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Wireless Point to Point Configuration Guide John M - 2019-12-23 - BAT, WLC (HiLCOS)

## **Master AP Configuration**

1. When the BAT radio is connected to a network or computer it will automatically take the subnet of the network with 254 for the last octet xxx.xxx.254.

2. Login to the device GUI and go to Setup Wizards/Configure WLAN interface



3. Choose the Step by step option and click next

192.168.1.116 - Configure WLAN	
★ ★ https://192.168.1.116/AA_WLAN_0?CONFSID=42df941be42	7ee001fdcc37f86b6539b39edf42ab05002f93994
192.168.1.116 - Configure WLAN	(Į
You can select between two options	
<ul> <li>Express configures the WLAN in a few steps</li> </ul>	
Step-by-step executes a detailed configuration of the WLAN	
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<u> </u>	Tons - age [Heat > [Keest]

4. Choose the country code the radio will be located in and click next

192.168.1.116 - Configure WLAN	
https://192.168.1.116/AA_WLAN_0/AA_WLAN_0_Pa	ge3done/3_session/?CONFSID=42df941be
192.168.1.116 - Configure WLAN	
The device must know its country location in order to use the correct wireless base	
settings.	
Please select the country in which the device will be operated. Country	USA
	Deviews Dama Newto Dearst
	Previous Page Next > Reset

5. Select the WLAN interface and click next



6. Choose the Access point mode and click next

192.168.1.116 - Configure WLAN	
	Page10done/3_session/?CONFSID=42df941be42
192.168.1.116 - Configure WLAN	
Select the operating mode of the WLAN interface.	
WLAN operating mode	Access point
If you select 'Access point' (default), clients (e.g. notebooks) can login to this interface and you will be able to establish WLAN point-to-point or relay connections via this interface.	
If you select 'Station' and the connected AP is a BAT too, you will have the possibility to select the transparent client mode later on. This mode will not replace all transmitted MAC addresses with the one of the WLAN adapter.	
If you select 'Managed', no further configuration will be made here. The AP then tries to connect to a WLAN controller (WLC) to configure this WLAN interface.	
	Previous Page Next > Reset

7. Select the frequency and channel for the radio and click next

192.168.1.116 - Configure WLAN	
	age14done/3_session/?CONFSID=42df941be427e
192.168.1.116 - Configure WLAN	
Select the frequency band and a radio channel for your first wireless network interface. Please note that in some countries not all available channels may be used. Frequency band Channel number	2.4 GHz (802.11g/b/n) ▼ Channel 11 (2.462 GHz) ▼
Automatic Channel Selection works only for DFS enabled channels. To verify if you need to configure a fixed channel, please use the "show vlan" command on the CLI of the device. The target country has to be configured in advance for this.	
	Previous Page Next > Reset

8. For link test select the internal antenna option and next. Note: if using a high gain antenna the radio may need to be attenuated per FCC standards

🔡 192.168.1.116 - Configure WLAN
S S Khttps://192.168.1.116/AA_WLAN_0/AA_WLAN_0_Page24done/3_session/?CONFSID=42df941be4
192.168.1.116 - Configure WLAN
Which antennas are you using?
The provided default respectively internal antennas are used
<ul> <li>Other than the default antennas are connected to the device (expert settings)</li> </ul>
Previous Page Next > Reset

9. Select configure WLAN point to point and click next

🔄 192.168.1.116 - Configure WLAN
Solution (\$10,000,000,000,000,000,000,000,000,000,
192.168.1.116 - Configure WLAN
•
Each WLAN interface can span WLAN networks (SSIDs) and connect to Point-to- Point remote access points.
O Configure WLAN network
Configure WLAN Point-to-Point remote site
If you configure your WLAN network for the first time and intend to connect several WLAN access points via WLAN Point-to-Point, it is recommended to start configuring the WLAN Point-to-Point remote sites.
Previous Page Reset

10. If the network only Hirschmann devices with point to point links select exclusive, if the network has client devices connecting to the Aps select On, then specify the P2P radio ID, select Master for the channel selection scheme and click next

192.168.1.116 - Configure WLAN	
★      ★      ★      ★      https://192.168.1.116/AA_WLAN_0/AA_WLAN_0_Page52done/3	_session/?CONFSID=42df941be427ee001fdcc37f86b653s
192.168.1.116 - Configure WLAN	
Point-to-Point operation mode	
<ul> <li>Off - This access point can only communicate with WLAN clients (e.g. notebooks).</li> </ul>	
On - This access point can also communicate with other access points to connect several local	wireless networks.
<ul> <li>Exclusive - This access point can only communicate with other access points; WLAN clients ca</li> </ul>	nnot connect to this access point (pure WLAN bridge).
P2P radio ID	P2Pmaster (max. 24 characters)
Do not forward between P2P links on the same interface	
Channel Selection Scheme	Master 🔻
Previous	Page Next > Reset

11. Put the estimated distance between radios to set the timing of the links and click next

192.168.1.116 - Configure WLAN	
★      ★      ★      https://192.168.1.116/AA_WLAN_0/AA_WLAN_0_P	age53done/3_session/?CONFSID=42df941be427ee001fdcc37
192.168.1.116 - Configure WLAN	Б
If you plan to establish a long range connection (above 1 km), you have to fill this particular WLAN radio setting. Maximum distance	0 km (possible values: 0 - 65535)
None of your wireless stations should exceed this distance. Otherwise it will be impossible to reach this station.	
	Previous Page Next > Reset

12. Choose the use WPA-2 to secure the link and click next

🔡 192.168.1.116 - Configure WLAN		
192.168.1.116 - Configure WLAN		
Activate encryption for your wireless network to allow access only to authorized clients and encrypt all data transmissions.		
Use WPA-2 (802.11i) Enhanced Security with Advanced Encryption Standard (WPA/AES) for encryption		
<ul> <li>Do not activate encryption for the wireless LAN (only for public access)</li> </ul>		
Previous Page Next > Reset		

13. Type in the chosen passphrase and repeat to verify, then click next

★    ★    ★    ★    ★    ★    https://192.168.1.116/AA_WLAN_0/AA_WLAN_0_F	age64done/3_session/?CONFSID=4	2df941be427ee001fdcc37
192.168.1.116 - Configure WLAN		Б
Enter the WPA passphrase that will be used to encrypt all data transmissions in your wireless network. This passphrase must also be set in all WLAN clients. WPA passphrase (Repeat)	······	(max. 63 characters) (required)
WPA passphrase		(max. 63 characters) (required)
For higher security it is recommended to use a long key containing some special characters and numbers.		

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## 14. Choose no(default) for client bridge support and click next

192.168.1.116 - Configure WLAN	
★      ★      ★      https://192.168.1.116/AA_WLAN_0/AA_WLAN_0_Pag     ★	ge68done/3_session/?CONFSID=4;
192.168.1.116 - Configure WLAN	
It is possible to negotiate the client bridge mode against BAT stations running in client mode.	
If this mode establishes, all Ethernet packets are transmitted transparently. The MAC address of the packets is not replaced by the MAC address of the WLAN card as usual in all WLANs.	
Client bridge support	No 🔻
If 'Exclusive' is selected for this WLAN network only clients supporting this mode are accepted.	
This mode is currently supported only by BAT stations which must have enabled client bridge support in client mode settings for this to function.	
	Previous Page Next > Reset

15. Choose the point to point link to edit and click next

K https://192.168.1.116/AA_WLAN_0/AA_WLAN_0_Page72done/3_session/?CONFSID=4.	
192.168.1.116 - Configure WLAN	
The physical WLAN interface can connect to up to 16 Point-to-Point remote access points (APs). It will transparently transmit all packets to the remote APs (WLAN bridge).	
Select the Point-to-Point remote access points (AP) to edit.	
Point-to-Point AP	P2P-1-1 is off, MAC: empty
	Devices Deve Nexts 2
	Previous Page <u>N</u> ext > <u>R</u> eset

16. Enable the P2P channel, select P2P radio ID of remote site and specify the remote site radio ID, and then click next

♦ > ● ★ https://192.168.1.116/AA_WLAN_0/AAA_WLAN_0/AA_WLAN_0/AAA_WLAN_0/AAA_WLAN_0/AAAWLAN_0/AAAWLAN_0/AAAWLAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	AN_0_Page76done/3_session/?CONFSID=	42df941be427ee001fdcc37
192.168.1.116 - Configure WLAN		Б
<ul> <li>✓ Enable this Point-2-Point channel Recognize remote site by</li> <li>● P2P radio ID of remote site</li> </ul>		
<ul> <li>MAC address of remote site</li> </ul>		
P2P radio ID	P2Pslave	(max. 24 characters) (required)
MAC address	0000000000	(max. 12 characters) (required)
	Previous Page Next > Reset	

17. Click finish and the Master radio P2P link is configured

★ ★ https://192.168.1.116/AA_WLAN_0/AA_WLAN_0_Page78done/3_session/?CONFSID=42     ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★
192.168.1.116 - Configure WLAN
You have successfully changed the WLAN settings.
Open the following table to get an overview of the changes made.
Summary of settings
Select 'Finish' to apply the new settings.
Previous Page Einish Reset

## Slave AP Configuration

1. Login to the device GUI and go to Setup Wizards/Configure WLAN interface

★ ● ★ https://192.168.1.117/frames/Start.html?CONFSID=e7e860a8b2		
<ul> <li>Setup Wizards</li> <li>Set up Internet connection</li> <li>Check Security Settings</li> <li>Basic Settings</li> <li>Configure WLAN Interface</li> <li>Configure dynamic DNS</li> <li>System information</li> <li>System information</li> <li>Configuration</li> <li>HiLCOS Menu Tree</li> <li>File management</li> <li>Extras</li> <li>HTTP-Session</li> <li>Logout</li> </ul>	System information System data Name: Location: Administrator: Comments:	tion  Device status BAT-R_P2Pslave lab www.hirschmann.cd

2. Choose the Step by step option and click next

★      ★ https://192.168.1.117/AA_WLAN_0?CONFSID=e7e860a8b20444f3a1c439247b90a1e3944     ★
192.168.1.117 - Configure WLAN
You can select between two options
Express configures the WLAN in a few steps
Step-by-step executes a detailed configuration of the WLAN
Browleys Dates   Next >   Depart

3. Choose the country code the radio will be located in and click next

https://192.168.1.117/AA_WLAN_0/AA_WLAN_0_Page1done/1_session/?CONFSID=e76	
192.168.1.117 - Configure WLAN	
The device must know its country location in order to use the correct wireless bas settings.	ie
Please select the country in which the device will be operated.	
Country	USA 🔻
	Previous Page Next > Reset
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4. Select the WLAN interface and click next

	Page4done/1_session/?CONFSID=e7e8
192.168.1.117 - Configure WLAN	
°	
The device supports two physical WLAN interfaces. Please select the one to configure.	
WLAN interface to change	WLAN interface 1 <
Current WLAN interfaces settings:	
WLAN interface 1	Access point, 2.4 GHz, 1 network active
WLAN interface 2	Access point, 2.4 GHz, 1 network active
	Previous Page Next > Reset

## 5. Choose the Access point mode and click next

K > 🛞 🗱 https://192.168.1.117/AA_WLAN_0/AA_WLAN_0_Page7done/1_session/?CONFSID=e7e4	
192.168.1.117 - Configure WLAN	
Select the operating mode of the WLAN interface.	
WLAN operating mode	Access point
If you select 'Access point' (default), clients (e.g. notebooks) can login to this interface and you will be able to establish WLAN point-to-point or relay connections via this interface.	
If you select 'Station' and the connected AP is a BAT too, you will have the possibility to select the transparent client mode later on. This mode will not replace all transmitted MAC addresses with the one of the WLAN adapter.	
If you select 'Managed', no further configuration will be made here. The AP then tries to connect to a WLAN controller (WLC) to configure this WLAN interface.	
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6. Select the same frequency and channel as the master radio and click next

★ Solution: Control C	
192.168.1.117 - Configure WLAN	
······	
Select the frequency band and a radio channel for your first wireless network interface.	
Please note that in some countries not all available channels may be used.	
Frequency band	2.4 GHz (802.11g/b/n) 🔻
Channel number	Channel 11 (2.462 GHz) 🔻
Automatic Channel Selection works only for DFS enabled channels. To verify if you need to configure a fixed channel, please use the "show wlan" command on the CLI of the device. The target country has to be configured in advance for this.	
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7. For link test select the internal antenna option and next.

★ ★ https://192.168.1.117/AA_WLAN_0/AA_WLAN_0_Page     ★	21done/1_session/?CONFSID=e
192.168.1.117 - Configure WLAN	
Which antennas are you using?	
The provided default respectively internal antennas are used	
O Other than the default antennas are connected to the device (expert settings)	
	Previous Page Next > Reset

8. Select configure WLAN point to point and click next

Image: Second
192.168.1.117 - Configure WLAN
Each WLAN interface can span WLAN networks (SSIDs) and connect to Point-to- Point remote access points.
Configure WLAN network
Configure WLAN Point-to-Point remote site
If you configure your WLAN network for the first time and intend to connect several WLAN access points via WLAN Point-to-Point, it is recommended to start configuring the WLAN Point-to-Point remote sites.
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9. Select the same operation mode as the master radio, specify the radio ID (should be the same as the remote site ID in the master radio configuration), select the slave channel selection scheme and click next

192.168.1.117 - Configure WLAN	
Point-to-Point operation mode Off - This access point can only communicate with WLAN clients (e.g. notebooks) • On - This access point can also communicate with other access points to connect	several local wireless networks.
<ul> <li>Exclusive - This access point can only communicate with other access points; WL</li> </ul>	AN clients cannot connect to this access point (pure WLAN bridge).
P2P radio ID Do not forward between P2P links on the same interface Channel Selection Scheme	P2Pslave (max 24 characters)
	Previous Page Next > Reset

10. The distance should be the same as the master configuration for timing purposes and click next

192.168.1.117 - Configure WLAN	(
If you plan to establish a long range connection (above 1 km), you have to fill this particular VULAN radio setting.	
Maximum distance	0 km (possible values: 0 -
None of your wireless stations should exceed this distance. Otherwise it will be impossible to reach this station.	
	Previous Page <u>N</u> ext > <u>R</u> eset

11. Choose the use WPA-2 to secure the link and click next Note:The encryption needs to be the same as the master radio or the link will not work

★
192.168.1.117 - Configure WLAN
Activate encryption for your wireless network to allow access only to authorized clients and encrypt all data transmissions.
Use WPA-2 (802.11i) Enhanced Security with Advanced Encryption Standard (WPA/AES) for encryption
<ul> <li>Do not activate encryption for the wireless LAN (only for public access)</li> </ul>
Previous Page Next > Reset

12. Type in the same passphrase as the Master radio, verify and click next

★      ★      ★      ★      https://192.168.1.117/AA_WLAN_0/AA_WLAN_0_F     ★      ★	Page60done/2_session/?CONFSID=051f2ea4afdbe21798552f45
192.168.1.117 - Configure WLAN	Б
Enter the WPA passphrase that will be used to encrypt all data transmissions in your wireless network. This passphrase must also be set in all WLAN clients. WPA passphrase (Repeat) WPA passphrase You must enter between 8 and 63 ASCII characters for this key. For higher security it is recommended to use a long key containing some special characters and numbers.	(max. 63 characters) (required)         (max. 63 characters) (required)
	Previous Page Next > Reset

13. Choose no(default) for client bridge support and click next

♦ ★ https://192.168.1.117/AA_WLAN_0/AA_WLAN_0_Page62done/2_session/?CONFSID=05				
192.168.1.117 - Configure WLAN				
It is possible to negotiate the client bridge mode against BAT stations running in client mode.				
If this mode establishes, all Ethernet packets are transmitted transparently. The MAC address of the packets is not replaced by the MAC address of the WLAN card as usual in all WLANs.				
Client bridge support	No			
If 'Exclusive' is selected for this WLAN network only clients supporting this mode are accepted.				
This mode is currently supported only by BAT stations which must have enabled client bridge support in client mode settings for this to function.				
	Previous Page Next > Reset			

14. Choose the point to point link to edit and click next

★    ★    ★    ★    ★    https://192.168.1.117/AA_WLAN_0/AA_WLAN_0_Page66done/2_session/?CONFSID=05     ★			
192.168.1.117 - Configure WLAN			
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The physical WLAN interface can connect to up to 16 Point-to-Point remote access points (APs). It will transparently transmit all packets to the remote APs (WLAN bridge).			
Select the Point-to-Point remote access points (AP) to edit.			
Point-to-Point AP	P2P-1-1 is off, MAC: empty V		
	Previous Page Next > Reset		

15. Enable the P2P channel, select P2P radio ID of remote site and specify the remote site radio ID (Master radio ID), and then click next

★    ★    ★    ★    https://192.168.1.117/AA_WLAN_0/AA_WLAN_0_1	Page70done/2_session/?CONFSID=	051f2ea4afdbe21798552f45	if92c1€
192.168.1.117 - Configure WLAN		Б	HIF A BEL
<ul> <li>✓ Enable this Point-2-Point channel Recognize remote site by</li> <li>● P2P radio ID of remote site</li> </ul>			
<ul> <li>MAC address of remote site</li> </ul>			
P2P radio ID	P2Pmaster	(max. 24 characters) (required)	
MAC address	00000000000	(max. 12 characters) (required)	
	Previous Page <u>N</u> ext > <u>R</u> eset		

16. Click finish and the Slave radio P2P link is configured

Solution: State
192.168.1.117 - Configure WLAN
You have successfully changed the WLAN settings.
Open the following table to get an overview of the changes made.
Summary of settings
Select 'Finish' to apply the new settings.
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Previous Page Finish Reset

17. Verify the link is working by going to extras/WLAN link test. Here you can see the active link

