



BAT-C Commissioning Guide

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Featured Brands



About this Guide

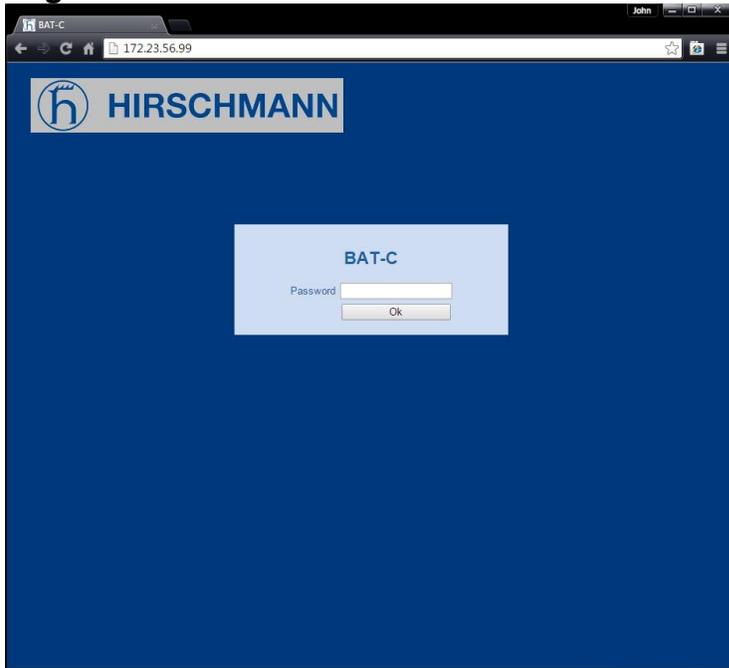
The Hirschmann BAT-C product is a simple, cost effective wireless client device. The configuration method is limited to a GUI accessed via a web browser. All standard web browsers should work with no issues, as the interface is html based. As the BAT-C is a low cost/reduced functionality device, it is capable of joining any 802.11 based network (a/b/g/n) and supports both 2.4GHz and 5GHz frequency bands.

Configuration Steps:

Accessing the GUI

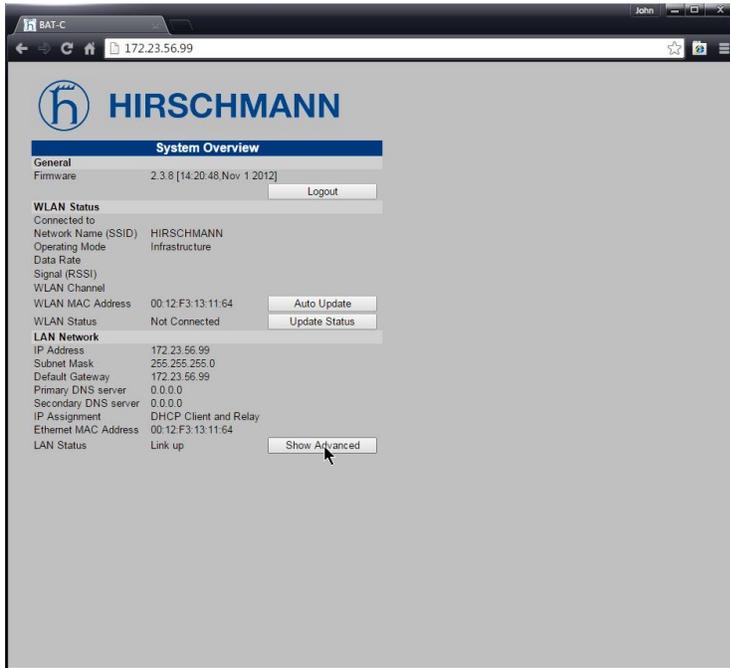
1. The BAT-C has a default IP address of 172.23.56.99. Once the BAT-C is powered and has an ethernet connection, set the configuring PC to a static IP address of 172.23.56.1 with a subnet mask of 255.255.255.0.

Login



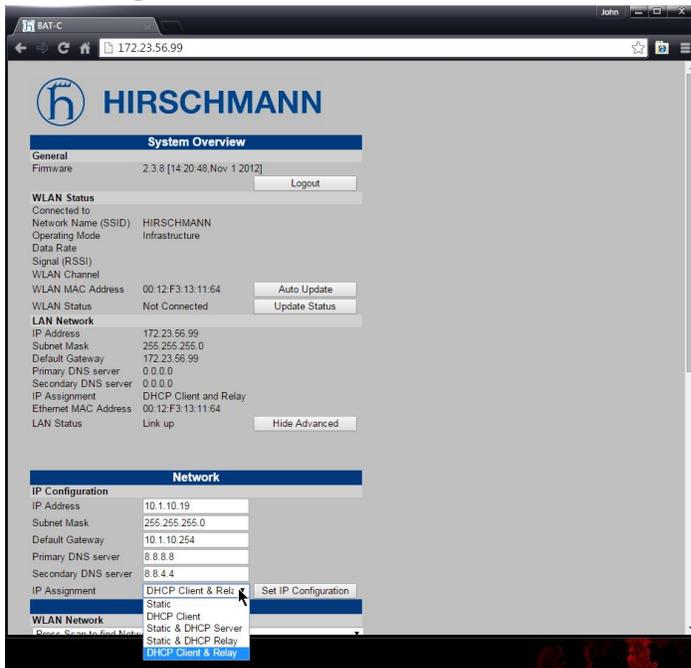
2. On the configuring PC, open a web browser. In the address bar (not search box) enter the IP address of the BAT-C (172.23.56.99) and hit "Enter" or click "Go" (depending on browser features). You should be greeted with the login page as shown above. Enter the default password (*private*) to enter the GUI.

Advanced Settings



3. Once in the GUI, click the "Show Advanced" button to reveal the setting options

IP settings



4. If assigning the BAT-C with a static IP address, enter the desired IP information and change the "IP Assignment" option to "Static"

IP Assignment Options:

Static - IP assigned directly to BAT-C

DHCP Client - BAT-C will try to obtain an IP address from a DHCP server

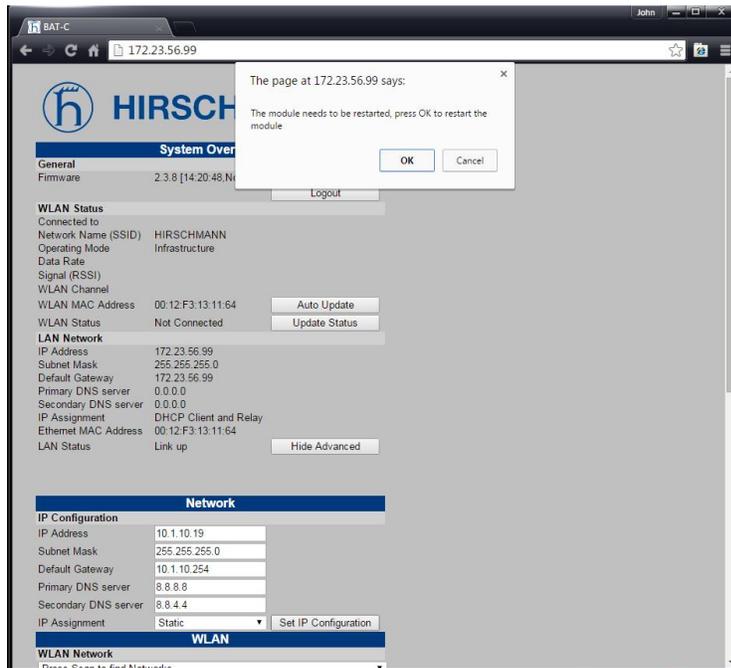
Static & DHCP Server - IP directly assigned to BAT-C and it will act as a DHCP server for other devices

Static and DHCP Relay - IP assigned directly to the BAT-C, and will forward any DHCP requests from other devices to a separate DHCP server

DHCP client and Relay - BAT-C will try to obtain an IP address from a DHCP server and will forward any DHCP requests from other devices to a separate DHCP server

NOTE - "Static" method is recommended. This allows you to always know the IP address of the BAT-C, should you need to do connection troubleshooting or maintenance in the future

Restart



5. Once the desired IP parameters are entered, click the "Set IP Configuration" button to make the changes active. You will get a notification that the unit needs to restart in order to make the changes. Click "OK" to continue. At this point, you will probably need to change the IP parameters on the configuring PC, in order to reach the BAT-C at the newly assigned IP parameters.

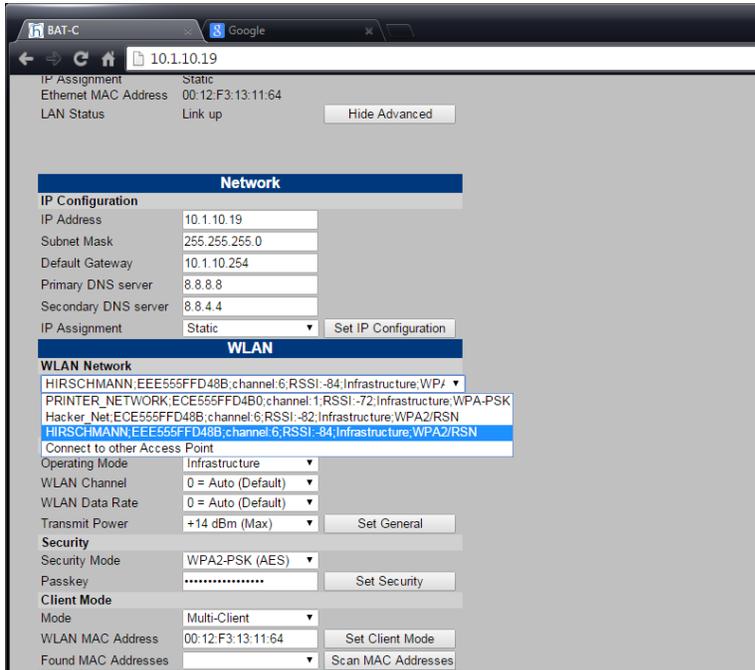
Wireless Settings

The screenshot displays the BAT-C web interface for configuring wireless settings. The browser address bar shows '10.1.10.19'. The page is organized into several sections:

- IP Address:** IP Address (10.1.10.19), Subnet Mask (255.255.255.0), Default Gateway (10.1.10.254), Primary DNS server (8.8.8.8), Secondary DNS server (8.8.4.4), IP Assignment (Static), and a 'Set IP Configuration' button.
- WLAN Network:** A dropdown menu for 'Press Scan to find Networks' with a 'Scan for Networks' button. Below it, the 'Network Name (SSID)' is set to 'HIRSCHMANN' with a 'Set SSID' button.
- General:** Operating Mode (Infrastructure), WLAN Channel (0 = Auto), WLAN Data Rate (0 = Auto), and Transmit Power (+14 dBm (Max)) with a 'Set General' button.
- Security:** Security Mode (WPA2-PSK (AES)) with a 'Set Security' button and a 'Passkey' field.
- Client Mode:** Mode (Multi-Client), WLAN MAC Address (00:12:F3:13:11:64) with a 'Set Client Mode' button, and Found MAC Addresses with a 'Scan MAC Addresses' button.
- Miscellaneous:** Send AT Command field and buttons for Send AT Command, Reboot Module, Restore Module, and Show AT Commands.
- Read Settings:** Read All Settings button.
- Write Settings:** Write All Settings button.
- Configuration:** New Password and Confirm New Password fields with a 'Set New Password' button. A 'Choose File' button for configuration files and 'Load Configuration' and 'Save Configuration' buttons.
- Firmware Update:** TFTP Server IP Address field.

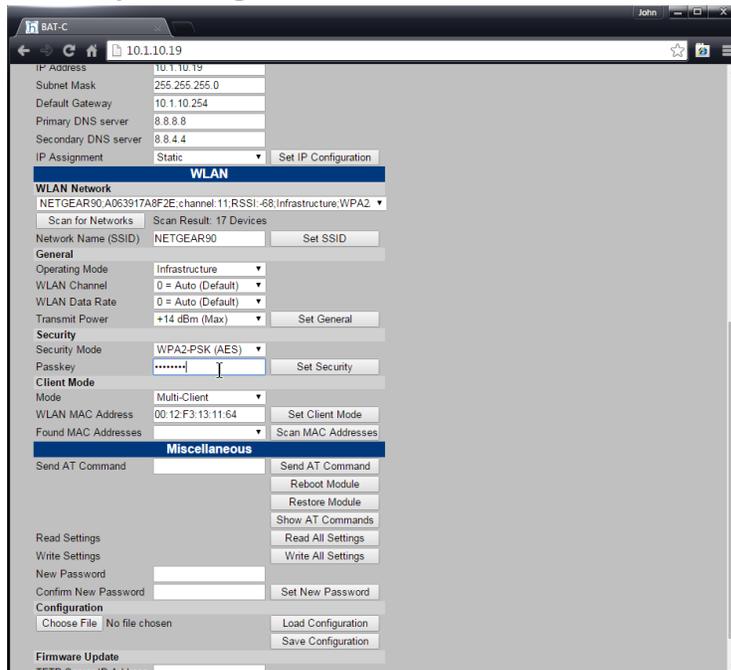
- To setup the wireless parameters, the easiest method is to click the "Scan for networks" button. This allows the BAT-C to collect beacons from nearby access points to determine available wireless networks to join. After a few seconds, the drop-down should populate. **Note:** This method will only find broadcasting access points. If you are trying to connect to a hidden wireless network, you will need to manually enter the appropriate SSID into the "Network Name" text box.

Selecting SSID



7. Once the search is finished, click the drop-down box to show the available wireless networks as shown. Find the appropriate wireless network for the BAT-C to connect and click on it in the list. This should populate the "Network Name" text box with the correct SSID.

Security Settings



8. Select the proper option from the "Security Mode" drop-down and enter the appropriate key or credentials to join the wireless network. Once configured, click the "Set Security" button to save the changes.

Note: The security settings are defined by the access point. You will need to know or ask the administrator of the wireless network what the appropriate security settings are.

Security Mode options:

- None** - No data Encryption used. All data sent in clear text, unless encrypted by the application/devices
- WPA-PSK (TKIP)** - Wifi Protected Access, Pre-Shared Key using the Temporal Integrity Key
- WPA2-PSK (AES)** - Wifi Protected Access, Pre-Shared Key using the Advanced Encryption Standard
- WPA2-PEAP** - Wifi Protected Access, Protected Extensible Authentication Protocol (Radius authentication)
- WEP64 (Open)** - Wired equivalent Protocol, using a 64-bit encryption key
- WEP128 (Open)** - Wired equivalent Protocol, using a 128-bit encryption key
- Other** - Allows for more specific and less commonly used settings

Client Mode

Client Mode		
Mode	Multi-Client ▼	
WLAN MAC Address	00:12:F3:13:11:64	Set Client Mode
Found MAC Addresses	▼	Scan MAC Addresses

- The Client Mode setting effects the ethernet MAC layer of the frames traveling through the BAT-C. Per the 802.3 ethernet standard, an ethernet client (or wireless client) must perform a MAC masquerading function. Replacing the original source MAC address of an ethernet frame, with it's own MAC address. In most cases this is fine, and provides for layer 3 (IP) connectivity to all devices connected behind the BAT-C. Some proprietary discovery protocols can be affected by this, as well as Profinet communication.

Client Mode Options:

Client Mode - In this mode, the BAT-C is acting as a wireless extension of the cable connected Ethernet device. Configure the BAT-C to take over, clone, the MAC address of the connected device. This means that you connect **ONE** Ethernet device at a time to each BAT-C.

Ethernet Bridge - Two BAT-C's connected together support this mode. In this mode, the two BAT-C's transparently transfer encapsulated UDP packages Ethernet packages. Devices on both sides of the wireless link are unaware of the wireless connection. For example, an Ethernet network with several devices connected through an Ethernet switch or hub

Multi-Client – (typically recommended) In this mode, the BAT-C is acting as in Client mode but with the addition of connecting several devices using the IP layer.

WLAN Status

The screenshot shows a web browser interface for a Hirschmann device. The address bar displays '10.1.10.19'. The page header features the Hirschmann logo and name. Below the header is a 'System Overview' section with three main categories: General, WLAN Status, and LAN Network.

System Overview	
General	
Firmware	2.3.8 [14:20:48, Nov 1 2012]
<input type="button" value="Logout"/>	
WLAN Status	
Connected to	EC:E5:55:FF:D4:8B
Network Name (SSID)	Hacker_Net
Operating Mode	Infrastructure
Data Rate	39 Mbit/s
Signal (RSSI)	-37 dBm - Excellent
WLAN Channel	6 (2.437 GHz)
WLAN MAC Address	00:12:F3:13:11:64
WLAN Status	Connected
<input type="button" value="Auto Update"/>	
<input type="button" value="Update Status"/>	
LAN Network	
IP Address	10.1.10.19
Subnet Mask	255.255.255.0
Default Gateway	10.1.10.254
Primary DNS server	8.8.8.8
Secondary DNS server	8.8.4.4
IP Assignment	Static
Ethernet MAC Address	00:12:F3:13:11:64
LAN Status	Link up
<input type="button" value="Show Advanced"/>	

- Once all the proper settings have been made, you can click the "Update Status" button to view the connection information. Data rate, Signal strength and channel information will be displayed for troubleshooting and diagnostics if needed.