VIRTUAL LINK – APP GUIDE
Product: Pinnatec Auto Virtual Link
Vehicle Scope: All Virtual Link Models
Version: v1.1
Date: 12/2025
Pinnatec Auto
https://pinnatecauto.com
Support: https://pinnatecauto.com/support/

1. Preamble – Important Information

1.1 About this guide

This guide explains how to connect to and use the Virtual Link web app to adjust ride height after hardware installation.

It assumes:

- Your Virtual Link hardware is already installed using the correct install guide for your chassis.
- You have completed the post-install checks from the hardware guide.

Please read this guide once, start to finish, before first using the app.

1.2 Terms & acceptance

Installation and use of Virtual Link (hardware + software) are governed by the Pinnatec Auto Terms of Sale, Use, and Liability at: https://pinnatecauto.com/terms-of-sale/. By purchasing, installing, configuring, or using Virtual Link, you confirm that you have read and agree to those Terms. The web app may show a Terms popup on first use (and occasionally after that). You must accept the Terms in the app to continue using it.

1.3 What Virtual Link is

Virtual Link is an aftermarket electronic ride-height controller that plugs into your factory air-suspension module and lets you adjust and manage suspension height through our software.

It is not an OEM safety device, not a repair for damaged or failing suspension, and not a substitute for proper alignment, maintenance, tires, or safe driving. You are responsible for making sure your vehicle is safe to drive after any changes.

1.4 Safety & using the web app

Only use the web app when the vehicle is in a safe situation and you can pay full attention to what it's doing. The **driver must not** operate the app or focus on the screen while driving. A passenger may adjust settings if local laws allow, but the driver is always responsible for safe operation.

Do not:

- Run firmware or filesystem updates while the ignition is on.
- Change Wi-Fi settings while the ignition is on.
- Reboot or factory reset the device while the ignition is on.
- Test new features for the first time while the car is in motion.

In this web-app version, **do not command more than about 65 mm of change in a single step** from where the car currently is. Going too low, too high, or asking for more than ~65 mm at once can trigger temporary suspension faults. These usually clear once you return the car to a reasonable height and, if needed, clear codes after everything is back in range. If you want to make a large change, adjust in increments smaller than ~65 mm, let the vehicle fully settle between adjustments, and confirm there are no new warnings before continuing.

A future "infinity" adjustment update is planned to let you go from any supported height to any other in one go, within safe limits, without worrying about the ~65 mm step rule. Until that dedicated feature is released and documented, please follow the 65 mm guideline above.

While you're learning the system, keep an eye on the Audi MMI **"raised"** indicator in the top-left of the screen:

- If "raised" becomes greyed out or unavailable, open the vehicle settings, go to the maintenance / vehicle care menu, and confirm that **Tire Change Mode / Jack Mode** is turned **off**.
- If "raised" remains greyed out, the car likely did not like the height change (too high, too low, or too much change at once). Revert to your previous setting and confirm that "raised" becomes available again.

If you ever see a red suspension warning or anything that feels unsafe:
1. Safely pull over and stop the vehicle as soon as you reasonably can.
2. In the web app, switch back to your last known-good ride-height setting and give the car a moment to re-level.
3. Turn the car fully off, wait 30–60 seconds, then restart and check if the warnings clear.

If the warnings do **not** clear or the car still behaves oddly:
4. Note the exact warning message(s) and any symptoms.
5. Remove Virtual Link from the circuit following the hardware guide (unplug the Virtual Link harness and reconnect the OEM harness directly to the suspension control module).
6. With Virtual Link fully removed, start the car again and see whether the fault remains.

Virtual Link is a stand-alone **pass-through** unit. It does not flash, tune, or permanently modify any factory ECU software; when it is unplugged and the OEM harness is reconnected, the wiring returns to its original configuration. If a fault persists with Virtual Link removed, the cause is elsewhere in the vehicle.

In all cases:
- Log what happened (warning text, when it occurred, what profile/height you were using).
- Contact support at **https://pinnatecauto.com/support/** with your vehicle details, a description of the issue, and photos or a short video of the cluster and the app.
- Always test new height setups at low speed in a safe area before regular use.

1.5 Devices, time & vehicle condition

You'll need:
- A phone, tablet, or laptop with a modern web browser.
- Ability to connect to the Virtual Link Wi-Fi Access Point.

Typical time for first setup is about 5–15 minutes, including initial connection and basic profile setup.

Recommended: a clean, dry, well-lit workspace with the car parked on flat ground. For best results, start with a healthy vehicle (no existing suspension fault codes, no obvious low-voltage or starting issues).

1.6 Genuine product, warranty & support

Warranty and support apply only to genuine, unmodified Virtual Link units installed and used as instructed. Devices purchased from pinnatecauto.com or our listed authorized partners are considered genuine. Units from unauthorized third parties may not be authentic and may not be covered for warranty or support. If anything in the app looks significantly different from our screenshots, if the car behaves unexpectedly, or if new warnings appear and do not clear, stop experimenting and reach out to us at: https://pinnatecauto.com/support/ Please include photos or video along with a short description of what you were doing when the issue appeared.

1.7 Data & privacy

Virtual Link products and apps may store local diagnostic and operational logs (such as profiles, offsets, and status) to support functionality and troubleshooting. If you request support, we may ask you to share logs or screenshots. Any personal information is handled under our full Privacy Policy at: https://pinnatecauto.com/privacy-policy/

1.8 Versions, web app, and feedback

This guide covers the **Wi-Fi web app** version of Virtual Link. A free iOS and Android Bluetooth app is in development; when it is ready, existing users will be guided through any needed migration steps via updated firmware and documentation.

Virtual Link (hardware + software) is an active, evolving product. Features and visuals may change over time, and your screen may not always look exactly like the screenshots in this guide.

User feedback strongly influences what we improve next. If there is something you'd like to see added, changed, or clarified, please let us know through the support page.

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2. Connect to Virtual Link

2.1 Power the device

1. Make sure the hardware is installed and plugged in.
2. With the car parked and turned fully off:
   - Hit the lock/ unlock fob, or
   - Adjust any button in the car, or
   - Open any door

   Any of these actions will wake Virtual Link for 10 minutes at a time.

2.2 Join the Wi-Fi network

On your phone, tablet, or laptop:
1. Open your Wi-Fi settings.
2. Look for the network:
   Name: Virtual Link

3. Connect using the default password:
   Password: password123
4. Wait for the device to show as connected.

If you later change Wi-Fi settings in the app, the SSID/password may be different. The values above are the out-of-the-box defaults. If you need to factory reset the Wi-Fi username or password please visit Section 8.9 for **Manual Hard Reset** instructions

2.3 Open the web app
With your device connected to the **Virtual Link** Wi-Fi:
1. Open your browser (Safari, Chrome, etc.).
2. In the address bar, type:
   ○ **http://10.10.10.1**
   ○ If that does not load, try **http://virtual-link.local**
3. The Virtual Link Home screen should load.

If the page will not load, see **Section 8 – Troubleshooting & Support**.

2.4 Terms popup
On first use (and again periodically over time):
● A **Terms of Service** popup may appear and block interaction.
● You must read the terms, check the box, and tap **Accept** to continue.
The full Terms are always available via the **Terms** page in the app found through the **About** page in the menu or on the website. If there is ever a conflict between the app wording and the website, the website Terms control.

2.5 Update to the latest Firmware and Filesystem
Skip to **section 6.3** and complete the latest Firmware and Filesystem update. Then continue to section 3.

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3. Quick Tour – Layout & Key Controls
3.1 Header & navigation
Across the top of the web app you'll see:
● **Logo**
   ○ Click any time to return to the **Home** page
● **Connection Pill**
   ○ **Connected** – The app is talking to Virtual Link correctly.
   ○ **Disconnected** – The app is not currently getting responses from Virtual Link.
      ■ Changes you make on-screen may not reach the device while it is disconnected.
● **Navigation Menu** – Links for:
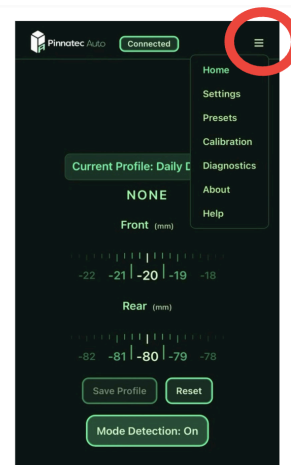
- ○ **Home** – Main control screen (sliders, active profile, mode label).
- ○ **Presets** – Manage profiles and mode mapping.
- ○ **Settings** – Range, Wi-Fi, advanced options, device info, access to the **Updates** page.
- ○ **Calibration** – Per-corner trim for baseline corrections.
- ○ **Diagnostics** – Currently disabled, Coming soon.
- ○ **About** – Basic info about Virtual Link, access to the **Terms** page.
- ○ **Help** – FAQ and link to support.

3.2 Page controls – overview

Use this section to familiarize yourself with what each page and button does. For first-time setup, read through these once and head to Section 4 for the step-by-step guide.

3.2.1 Home

- ● **Profile dropdown / name**
  - ○ Shows the active profile name; click/tap to manually switch profiles.
- ● **Edited Status marker**
  - ○ Appears when the current profile has unsaved edits (e.g. "edited") because the sliders no longer match the saved values for that profile.
- ● **Drive mode label**
  - ○ Shows the current Audi drive mode (Comfort, Dynamic, etc.).
  - ○ Used by **Mode Detection** to auto-switch profiles when enabled.
- ● **Front / Rear sliders (mm)**
  - ○ Negative values lower the car; positive values raise it.
  - ○ Drag the slider left or right to make changes, when you release your finger the changes are loaded into the car
  - ○ Slider size is controlled by the **Ride Height Range** set on the **Settings** page, default is -60mm to 60mm
- ● **Save Profile button**
  - ○ Enabled only when current slider values differ from the stored values for that profile.
  - ○ Writes the current Front/Rear offsets into the active profile.
- ● **Reset button**
  - ○ Snaps the sliders and the hardware back to the last saved values for that profile.
- ● **Mode Detection toggle**
  - ○ **Off** – Profiles only change when you manually select them.
  - ○ **On** – Profiles can auto-switch based on the mode-to-profile mappings you set on the **Presets** page.
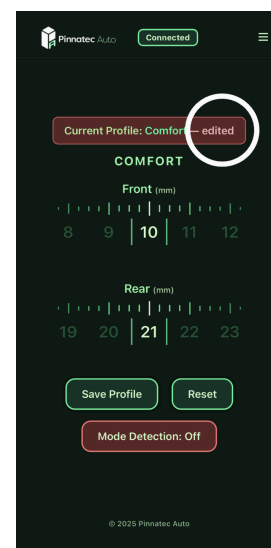
3.2.2 Presets

- ● **Mode mapping section**
  - ○ For each drive mode (Comfort, Dynamic, Off Road, Efficiency, Auto):
    - ■ Choose a profile from a dropdown, or select "no auto-switch" to disable mapping for that mode.

- ○ **Save Mapping** – Applies your changes after selecting a profile in a drop down menu.
- ○ **Clear All** – Remove all mappings so no modes auto-switch profiles.
- **Profile cards / list**
  - ○ Each profile shows its name and stored Front/Rear offsets in mm.
  - ○ **Rename**
    - ■ Change the profile's name.
  - ○ **Delete**
    - ■ Permanently remove a profile (cannot be undone).
    - ■ If a deleted profile was mapped to a drive mode, that mode will stop auto-switching until you assign a new profile.
  - ○ **Front / Rear Offset Input**
    - ■ Input a value for front and rear offset
  - ○ **Save Offset**
    - ■ Hit save once you are finished adjusting Front / Rear offsets
- **Add New Profile**
  - ○ Type the name of a profile and hit add to create a new profile.

3.2.3 Calibration
- Four numeric fields: **LF, RF, LR, RR** (Left/Right Front/Rear), in mm.
- **Save Calibration** – Saves and applies the per-corner trim values.
- **Zero All** – Sets all four corners back to 0 mm and saves.

3.2.4 Settings
Everyday controls:
- **Ride Height Range (mm)**
  - ○ Two fields: **Min** and **Max** for the **Home** page sliders.
  - ○ **Save** – Applies the new range.
  - ○ **Reset** – Returns to the default range (−60 to +60 mm).
  - ○ This only affects the UI range; the device still enforces its own internal safety limits.
- **Wi-Fi Info Update**
  - ○ Fields for **SSID** (network name) and **Password**.
  - ○ **Save Wi-Fi** – Saves the new credentials, shows a warning modal, and reboots the device.
  - ○ After a change, you will need to reconnect to Virtual Link on the new network.
- **Device info**
  - ○ Shows device **Serial Number**.
  - ○ Shows **Firmware version** and build number.
  - ○ Shows **Filesystem/UI version** and build number.
- **Reboot**
  - ○ Use this button to shut down and restart the Virtual Link.
- **Factory Reset**
  - ○ If confirmed, erases profiles, calibration, Wi-Fi credentials, and most settings, and returns Virtual Link to its default Access Point state (Virtual Link / password123).

Advanced / experimental (do not change unless instructed):

- **Infinity Adjust / chunking parameters**
- **Absolute Height Lock**

3.2.5 Update, Diagnostics, About, Help, Terms
- **Update**
  - Section to upload **Firmware** update files (.enc).
  - Section to upload **Filesystem/UI** update files (.enc).
  - Shows update status and reminds you to park and have the ignition off before updating.
- **Diagnostics**
  - Coming soon
- **About**
  - Static description of Virtual Link, basic compatibility info, and a link to the **Terms** page on the main website.
- **Help**
  - FAQ entries you can expand for more detail.
  - Link to the Pinnatec **Support** page.
- **Terms**
  - Full Terms of Service text.
  - Includes an acknowledgment control.

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4. First-Time Setup

4.1 Set your baseline with Calibration

Do this once before building or tuning any ride-height profiles.

Step 1 – Establish your current baseline

1. Park on flat, level ground, and remain in park.
2. Start the engine, make sure the **parking brake is off**, and set **Audi Drive Select to Comfort**.
3. On the MMI Drive Select screen, find the **"raise"** button in the top-left corner and press it.
   - Wait until the car finishes raising and the arrows stop blinking.
4. Press **"lower"** and wait again until the car finishes lowering and the arrows disappear.
5. Stay in **Comfort** mode, then turn the car **off**.
6. Step out, walk around the car, and take note of how each wheel sits in the arches.

This is your current factory-style baseline with Virtual Link installed.
- If you are **happy** with how the car sits here, you can **skip to Section 4.2**.
- If you want to change corner height, side-to-side lean, front-to-rear rake, or set a new overall baseline height, continue below.

Step 2 – Prepare Virtual Link for calibration

1. Open the **Home** page in the web app.
2. Make sure both **Front** and **Rear** sliders are set to **0 mm**:
   - If they are not, manually drag each slider to **0 mm**, then tap **Save Profile**.

This ensures calibration is done from a clean 0 / 0 starting point.

Step 3 – Adjust the baseline on the Calibration page
1. Open the **Calibration** page from the menu.
2. You'll see four fields in millimeters (mm):
   ○ **LF** – Left Front
   ○ **RF** – Right Front
   ○ **LR** – Left Rear
   ○ **RR** – Right Rear

These values define your **new zero point** for each corner. When any profile is set to **0 mm Front / 0 mm Rear**, the car will aim to sit at the stance you set here. If you want to change how the car sits at "zero" (per corner, side-to-side, or front/rear):
- Make **small changes** at a time:
  ○ **Positive** values **raise** that corner.
  ○ **Negative** values **lower** that corner.
- Tap **Save Calibration**.
- Repeat **Step 1** of this section to establish your new baseline

Repeat:
    Adjust Calibration → Save Calibration → re-level → walk around and re-check
until the car:
- Sits straight side-to-side, and
- Sits at the overall baseline height you want for **0 mm Front / 0 mm Rear**.

If you make it worse or get lost
- Tap **Zero All**, then tap **Save Calibration**.
- Re-level the car using the raise → lower sequence above.
- Confirm you're back to a neutral baseline before trying again.

Once you're happy with how the car sits with Calibration applied, treat this as your **"home position."**
All future profiles (Home / Presets) layer on top of this baseline, so get Calibration dialed in **before** you start building aggressive ride-height presets.

4.2 Create everyday profiles
Once Calibration is dialed in (or you've decided to keep the factory baseline), set up your profiles.

Step 1 – Create one or more everyday profiles
1. On **Presets**, use **Add New Profile** to create everyday setups, for example:
   ○ **Baseline –** set to 0mm,0mm so you have a good baseline with no offset
   ○ **Daily** – mild drop from Baseline.
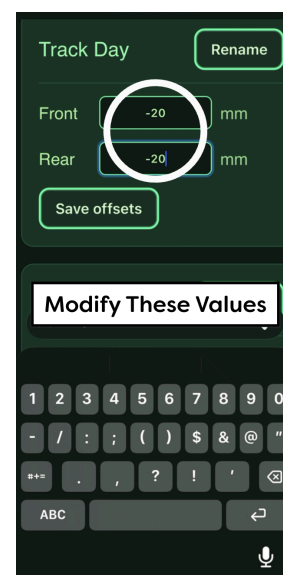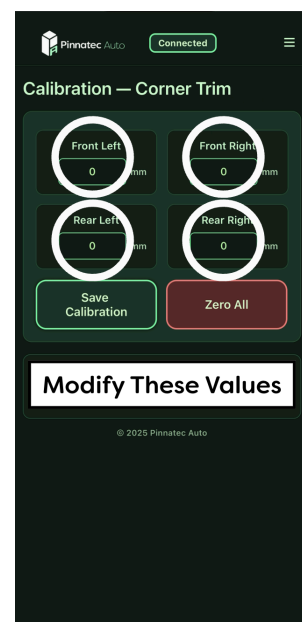
- ○ **Sport** – a bit lower and more aggressive.
- ○ **Show** – lowest stance you're comfortable with (for parking / shows).
- ○ **Winter / Travel** – higher than Baseline, if desired.
- ○ **Monster Truck** – for getting out of sticky situations
2. Start conservatively:
   - ○ Use small changes relative to Baseline (e.g. **−10 to −20 mm** front/rear, not giant jumps).
3. Set the **Front / Rear Offset Inputs** for each profile and tap **Save Offset**.

==Remember the ~65 mm rule from Section 1.4:==
- ● ==Avoid creating profiles that are more than about **65 mm apart** in one jump from where the car currently is.==
- ● ==If you want a very big total change, plan to use intermediate profiles or smaller steps with the sliders instead of going all at once.==

Step 2 – Test profiles at low speed

Once you've created a few profiles:
- ● In a safe, open area at low speed:
  - ○ Select each profile from the **Home** page (or via Mode Detection once mapped in 4.3).
  - ○ Let the car finish moving and settling at each height.
  - ○ Have an observer watch from outside if possible and call out what the car is doing as you switch.

Check for each profile:
- ● No rubbing or contact.
- ● Ground clearance looks reasonable for your roads and speeds.
- ● No new warnings or red suspension errors that stay on.

If a profile feels too aggressive or causes warnings:
- ● Raise it a bit (less negative / more positive mm),
- ● Re-test in small steps, keeping each change within ~65 mm at a time,
- ● Or retire that profile and stick to safer ones.

You can always fine-tune later:
- ● Use the sliders on **Home** to find a "just right" height,
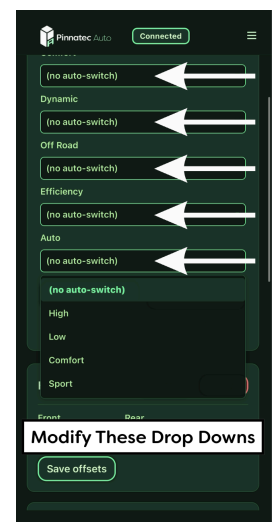- ● Then go back to **Presets** and update that profile's Front / Rear offsets to match.

4.3 Map drive modes and enable Mode Detection

(optional, but recommended)

Mode Detection lets you assign different profiles to different drive modes in **Audi Drive Select**.

Step 1 – Map drive modes to profiles

1. On the **Presets** page, scroll to the **Mode mapping** section.

2. For each mode you care about (**Comfort, Dynamic, Off Road, Efficiency, Auto**):
   ○ Choose a profile from the dropdown, or
   ○ Select **"no auto-switch"** if you don't want that mode doing anything.
3. Tap **Save Mapping** to apply your changes.
4. If you ever want to strip everything back, use **Clear All** so no modes auto-switch.

==Note on Audi "Individual" mode:== In Audi "Individual", you can choose a suspension setting (e.g. Comfort or Dynamic) inside the Individual menu. Virtual Link follows that suspension setting. For example:

● If Individual's suspension is set to **Comfort**, Virtual Link treats it like **Comfort** and will use your Comfort mapping (if one is configured).
● If Individual's suspension is set to **Dynamic**, Virtual Link treats it like **Dynamic** and will use your Dynamic mapping.

So your Comfort/Dynamic mappings still matter for how "Individual" behaves.

Step 2 – Turn on Mode Detection and verify it
1. Go to the **Home** page.
2. Confirm the **connection pill** is **Connected**.
3. Turn **Mode Detection ON** using the button.
4. While parked, use the Audi MMI to scroll through drive modes (Comfort → Dynamic → Auto, etc.):
   ○ The **drive mode label** in the app should match the mode shown in the cluster.
   ○ The **active profile name** should change according to the mappings you set.
   ○ The **Sliders** should shift to the values set to each profile.

If something doesn't line up (wrong profile, no change, incorrect mode label):
● Turn **Mode Detection OFF**.
● Go back to **Presets**, adjust the mappings, **Save Mapping**, then re-test with **Mode Detection ON.**

If you prefer full manual control and don't want auto-switching at all, simply leave **Mode Detection OFF** and pick profiles yourself from the Home page dropdown. Your profiles will no longer change with the drive modes regardless of if auto switching is enabled in the presets page.

4.4 Set your safe slider limits (Ride Height Range)

(optional, but recommended)
This step keeps the sliders from going lower (or higher) than you've proven the car is happy with.
Find your practical lower limit
● While parked on flat ground, in a known-good profile (Baseline / Daily) with Calibration done:
   ○ Lower the car **−10 mm** at a time.
   ○ After each step, let the car finish moving and check:
      ■ No new warnings or red suspension errors
● If **"raised"** in the MMI greys out or a suspension warning appears:
   ○ Raise the car back up toward 0 mm until things look normal again.
● The **last clean value above where problems started** is your practical **lower limit**. Note that Front/Rear mm value.

Pick a reasonable upper limit
- ● As a general rule, do **not** go more than about **6" (~150 mm)** above the **true lower limit**.
- ● Most users stay within the default **−60 to +60 mm** or a narrower band they're comfortable with.

Set Min / Max in Settings
- ● Go to **Settings → Ride Height Range (mm)**.
- ● Set:
  - ○ **Min** = your chosen lower limit (or slightly higher for extra safety).
  - ○ **Max** = your chosen upper limit (within what you've safely tested).
- ● Tap **Save**. Use **Reset** to go back to the default −60 / +60 mm.

This only changes the **UI slider range**. The device still enforces its own internal safety limits and can clamp extreme requests.

4.5 Set Wi-Fi name and password

(optional, but good practice once you're comfortable)
Defaults
- ● **SSID:** Virtual Link
- ● **Password:** password123

You can keep these or change them to something unique.

Change Wi-Fi info
- ● **Confirm the engine is off and ignition is off**
- ● On **Settings → Wi-Fi Info Update**:
  - ○ Enter your new **SSID** (case-sensitive).
  - ○ Enter a secure **Password** you'll remember.
  - ○ Tap **Save Wi-Fi**:
    - ■ Confirm the warning **only** when parked with ignition off.
    - ■ The device will reboot.
- ● After reboot:
  - ○ Reconnect your phone/tablet/laptop to the **new SSID**.
  - ○ Open the app again via http://10.10.10.1 or http://virtual-link.local.

If you forget the new credentials
- ● You may need to use **Factory Reset** on the Settings page (Section 6.4) or the **Manual Hard Reset** procedure in Section 8.9 to restore defaults:
  - ○ **SSID:** Virtual Link
  - ○ **Password:** password123
- ● Factory Reset also erases profiles, calibration, and settings. Use it only as a last resort, with the car parked and the ignition off.

5. Everyday Use – How to Use Virtual Link Day to Day

5.1 Driving without opening the app (normal use)

Most of the time, you will **not** need to open the app.
Once you've finished First-Time Setup (Section 4):
- Virtual Link remembers:
  - Your **Calibration baseline**.
  - Your **active profile**.
  - Your **Mode Detection** setting and mappings (if enabled).

Day-to-day behavior:
- If **Mode Detection is OFF**:
  - The car always runs whatever **profile** was last active on the Home page.
  - Drive mode changes in Audi Drive Select **do not** change your Virtual Link profile.

- If **Mode Detection is ON**:
  - Changing Audi Drive Select modes (Comfort, Dynamic, Off Road, Efficiency, Auto) will:
    - Update the **drive mode label** in the app, and
    - Auto-switch to the mapped profile you set in Presets.
  - This works even with the app closed; Virtual Link runs on the car, not on your phone.

Before trusting any new setup in normal driving:
- Make sure you have:
  - Tested the profile at low speed.
  - Confirmed no warning lights stay on.
  - Verified clearance is safe for your typical roads and speeds.

If the car ever shows a red suspension warning or feels unsafe, follow the safety steps in Section 1.4.

5.2 When you *do* open the app – quick checks on Home

If you open the app to tweak something:

1. **Confirm the active profile**
   - Look at the **profile name** (Daily, Baseline, Show, etc.).
   - Use the dropdown to switch if you want a different starting point.
   - If you see an **"edited"** marker, it means the sliders don't match the last saved values yet.

2. **Adjust height**
   - Front / Rear sliders are in **mm**:
     - Negative = lower, positive = raise.
   - When you **release** a slider, the car moves toward that target (within internal safety limits).
   - You don't have to press *Save Profile* just to test a temporary height.

3. **Keep or discard the change**
   - Like the new stance? → **Save Profile** to store it for next time.

○ Don't like it? → **Reset** to jump back to the last saved values.

4. **Sanity check before you drive**
    ○ Stay within the ~**65 mm per-step** guideline from Section 1.4.
    ○ Make sure:
        ■ No new warning lights stay on.
        ■ No rubbing, contact, or obviously unsafe stance.

5.3 Updating profiles occasionally – Presets page

Use Presets when you want to:
- **Add or remove profiles**
    ○ Example: create *Winter* before a season, or delete *Show* if you never use it.

- **Refine existing profiles**
    ○ After testing on the road, set exact **Front / Rear offsets** that felt best.
    ○ Type those mm values into the profile's inputs and **Save Offset**.

- **Rename for clarity**
    ○ Make names match how you actually use them (e.g. *Daily – City*, *Daily – Highway*).

- **Adjust Mode Detection mappings**
    ○ Change which profiles are used for Comfort / Dynamic / Off Road, etc.
    ○ After changes, do a quick parked test:
        ■ Scroll through drive modes on the MMI and confirm the **profile** and **mode label** match your expectations

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6. Settings & Other Pages

6.1 Ride Height Range

On **Settings → Ride Height Range (mm)** you can set the minimum and maximum values for the car's offset.

Example:
○ **Min:** −40 mm
○ **Max:** +40 mm

What it does:
- Limits what you can select for offsets.
- Does **not** bypass the device's internal safety limits; the hardware can still clamp extreme requests.

If you're unsure how far to go:
- Use the defaults, or
- Use the limits you discovered when testing in **Section 4.4 – Set your safe slider limits**.

6.2 Wi-Fi Info (optional)

By default, Virtual Link broadcasts:

- **SSID:** Virtual Link
- **Password:** password123

On **Settings → Wi-Fi Info Update** you can change the network name and password:

- Enter a new **SSID** (case-sensitive) and **Password**.
- Tap **Save Wi-Fi** to apply; the device will reboot and you'll reconnect to the new network.

For the full step-by-step flow, see **Section 4.5 – Set Wi-Fi name and password**.

Only change Wi-Fi settings with the car parked and ignition off.

If you get locked out after a change, use the **Manual Hard Reset** in Section 8.9 as a last resort.

6.3 Update page – firmware & filesystem

On the **Update** page you can:

- Upload an encrypted **firmware** file (.enc).
- Upload an encrypted **filesystem** file (.enc).

Full **update** steps:

1. Park safely and fully turn the car OFF. Do not update while driving or with ignition on.
2. Visit https://pinnatecauto.com/software-updates/ and download the latest FW and FS files.
3. Connect to Virtual Link Wi-Fi, open the web app, go to Settings → Update.
4. Press Lock or Unlock once on the car key or door (don't skip this step).
5. In the **Firmware** section: **Choose File → select the FW → Upload Firmware**.
6. The Wi-Fi connection will typically drop during the update/reboot. This is normal. Wait briefly, then reconnect to Virtual Link Wi-Fi and return to the Update page. **Refresh the page.**
7. Confirm the FW Version shown on the Update/Settings footer matches what you uploaded. If it doesn't match; redo steps 4-7.
8. Press Lock or Unlock once on the car key or door (don't skip this step).
9. In the **Filesystem** section: **Choose File → select the FS → Upload Filesystem**.
10. The Wi-Fi connection will typically drop during the update/reboot. This is normal. Wait briefly, then reconnect to Virtual Link Wi-Fi and return to the Update page**. Refresh the page.**
11. Confirm the FS Version shown on the Update/Settings footer matches what you uploaded. If it doesn't match; redo steps 8-11.
12. Once both versions match, you're done. You can start the car and continue.

If you see integrity errors, "refusing downgrade," or repeated failures:

- Stop, do **not** keep trying random files,
- Contact support and include your firmware/filesystem versions from the page footer.

6.4 Factory Reset

Factory Reset is available in the Settings/Update area.

It will:

- Erase:
  - All profiles
  - All calibration values
  - Wi-Fi credentials
  - Most user settings
- Restore default Wi-Fi:

     ○ **SSID:** Virtual Link
      Password: password123

Use Factory Reset only when:

- You understand all configuration will be lost

Always perform Factory Reset with the car parked, ignition off, and only after reading the warning modal carefully.

6.5 Diagnostics, About, Help, Terms

Diagnostics

- Coming soon.
- Future versions may add live sensor data, logs, and other tools.

About

- Short description of Virtual Link and supported platforms.
- Basic company info and links to Terms and/or support.

Help

- FAQ entries for common questions (sliders, profiles, Calibration basics, Mode Detection, updates, etc.).
- Direct link to the Pinnatec support portal.

Terms

- Full Terms of Service as a standalone page.
- If there is ever a conflict between in-app wording and the website, the website Terms control (see **Section 1.2**).

6.6 Advanced features (do not change unless instructed)

Some Settings options are advanced/experimental, including:

- **Infinity Adjust / chunking parameters**
- **Absolute Height Lock** and mode baselines
- Any other tuning fields not documented in this guide

If you're not sure what a setting does, leave it at its factory default.

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7. Tips and Tricks

7.1 Keep a "panic" profile

Create and keep one profile (for example, "Baseline" or "Safe") that you rarely change:

- Use 0 mm / 0 mm or another stance you know is safe and fault-free.
- If something feels odd, switch back to this profile first and let the car settle.

7.2 Enable Offroad and Efficiency modes in MMI

If you don't have them already:

- Using OBDEleven or VCDS, enable the additional Drive Select modes (Offroad and Efficiency) in the MMI.

- This will let you map two additional suspension profiles in the Presets page.

7.3 Name profiles by how you actually drive

Instead of generic names, use labels that match real use:
- "Daily – City", "Daily – Highway"
- "Show – Static", "Show – Roll-in"

This makes it easier to pick a safe profile quickly when you're in a hurry.

7.4 Re-check after dealer visits or alignment

Any time the car has:
- Dealer suspension work
- Height sensor replacement
- Alignment with significant height changes

Do a quick check:
- Confirm Calibration still gives you the stance you expect.
- Confirm your key profiles still drive without rubbing or warnings.

7.5 Use Mode Detection where it helps

Mode Detection is great when:
- You clearly want different heights for Comfort vs Dynamic vs Off Road.
- You like the car to "just do the right thing" as you change modes.

It may be better left OFF when:
- You're troubleshooting or chasing a suspension issue.
- You want full manual control while testing new profiles.

7.6 Watch the Audi "raised" indicator

If the "raised" icon in the MMI goes grey or disappears:
- Check that Tire Change / Jack Mode is off.
- If it still won't come back, raise the car closer to your baseline and re-test.

A stubborn "raised" icon can be an early sign that a profile is too low or a single step change was too aggressive.

7.7 Take screenshots before big changes

Before major re-tuning:
- Screenshot your Presets and Calibration pages.
- Keep those images somewhere safe.

If you ever need to rebuild after a reset, you can quickly re-enter known-good values.

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8. Troubleshooting & Support

8.1 LED status reference

The status LED on the Virtual Link (blue + green) gives a quick view of what the device is doing.

LED Indicator

Normal / boot states
- **Off**
  - Virtual Link is asleep or not powered (car fully off and not recently woken).
- **Blue triple blip** (three short flashes, then a pause, repeating)
  - Boot / reboot / initialization in progress.
- **Blue slow blink** (~1s on / 1s off)
  - Wi-Fi started, waiting for the user to connect.
- **Solid green**
  - Normal operation – system initialized, vehicle signals present, and Wi-Fi/connection OK.

Setup / feature states
- **Green slow blink** (~1s on / 1s off)
  - First-time setup / uncalibrated state.
- **Green fast blink** (~200ms on / 200ms off)
  - Mode Detection active.

Update / error / reset states
- **Blue double blip** (two short flashes, pause, repeat)
  - OTA update in progress (firmware or filesystem).
- **Solid blue**
  - Error state – typically an OTA/update/file problem (bad or incompatible .enc).
- **Blue fast blink** (~200ms on / 200ms off)
  - Vehicle signals missing.

8.2 Connection issues

Can't see the "Virtual Link" Wi-Fi network:
- Wake the car (lock/unlock, open a door, or press any interior button).
- Stand close to the car.
- Try another phone/tablet/laptop.
- If you previously changed SSID, look for that name instead of Virtual Link.
- If the LED is not behaving as expected, see **8.1 – LED status reference**.

Connected to Wi-Fi but the page will not load:
- Confirm Wi-Fi is actually connected (not on LTE/5G or another network).
- Try both: http://10.10.10.1 and http://virtual-link.local.
- Try another browser or device.
- Toggle Wi-Fi off/on on your device and reconnect.
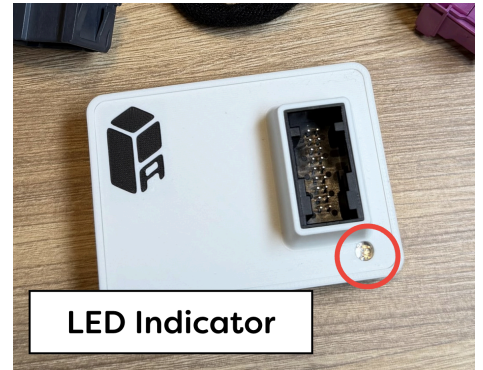
- Turn off mobile data.

Connection pill shows "Disconnected":
- Confirm you're still on the Virtual Link Wi-Fi / correct SSID.
- Disconnect and reconnect.
- Wake the car if it has gone to sleep; wait a few seconds.
- Refresh the page.
- Don't trust edits made while it says **Disconnected** – re-apply once it shows **Connected**.

8.3 Profiles & sliders
"Save Profile" is greyed out:
- Normal when the sliders already match the saved values.
- Nudge a slider slightly; **Save Profile** should become active.

Profile dropdown is empty or says "Select profile":
- Go to **Presets**, create at least one profile, and set offsets.
- Return to **Home** and select it from the dropdown.

Sliders stop at unexpected limits:
- Check **Settings → Ride Height Range (mm)** and **Section 4.4** – your UI range may be narrower than the defaults.

8.4 Mode Detection
If Mode Detection doesn't behave as expected:
- On **Home**, make sure the **Mode Detection** toggle is **ON**.
- On **Presets**, confirm each mode you care about is mapped to a valid profile.
- Confirm the Audi cluster is actually changing modes (Comfort, Dynamic, etc.).
- If you deleted a mapped profile, re-assign that mode to a new profile.
- If you're in an unsaved "edited" state on Home, **Save** or **Reset** first, then re-test.
- If you're in **Audi Individual**, remember that Virtual Link uses whichever suspension setting is selected inside the Individual menu (Comfort or Dynamic). If Individual is set to Comfort suspension, your **Comfort** profile mapping will apply; if set to Dynamic, your **Dynamic** mapping will apply.

If it still feels inconsistent, turn Mode Detection **OFF**, stay on a known-good profile (e.g. Baseline / Daily), and contact support.

8.5 Calibration
Changes don't seem to take effect:
- After **Save Calibration**, drive the car forward/back a short distance.
- Re-check visually.

Car still leans after careful calibration:

- Double-check you used the correct sign (positive = raises that corner, negative = lowers).
- If lean persists, suspect a mechanical problem (air bag, sensor, shock, or line) rather than software.
- You can always **Zero All → Save Calibration** and return to a neutral baseline before further diagnosis.

8.6 Updates & Wi-Fi configuration

OTA update fails, downgrade/integrity error:
- Confirm the .enc file is specifically for your device and firmware generation.
- Confirm that the .enc file is a higher version number than your current version.
- Make sure the car is parked, ignition off, and the electrical system is stable.
- Always update **firmware first**, then filesystem/UI to the matching version.
- If you see repeated errors or "refusing downgrade", stop and contact support instead of trying random files.
- During a healthy update you should see the **blue double-blip** OTA LED pattern (see **8.1**).

Locked out after changing Wi-Fi:
- Confirm you are on the network you told Virtual Link to join, or back on the default Wi-Fi if a reset was performed.
- If you cannot recover connectivity, follow the **Manual Hard Reset** guidance in Section 8.9 and your install documentation, then re-do **First-Time Setup**.

8.7 Safety / warnings

For full safety procedures, see **Section 1.4**. Quick summary:

If you see red suspension warnings or anything feels unsafe:
- Safely pull over and stop.
- In the app (if connected), switch back to a conservative profile or your Baseline and let the car settle.
- Turn the car fully off, wait 30–60 seconds, then restart and see if warnings clear.

If faults do not clear:
- Note the exact warning messages and what you were doing.
- Remove Virtual Link (unplug its harness and reconnect OEM harness per the hardware guide).
- If problems remain with Virtual Link removed, the cause is elsewhere in the vehicle.

Virtual Link is a stand-alone unit; it does not flash, tune, or permanently modify factory ECU software.

8.8 Manual Soft Reset (power cycle)

Use this step before trying the Section 8.9 **Manual Hard Reset** or Section 6.4 **Factory Reset**.
It is safe to unplug and re-plug Virtual Link with the car battery connected as long as the vehicle is fully off. You only need access to the Virtual Link module and its 18-pin connector.
To power-cycle the module through the app:
1. Park the car safely and turn the ignition fully **OFF**.

2. Find the Reboot button in the Settings Page, press it.
3. Wait 15 seconds.
4. Wake the car (lock/unlock, open a door, or press a button) and reconnect to Virtual Link Wi-Fi.

To power-cycle the module manually:
5. Park the car safely and turn the ignition fully **OFF**.
6. At the module, press the latch and unplug the Virtual Link 18-pin connector.
7. Wait 15 seconds.
8. Plug the 18-pin connector back into Virtual Link until it clicks fully into place.
9. Wake the car (lock/unlock, open a door, or press a button) and reconnect to Virtual Link Wi-Fi.


Disconnect

This gives the module a clean power cycle without touching the battery or erasing any profiles, calibration, or Wi-Fi settings.

8.9 Manual Hard Reset
Use this only if the module/app is unresponsive and normal power cycles or Wi-Fi changes have not helped.
Procedure:
1. Park the car safely.
2. Turn **ignition ON** with the **engine OFF**.
3. Pull and hold the **high-beam stalk** toward you (flash-to-pass position).
4. While holding the stalk:
   - Use Audi Drive Select to switch between **Dynamic** and **Comfort** three times
     (Dynamic → Comfort → Dynamic → Comfort).
5. Release the high-beam stalk.
6. Turn the ignition fully **OFF**, and wait at least **1 minute** so the system can fully power down.
7. Wake the car again (lock/unlock or open a door) and reconnect to Virtual Link.

Pull Towards You
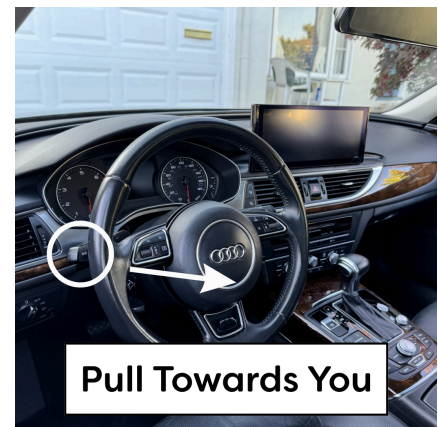
This performs a factory reset of Virtual Link and can clear certain stuck states. You will need to setup virtual link as a new device again starting in Section 4.

8.10 When to contact support
Stop experimenting and contact support if:
- New warning lights appear and do not clear after reverting to a safe profile and power-cycling.
- Ride height looks drastically different or unsafe compared to what you commanded.
- Values refuse to save, mappings refuse to stick, or the app behaves inconsistently.

Use: **https://pinnatecauto.com/support/**

Include when you can:

- Vehicle model/year.
- What you were doing (e.g. "Switched from Daily to Show, front −35 mm, Dynamic mode").
- Screenshots/photos of:
    - Virtual Link screen (Home / Presets / Settings / Calibration, whichever applies).
    - Cluster + warning messages.
    - The car's stance if height is the concern.
- If available:
    - Firmware and filesystem versions (from Settings/Update).
    - Device serial number.