FAQ WMC251-1W-1T-300

Q: How to set up the AP-Client and WDS Connection

- (1) <u>AP-Client Connection</u>
- (2) WDS Connection

(1) AP-Client Connection

Topology:



Step 1. Use the static IP in the PCs that are connected with AP-1(Site 1) and AP-2 (Site 2). In this case, Site 1 is "192.168.0.100", and Site 2 is "192.168.0.200".

etworking Connect using:	General You can get IP settings assigned this capability. Otherwise, you ne	automatically if your network eed to ask your network admir	supports
	for the appropriate IP settings. Obtain an IP address autom Obtain an IP address autom Obtain an IP address	atically	
 Client for Microsoft Networks AVG network filter driver QoS Packet Scheduler File and Printer Sharing for Microsoft Networks 	IP address: Subnet mask:	192 . 168 . 0 . 10 255 . 255 . 255 . 0	0
Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) Link-Layer Topology Discovery Mapper I/O Driver Link-Layer Topology Discovery Responder	 Obtain DNS server address Use the following DNS server 	automatically er addresses:	
Install Uninstall Properties	Preferred DNS server:		
Description	Alternate DNS server:		
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	Validate settings upon exit	Adv	anced
	L		Cancel

Step 2. In AP-1, go to "Operation Mode" to configure it to Access Point mode.

※ You can also configure it to "AP Router" mode if the WAN port of the AP is connected to the internet directly.

► Oper	ration Mode			
Sele	ct the "Operation Mode" by clicking on "Set	tup" button an	d then configure the Wirele	ss Settings.
M	ode		Radio	Ethernet Port
 Ac 	ccess Point	Setup	Access Point	LAN+LAN
O CI	lient	Setup	Client	LAN+LAN
⊖ W	'DS AP	Setup	WDS Access Point	LAN+LAN
⊖ W	'DS Client	Setup	WDS Client	LAN+LAN
O AF	P Router	Setup	Access Point	WAN+LAN
⊙ w	ireless ISP	Setup	Wireless ISP	LAN+LAN

Step 3. Click "Setup" to configure the following parameters, and then click Save & Restart to save the settings.

- 1) Network ID (SSID): set to a unique value
- 2) **Channel**: set to a fixed one
- 3) Security Setting: strongly suggested to configure it.

In this case, we configure it to WPA2-PSK, AES.

Operation Mode Settings

Regulatory Domain:	United States 👻	
Network ID (SSID)	WMC251	Site Survey
 Enable Wireless Disable SSID Broadcas Enable Isolated 	ting	
Radio Mode:	2G 11NG HT40 💌	
Channel:	6 -2437MHz 💉	
Data Rate:	Auto 💌	
Security Setting:	Setup	
Transmit Power:	27 dbm 🖌	
Transmit Distance:	1 Km 💌	
TDMA:	Disable 💌	
Advanced Settings:	Setup	
Access Control:	Setup	
		Save & Restart

NOTE: To access the wireless network, user must have correct SSID and encryption key, if enabled.

Security Setting	l de la construcción de la constru	
Select Encryption:	WPA2	
Pre-Authentication:	● Personal (Pre-Shared Key)	S)
Encryption Type:	◯ TKIP ③ AES ◯ Auto	
Pre-Shared Key:	12345678	
(Save Cancel	

Step 4. In AP-2, modify the default IP to the same IP range but different with AP-1. In this case, the IP is changed to **192.168.0.252**.

►	Device IP Settings				
	Configure the IP settings of	the device.			
	IP Address:	192	168	. 0	252
	IP Subnet Mask:	255 .	255	. 255	0
	Gateway IP Address:	192 .	168	. 0	253
	Primary DNS Server :	8	8	. 4	4
	Secondary DNS Server :	8	8	. 8	8
					Save & Restart

NOTE: Changes to this page will not take effect until you click Save & Restart on the save config page.

Step 5. In AP-2, configure it to "Client" mode, and click "Setup".

•	O	peration Mode			
	Se	elect the "Operation Mode" by clicking on "Se	tup" button ar	nd then configure the Wirele	ess Settings.
		Mode		Radio	Ethernet Port
(С	Access Point	Setup	Access Point	LAN+LAN
(۲	Client	Setup	Client	LAN+LAN
(С	WDS AP	Setup	WDS Access Point	LAN+LAN
(С	WDS Client	Setup	WDS Client	LAN+LAN
(С	AP Router	Setup	Access Point	WAN+LAN
(С	Wireless ISP	Setup	Wireless ISP	LAN+LAN

Step 6. Click "Setup", and then click Site Survey to find the AP-1.

►

Operation Mode Settings		
Regulatory Domain:	United States 🗸	Site Survey
 Enable Wireless Disable SSID Broadcast Enable Isolated 	ing	
Radio Mode:	2G 11NG HT40 💌	
Channel:	6 -2437MHz 💌	
Data Rate:	Auto 🐱	
Security Setting:	Setup	
Transmit Power:	27 dbm 💌	
Transmit Distance:	1 Km 💌	
TDMA:	Disable 🗸	
Advanced Settings:	Setup	
Access Control:	Setup	
		Save & Restart

NOTE: To access the wireless network, user must have correct SSID and encryption key, if enabled.

Step 7. Select the AP-1 from the list.

<i> Inter</i>	net Explorer					×
e http:	o://192.168.0	0.252/sts_sitesvy.asp				
Select	SSI	D MAC Address	Channel	Signal Strength(%)	Security	
0	WMC252	09:f6:03:00:1b	6	-36 dBm	WPA2/YesCCMP/PSK	
۲	WMC251	09:f6:03:1d:1c	6	-31 dBm	WPA2/YesCCMP/PSK	
		SET SECURITY	RESCAN	CLO	BE	~
					🔍 100%	▼

Step 8. Click "SET SECURITY" to configure the Pre-Shared Key, and then click "Save" and close the window.

🦪 Internet Explorer				×
é http://192.168.0.25	2/svr_security.asp			
Security Settings				^
Select Encryption:	WPA-Mixed			
Pre-Shared Key:	12345678			
	Save	Close]	
				~
			🔍 100% 📼	

Step 9. Click "OK" and click "Save & Restart" to apply the setting.

Message from webpage
You already changed the settings, do you need to restart the device?
OK Cancel

Step 10. In AP-1, go to "Device Status-> Wireless Client Table" to check whether the AP-2 is in the list.

Operation Mode System Configuration Tools Device Status Logout				
 Device Information 	 Wireless Client Table 			
	No.	Mac Address		
 Wireless Information 	1	09:f6:03:00:1b		
► LAN Information				
Wireless Client Table				
► System Log				

Step 11. Use command line tool to ping each other to ensure the link is successfully established.

From Site-1, ping 192.168.1.200, and in Site-2, ping 192.168.1.100.

🗛 C:\WINDOWS\system32\CMD.exe - ping 192.168.1.100 -t - 0 × Destination host unreachable. * Ping statistics for 192.168.0.100: Packets: Sent = 25, Received = 0, Lost = 25 (100% loss), Control-C ^C C:\Documents and Settings\Administrator>ping 192.168.1.100 -t Pinging 192.168.1.100 with 32 bytes of data: Request timed out. Reply from 192.168.1.100: bytes=32 bytes=32 bytes=32 bytes=32 bytes=32 bytes=32 bytes=32 bytes=32 bytes=32 time=7ms time=1ms time=2ms time=2ms time=2ms time=1ms time=1ms time=1ms TTL=128 L = 128TTL=128 TTL=128 L = 128Reply from 192.168.1.100:

Step 12. Configure the TCP/IP settings of Site-2 to "Obtain an IP address automatically".

	Alternate Comiguration	
Connect using:	You can get IP settings assigned au this capability. Otherwise, you nee	utomatically if your network supports d to ask your network administrator
Intel(R) PRO/1000 MT Desktop Adapter	for the appropriate IP settings.	
Configure	Obtain an IP address automat	ically
his connection uses the following items:	⊂⊚ Use the following IP address:	
Glient for Microsoft Networks	IP address:	· · · · · · · · · · · · · · · · · · ·
☑ □ QoS Packet Scheduler	Subnet mask:	· · · ·
☑ ➡ File and Printer Sharing for Microsoft Networks	Default gateway:	
Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4)		
Link-Layer Topology Discovery Mapper I/O Driver	Obtain DNS server address au	utomatically
🗹 🛶 Link-Layer Topology Discovery Responder	Use the following DNS server a	addresses:
Install Uninstall Properties	Preferred DNS server:	· · ·
Description	Alternate DNS server:	· · · ·
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication	Validate settings upon exit	Advanced

Step 13. Use command line tool to ping the DNS (e.g. Google) to ensure Site-2 can access internet through the wireless connection.

CIN. C:\\	Vindows\system32\cmd.exe - ping 192.168.1.1 -t	
Reply Reply Reply Reply Reply Reply Reply Reply Reply Reply Reply	from 192.168.1.1: bytes=32 time(1ms TTL=64 from 192.168.1.1: bytes=32 time(1ms TTL=64	_
C:\. C:\\	Windows\system32\cmd.exe - ping 8.8.8.8 -t	- 0 X
Replyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy	from 8.8.8.8: bytes=32 time=37ms TTL=53 from 8.8.8.8: bytes=32 time=38ms TTL=53 from 8.8.8.8: bytes=32 time=36ms TTL=53 from 8.8.8.8: bytes=32 time=37ms TTL=53 from 8.8.8.8: bytes=32 time=37ms TTL=53 from 8.8.8.8: bytes=32 time=37ms TTL=53 from 8.8.8.8: bytes=32 time=37ms TTL=53 from 8.8.8.8: bytes=32 time=38ms TTL=53 from 8.8.8.8: bytes=32 time=37ms TTL=53	

The following hints should be noted:

- 1) The encryption method must be the same in both sites if configured.
- Note
- 2) Both sites should be Line-Of-Sight.
- 3) For the short distance connection less than 1km, please reduce the "Transmit Power" of both sites.
- 4) For the long distance connection over 1km, please adjust the "Transmit Distance" to the actual distance or double the actual distance.

(2) WDS Connection

Topology:



Step 1. Use the static IP in the PCs that are connected with WMC251 (Site 1) and WMC251 (Site 2). In this case, Site 1 is "**192.168.1.100**", and Site 2 is "**192.168.1.200**".

Connect using:	You can get IP settings assigned	automatically if your network supports
Realtek PCIe FE Family Controller	this capability. Otherwise, you n for the appropriate IP settings.	eed to ask your network administrator
Configure	Obtain an IP address autor	natically
This connection uses the following items:	Use the following IP address	ss:
Client for Microsoft Networks	IP address:	192.168.1.100
QoS Packet Scheduler	Subnet mask:	255 . 255 . 255 . 0
File and Printer Sharing for Microsoft Networks Anternet Protocol Version 6 (TCP/IPv6)	Default gateway:	• • •
Internet Protocol Version 4 (TCP/IPv4) Link-Layer Topology Discovery Mapper I/O Driver	Obtain DNS server address	automatically
Link-Layer Topology Discovery Responder	Use the following DNS serv	er addresses:
Install Uninstall Properties	Preferred DNS server:	15 11 11
Description	Alternate DNS server:	2 2 2
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	Validate settings upon exit	Advanced



Step 2. In AP-1, go to "Operation Mode" to configure it to Access Point mode.

Step 3. Click "Setup" to configure the following parameters, and then click Save & Restart to save the settings.

- 4) Network ID (SSID): set to a unique value
- 5) Channel: set to a fixed one
- 6) Security Setting: strongly suggested to configure it.

In this case, we configure it to WPA2-PSK, AES.

Regulatory Domain:	United States 🐱	
Network ID (SSID)	WMC251	Site Survey
 Enable Wireless Disable SSID Broadcas Enable Isolated 	sting	
Radio Mode:	2G 11NG HT40 🔽	
Channel:	6 -2437MHz 💉	
Data Rate:	Auto 🐱	
Security Setting:	Setup	
Transmit Power:	27 dbm 💌	
Transmit Distance:	1 Km 💌	
TDMA:	Disable 🗸	
Advanced Settings:	Setup	
Access Control:	Setup	
		Save & Restart

Operation Mode Settings

NOTE: To access the wireless network, user must have correct SSID and encryption key, if enabled.

Security Setting	\$
Select Encryption:	WPA2
Pre-Authentication:	Personal (Pre-Shared Key) O Enterprise (RADIUS)
Encryption Type:	◯ TKIP
Pre-Shared Key:	12345678
(Save Cancel

Step 4. In AP-2, modify the default IP to the same IP range but different with AP-1.

In this case, the IP is changed to **192.168.1.252**.

Device IP Settings				
Configure the IP settings of	the devic	e.		
IP Address:	192	. 168	. 1	_ 252
IP Subnet Mask:	255	. 255	. 255	. 0
Gateway IP Address:	192	. 168	. 1	. 253
Primary DNS Server :	8	. 8	. 4	. 4
Secondary DNS Server :	8	. 8	. 8	. 8
				Save & Restart
OTE: Changes to this page w	/ill not tał	e effect until	you click Sa	ave & Restart on the save config pa

Step 5. In AP-2, configure it to "Client" mode, and click "Setup".

٠	O	peration Mode						
	Select the "Operation Mode" by clicking on "Setup" button and then configure the Wireless Settings.							
		Mode		Radio	Ethernet Port			
(С	Access Point	Setup	Access Point	LAN+LAN			
(С	Client	Setup	Client	LAN+LAN			
(С	WDS AP	Setup	WDS Access Point	LAN+LAN			
(۲	WDS Client	Setup	WDS Client	LAN+LAN			
(С	AP Router	Setup	Access Point	WAN+LAN			
(С	Wireless ISP	Setup	Wireless ISP	LAN+LAN			

Step 6. Click "Setup", and then click Site Survey to find the AP-1.

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Data Rate:	Auto 🐱	
Security Setting:	Setup	
Transmit Power:	27 dbm 💌	
Transmit Distance:	1 Km 💌	
TDMA:	Disable 🗸	
Advanced Settings:	Setup	
Access Control:	Setup	
		Save & Restart

NOTE: To access the wireless network, user must have correct SSID and encryption key, if enabled.

Step 7. Select the AP-1 from the list.

🧟 Internet Explorer								
🥖 htt	http://192.168.1.252/sts_sitesvy.asp							
Select	SSID	MAC Address	Channel	Signal Strength(%)	Security			
0	WMC252	09:f6:03:00:1b	6	-36 dBm	WPA2/YesCCMP/PSK			
۲	WMC251	09:f6:03:1d:1c	6	-31 dBm	WPA2/YesCCMP/PSK			
		SET SECURITY	RESCAN	CLOSE				
					🔍 100%	▼		

Step 8. Click "SET SECURITY" to configure the Pre-Shared Key and then click "Save" and close the window.

🦪 Internet Explorer		
@ http://192.168.1.25	2/svr_security.asp?	
Security Setting	S	^
Select Encryption:	WPA-Mixed	
Pre-Shared Key:	12345678	
[Save Close	
		~
		🔍 100% 🔻 🔡

Step 9. Click "OK" and then click "Save & Restart" to apply the setting.



Step 10. In AP-1, go to "Device Status-> Wireless Client Table" to check whether the AP-2 is in the list.

Operation Mode System Configuration Tools Device Status Logout						
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	No.	Mac Address				
 Wireless Information 	1	09:f6:03:00:1b				
► LAN Information						
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► System Log						

Step 11. Use command line tool to ping each other to ensure the link is successfully established.

From Site 1, ping 192.168.1.200, and in Site 2, ping 192.168.1.100.

📾 C:\WINDOWS\system32\CMD.exe - ping 192.168.1.100 -t	
Destination host unreachable. Destination host unreachable. Destination host unreachable. Destination host unreachable. Destination host unreachable.	
Ping statistics for 192.168.0.100: Packets: Sent = 25, Received = 0, Lost = 25 (100% loss), Control-C ^C C:\Documents and Settings\Administrator>ping 192.168.1.100 -t Pinging 192 168 1 100 with 32 butes of data:	
Request timed out. Reply from 192.168.1.100: bytes=32 time=7ms TTL=128 Reply from 192.168.1.100: bytes=32 time=1ms TTL=128 Reply from 192.168.1.100: bytes=32 time=2ms TTL=128 Reply from 192.168.1.100: bytes=32 time=1ms TTL=128 Reply from 192.168.1.100: bytes=32 time=2ms TTL=128 Reply from 192.168.1.100: bytes=32 time=2ms TTL=128 Reply from 192.168.1.100: bytes=32 time=2ms TTL=128 Reply from 192.168.1.100: bytes=32 time=1ms TTL=128	<u>_</u>

The following hints should be noted:

- 1) The encryption method must be the same in both sites if configured.
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Note

- 3) For the short distance connection less than 1km, please reduce the "Transmit Power" of both sites.
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