🚀 Optimal Setup Guide:

AP Wireless Unit for Nacsport Video Analysis

This guide provides the full procedure for optimising your pre-configured **AP Wireless** unit to deliver a stable, low-latency Wi-Fi link for Nacsport video and data sharing in high-traffic environments.

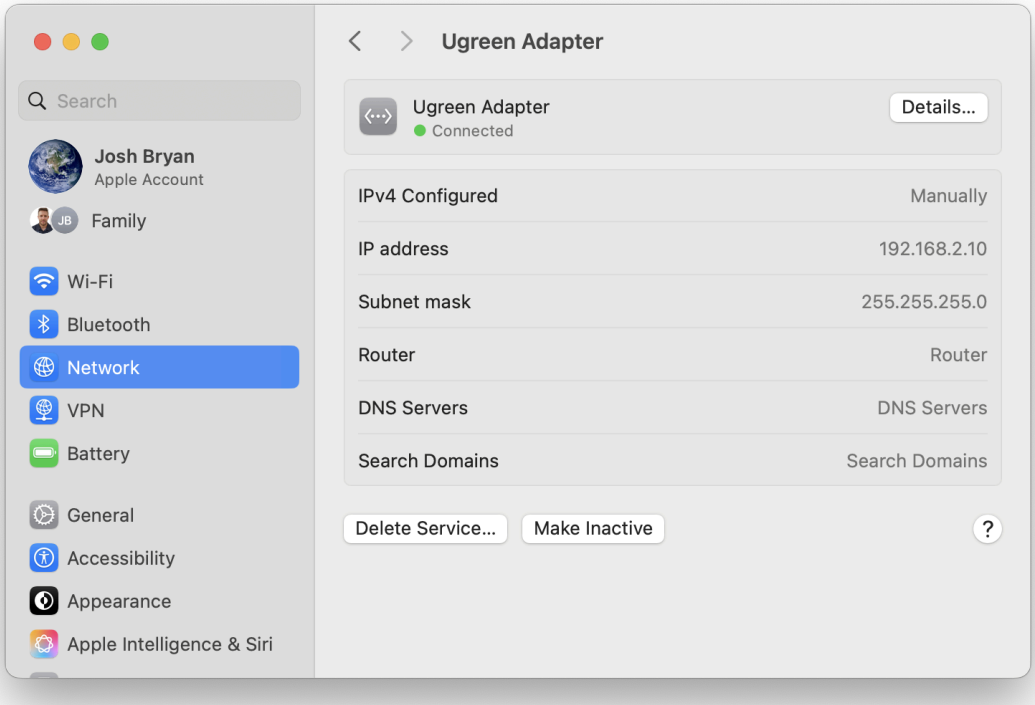
Part 1: Pre-Configured Base Setup

Your **AP Wireless** unit is set up as a high-performance network bridge with fixed IP addresses.

Component	Fixed IP Address	Role in Network
AP Wireless Unit	192.168.2.20	Network Bridge
Analysis Computer	192.168.2.10 (Manual)	Ethernet Link (Video/Data Source)
iPad	192.168.2.11 (Manual)	Wi-Fi Link (Video Receiver)

Step 1: Physical Setup & Initial Connection

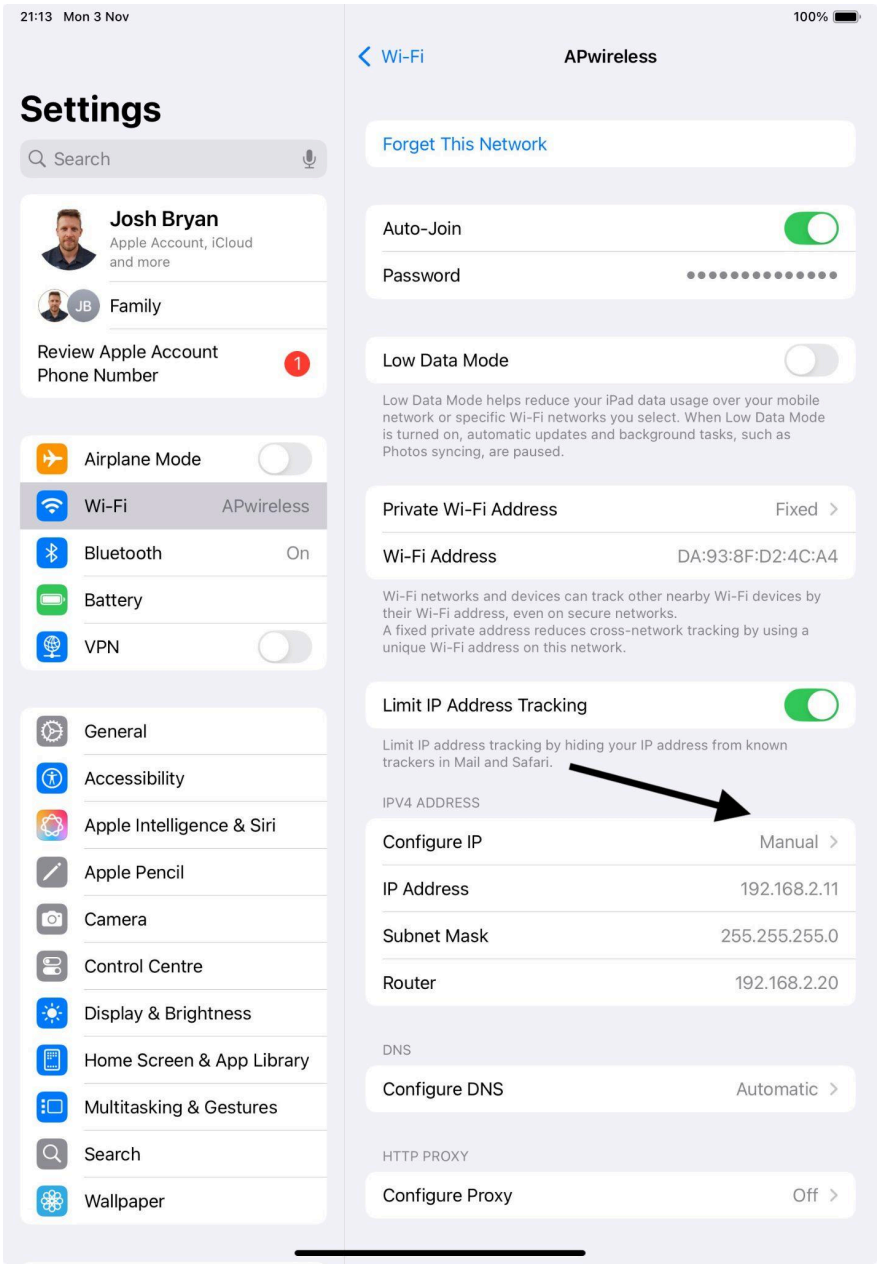
1. **Mount:** Place the **AP Wireless** unit on the supplied tripod, ensuring a **clear line of sight** between the unit and the typical iPad location.
2. **Connect Computer:** Connect your computer to the PoE injector's **LAN port** via Ethernet cable.
3. **Computer IP Check (CRITICAL STEP):** Verify your computer's Ethernet adapter is configured **Manually** with:
    - **IP Address:** 192.168.2.10
    - **Router/Gateway: LEAVE BLANK.** This setting tells your computer to use the Ethernet connection *only* for local traffic (Nacsport) and to use an active Wi-Fi connection for all internet access.



4. **Confirm computer connection to AP Wireless:** Open a web browser, navigate to the **AP Wireless** unit's IP (192.168.2.20) and login (ubnt - analysispro123). If you can login, your computer is connected to AP Wireless via ethernet.

Step 2: Connecting the iPad

1. **Connect:** On the iPad, connect to the **AP Wireless** Wi-Fi network.
2. **Configure Static IP:** Manually configure the iPad's Wi-Fi settings (tap the **i** next to the network) with the following values:
    - **IP Address:** 192.168.2.11 (make sure the last number is different to other devices in your network, .10 and .20 are already used)
    - **Subnet Mask:** 255.255.255.0
    - **Router:** 192.168.2.20
    - *This connection setup should be saved on your iPad, so you only have to enter these manual settings initially.*



[Further Resources on our Knowledge Base Here]

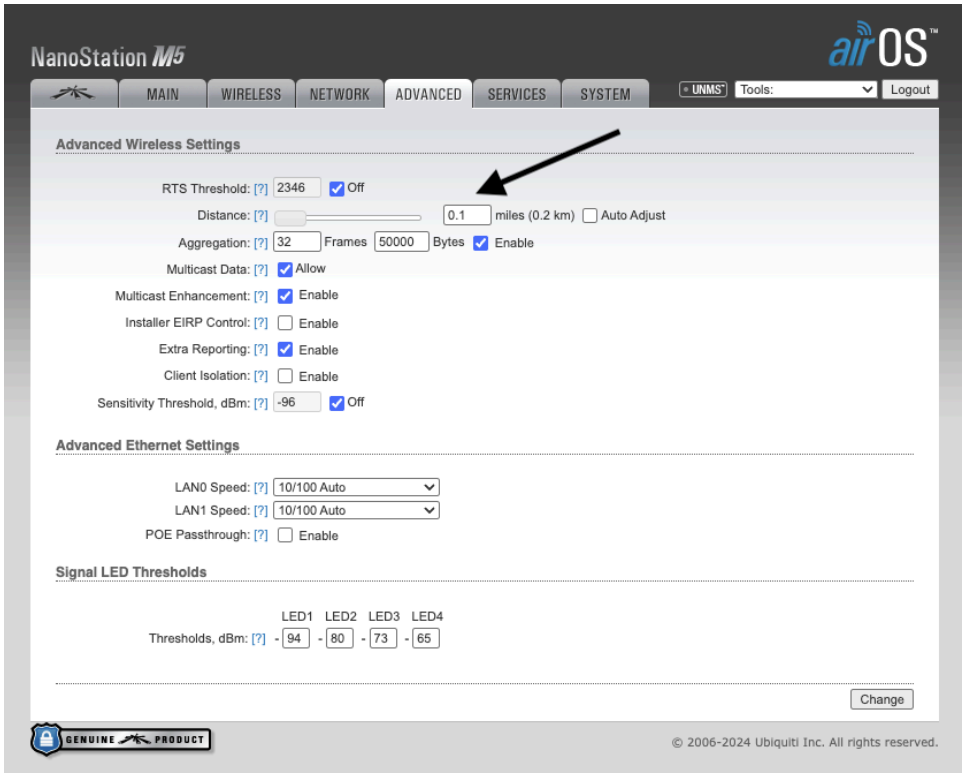
Part 2: Venue-Specific Optimisations

(If struggling to connect the iPad to the network)

Step 1: Adjusting ACK Timing (Distance)

The **AP Wireless** unit's ACK Timing (**Distance** in the **ADVANCED** tab) has been set to the minimum of **0.1 miles (0.2 km)** for the lowest latency possible.

If you are deploying the unit for a connection **longer than 0.1 miles (approx. 160 meters)**, you must increase this setting:

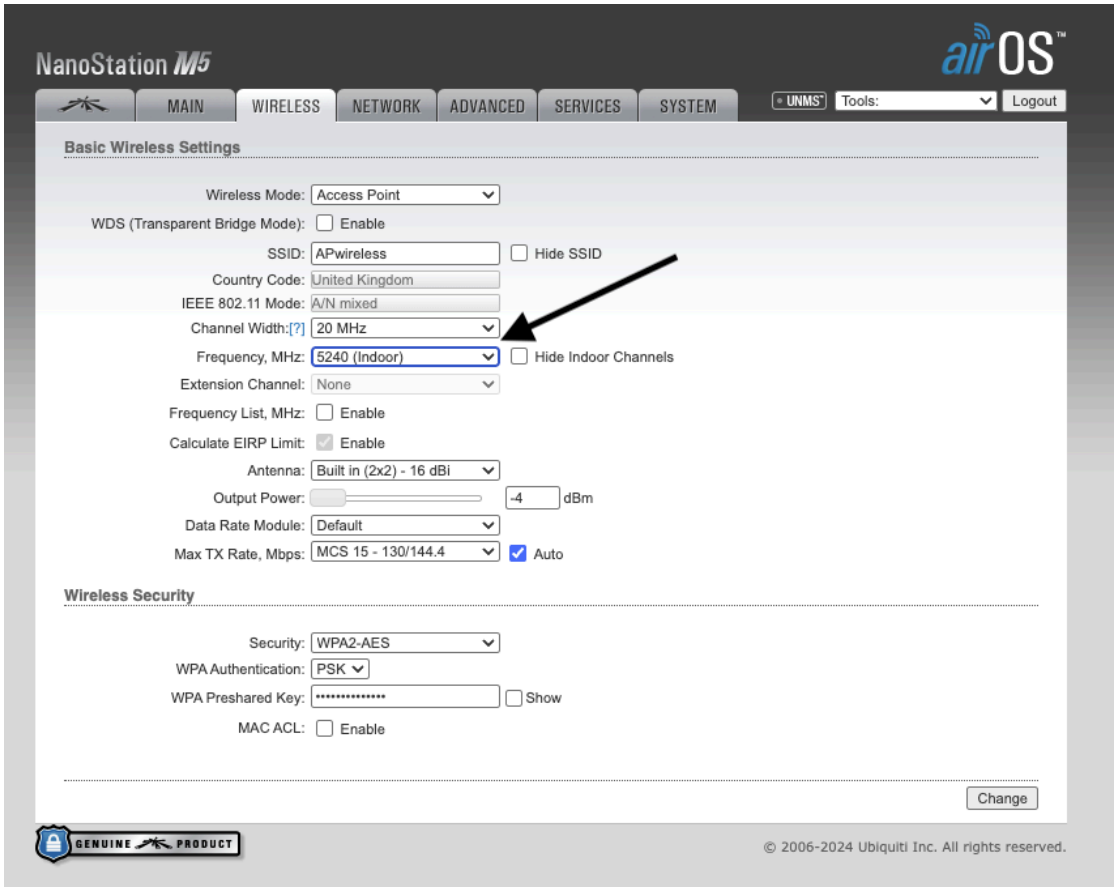
1. Log into the **AP Wireless** unit (192.168.2.20).
2. Go to the **ADVANCED** tab.
3. Manually set the **Distance** value (e.g., set to 0.5 miles for a 0.5 mile connection).
4. Click **Change** and **Apply**.
5. 

Step 2: Finding the Clearest Channel (Venue-Specific Scan)

1. **Run Scan:** Use your **NetSpot** tool (or similar) near the **AP Wireless** unit to scan the **5 GHz band**: ▸ **Watch Video**
2. **Target Non-DFS:** Find the quietest **20 MHz wide channel** that is **NOT** a DFS channel (Channels 52-144).

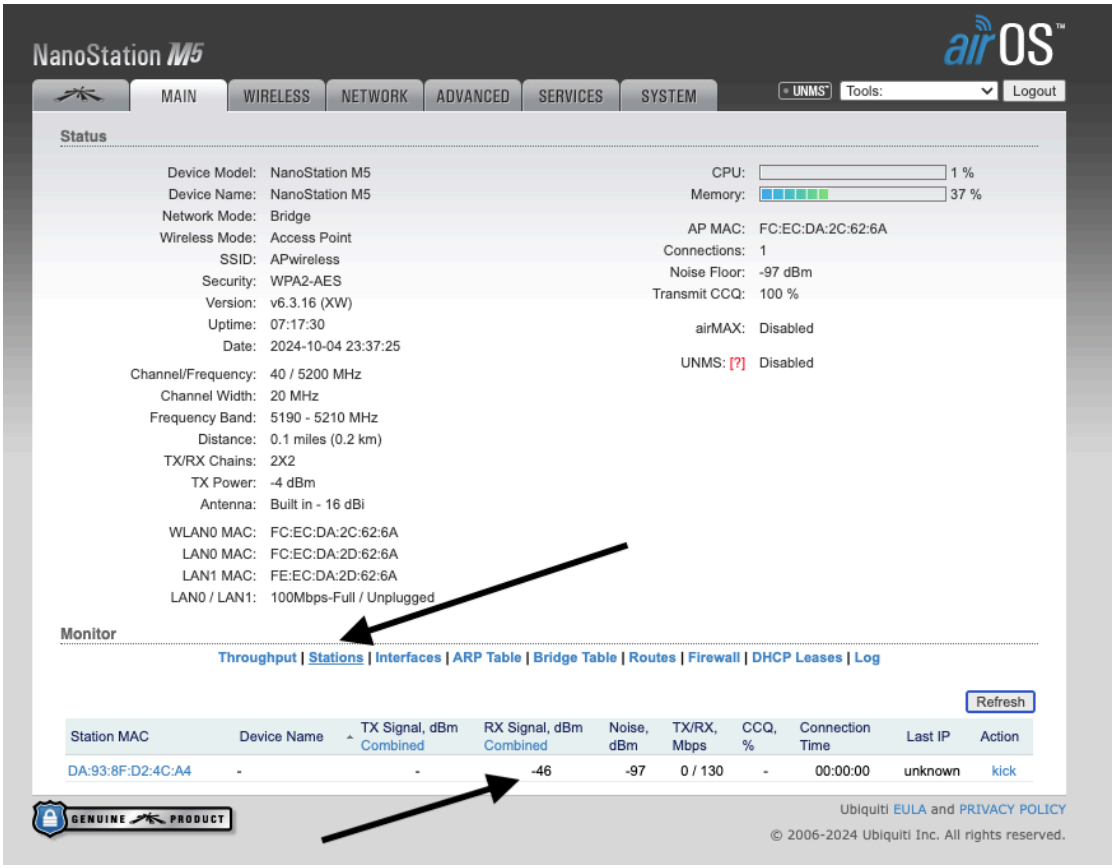
- **Best Frequencies:** 5180 MHz to 5240MHz (Ch. 36-48) OR 5745 MHz to 5805 MHz (Ch. 149-161). 5745-5805 show as DFS in the AP Wireless settings, but they are not actually DFS in the UK or common deployment areas.
- 5180-5240 are optimal for indoor.
- 5745-5805 are optimal for outdoor.

3. **Apply Frequency:** In the **AP Wireless** settings:
   - Go to the **WIRELESS** tab.
   - Change **Frequency, MHz** from the current setting to your chosen **Manual Frequency** (e.g., 5240 MHz).
   - Ensure **Channel Width** is set to **20 MHz**.
   - Click **Change** and **Apply**.



Step 3: Optimising Output Power (Bonus Steps)

1. **Measure Signal:** Go to the **AP Wireless** unit's **MAIN** tab and click **Stations** near the bottom.
2. **Check RX Signal:** Look for the **RX Signal, dBm Combined** value for your iPad.



iPad RX Signal (Reported in 'Stations' area on AP Wireless)	Action	Reason
Stronger than -68 dBm (e.g., -55 dBm)	**PHYSICAL ADJUSTMENT:** The minimum power (-4 dBm) may still be too strong. **Increase the physical distance** between the unit and the iPad if you can.	The signal is too strong (overload risk). The AP Wireless unit software cannot lower it further.

Between -68 dBm and -75 dBm	**OPTIMAL.** Keep this output power setting.	Best range for high speed and a clean signal.
Weaker than -75 dBm (e.g., -80 dBm)	**Increase Output Power** on the **WIRELESS** tab by **1 dBm increments**. Stop immediately when the signal enters the optimal range.	The signal is too weak. Increase power only as necessary.

3. **Change Power:** Go to the **WIRELESS** tab and set **Output Power** to a different value. Click **Change** and **Apply**.