



Terminal Server
User Manual

Version 2.70

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Welcome to Airconsole TS

Thanks for purchasing Airconsole TS – The worlds smallest most flexible serial console server.

Airconsole TS comprises a head unit and additional 4-port cable kits which form a 4 to 12 port single terminal server unit. The entire unit is powered via either via mains from an external 5V DC USB power adaptor (included) or from a 802.3af PoE switch via an optional PoE splitter.

Airconsole Serial ports can be accessed one of 4 ways:

- 1) Directly via IP protocols (ie SSH or Telnet) in a terminal emulator (such as PuTTY on PC, or Get Console on IOS)
- 2) Directly via virtual COM ports created on PC, Mac via drivers, or with our “Get Console” (IOS) or SerialBot (Android) Apps. COM Ports created over either IP or Bluetooth.
- 3) via the built in Web Terminal on the Airconsole TS Web Terminal page
- 4) via centralized management server (Airconsole Enterprise Server v2.0)

The first part of this guide highlights the most common setup requirements. Later sections go through the full configuration options in more detail.

Airconsole TS Features

Airconsole TS has the following supported features

- Presents 4-12 RS232 serial ports over **WIFI** or **Ethernet** connection to an end user terminal via SSH, Telnet or integrated HTTP
- Presents a single, selectable RS232 serial port over **Bluetooth 4.0** (Low Energy) or **Bluetooth 2.1** (Classic)
- Flexible expansion from 4 to 12 ports via slide on modules without rebooting
- Fully configurable Wireless security, IP routing and IP Addressing
- On-demand connectivity to Cloud Service (Airconsole Enterprise Server) makes serial ports accessible via remote web browsers
- Local user database, or use remote Radius / Tacacs+ Authentication, SNMP monitoring
- External power or PoE power options
- Integrated simple Websockets terminal directly from Airconsole TS IP address
- Full Developer SDK for iOS, Android and Websockets
- Machine-to-Machine operating modes

Package Contents

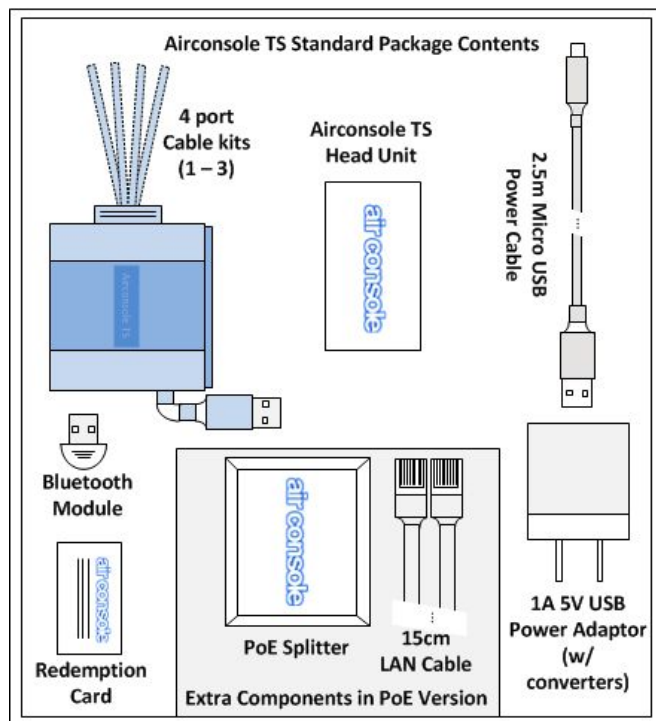
Your Airconsole TS package contents depends on whether you ordered a Standard or PoE model

The Standard Kit includes:

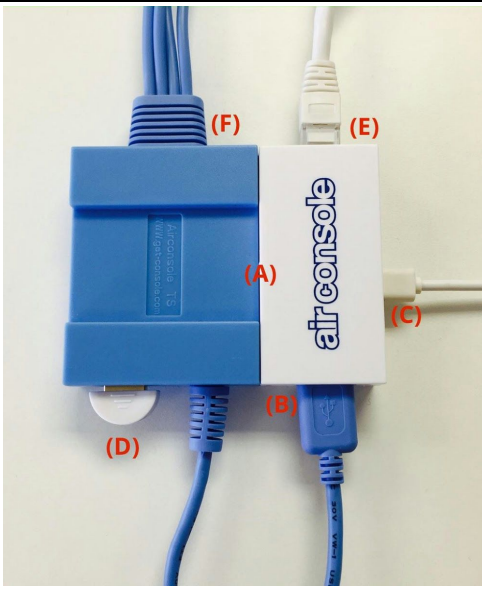

1 x Airconsole TS Adaptor
1 x White Micro-USB Power Cable
2.5m / 8.2ft
1-3 x 4 port Serial cable kits
1 x Bluetooth Adaptor
1 x 1A 5V USB Power adaptor
1 x Redemption Card for a 2 UDID Get
Airconsole Enterprise Server license


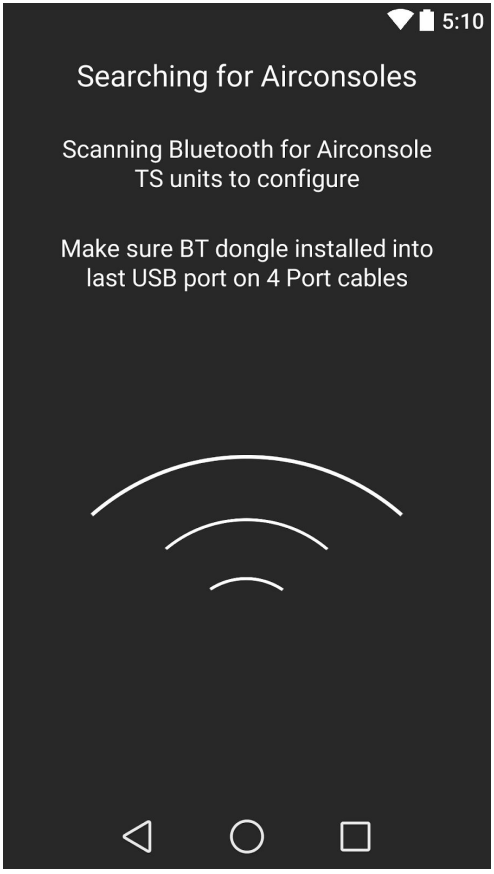
The PoE Kit also includes:

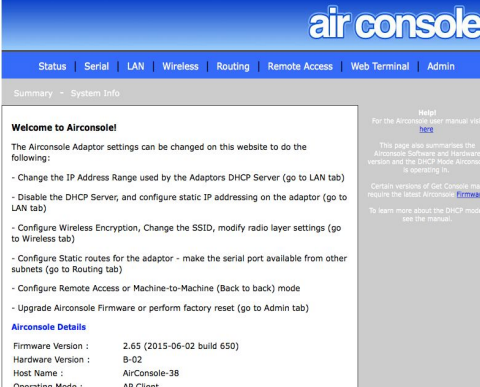

1 x 802.3af 10/100 PoE Splitter
1 x 15cm Ethernet Cable

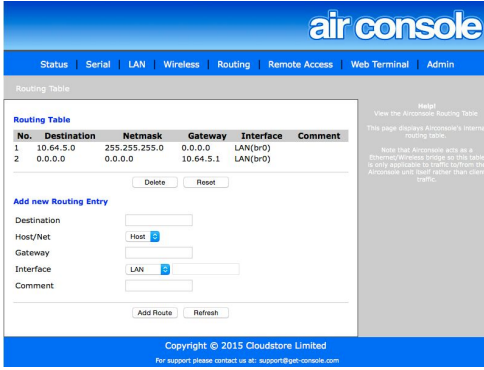
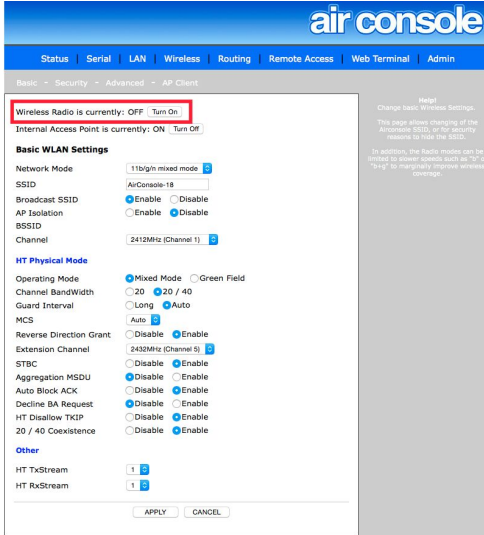


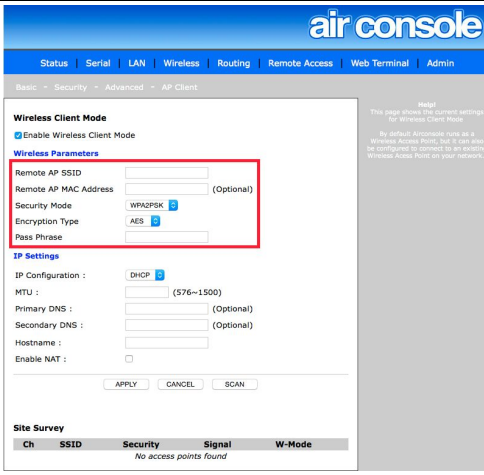
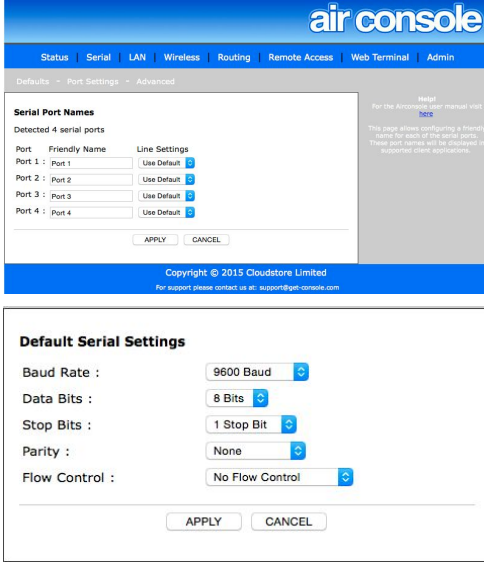
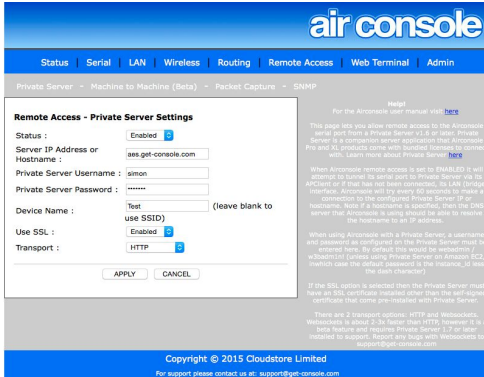
Assembly and Mounting

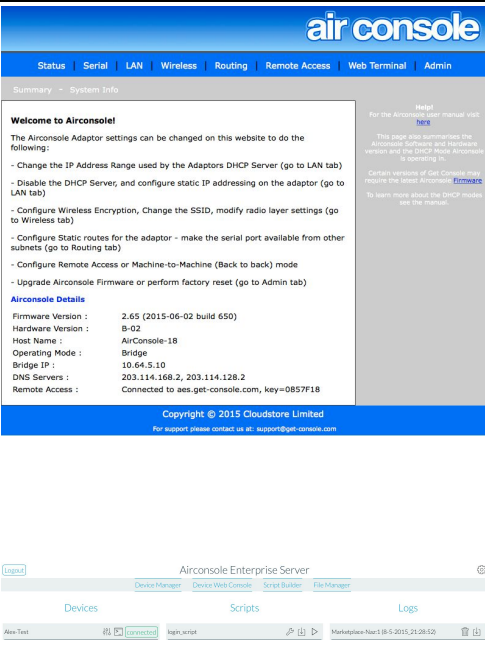
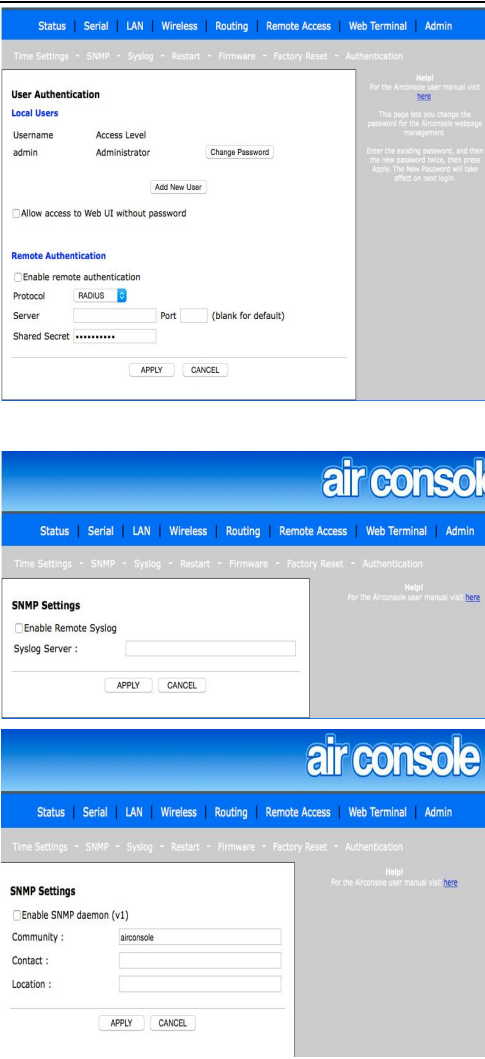
Step	Description	Example
1	<p>A. Slide Airconsole Head unit onto 4 port cable kit. If more than one 4 port kit then slide these on as well.</p> <p>B. Connect USB cable from the first (closest) 4 port cable into USB port of Airconsole Head unit. If more than one 4 port kit then chain the USB cable from second kit into the USB female port of the 1st kit.</p> <p>C. Connect microUSB power cable</p> <p>D. Connect supplied Bluetooth adaptor into USB female port of the last 4 port cable</p> <p>E. Connect ethernet cable to local LAN (if using wired Ethernet instead of or in addition to WIFI)</p> <p>F. Connect the serial cables to your serial equipment serial ports.</p>	
2	<p>Mounting in Rack</p> <p>Airconsole TS includes industrial Velcro for mounting practically anywhere. Apply velcro square to the back of each 4 port cable kit.</p> <p>Apply self-adhesive hook section of velcro square inside rack where when attached to Airconsole TS will be within reach of external power and serial console ports of the devices to be managed.</p> <p>The supplied power cable is 2.5m long Each serial cable on the 4 port kit is 1.8m long</p> <p>This should allow for positioning Airconsole either at top or bottom of 42U rack and still allow reaching a PDU at the opposite end within same cabinet. The 1.8m serial cables generally will also reach all devices within the same cabinet.</p> <p>If serial cables are too short they can be extended by any “straight through” RJ45 coupler and an Ethernet cable (not supplied).</p>	

		
3a	<p><u>Quick Setup via Bluetooth LE</u></p> <p>Once physically installed the <i>fastest way</i> to setup Airconsole TS is via our Configuration App (available for Android and iOS in August 2015). Download the App and install. Airconsole TS units are automatically detected via Bluetooth LE. Download the Airconsole TS Quickstart app from Apple App Store or Google Play Search for "Airconsole QuickStart"</p> <p>Once connected via the App, follow the configuration Wizard that leads through the following settings:</p> <ol style="list-style-type: none"> 1) LAN and Device Identity Configuration 2) WIFI Configuration (optional) 3) Serial Port Configuration 4) Remote Access Configuration <p>Other advanced settings can be configured via the Airconsole Web interface or over the air from the Airconsole Enterprise Server.</p>	

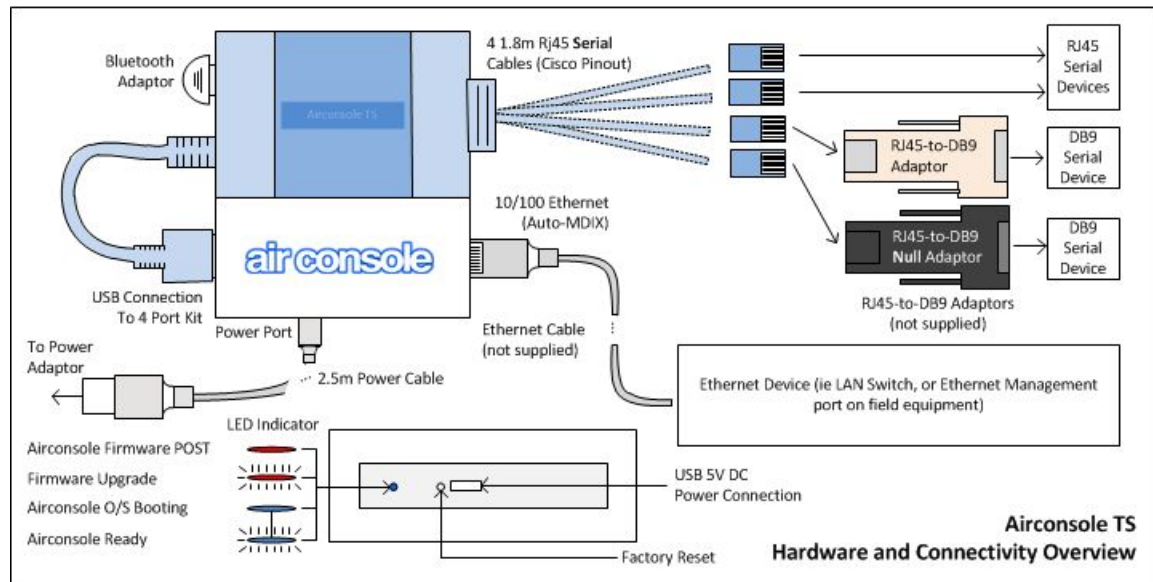
3b	<p>Web Setup</p> <p>Alternatively, Airconsole can be setup via its built in web based Admin page. This method allows for all settings to be configured.</p> <p>Join your mobile/PC to the Airconsole WIFI network. The Default WIFI password it is 12345678.</p> <p>By Default Airconsole acts as a DHCP server so will give an IP address to your iOS/PC/Android device on the 192.168.10.X network.</p> <p>By Default, the Airconsole DHCP Server does not provide a gateway IP. This allows iPad/iPhones to retain Internet access while still connected to Airconsole WIFI. Once connected to the Airconsole WIFI network access the Web admin page at http://192.168.10.1/ Login with username: admin password: admin</p>	
4	<p>The normal configuration tasks for a typical Airconsole TS deployment follow:</p> <ol style="list-style-type: none"> Configure LAN port IP Address Configure IP routing Configure or Disable WIFI Configure Serial Ports (Optional) Configure Remote Access to Airconsole Enterprise Server (Optional) Configure User Accounts and other Admin settings 	
5	<p>LAN Port Configuration</p> <p>>> LAN >> Setup</p> <p>To set Airconsole's IP address, Netmask and Default Gateway. Note that changing these settings may require you to reconnect.</p> <p>Airconsole can have its IP address set Statically or learn it via the wired LAN port from an external DHCP server.</p> <p>If the Static Assignment option is taken by the user simply enter the chosen IP address into the settings and may also choose to enter in the details of up to two DNS servers.</p> <p><i>If Airconsole has a Static IP address then Airconsole can also act as a DHCP server itself</i>, providing IPs for other WIFI and Wired LAN users. Tick the box to enable DHCP server and then set the start/end IP addressing and lease time in seconds.</p> <p><i>If Airconsole's own IP is provided by</i></p>	

	<p>external DHCP server then select this option. Optionally providing a Hostname may be required for external DHCP server. Airconsole will obtain its IP address from the users DHCP server reachable via the Airconsole LAN port. Note that setting Airconsole to be a DHCP client will automatically disable Airconsole's internal DHCP Server. This is to ensure Airconsole does not allocate IP addresses to user's existing corporate network.</p>	
6	<p>IP Routing Configuration (Optional)</p> <p>>> Routing</p> <p>The Default route will be present from the LAN settings, however use this page to setup additional static routes via other IP addresses.</p>	
7	<p>Configure or Disable WIFI</p> <p>Although Airconsole has a built in WIFI network, in many datacentre deployments this is not permitted or may interfere with other network operations. In order to disable or configure the WIFI go to Wireless Tab.</p> <p>>> Wireless</p> <p>the first option on the page is to switch the WIFI off.</p> <p>IF however WIFI is required then Airconsole has 3 different operating modes for its WIFI network:</p> <ol style="list-style-type: none"> 1) (Default) Infrastructure AP - Airconsole acts as an AP via the "Airconsole-XX" SSID. It bridges from this WIFI network to the wired LAN port 2) Infrastructure AP plus AP Client - Airconsole acts as both an AP as per (1) but also joins an external WIFI network via a separate IP routed interface 3) Station Mode - Airconsole acts only as a client (station) connecting to an external WIFI network. This interface is either routed or bridged to the wired LAN port depending on option selected. To setup this mode disable the 	

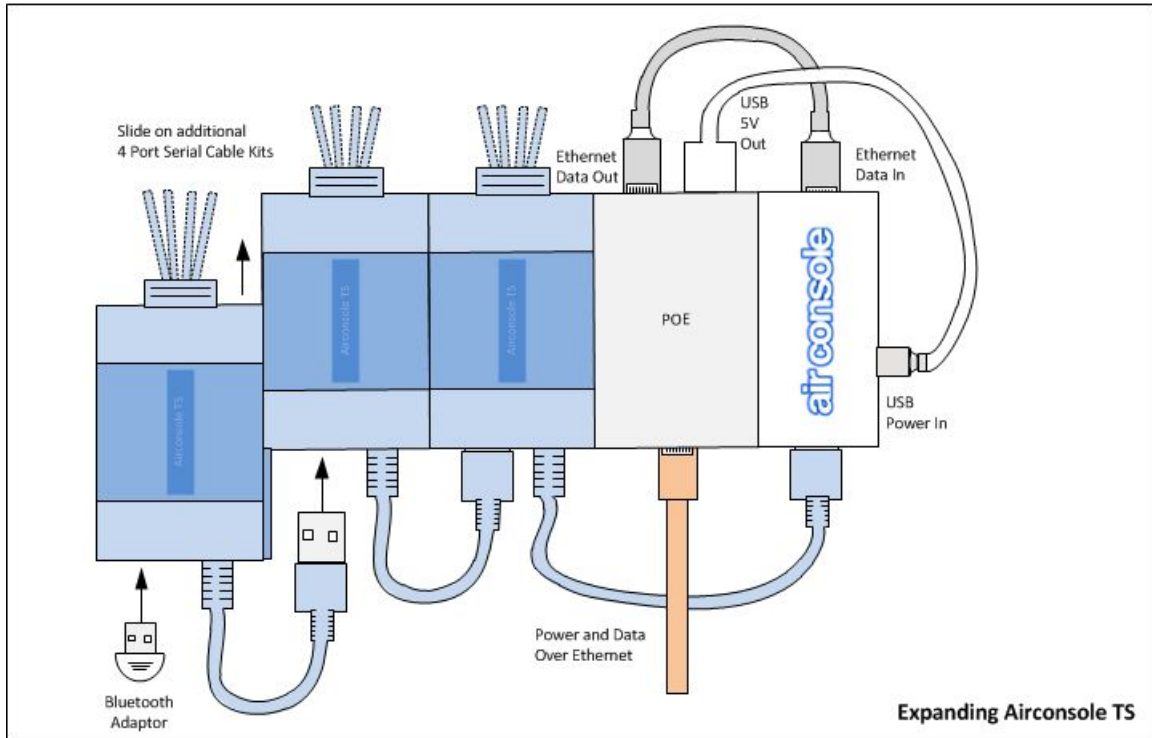
	<p>internal Airconsole AP (second button on Wireless Tab)</p> <p>For more details on configuring WIFI see the Wireless section in this document below.</p>	
8	<p><u>Configure Serial Ports</u></p> <p>>> Serial >> Defaults</p> <p>The Default baud rate, flow control and other serial settings are edited via Defaults page. These will apply to all ports unless specifically overridden.</p> <p>>> Serial >> Port Settings</p> <p>The names and line speed and other serial settings of each of the individual serial port that are connected to end devices may be edited on this page. Names provide an easy identification of the port via remote access, and port parameters can be configured to override the default settings.</p>	
9	<p><u>Configure Remote Access via Airconsole Enterprise Server (Optional)</u></p> <p>Airconsole can be configured to automatically tunnel all serial ports to a remote Airconsole Enterprise Server (Previously called "Private Server"). This allows a remote user access to a serial device while concurrently also allowing a local user to the same serial port.</p> <p>>> Remote Access >> Private Server</p> <p>Set the status to Enabled and enter the IP address or FQDN of the Server, The Username and Password field must match existing accounts on the Private Server/Airconsole Enterprise Server. The device name identifies this Airconsole in the available list of connected Airconsole's on the Server console. Airconsole uses web protocols to tunnel</p>	

	<p>serial data to the remote Server. There are 2 options.</p> <p>The Websockets option is on average 3 times faster than HTTP however it currently is not able to support SSL, so if SSL security is required then the HTTP transport must be selected.</p> <p>Once the settings are applied, the status of the Remote Access connection can be seen by refreshing the home (Status) page.</p> <p>If successfully connected to the Airconsole Enterprise Server, the Airconsole will be visible in the portal page</p> <p>For more details on the Airconsole Enterprise Server see http://www.get-console.com/en/8-airconsole-e-enterprise-server</p>	
10	<p><u>Configure User Accounts and other Admin Settings</u></p> <p><u>Authentication</u></p> <p>Admin >> Authentication</p> <p>This allows the user to change the default password or add additional user accounts. Remote authentication may also be enabled as an option with both RADIUS and TACACS+ protocol being available. Enter the servers IP address and specify what tcp port it is using (if it is not default). Enter the Shared Secret which matches the servers secret.</p> <p>If Radius or TACACS+ authentication is enabled, then this will superceed the local user database. The local user database will only be used as a fallback if the Radius or TACACS server does not reply to an authentication request.</p> <p><u>SNMP Settings</u></p> <p>Airconsole can be polled by SNMP from a remote management platform. SNMP provides access to a variety of standard MIBs including Interface and others. Enable SNMP and then set the SNMP Community string.</p> <p>Optionally set the Contact and Location to identify the Airconsole to the SNMP server. In addition Syslog can be configured. Syslog will stream log data from the Airconsole OS to a remote customer Syslog server. Enable Syslog via Admin >> Syslog.</p>	

1 Hardware and Connectivity Overview



Airconsole TS ships with 4 serial cables with RJ45 presentation. These are pinned out for cisco serial console ports. Each cable can be individually adapted to DB9 (Null or Straight through) via an additional RJ45-to-DB9 adaptor. Other adaptors including RJ45-to-DB25 and RJ45-to-DEX are also available from www.get-console.com.



Airconsole TS can be expanded by adding both additional 4 Port Serial cable kits, and also via using a slide on PoE Splitter rather than the external power cable and Power adaptor. Add these optional components as per the illustration above.

2 Airconsole TS Web Configuration

Airconsole TS has a built in webpage that can be used to change the default settings, as well as flash the device with new firmware if required. To access this webpage complete steps 1 and 3 of the initial setup instructions above, and then browse to <http://192.168.10.1/> from any modern web browser.



The default username and password are both **"admin"**.

From the webpage you can perform the following tasks

- Change the wireless parameters such as the SSID, the password, or the encryption method
- Change the default serial port baud rate, data and parity bit settings and flow control, as well as each serial port individually
- Change the IP address of the LAN that Airconsole operates on, including disabling the built in DHCP server and enabling DHCP client or static addressing.
- Viewing the device log files
- Enable Airconsole TS to act as an "AP Client" to join an existing WIFI network instead of *or* in addition to its own WIFI
- Enable Airconsole TS to concurrently share its serial ports to an Airconsole Enterprise Server directly.
- Setup additional user accounts, change user passwords, or configure external authentication against a Radius or TACACS+ server
- Reset the Airconsole TS back to its factory settings
- Upgrade the Airconsole TS firmware

air console

Status | Serial | LAN | Wireless | Routing | Remote Access | Web Terminal | Admin

Summary - System Info - System Log

Welcome to Airconsole!

The Airconsole Adaptor settings can be changed on this website to do the following:

- Change the IP Address Range used by the Adaptors DHCP Server (go to LAN tab)
- Disable the DHCP Server, and configure static IP addressing on the adaptor (go to LAN tab)
- Configure Wireless Encryption, Change the SSID, modify radio layer settings (go to Wireless tab)
- Configure Static routes for the adaptor - make the serial port available from other subnets (go to Routing tab)
- Configure Remote Access or Machine-to-Machine (Back to back) mode
- Upgrade Airconsole Firmware or perform factory reset (go to Admin tab)

Airconsole Details

Firmware Version :	2.65 (2015-07-16 build 688)
Hardware Version :	B-02
Host Name :	AirConsole-18
Operating Mode :	Gateway
Bridge IP :	10.64.5.10
WAN IP :	10.64.8.172
DNS Servers :	203.114.168.2, 203.114.128.2, 8.8.8.8
Remote Access :	Connected to aes.get-console.com, key=0857F18

Help!
For the Airconsole user manual visit [here](#)

This page also summarises the Airconsole Software and Hardware version and the DHCP Mode Airconsole is operating in.

Certain versions of Get Console may require the latest Airconsole [Firmware](#)

To learn more about the DHCP modes see the manual.

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Each page on the Airconsole website has built in help for each of these functions on the right hand side of the screen.

2.1 Home / Status Page

The Home (Status) page shows the current status of Airconsole TS. Changes to Airconsole TS connectivity to external WIFI, external DHCP servers and external remote access servers (Airconsole Enterprise Server) will appear on the Airconsole Details section.

As Airconsole's web pages do not automatically refresh, it is useful to refresh this page in browser after changing a LAN, WIFI or Remote Access configuration to see the change reflected.

2.2 Serial Settings

The Serial page allows for the tuning of the Default serial port baud rate and other parameters. These settings apply to all serial ports unless modified on the Port Settings Page.

When using Airconsole TS with a terminal application that cannot request to change these settings via RFC2217 method, they should be modified to the settings required by the serial device on this webpage prior to connecting.

For applications such as Get Console, these *settings on this webpage do not need to be changed* as the Get Console application will dynamically reconfigure Airconsole's serial settings (Baud rate, Flow Control, Data/Stop/Parity Bits etc) on each new connection.

air console

Status | Serial | LAN | Wireless | Routing | Remote Access | Web Terminal | Admin

Defaults - Port Settings - Advanced

Default Serial Settings

Baud Rate : 9600 Baud

Data Bits : 8 Bits

Stop Bits : 1 Stop Bit

Parity : None

Flow Control : No Flow Control

APPLY CANCEL

Help!
For the Airconsole user manual visit [here](#)

This page displays the default Serial port configuration applied when using the supplied light blue USB-Serial console cable.

When using Airconsole with our Get Console terminal application, these settings are automatically changed dynamically via the Baud Rate, Bits and Flow Control settings in Get Console, so should not be changed here.

When using Airconsole with another terminal application (for example SecureCRT), that does not comply with RFC2217 Network extensions, the serial port settings can be adjusted on this page and then applied with the APPLY button.

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The supported options for each of the serial settings are as the below table:

Speed (Baud Rate)	Data Bits	Stop Bits	Parity	Flow Control
300	8	1	None	None
600	7	2	Odd	RTS/CTS Hardware
1200			Even	DSR/DTR Hardware
2400			Mark	XON/XOFF Software
4800			Space	
9600				
19200				
38400				
57600				
115200				
230400				

Airconsole TS allows for individual Serial ports to have different Default settings by changing the Line settings to "Custom". Modify each individual port as well as

provide the port a more friendly name on the Port Settings page.

air console

Status | Serial | LAN | Wireless | Routing | Remote Access | Web Terminal | Admin

Defaults - Port Settings - Advanced

Serial Port Names

Detected 4 serial ports

Port	Friendly Name	Line Settings
Port 1 :	Lab Router Console	Custom 115200 Baud 8 Bits 1 Stop Bit None No Flow Control
Port 2 :	Port 2	Use Default
Port 3 :	Port 3	Use Default
Port 4 :	Port 4	Use Default

APPLY CANCEL

Help!
For the Airconsole user manual visit [here](#)
This page allows configuring a friendly name for each of the serial ports. These port names will be displayed in supported client applications.

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2.2.1 Advanced Serial Settings

Airconsole TS can act as an RFC2217 compatible serial terminal server and/or a Raw IP-Serial bridge. The default ports for each of these services can be modified on the Advanced Serial Settings page.

Note that altering the default Com Port Control tcp port from 3696 will require a restart of Get Console app to redetect the changed port, and will require modification of windows and OSX driver default configuration.

If SSH support is enabled, then the default starting port is 4001. This can also be changed.

Note that the telnet (3696) and SSH (4001) tcp ports refer to the first Airconsole TS serial port. Each subsequent serial port the tcp port number increases by one as per the below table:

Serial Port	1	2	3	4	5	6	7	8	9	10	11	12
Telnet	3696	3697	3698	3699	3700	3701	3702	3703	3704	3705	3706	3707

TCP Port												
SSH TCP Port	4001	4002	4003	4004	4005	4006	4007	4008	4009	4010	4011	4012

The “Force Binary Mode” can be used when operating on the 3rd party HW Group Windows driver that does not dynamically negotiate binary transfer mode.

Un-checking the “Enable Com Port Control” tick box will disable the NVT extensions to the RFC2217 that allow for dynamic changing of baud-rate, flow control and other serial parameters in-band without resetting the serial port.

Advanced Serial Settings

Com Port Control (NVT)

☒ Enable Com Port Control (NVT)
 Port Number :
☐ Force binary mode

Raw Serial

☒ Enable Raw Serial
 Port Number :

WebSocket Proxy

☒ Enable WebSocket Proxy
 Port Number :

SSH to Serial

☐ Enable SSH to serial port
 Port Number :

Bluetooth Support

☒ Enable Bluetooth Support

Mutiple Connection Preference

This setting controls how multiple connections to the same serial port are handled. By default if a new connection attempt is made, any existing connection to the same serial port will be terminated. Setting this option alters this behaviour.

☐ Prevent subsequent connections to an active serial port

Connection Timer

seconds (assume existing connections are dead if no data received from network in this time - use 0 to disable dead connection detection)

Lockout Message

(shown to subsequent connections - leave blank for no message))

APPLY

CANCEL

Airconsole TS also supports direct interaction with its serial port via Websockets protocol on tcp port 8080. This port can be changed on this Advanced Serial Settings page. Websockets provides a simple and developer friendly method for communicating through a serial port directly from a web page or web application. To learn more about Websockets support in Airconsole download the Websockets SDK at support.get-console.com

Airconsole TS supports the Bluetooth Low Energy and Bluetooth Classic connectivity to a **single** serial port if a Bluetooth dongle is attached to the female USB port on the 4 port cable kit. The first port (labelled "1") is accessible via Bluetooth. Other ports and multiple ports concurrently over Bluetooth will be supported in later firmware releases.

Behaviour when using Bluetooth connectivity to the 1st Serial port by default allows for subsequent Bluetooth connections to "kick out" the initial connection. This behaviour can

be modified on the Multiple Connection Preference section of Advanced Serial Settings. Tick the box to prevent subsequent connections, and then set an idle time before a subsequent Bluetooth connections can terminate the original connection.

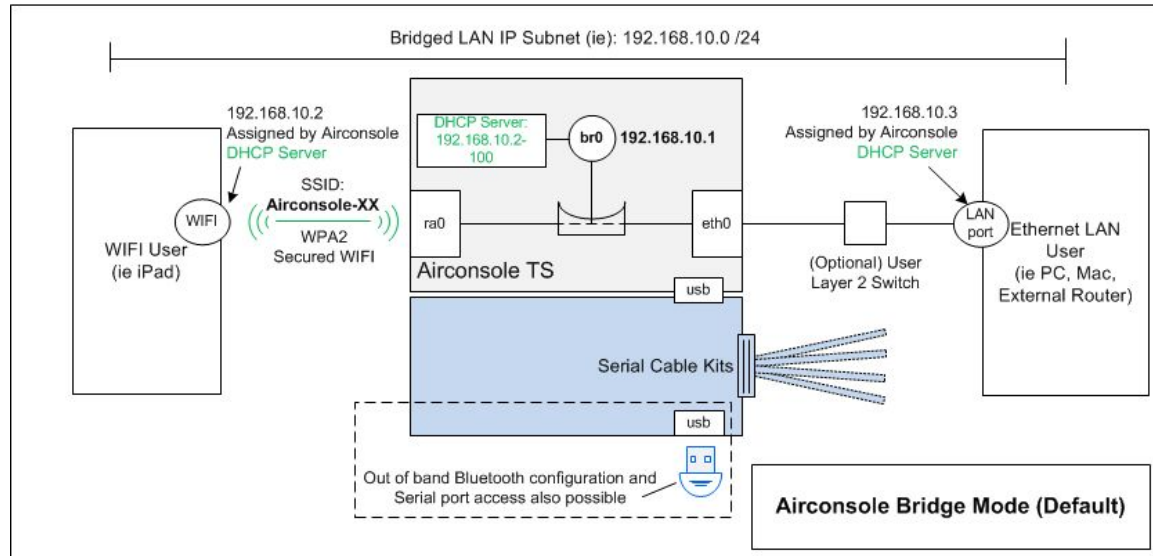
2.3 [Airconsole TS Network Options - READ BEFORE CONFIGURING WIFI and LAN](#)

Airconsole TS has 4 different operating modes to participate in WIFI and Wired Ethernet networks. Before configuring LAN and WIFI settings, consider the best mode for Airconsole TS in your environment.

1. **Bridge Mode:** The Default Mode. Airconsole Bridges between its own Airconsole-XX WIFI and Wired LAN port. It has an IP address on the logical Bridge interface only. The IP address can be configured statically, or learnt from an external DHCP server via the LAN port. If the IP address is configured statically, then Airconsole itself can be a DHCP server for the bridged WIFI/Wired Interfaces.
2. Bridge Mode with AP Client (**AP Client Mode**): This is an extension to Bridge Mode with an **additional routed** WIFI connection can be made to an external WIFI network. Airconsole will route between the Bridged group of interfaces (LAN port, Airconsole-XX WIFI) and this external WIFI network.
3. **Station Mode (Bridged):** The Airconsole internal Access Point is disabled, and instead Airconsole joins *only* to an external WIFI network. The external WIFI interface is bridged with the LAN port. Airconsole's IP is configured either statically or learned from the external WIFI DHCP server.
4. **Station Mode (Gateway / Routed):** The Airconsole internal Access Point is disabled, and instead Airconsole joins *only* to an external WIFI network. The Wired LAN port is also configured on a different IP subnet. The external WIFI interface subnet is routed with the LAN port. Airconsole's IP on the external WIFI segment is configured either statically or learned from the external WIFI DHCP server. Airconsole's IP on the LAN port subnet is also either statically configured or learnt via DHCP.

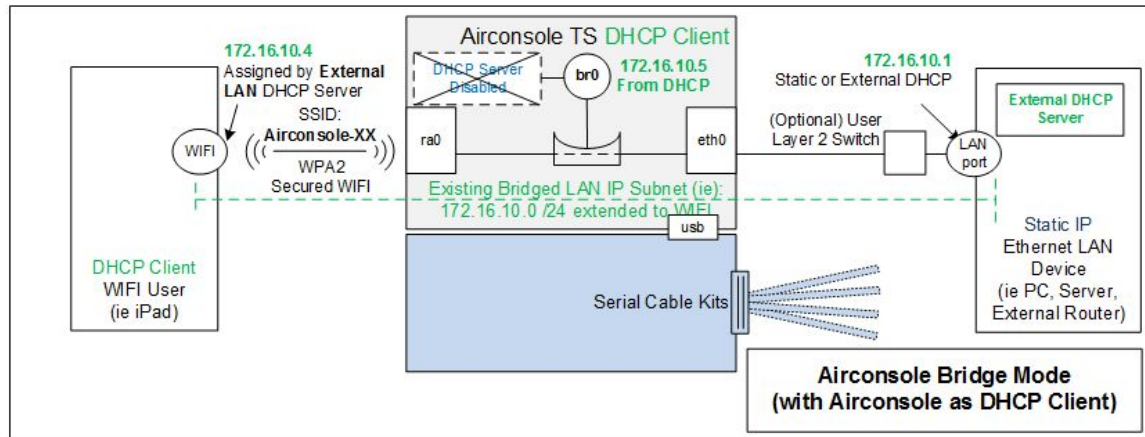
The following drawings and interface descriptions further expand on each mode and the configuration steps to achieve the correct operation.

Bridge Mode (Default Operation)



Airconsole Interface	Description	Notes
eth0	Physical Ethernet Port	(by default) connected to Br0 bridge (does not have its own IP address)
ra0	802.11n WIFI interface	(by default) connected to Br0 bridge (does not have its own IP address)
br0	Logical Bridge Interface	<p>A virtual interface hosting Airconsole's IP address, accessible directly via eth0 or ra0. Hosts all Airconsole services (ie Serial Ports and DHCP server)</p> <p>Configure br0's IP address on the LAN page</p>

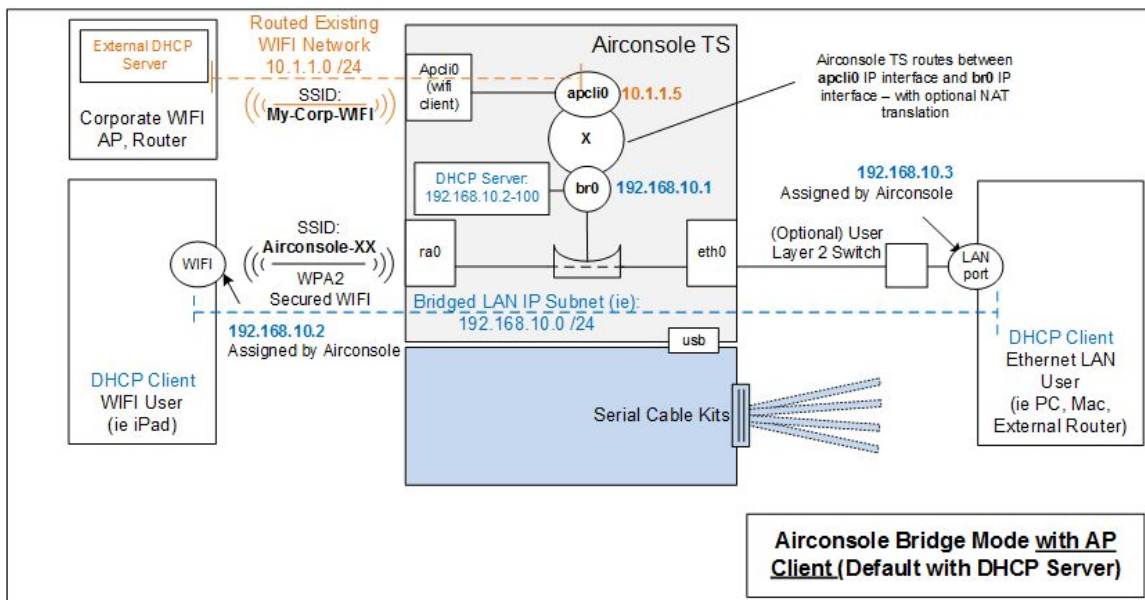
The DHCP Server function is enabled by Default. Airconsole will allocate IP's to both WIFI clients connecting to the ra0 interface or LAN users reachable via the eth0 interface. Sometimes this is not desirable, if connecting the LAN port into an existing Corporate LAN that already has a DHCP server. In this case disable the Airconsole DHCP server and enable "DHCP Client" rather than Static IP address for Airconsole's interface itself.



When DHCP Client is enabled for Airconsole LAN (br0) interface IP, it will automatically disable the DHCP server.

The screenshot shows the 'LAN Settings' page in the Airconsole web interface. The 'Address Configuration' is set to 'Configured by DHCP'. The 'MAC Address' is 9C:41:7C:85:A5:50. The 'Hostname' field is empty and marked as optional. The page includes 'APPLY' and 'CANCEL' buttons. A 'Help!' link is provided for the user manual. The footer indicates 'Copyright © 2015 Cloudstore Limited'.

AP Client Mode



AP Client mode allows Airconsole TS to run 2 different WIFI networks at a time.

- 1) it acts as an access point (AP) for the “Airconsole-XX” WIFI network on its ra0 interace, and as per the default bridge operation, it will bridge this WIFI network to the wired LAN (eth0). The IP address of Airconsole on this segment is the br0 virtual interface.
- 2) it acts as an AP Client (end station) for an external WIFI network at the same time. This is a routed interface called “apcli0” and can be IP addressed via either Static or DHCP client. DHCP client is default operation.

Airconsole will route between these two networks. Optionally NAT can be configured so that traffic from the Airconsole-XX WIFI and LAN going to the external WIFI network will be NAT’ed to the apcli0 IP address. This is useful where the external WIFI network provides an Internet hotspot service.

Additional IP routing can be configured on the Routing tab.

Airconsole Interface	Description	Notes
eth0	Physical Ethernet Port	(by default) connected to Br0 bridge (does not have its own IP address)
ra0	802.11n WIFI interface	(by default) connected to Br0 bridge (does not have its own IP address)
br0	Logical Bridge Interface	<p>A virtual interface hosting Airconsole’s IP address, accessible directly via eth0 or ra0. Hosts all Airconsole services (ie Serial Ports and DHCP server)</p> <p>Configure br0’s IP address on the LAN page</p>
apcli0	Additional WIFI interface connected to external WIFI network.	<p>This interface is routed to/from the above bridge group of interfaces. Optionally NAT can be performed for traffic from the Bridged interfaces to this routed interface. Use this method (for example) to provide Airconsole-XX and LAN users access to an external WIFI network that can connect to the Internet.</p> <p>Configure apcli0’s IP address on the Wireless-> APClient Page</p>

To enable AP Client mode go to Wireless->AP Client (1) and then tick the “Enable Wireless Client Mode” (2)

Then initiate Scan for a WIFI network to join with the SCAN button (3)

The screenshot shows the 'Wireless' tab in a router's configuration interface. The 'AP Client' sub-tab is selected (1). Under 'Wireless Client Mode', the 'Enable Wireless Client Mode' checkbox is checked (2). The 'Wireless Parameters' section includes fields for Remote AP SSID, Remote AP MAC Address (Optional), Security Mode (WPA2PSK), Encryption Type (AES), and Pass Phrase. The 'IP Settings' section includes IP Configuration (DHCP), MTU (576~1500), Primary DNS (Optional), Secondary DNS (Optional), Hostname, and Enable NAT (unchecked). At the bottom, the 'SCAN' button is highlighted (3). Below the configuration fields is a 'Site Survey' table showing detected wireless networks.

Ch	SSID	Security	Signal	W-Mode
1	[00:19:be:30:73:08]	WPA1PSKWPA2PSK/AES	20 %	11b/g/n Select
1	AKL ON	NONE	15 %	11b/g/n Select

Site Survey

Ch	SSID	Security	Signal	W-Mode	
1	[00:19:be:30:73:08]	WPA1PSKWPA2PSK/AES	34 %	11b/g/n	Select
1	[06:19:be:30:73:08]	NONE	34 %	11b/g/n	Select
1	AirConsole-XX [00:20:0c:07:13:8e]	WPA2PSK/TKIP	70 %	11b/g	Select
1	Generate [c2:9f:db:f3:f2:9c]	WPA1PSKWPA2PSK/TKIPAES	34 %	11b/g/n	Select
3	DW-AKL [94:44:52:91:d7:a0]	WPA1PSKWPA2PSK/AES	50 %	11b/g	Select
6	AirConsole-EC [00:20:0c:07:55:ec]	WPA2PSK/TKIPAES	81 %	11b/g/n	Select
6	Cloudstore [94:44:52:a4:88:64]	WPA2PSK/TKIP	86 %	11b/g	Select
11	OSP [00:60:64:82:bc:76]	WPA1PSKWPA2PSK/TKIPAES	5 %	11b/g/n	Select

The SSID, Authentication type and encryption method are prepopulated. Tick the Enable Wireless Client Mode and add in passphrase. Then press Apply.

Note that with AP Client mode, Airconsole's AP client will NOT follow the external WIFI network if the channel changes. If the channel changes then the user must re-scan and reconnect to the external WIFI network. This is because in AP client, the Airconsole is operating its own Access point at the same time on a single radio so cannot change channels automatically.

If uninterrupted access to an external WIFI network is needed as the external WIFI network changes radio channels, consider using the Station Mode method instead.

Basic - Security - Advanced - AP Client

Wireless Client Mode

☒ Enable Wireless Client Mode

Wireless Parameters

Remote AP SSID: Cloudstore

Remote AP MAC Address: (Optional)

Security Mode: WPA2PSK

Encryption Type: TKIP

Pass Phrase:

IP Settings

IP Configuration : DHCP

MTU : (576~1500)

Primary DNS : (Optional)

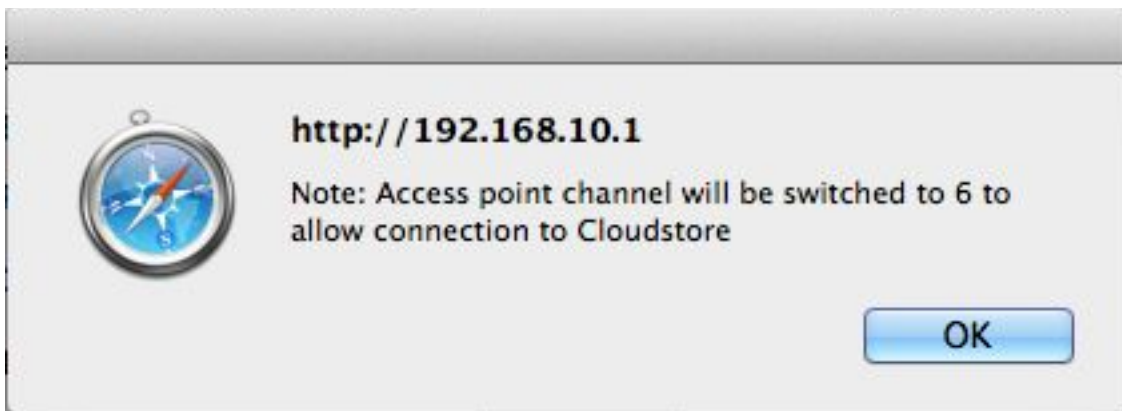
Secondary DNS : (Optional)

Hostname :

Enable NAT : ☐

APPLY CANCEL SCAN

Because Airconsole can only operate on a single channel at a time, if the current Airconsole-XX WIFI network is on a different wireless channel to the selected AP Client WIFI network, the Airconsole-XX SSID will shift to the same channel and a popup will appear



The webpage may timeout while connecting. This is normal. Refresh the connection to the web page via refresh button on your browser. If successful the AP Client page will show Connection Status: Connected.

Wireless Client Mode

☒ Enable Wireless Client Mode

Wireless Parameters

Remote AP SSID

Also on the Airconsole Home (Status) page the IP Address allocated to the AP Client (WAN) interface will be visible

Airconsole Details

Firmware Version :	2.65 (2015-07-16 build 688)
Hardware Version :	B-02
Host Name :	AirConsole-18
Operating Mode :	AP Client
Bridge IP :	10.64.5.10
WAN IP :	0.0.0.0

Note the WAN IP will change from 0.0.0.0 to the allocated IP from the external WIFI network.

Access Internet via AP Client

Airconsole can NAT the internal LAN through the AP Client (WAN) interface to allow wireless clients on the Airconsole-XX WIFI and LAN network to connect to the internet via the AP Client WIFI. This assumes that the AP Client WIFI network has Internet access. To enable this 2 configuration changes need to be enabled

- 1) on the AP Client page enable NAT

Hostname :

Enable NAT :

☒

APPLY

CANCEL

SCAN

- 2) on the LAN -> DHCP Server, enable the DNS Proxy

DHCP Server

☒ Enable DHCP Server

Starting IP Address : 192.168.10.2

Ending IP Address : 192.168.10.100

Lease Time : 1440 minutes(s)

☐ No default route

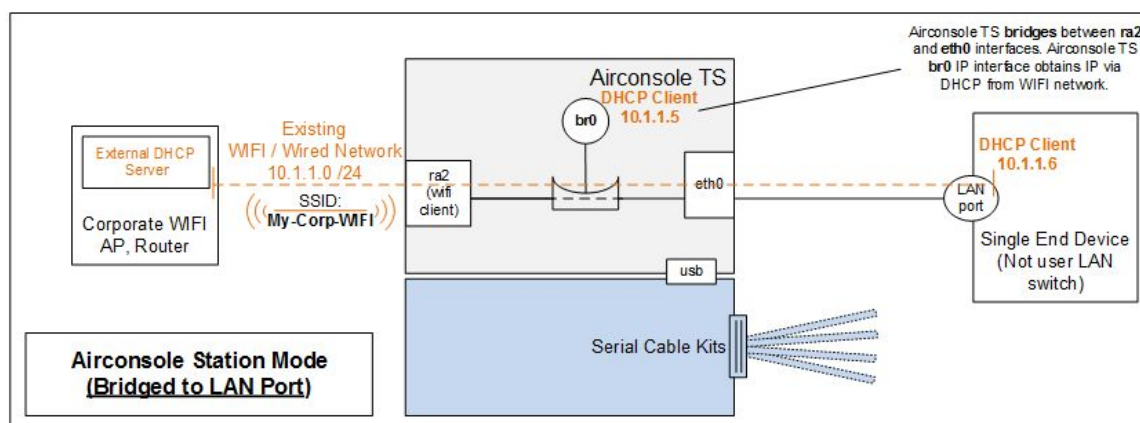
☒ Enable DNS Proxy

APPLY

CANCEL

Any Airconsole-XX WIFI clients will need to refresh their DHCP leases after making this change.

Station Mode (Bridged Operation)



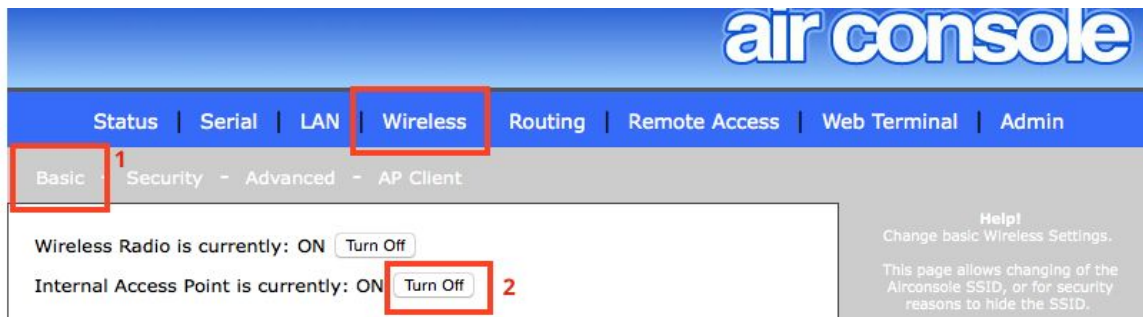
Station Mode (Bridged) is the simplest configuration option where Airconsole should join just an external WIFI network and bridge it to its LAN port. It does not operate its own Access point - rather behaves just like a WIFI client only.

Station Mode is often better than AP Client Mode because if the external WIFI network changes WIFI channels then with Station Mode, the Airconsole will follow the channel. This is not possible with AP Client Mode.

Airconsole Interface	Description	Notes
eth0	Physical Ethernet Port	Connected to Br0 bridge (does not have its own IP address)
ra2	802.11n WIFI client	Connected to Br0 bridge

	interface connected to external WIFI network	(does not have its own IP address)
br0	Logical Bridge Interface	A virtual interface hosting Airconsole's IP address, accessible directly via eth0 or ra2. Addressed only via DHCP on ra2.

To enable Station Mode (Bridged) is a little counter-intuitive. It is **NOT** configured via the Wireless->"AP client" page. Rather, it is only accessible after disabling the Airconsole Internal AP from the Wireless->Basic (1) page, then click "Turn Off" next to Internal Access Point (2)



Note that this configuration should be done via the LAN port else access to the Airconsole's web interface will be lost.

After switching off the AP, the options on the Wireless Tab change to Setup and Profiles.

Status
Serial
LAN
Wireless
Routing
Remote Access
Web Terminal
Admin

Setup - Profiles

Wireless Radio is currently: ON
Turn Off

Internal Access Point is currently: OFF
Turn On

Wireless Station Setup

Wireless Parameters

Connection Status	Connected to cloudstore (1C:DF:0F:D2:AD:8A)		
Remote AP SSID	cloudstore	SCAN	
Network Type	Infrastructure		
Security Mode	WPA2PSK		
Encryption Type	AES		
Pass Phrase	w3llingt0n1		
Network Mode	Bridge		

APPLY
CANCEL

Help!

This page shows the current settings for Wireless Station Mode.

By default Airconsole runs as a Wireless Access Point, but it can also be configured to connect to an existing Wireless Access Point on your network.

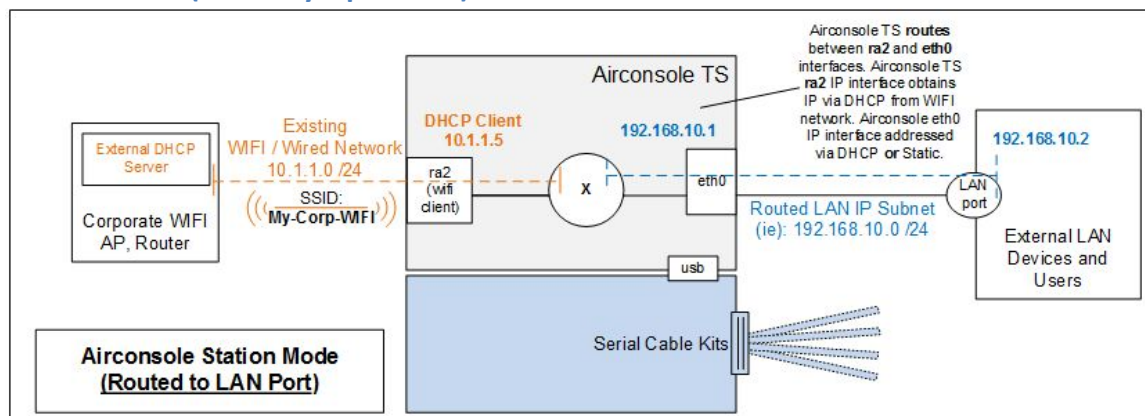
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For support please contact us at: support@get-console.com

Setup allows for Scanning and connecting to external WIFI networks, along with how the br0 interface will be addressed (ie via External WIFI's DHCP server (default) or statically). By Default the br0 interface will use an address learnt from DHCP over the ra2 interface. Alternatively change the "IP Configuration" dropdown to Static and populate the fields.

Profiles allow for the storage of 8 WIFI networks and credential settings so that Airconsole can automatically join these if seen again after power cycle.

Station Mode (Gateway Operation)



Station Mode (Routed) is an alternative Station mode where Airconsole routes between the ra2 (external WIFI) and eth0 interface (rather than bridging). This configuration is

useful where the internal private LAN network needs NAT to reach the external network (generally because the internal LAN network is not routable from the external network)

Airconsole Interface	Description	Notes
eth0	Physical Ethernet Port	IP routed Ethernet port - LAN address configured is applied directly to eth0. Can run a DHCP server as well if statically configured.
ra2	802.11n WIFI client interface connected to external WIFI network	Routed interface - IP interface can be configured Statically or via DHCP client.

To configure Station Mode (Routed) perform the same steps as Station Mode (Bridged) above, however on the WIFI - Setup tab, change the "Network Mode" to "Gateway"

Once "Gateway" is selected, the option for configuring the Wired LAN's segment IP address and details is presented. the LAN (eth0) port can be addressed via either DHCP or Statically.

If NAT is required when routing from the LAN to the external WIFI then tick the NAT box. This will translate all source addresses from the LAN to the WIFI interface IP address.

Status
Serial
LAN
Wireless
Routing
Remote Access
Web Terminal
Admin

Setup - Profiles

Wireless Radio is currently: ON

Turn Off

Internal Access Point is currently: OFF

Turn On

Wireless Station Setup

Wireless Parameters

Connection Status

Connected to cloudstore (1C:DF:0F:D2:AD:8A)

Remote AP SSID

cloudstore

SCAN

Network Type

Infrastructure

Security Mode

WPA2PSK

Encryption Type

AES

Pass Phrase

w3llingt0n1

Network Mode

Gateway

IP Settings

IP Configuration :

DHCP

MTU :

(576~1500)

Primary DNS :

(Optional)

Secondary DNS :

(Optional)

Hostname :

Enable NAT :

☐

APPLY

CANCEL

Help!

This page shows the current settings for Wireless Station Mode

By default Airconsole runs as a Wireless Access Point, but it can also be configured to connect to an existing Wireless Access Point on your network.

2.4 Airconsole DHCP Server Setup

[Applies only to Default Bridge Mode]

While the Airconsole Setup page has a static IP address set for the Bridge interface, the DHCP Server Mode is enabled by default on the main Setup page.

DHCP Server

☒ Enable DHCP Server

Starting IP Address :

192.168.10.2

Ending IP Address :

192.168.10.100

Lease Time :

1440

minutes(s)

☒ No default route

☒ Enable DNS Proxy

APPLY

CANCEL

In this mode the Airconsole acts as a DHCP Server on its Bridge interface .ie for both the “Airconsole-XX” wireless and wired LAN port. It will allocate IP addresses from the range

configured on the web page. Within this mode there are 2 sub options:

- “No default Route” – with this option selected: Airconsole will provide an IP address only to DHCP Clients. This is to allow devices such as iPhones and iPads with 3G wireless to continue to access the Internet directly over that interface while concurrently connected to the Airconsole-XX WIFI network. Note as at writing this option does not work with Android devices (an AP client tether workaround exists for Android as discussed below).
- “Enable DNS Proxy” – with this option enabled, when Airconsole has an AP Client interface enabled along with NAT, the Airconsole will act as a DNS proxy to resolve external names to IP addresses on behalf of Airconsole-XX WIFI clients. This allows these clients to access the Internet via the AP Client interface without knowing external DNS server addresses.

Assuming the DHCP Server feature is disabled, Airconsole will still bridge DHCP client requests (if any) from wireless clients on the Airconsole-XX WIFI through to the wired LAN, meaning any client connected wirelessly to the Airconsole will still be able to obtain an IP address from a wired LAN DHCP server if one exists.

2.5 General Wireless Settings

The Wireless Basic, Security and Advanced pages allows for configuring the general Wireless settings of Airconsole. This includes the SSID, the security settings, and for advanced users the tuning of the radio interface.

2.5.1 Basic Wireless

The Basic Wireless tab allows for setting the WIFI SSID, and the supported wireless protocols.

The default settings of Airconsole are:

802.11 Mode: 11b/g/n mixed mode

SSID: Airconsole-XX where XX is the last 2 digits of the device mac address

Broadcast SSID: On – disable this if you do not want Airconsole to announce its SSID to Wireless LAN. Only wireless clients that are manually configured to join the Airconsole-XX WIFI network with the correct password will be able to join

AP Isolation: Off – enable this if you do not wish wireless clients joined to Airconsole to be able to communicate with each other (ie only with the Airconsole itself)

Channel: Auto. By default Airconsole prefers channel 1. Other valid non-overlapping channels include 6 and 11. For use in Australia for NBN installers, we recommend using channel 11 as will not overlap at all with the high 2.3GHz frequency used by NBN Antenna equipment.

2.5.1.1 HT Physical Mode

The following are settings only applicable to 802.11N communication. Do not alter these settings unless absolutely necessary.

Operating Mode: Use Mixed mode unless all clients are 802.11N capable

Channel Bandwidth: 802.11n allows for double-width channels (ie channel 1 and 6 bound together) to improve throughput. The default is 20/40 which means Airconsole will accept 40Mhz channel connections from wireless clients that support this but also support legacy wireless clients that support only 20mhz channels (the default for 802.11b and 802.11g). **We recommend however when using with AP Client to set this to 20Mhz only.**

Guard Interval: Long or Auto. The Default is Auto. Setting Guard interval to “Long” will improve reliability in noisy WIFI environments at the expense of throughput. Airconsole’s Auto setting will attempt to tune the Guard Interval to maximize reliability and throughput.

Basic - Security - Advanced - AP Client

Wireless Radio is currently: ON Turn Off

Internal Access Point is currently: ON Turn Off

Basic WLAN Settings

Network Mode 11b/g/n mixed mode

SSID AirConsole-18

Broadcast SSID ☒ Enable ☐ Disable

AP Isolation ☐ Enable ☒ Disable

BSSID 9C:41:7C:85:7F:18

Channel 2412MHz (Channel 1)

HT Physical Mode

Operating Mode ☒ Mixed Mode ☐ Green Field

Channel BandWidth ☐ 20 ☒ 20 / 40

Guard Interval ☐ Long ☒ Auto

MCS Auto

Reverse Direction Grant ☐ Disable ☒ Enable

Extension Channel 2432MHz (Channel 5)

STBC ☐ Disable ☒ Enable

Aggregation MSDU ☒ Disable ☐ Enable

Auto Block ACK ☐ Disable ☒ Enable

Decline BA Request ☒ Disable ☐ Enable

HT Disallow TKIP ☐ Disable ☒ Enable

20 / 40 Coexistence ☐ Disable ☒ Enable

Other

HT TxStream 1

HT RxStream 1

APPLY CANCEL

2.5.2 Wireless Security

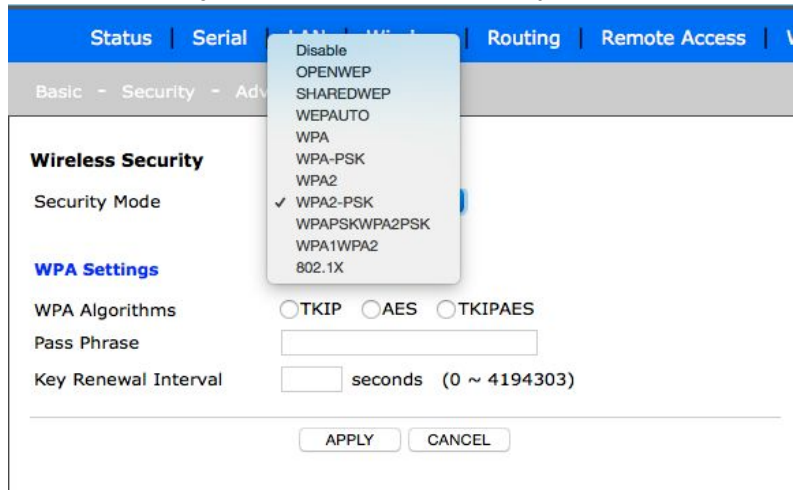
Airconsole offers 11 Security modes

- Security Disabled
- Open System – for WEP based encryption using pre-shared secrets. This is very weak encryption for use with very old Wireless clients that do not support newer WPA based security.
- Shared System - for WEP this allows sharing only between clients that use the same WEP key.
- WPA/WPA2 using TKIP for pre-shared key exchange
- WPA/WPA2 using AES for pre-shared key exchange
- 802.1X with pre shared key against remote RADIUS server

The default security mode is WPA2 with TKIP key exchange. This setting is the second most secure setting. TKIP is less secure than AES for key exchange; however has broader wireless client support. WPA2 still uses AES for encrypting data regardless of key exchange.

If all wireless clients needing to connect to Airconsole support WPA2/AES then we recommend changing the security mode to this setting.

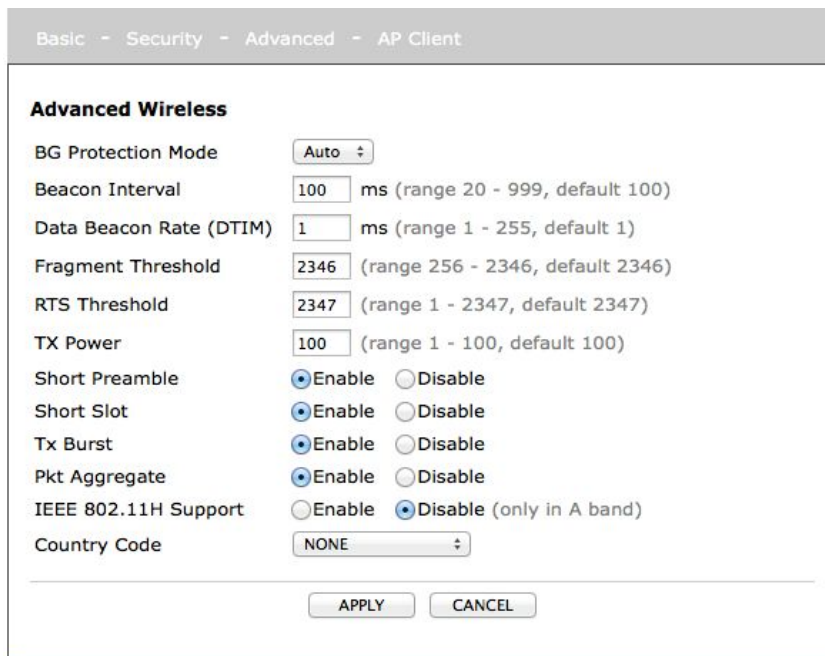
Airconsole does not support the use of WPA2 or 802.1X with certificates. 802.1X is supported with just Radius pre-shared key.



The screenshot shows the 'Wireless Security' configuration page. A dropdown menu is open, listing security modes: Disable, OPENWEP, SHAREDWEP, WEPAUTO, WPA, WPA-PSK, WPA2, WPA2-PSK (checked), WPA2PSKWPA2PSK, WPA1WPA2, and 802.1X. The page includes fields for WPA Algorithms (TKIP, AES, TKIPAES), Pass Phrase, and Key Renewal Interval.

Security Mode	WPA Algorithms	Pass Phrase	Key Renewal Interval
WPA2-PSK	TKIP AES TKIPAES		seconds (0 ~ 4194303)

2.5.3 Advanced Wireless



The screenshot shows the 'Advanced Wireless' configuration page. It includes settings for BG Protection Mode, Beacon Interval, Data Beacon Rate (DTIM), Fragment Threshold, RTS Threshold, TX Power, Short Preamble, Short Slot, Tx Burst, Pkt Aggregate, IEEE 802.11H Support, and Country Code.

Setting	Value	Range/Default
BG Protection Mode	Auto	
Beacon Interval	100	ms (range 20 - 999, default 100)
Data Beacon Rate (DTIM)	1	ms (range 1 - 255, default 1)
Fragment Threshold	2346	(range 256 - 2346, default 2346)
RTS Threshold	2347	(range 1 - 2347, default 2347)
TX Power	100	(range 1 - 100, default 100)
Short Preamble	Enable	
Short Slot	Enable	
Tx Burst	Enable	
Pkt Aggregate	Enable	
IEEE 802.11H Support	Disable	(only in A band)
Country Code	NONE	

The Advanced Wireless tab allows for setting various radio level settings. They are provided for wireless experts to tune their Airconsole wireless performance and also battery life.

Generally, reducing the TX power is possible to 50% or lower in low WIFI noise environments. This will extend the Airconsole battery life by up to 1 hour.

3 Access Airconsole TS Serial Ports via IP (Mac, PC, Mobile)

Once Airconsole TS has been correctly configured and connected to an IP network, each serial port can individually accessed via either Telnet or SSH protocols using any terminal client capable of either Telnet or SSH.

Examples of such supported clients are shown in below table

Operating System	Supported Terminal Clients	Supported Protocols
Windows 7 / 8 / 8.1	PuTTY SecureCRT 7+	SSH, Telnet, Virtual COM Port
Mac OSX	terminal.app	SSH, Telnet
Mac OSX	screen, MacWise	Virtual COM Port
iPad/iPhone (iOS 8+)	Get Console 2.21+	SSH, Telnet, Bluetooth 4.0
iPad/iPhone (iOS 8+)	Prompt 2	SSH, Telnet
Android	SerialBot 1.4+	SSH, Telnet, Bluetooth 2.1
Android	JuiceSSH	SSH

By default, Airconsole presents each serial port on a separate TCP port, via the telnet protocol. SSH Access is disabled by default, but is enabled via the Serial->Advanced page. Telnet and SSH use different TCP port numbers to reach the same serial ports as shown in the below table.

Serial Port	1	2	3	4	5	6	7	8	9	10	11	12
Telnet TCP Port	3696	3697	3698	3699	3700	3701	3702	3703	3704	3705	3706	3707
SSH TCP Port	4001	4002	4003	4004	4005	4006	4007	4008	4009	4010	4011	4012

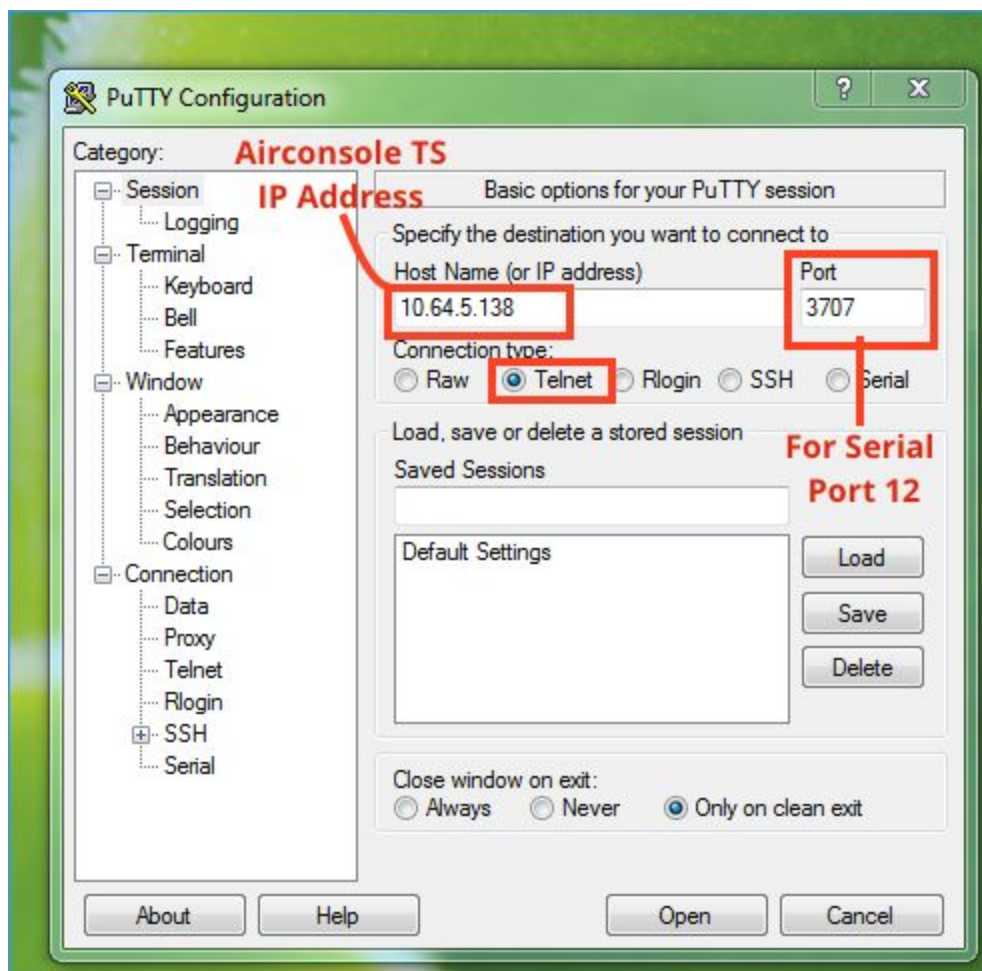
For example, assuming that SSH has been enabled, to connect to Serial port 12 on Airconsole TS from Apple OSX's built in Terminal.app

```
121-79-251-204:~ simon$ ssh -l admin -p 4012 10.64.5.138
admin@10.64.5.138's password:
Switch>
Switch>
Switch>
```

username (admin) **tcp port** (4012) **Airconsole TS IP Address** (10.64.5.138)
Airconsole password (default=admin)
Connected to device on port12

When connecting via SSH, Airconsole will require an SSH username and password before permitting the connection through to the serial port. These are user credentials stored on Airconsole or resolved via external RADIUS / TACACS server (see Admin settings below).

Below is how to connect to same port 12 via Telnet instead of SSH:



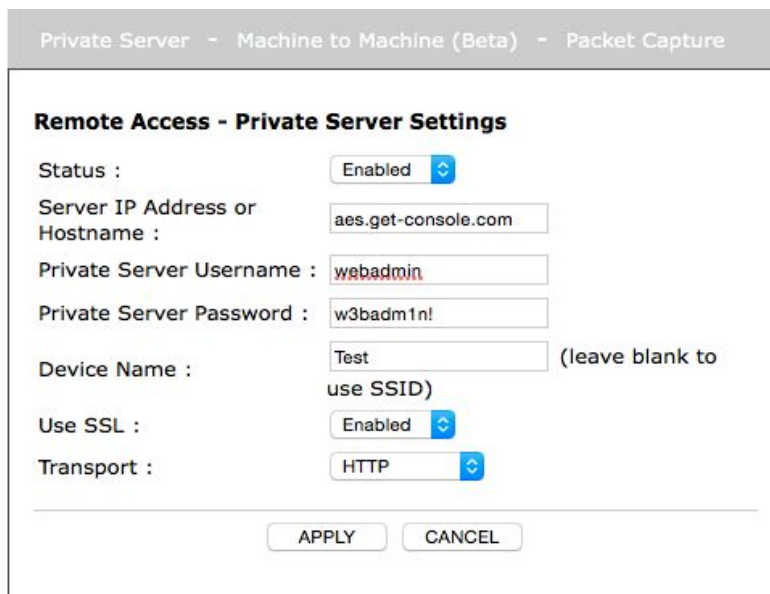
No username or password is required when connecting via Telnet.

4 Remote Access via Cloud Service (Airconsole Enterprise Server)

Airconsole TS supports direct tunneling of its serial port to our optional Cloud server - Airconsole Enterprise Server (version 2.0 or above).

Just as in Get Console App, the Enterprise Server connection does not preclude *concurrent* access to the same physical serial port via a terminal client (such as PuTTY, Get Console, SerialBot etc as described above) at the same time.

Airconsole Enterprise Server support is activated on the **Remote Access** tab in the Airconsole web management page.



The screenshot shows the 'Remote Access - Private Server Settings' tab in the Airconsole web management page. The page has a breadcrumb trail at the top: 'Private Server - Machine to Machine (Beta) - Packet Capture'. The settings are as follows:

- Status :** Enabled (dropdown menu)
- Server IP Address or Hostname :** aes.get-console.com
- Private Server Username :** webadmin
- Private Server Password :** w3badm1n!
- Device Name :** Test (leave blank to use SSID)
- Use SSL :** Enabled (dropdown menu)
- Transport :** HTTP (dropdown menu)

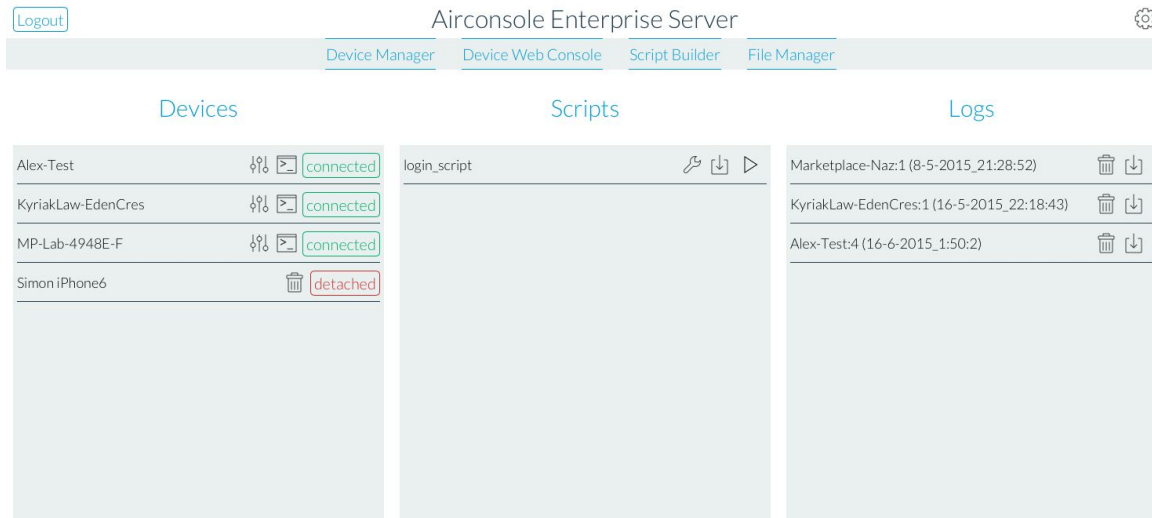
At the bottom of the settings form are two buttons: 'APPLY' and 'CANCEL'.

When Airconsole remote access is set to ENABLED it will attempt to connect to the Enterprise Server cloud service and once successful, tunnel its serial port to an Enterprise Server via the best interface in its routing table. The Airconsole must have a valid default gateway in order to route out to the configured Airconsole Enterprise Server IP address. If the Remote Server is specified as a domain name then Airconsole TS must have a valid DNS server configured (or learnt via DHCP) in order to resolve the server IP.

Airconsole will try every 60 seconds to make a connection to the configured Enterprise Server IP or hostname.

If the connection to the Enterprise Server is successful, then a session key will be shown in the Status (Home) page of the Airconsole and also the Airconsole will be visible on the

Airconsole Enterprise Server portal page. It can take upto 15 seconds for the Airconsole TS to be visible in the AES portal.



When using Airconsole with a Enterprise Server, a username and password as configured on the Enterprise Server must be entered on this page. By default this would be **webadmin / w3badm1n! on VMWare deployments..** For Amazon EC2 hosted AES, the default password is unique to each instance and is emailed at creation time to the server owner.

If the SSL option is selected then the Enterprise Server **must** have a valid SSL certificate, issued by a recognized Certificate Authority, installed. Using the self-signed certificate that come pre-installed with AES will not work.

Once connected the serial ports on the Airconsole TS can be directly accessed via the Web Console as per any other Enterprise Server shared terminal session. Apart from direct interaction with the terminal, the Enterprise Server also allows the pushing and remote execution of terminal scripts via the Airconsole, along with pulling of Airconsole terminal log files.

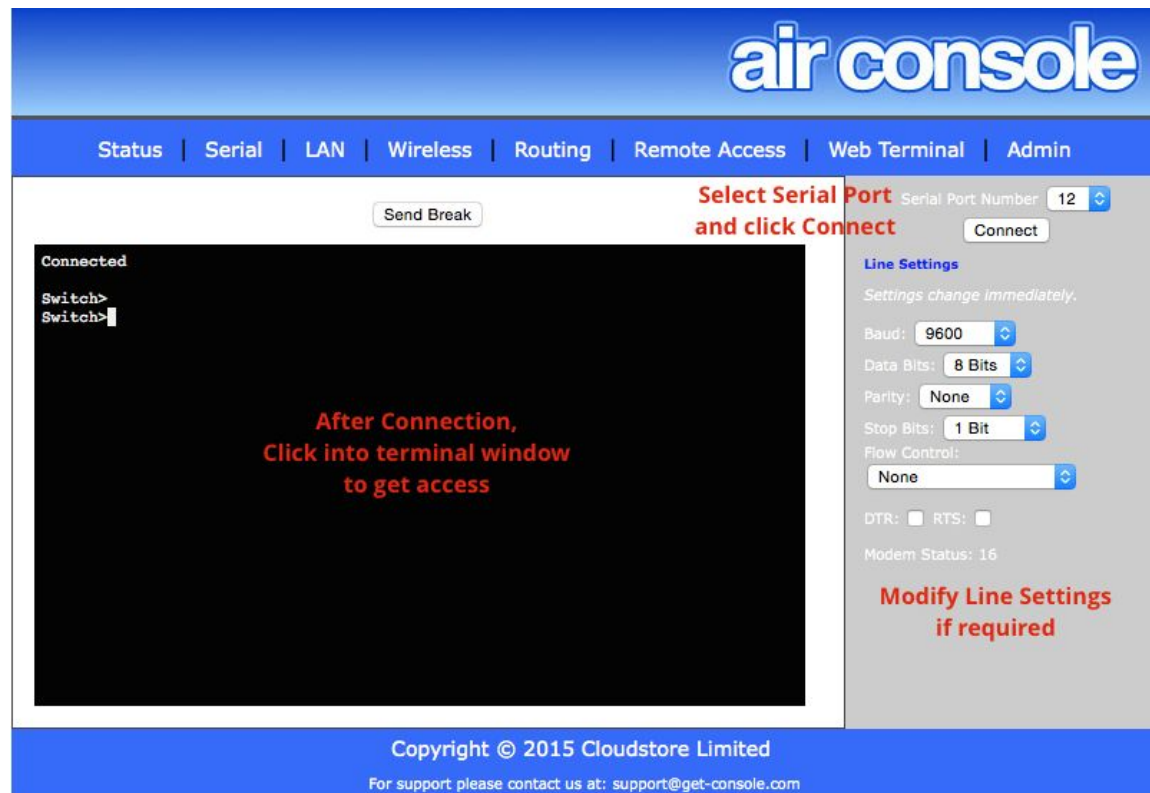
Unlike dynamically shared Get Console terminal sessions, individual Airconsole sessions via AES will always use the same session code. The session code will incorporate the last 6 digits of the Airconsole MAC address.



5 Airconsole TS - Built in Web Terminal

Airconsole has a built in websockets Terminal that can be used for quick configuration tasks via a web browser. The Web terminal is a very simple terminal implemented in javascript. It is not full VT100 compliant - rather it is designed for simple quick CLI interaction via a browser without the need to launch a dedicated terminal app.

Access the builtin Web terminal via [http://\[IP address of Airconsole\]/terminal.asp](http://[IP address of Airconsole]/terminal.asp)



6 Airconsole TS - Mac OSX - Direct COM Port Connection

To Access serial ports directly via a virtual COM (tty) line on OSX, requires the installation of the AirconsoleOSX driver package.

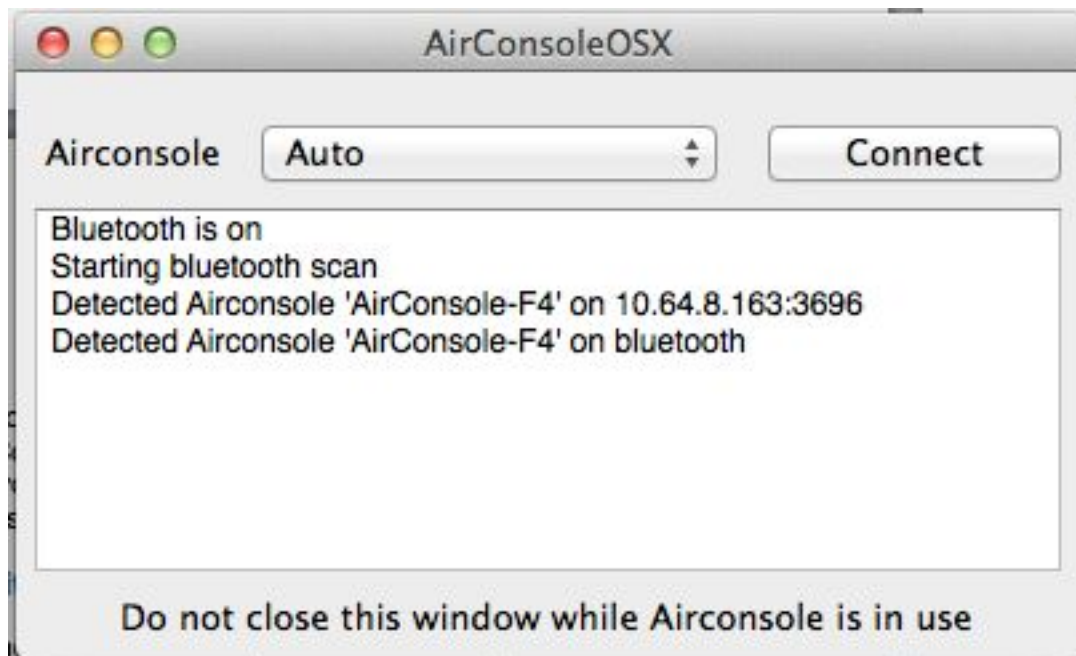
Download the latest package from support.get-console.com, which includes the installation instructions. Airconsole TS on Mac OSX Serial port driver now supports both Serial over WIFI and also Serial over Bluetooth Low Energy. Running the AirconsoleOSX app will detect the Airconsole TS adaptor and allow for connection of each individual serial line as a TTY line that any terminal application can connect to as if it is a physical serial port directly attached to OSX. The Bluetooth connectivity however is limited to mapping only a single port (Serial port 1).

After connection Airconsole will work with terminal applications such as the comprehensive OSX terminal applications (for example) Macwise, SecureCRT or Zterm that require a kernel mode installed serial port.

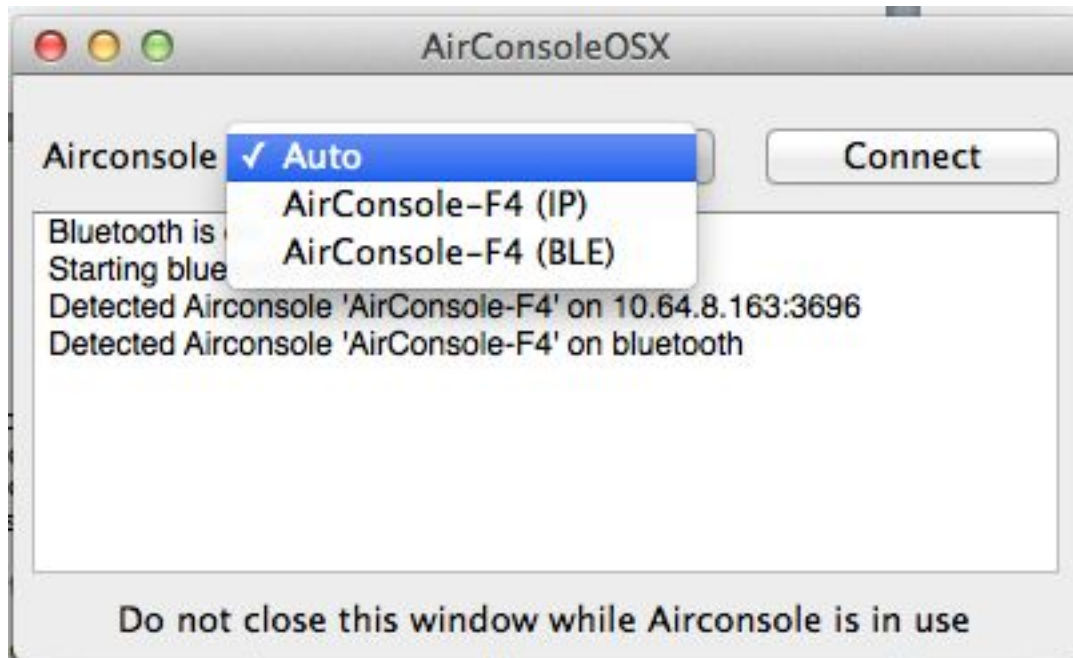
Airconsole can also be accessed directly from the OSX terminal using the “screen” app that is bundled with OSX.

If WIFI serial is required (for higher speed serial connections), ensure that your Mac has an IP network connection to the Airconsole adaptor's Wireless or Wired LAN prior to launching the AirConsoleOSX.app

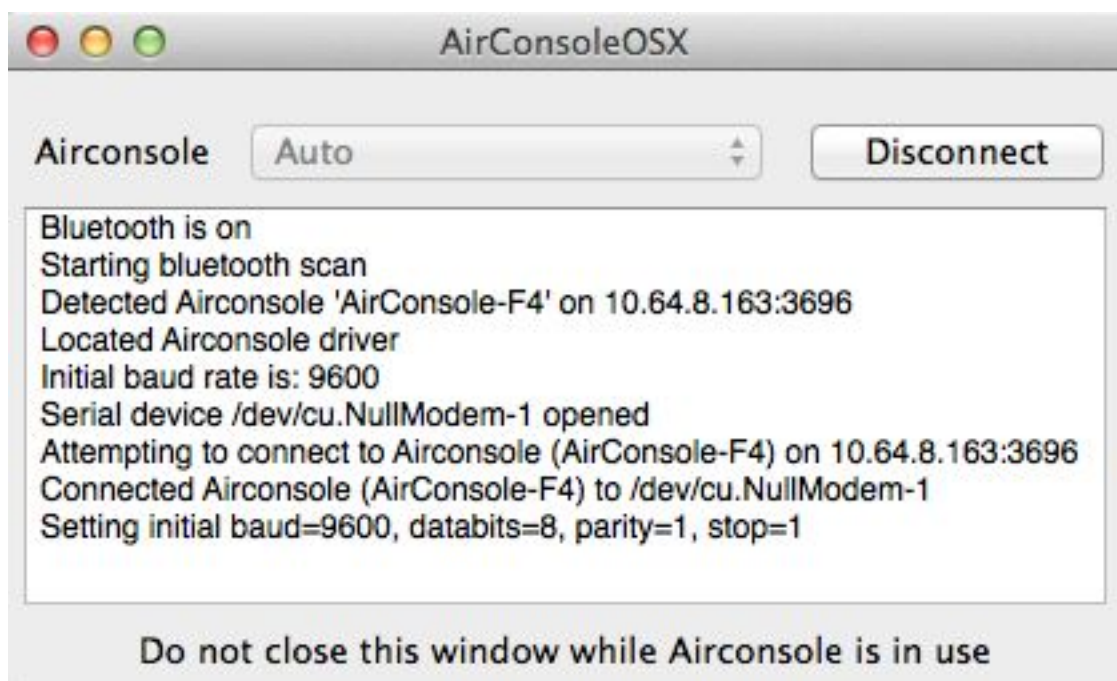
For simple Bluetooth low energy connections, ensure that Bluetooth is enabled in your OSX System Preferences.

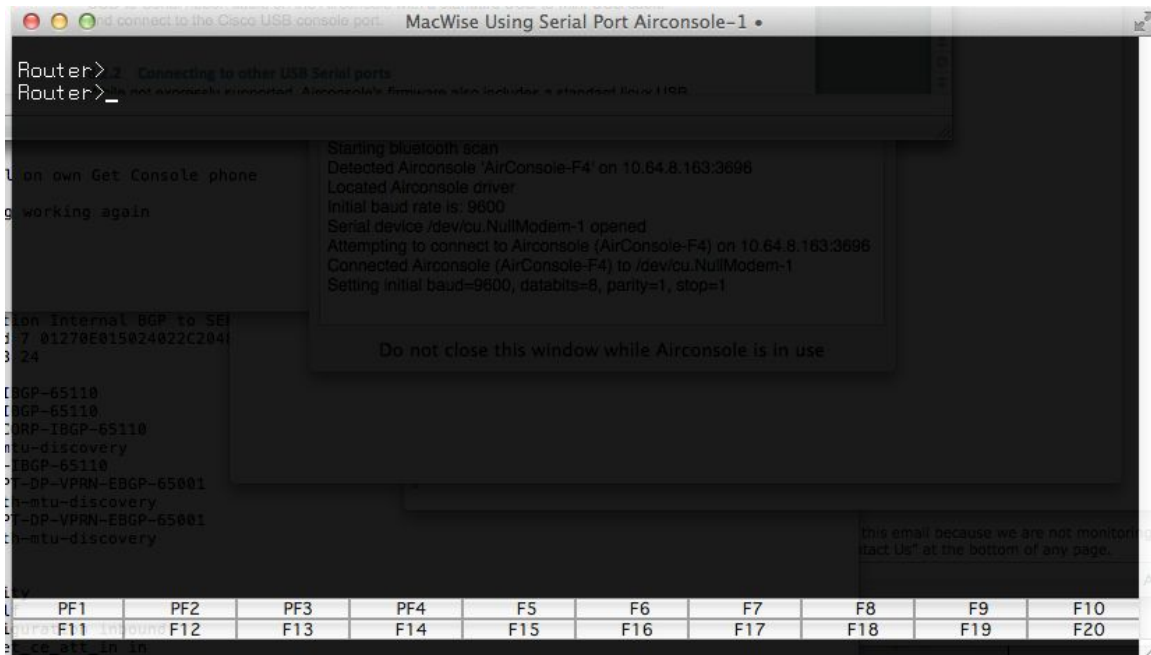


In the above example, the OSX computer has detected Airconsole on both WIFI and Bluetooth. In this situation, select the method required, or Auto – Auto will default to WIFI as WIFI has better performance than Bluetooth.



The AirconsoleOSX program will create a NullModem-1 and an Airconsole-1 COM port. In your Terminal Application (ie MacWise) only connect to the **Airconsole-1** port

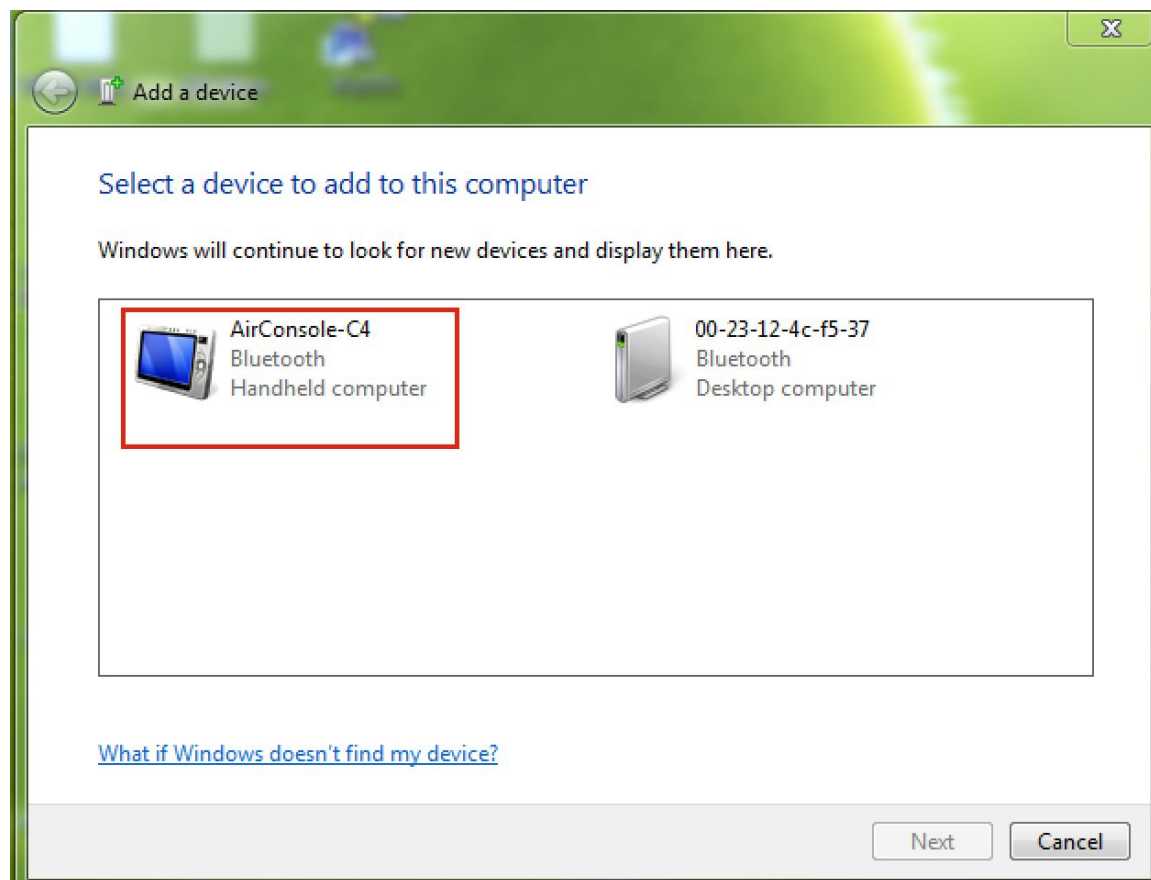
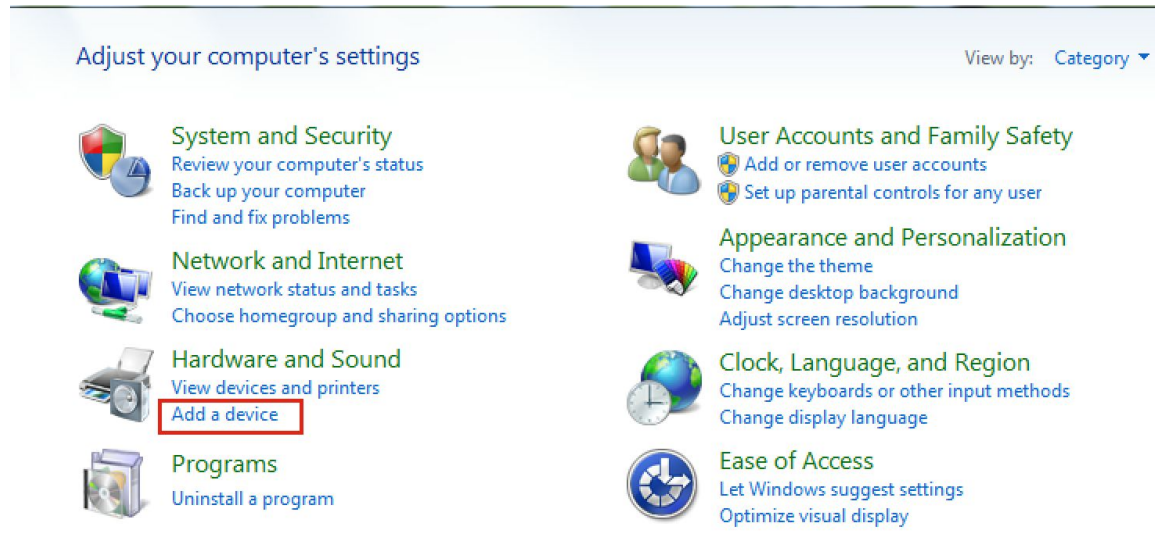




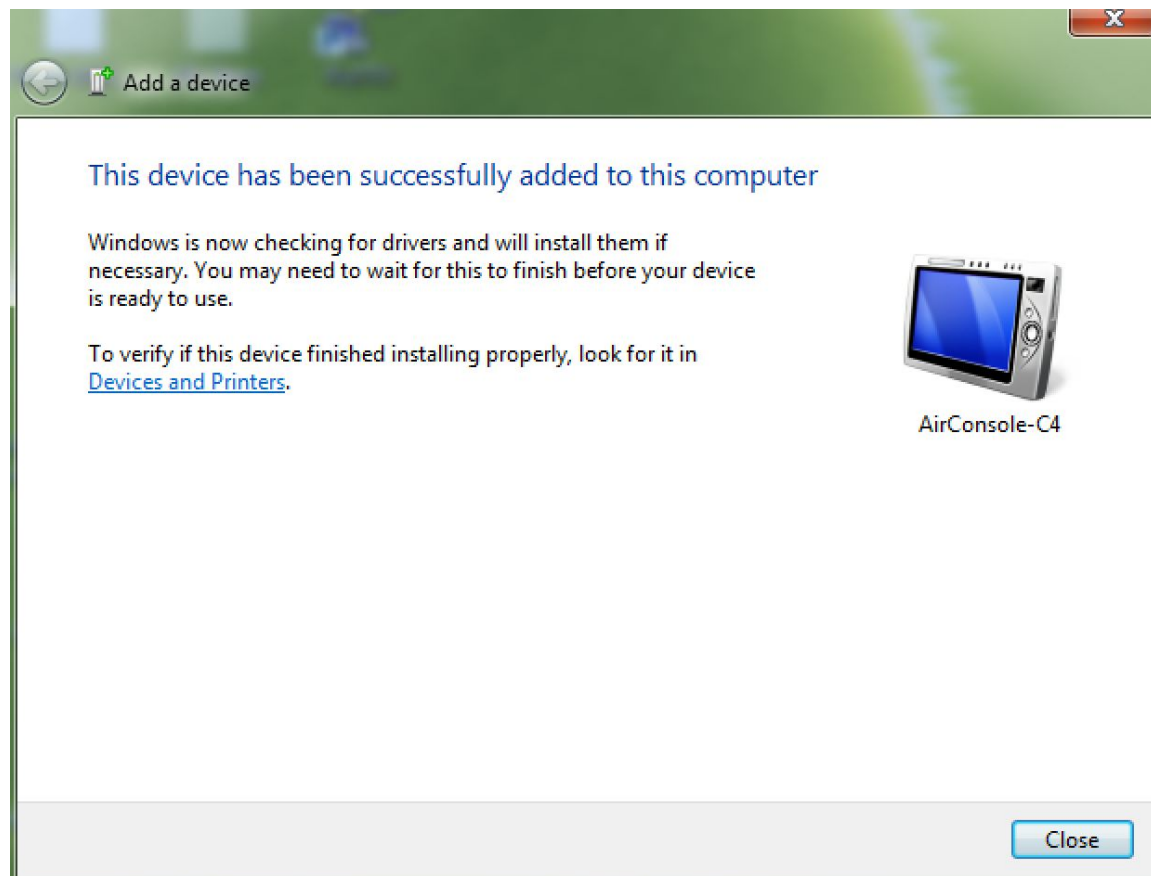
7 Airconsole TS - Win7/8 - Direct COM Port Connection

For connecting to just a single Serial port we recommend using Airconsole 2.0 on Windows via **Bluetooth 2.1**. This configuration is significantly simpler than mapping a Serial Port via WIFI. Once Airconsole has been paired with the Windows PC, Windows will create a new COM port that can then be connected to via the Windows terminal app of your choice (ie Putty or SecureCRT).

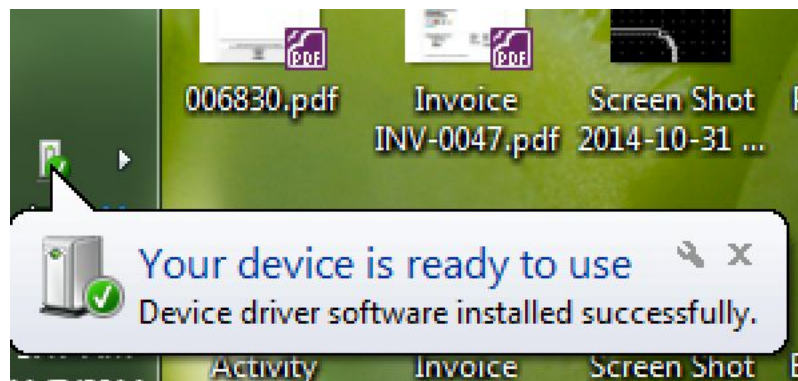
7.1 Windows Bluetooth Pairing



If when attempting to pair Windows comes up with a number string that has to be typed in to pair, then just wait as no pairing number key is required and Windows will connect anyway after a few seconds.



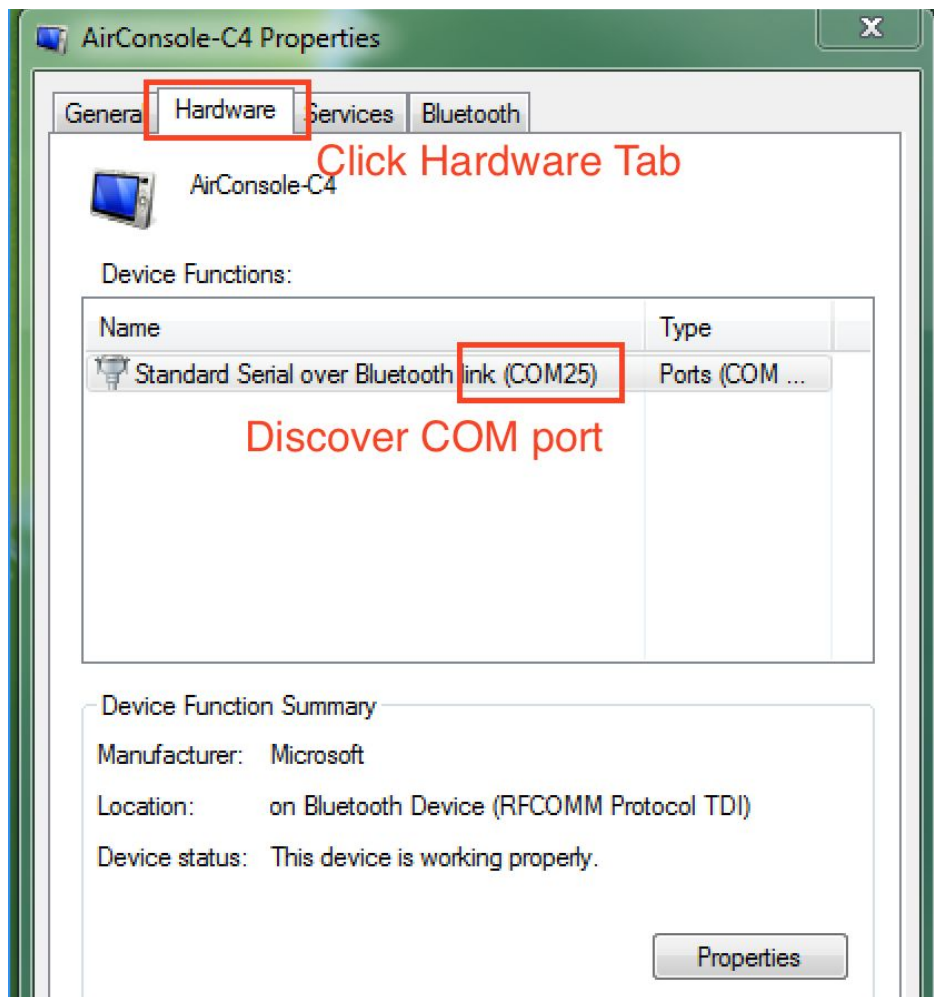
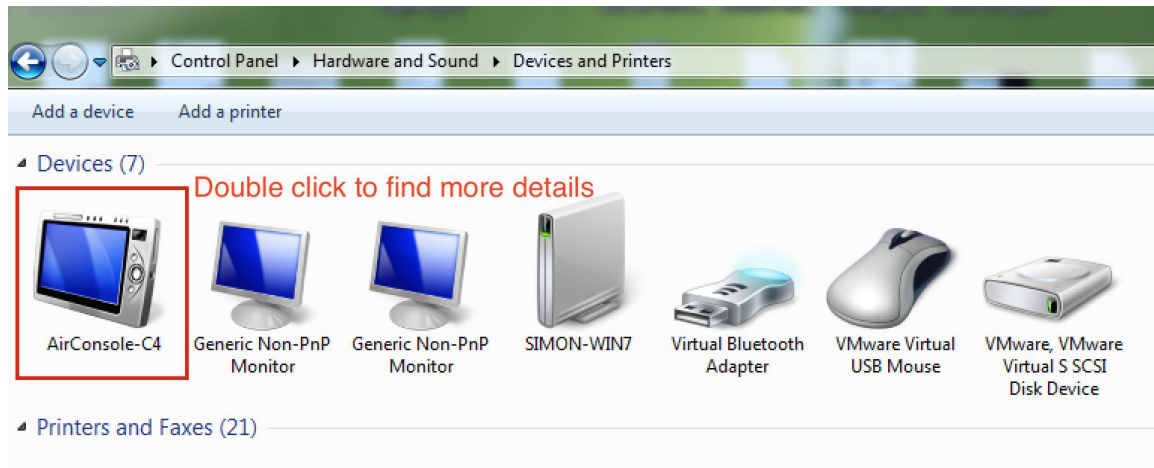
After adding the Airconsole device, Windows will install a new Serial port and map it to the Bluetooth pairing. When that is complete the “Device is ready to use” message will appear.



7.2 Discover COM port.

Before your terminal application can connect, you must discover what the COM port number is of Airconsole. This is assigned dynamically by Windows during the previous process.

To discover, open Control Panel ->Hardware and Sound -> Devices and Printers. Click on Airconsole and then open the Hardware Tab. The “Standard Serial over Bluetooth link” item will have a COM port number assigned.



7.3 Mapping Multiple COM Ports to Windows OS

To map multiple Airconsole TS serial ports to direct COM ports on a Windows PC requires the installation of the Com0Com port mapping software and our driver software. The software and installation instructions are available at:

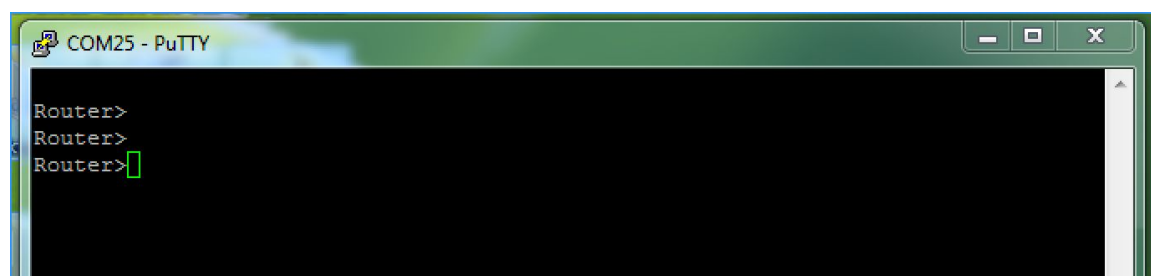
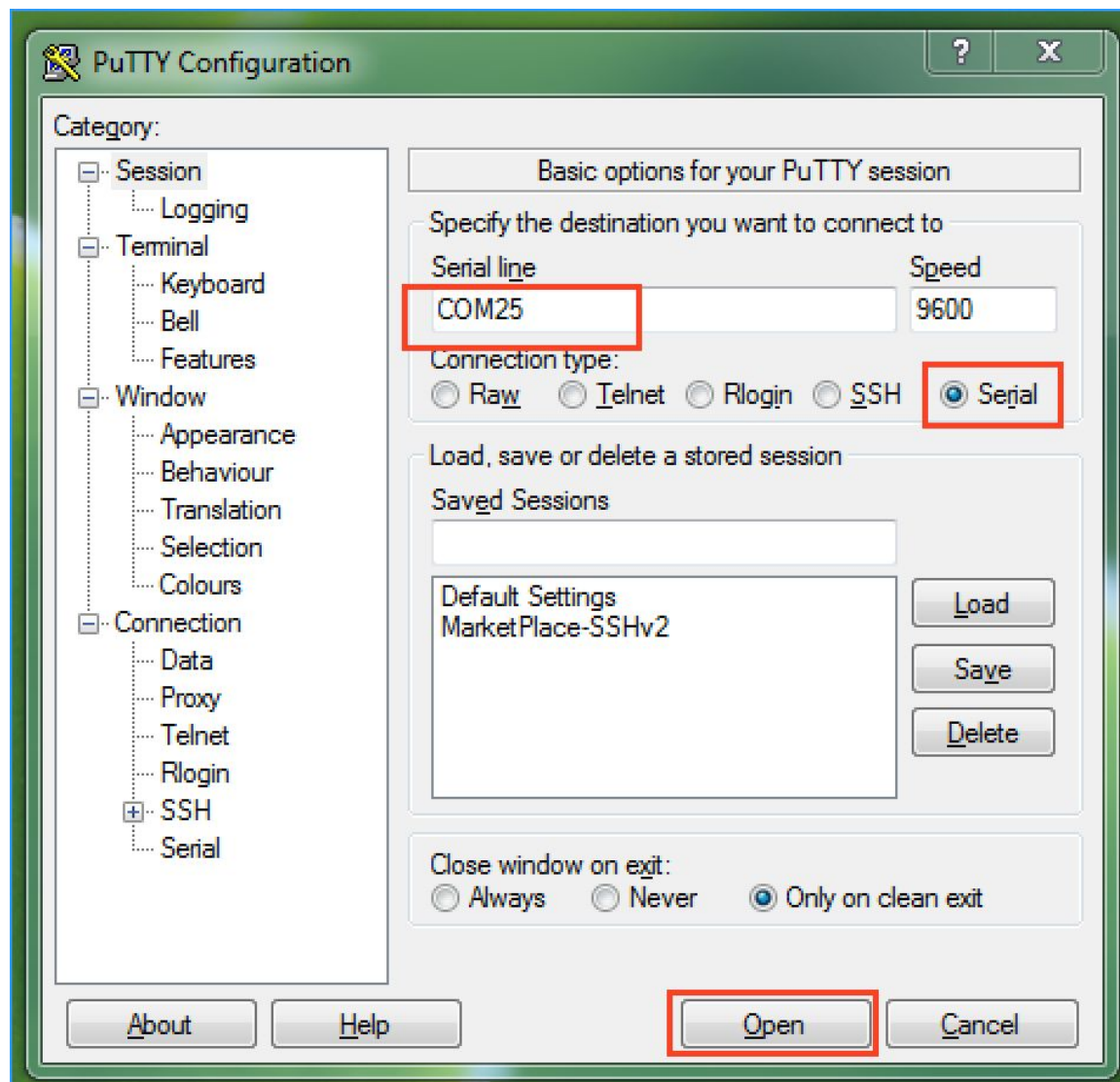
<http://support.get-console.com/support/solutions/folders/5000112382>

See the Windows drivers section.

7.4 Launch Terminal Application

Once either a single port (via Bluetooth or WIFI) or multiple ports are created as COM ports on Windows, they can be accessed directly via your Windows application.

Launch terminal application of your choice and connect to the discovered COM port. In this example we use the free Putty terminal to connect to our discovered COM port 25.



8 Other Airconsole TS Features and Settings

8.1.1 Configure NTP Server

Airconsole TS can receive time from an external NTP server. Configure the server, timezone and how often to synchronize via the Admin->NTP settings.

Status | Serial | LAN | Wireless | Routing | Remote Access | Web Terminal | Admin

Time Settings - SNMP - Syslog - Restart - Firmware - Factory Reset - Authentication

NTP Settings

Time Zone

(GMT) England

NTP Server

0.pool.ntp.org

(blank to disable)

NTP synchronization

300

seconds

APPLY

CANCEL

Help!

Time Setting: choose your own time zone so that Airconsole will gain time from the Internet (if connected).

8.1.2 Configure SNMP Support

Airconsole TS has basic SNMPv1 support. Configure a read community and optionally specify a contact and location. Remote SNMP management stations can now poll Airconsole for stats on various interfaces including Ethernet and WIFI connections, along with system health, CPU and other parameters.

8.1.3 Enable Syslog Support

Airconsole TS runs detailed internal logging and can send this to an external Syslog server if enabled and the IP address or hostname is entered into the Admin->Syslog settings.

8.1.4 Authentication and User Accounts

Airconsole TS runs a local user database or can authenticate Web and SSH sessions via an external authentication server (running either RADIUS or TACACS protocol).

Status | Serial | LAN | Wireless | Routing | Remote Access | Web Terminal | Admin

Time Settings - SNMP - Syslog - Restart - Firmware - Factory Reset - Authentication

User Authentication

Local Users

Username

Access Level

admin

Administrator

Change Password

Add New User

☐

Allow access to Web UI without password

Remote Authentication

☐

Enable remote authentication

Protocol

RADIUS

Server

Port

(blank for default)

Shared Secret

.....

APPLY

CANCEL

Help!

For the Airconsole user manual visit [here](#)

This page lets you change the password for the Airconsole webpage management

Enter the existing password, and then the new password twice, then press Apply. The New Password will take affect on next login.

8.1.5 Connecting to Cisco USB console ports

Airconsole TS has native Cisco USB port support via the last USB port (normally used for BT radio). Simply replace the BT dongle with a USB-to-mini-USB cable and connect to the Cisco USB console port.

8.1.6 Connecting to other USB Serial ports

While not expressly supported, Airconsole TS firmware also includes libraries and drivers to support many serial chipsets via USB. Plug a USB cable into the last USB port (normally used by BT radio) and connect. Airconsole TS will negotiate and build serial-over-USB connections to other device's USB serial ports. For details on other vendor's USB based serial ports that are known to work with Airconsole, please visit our forum at www.get-console.com/forum

8.1.7 Machine to Machine Mode

This mode is accessed in the "Remote Access" page on the Airconsole web interface. M2M mode allows you to configure two Airconsoles to connect to each other to make a back-to-back serial connection between 2 remote serial devices.

Configuration of M2M mode is **only** required on **ONE** Airconsole (called the Master), the other Airconsole can have its default configuration, but its IP addresses (ie APClient, or Bridge) must be reachable / routable from the Master Airconsole. This feature is currently BETA.

Private Server - Machine to Machine (Beta)

Machine to Machine Settings

Enabled : ☒

Remote Hostname :

Remote Port :

Set Line Properties : ☒

Remote Baud Rate :

Data Bits :

Stop Bits :

Parity :

Flow Control :

The master Airconsole can optionally set the line properties (Baud rate etc) which will be applied to the remote Airconsole to ensure that both serial port configurations match.

Successful connection to the remote Airconsole will be visible on the Status (home) page.

8.2 Resetting to Factory Defaults

If you somehow lose the ability to login to the Airconsole TS webpage, you can reset the whole device back to its factory settings via the small pin-hole on the side of the unit that is marked with "R".

8.2.1 Factory Reset procedure for version 2.x Firmware

With the unit powered on, insert a paperclip to press the reset button, keep it pressed for 3 seconds and then release the button. On release of the button the Airconsole TS LED will change to solid blue for a few seconds then the Airconsole TS will reboot (Red LED, followed by slow blue blinking, followed by blue intermittent blinking)

For Wifi access: SSID=Airconsole-XX (where XX is as printed on the back of the Airconsole), password 12345678

For Web console: Admin username and password are "admin"

WIFI network will be on the 192.168.10.0/24 network with Airconsole set as 192.168.10.1/24 and enabled as a DHCP server).

Note for firmware 2.x and later after a factory reset the SSID should remain the same

9 Upgrading Airconsole Firmware

Airconsole Firmware can be upgraded via the Admin -> Firmware Page.

Download the latest Firmware and Firmware upgrade instructions from the <http://support.get-console.com> webpage. The firmware instructions and firmware downloads are on the right hand side of the page under Airconsole Resources.

10 Troubleshooting

Symptom

No light on side of unit when connecting power cable.

Possible Resolution

Airconsole TS can be powered via either PoE splitter or the included Power adaptor. Do not use any other USB power adaptors as they may not produce enough current to power Airconsole and all connected 4 port USB Cable kits. Try to reseal the power connector with just Airconsole TS and no 4 port cables connected. Check cable length - the supplied 2.5m cable has thicker gauge internal cable to prevent excessive voltage drop. Other cables may not offer same voltage at the Airconsole end.

When using the PoE Splitter ensure cabling is correct and PoE switch is supplying power. The Splitter is a type-B Powered Device - meaning it Accepts power on same pins as data - 1,2,3,6. The switch should be supplying 48V DC and 15.4W. 24V DC will not work. The Splitter is 802.3af capable and will negotiate as a ieee 15.4W device.

Light on unit solid red or solid blue and doesn't change after 1 minute.

Your Airconsole TS unit has failed to boot (often after during a firmware upgrade). TFTP recovery of your Airconsole is possible - download the TFTP recovery tool from support.get-console.com

Cant see Airconsole-XX WIFI network from iPad/iPhone/OSX

There are a few possible reasons:
Out of range: Airconsole TS has a chip antenna that works in a relatively short range (<20m). Move closer to Airconsole unit and re-scan for WIFI networks.

SSID beacon not seen:
(iPad/iPhone) Turn WIFI on iPad / iPhone off then on again to enable iPad/iPhone to pick up the Airconsole-XX SSID
(OSX) Choose "Join other Network" then "Show Networks" to rescan for Airconsole SSID
SSID hidden: If Airconsole has been configured to hide its SSID then manually join "Other Network" in iOS WIFI settings and enter Airconsole-xx (where xx is the value printed on Airconsole device). On OSX click "Join Other" from the "Find and join a Wi-Fi network" dialog box.

**Connected to Airconsole-xx
WIFI but cannot connect to
Airconsole Webpage at
192.168.10.1**

Airconsole powered off: Check Airconsole is powered on and the blue light on the side is blinking every few seconds. If blue light is solid, or red (and stays that way) refer to below

There are a few possible reasons:
PC/Mac/iOS Device not on same IP network as Airconsole:

This can happen if using manual/static addressing for your iOS/PC/Mac. Change to DHCP client on your iOS/PC/Mac and restart its networking. It should then obtain an address from the Airconsole DHCP server and be on the same subnet.

Airconsole in DHCP Client / Static IP address mode: Alternatively, if the Airconsole default settings have been changed it may be in DHCP Client mode or Static IP addressing mode itself. This means the Airconsole may have an address other than the 192.168.10.1. Therefore to connect to Airconsole you must first discover its current IP address and place your iOS/Mac/PC onto the same IP subnet. A quick way to do this is to discover the Airconsole address via Bonjour (iOS/OSX) or mDNS (windows) by pinging the "AirConsole-xx.local" address from the command prompt – where "xx" is the actual values as printed on the back of the Airconsole unit.

URL entered incorrect: Ensure the URL is <http://192.168.10.1> or <http://airconsole-xx.local> (where xx is the actual value from back of unit)

Airconsole hasn't fully booted yet: If side indicator light is solid red or solid blue or is slowly blinking blue, wait for it to change to intermittent blinking blue for 10 seconds before trying to connect again.

**Connected to Airconsole
WIFI but cannot connect to
serial port in Get Console
app**

USB-4 port Serial cable not connected: Get Console will popup error if it connected to Airconsole WIFI, but there is no 4 port Serial cable kit connected from Airconsole to your serial device. Connect cable and retry the connection.

Web Terminal / Terminal App shows Connected to Airconsole Serial port, but there is no terminal output

Get Console needs to be restarted: If Get Console was running in the background of iPhone/iPad prior to joining to Airconsole WIFI network it may not pickup the Airconsole Bonjour broadcast. Restart Get Console by exiting the app (single tap home button) and then close it down fully by double-tapping home button and finding Get Console icon on list of background apps. Press and hold Get Console icon on the background app list and then close it via the "x" that appears. You can then re-launch the Get Console app from the normal app button on your iPad/iPhone. On restart the green "Airconsole discovered" message should appear.

iOS Device not on same IP network as Airconsole: Follow troubleshooting steps above to ensure your iOS device is on same IP subnet.

Airconsole Needs to be restarted: Occasionally Airconsole may crash. Power-cycle Airconsole unit by switch on side, wait 10 seconds until the blue light on top is blinking again and then rejoin the WIFI and re-attempt connection.

Baud Rate / Flow Control / Other Serial settings incorrect: Check Baud rate and Flow Control settings of Serial Device match Airconsole serial settings. The Default Airconsole settings are 9600-8-N-1, but can be changed via the Serial page, or in the side panel of the built in Web terminal page

Serial device not transmitting: (in Get Console) check status information for TX/RX counters (in Get Console 1.x, top left hidden button where TX/RX LED lights are shown. In Get Console 2.x press and hold the right hand side menu slide out button).

If the RX counter shows 0 then no frames are being received from serial device. Check serial pinouts or flow control. If RX counter shows >0 then check Baud Rate/Flow control and also scroll around on Get Console screen as terminal output maybe not where expected on screen.

Access Problem after changing LAN mode

(When connecting to DB9 serial port on Serial device) Pinouts of serial device not correct for RJ45-to-DB9 adaptor

Try DB9-RJ45 Null Adaptor. Often serial devices with DB9 interfaces require a “Null Modem” DB9 connection rather than RS232 DTE connection. For example HP Procurve switch DB9 console ports require Null Modem. Both adaptors are available from Get Console webshop.
Verify pinouts

AirConsole web page and/or Get-Console app intermittently working: Ensure that the IP address assigned manually to AirConsole has not already been assigned to another device on the network when the wired LAN port is used

AirConsole web page and/or Get-Console app are not accessible/working: Ensure to renew the lease for the Wifi Connection after changing LAN mode operation e.g. from Enable DHCP server -> Enable DHCP client. This allows the client device to obtain an IP that is in the same subnet as the AirConsole. Alternatively, reconnecting to the AirConsole Wifi can resolve this problem. This will only work provided that the AirConsole IP and the DHCP assigned IP are in the same subnet.

AP Client “connects” but cannot pass traffic on 802.11N dual channel networks.

On 802.11N networks, this problem can happen when operating in mixed 20/40mhz mode. In the basic WLAN Settings page, set the “Channel Bandwidth” under HT Physical Mode to be “20” rather than 20/40

11 Technical Information

11.1.1 Airconsole Connectors

USB Port	<p>For connecting the supplied 4 port USB-Serial Cable kits, or for connection directly to Cisco USB Console ports, via a USB-mini USB cable.</p> <p>The USB port also accepts FAT formatted thumb drives for performing firmware upgrades</p>
10/100 Ethernet Port	Use this port for connecting

	<p>a) to LAN switches to bridge the Airconsole TS WIFI network into a local LAN or;</p> <p>b) to Ethernet based management ports on field equipment</p> <p>The port has Auto-MDIX detection so can accept normal or crossed-over Ethernet cables.</p>
Micro USB Port	For powering the Airconsole TS via the supplied micro-USB power cable.
Factory Reset	<p>For resetting Airconsole back to its factory settings.</p> <p>Turn off Airconsole, press and hold the recessed reset button via a paperclip while turning on Airconsole. Wait until Red light stops blinking and turns solid Blue. Turn off Airconsole, remove paperclip, and then turn Airconsole back on. Airconsole will now have factory settings.</p>

11.1.2 Airconsole Indicator Lights

Side Light	<p>Indicates the Operational status of Airconsole</p> <p>a) Solid red – Airconsole booting, however if remains on for more than 20 seconds, indicates firmware error</p> <p>b) Red blinking – seen during Airconsole firmware update.</p> <p>c) Solid blue – Airconsole ready to receive firmware upgrade. If on when not performing firmware upgrade or stays on for more than 30 seconds then unit maybe faulty.</p> <p>d) Long Blue Blinking – Airconsole is booting (version 2.0)</p> <p>e) Intermittent Blue blinking – Airconsole WIFI network has started and available to connect from clients.</p>