	—	—	—	—
	120	—	5.600	—	—	—	—
	124	—	5.620	—	—	—	—
	128	—	5.640	—	—	—	—
	132	—	5.660	—	—	—	—
	136	—	5.680	—	—	—	—
Upper Band (149 = default)	149	5.745	—	—	5.745	5.745	5.745
	153	5.765	—	—	5.775	5.675	5.675
	157	5.785	—	—	5.785	5.785	5.785
	161	5.805	—	—	5.805	5.805	5.805
ISM Band	165	5.825	—	—	5.825	—	5.825

Note 1: Channel 34 is the default channel for Japan