VNC Automotive
Connectivity that moves

Smartphone Control Guide

Cobalt Cube®

Contents

1 Introduction

The Smartphone Control app is designed to be used in conjunction with iOS and Android devices that have the Cobalt Link+ app installed. This connection will allow you to view and control the apps running on your mobile device from the Cobalt Cube. For more information on the Cobalt Link+ apps for iOS and Android please contact your VNC Automotive technical representative.

2 Additional hardware requirements

In addition to the Cobalt Cube, an iOS or Android device running the Cobalt Link+ app is required.

3 Connectivity and set-up instructions

3.1 Wi-Fi with Wi-Fi hotspot

Smartphone Control can control your device wirelessly via a Wi-Fi hotspot running on Cobalt Cube. Wi-Fi hotspot on Cobalt Cube is the preferred option for wireless control of the smartphone. This gives the integrator the option to keep a vehicle's router available as a separate network. The hotspot configuration also allows a mobile device in the vehicle to connect to both a mobile data network and the Wi-Fi hotspot provided by the Cobalt Cube.

Note: It is possible to set up a Wi-Fi hotspot on a smartphone as the basis of the network used for connecting the Cobalt Cube and the phone, however this approach has not been officially tested at this time.

Find the "Wi-Fi Hotspot" section in Cobalt Cube admin settings and enable the hotspot. Once enabled, Smartphone Control must be opened for the hotspot to start.

Figure 1: Wi-Fi hotspot section

For regular users of the app once the vehicle is in service, the name and password of the created "Wi-Fi Hotspot" can be viewed, but not edited, in the My Settings app.

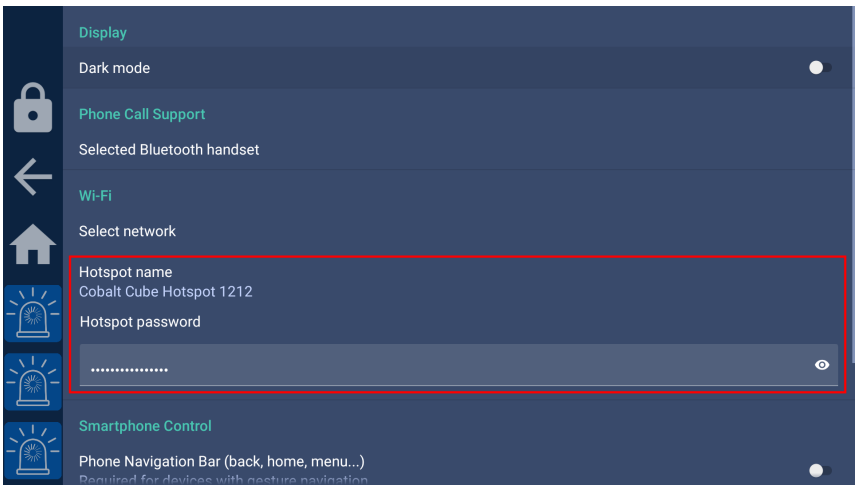

Figure 2: Wi-Fi Hotspot name and password

Once a "Wi-Fi Hotspot" is shown in the My Settings app, a mobile device can be connected to this hotspot, as shown in Figure 2.

For Android, it is important to connect to the hotspot using the Cobalt Link+ mobile app, rather than System Settings. Connecting to the hotspot using System Settings will cause the device to lose its mobile data connection. Enter the hotspot name and password into the Wi-Fi details dialog, which will appear when the broadcast button is pressed.

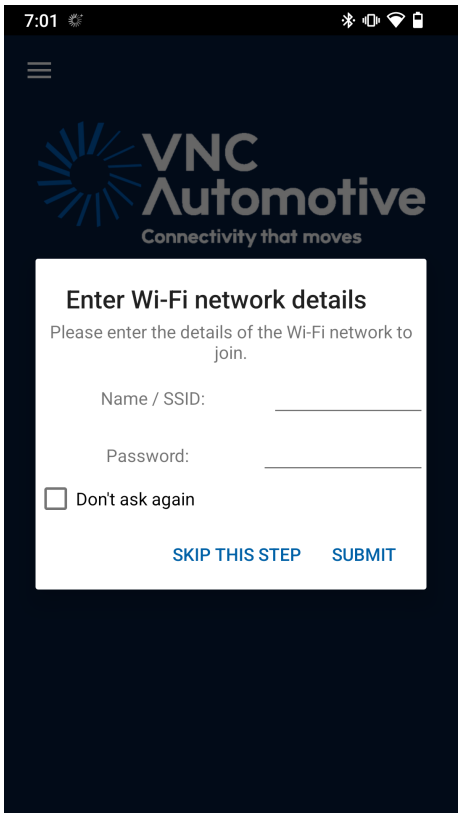

Figure 3: Cobalt Link+ app Wi-Fi details dialog

For iOS, connect to the hotspot using the Wi-Fi section in the Settings app. Select the hotspot by name from the list of networks.

3.2 Wi-Fi with Router

There must be a network to which both the mobile device and the Cobalt Cube are connected. The Cobalt Cube should be connected using an Ethernet cable from its "ETHERNET" port to the router. The mobile device should be connected to the network in the same way as with a hotspot, using the Cobalt Link+ mobile app instead of Settings.

3.3 USB (Android only)

Android devices can be connected to Smartphone Control via a USB cable. The device's USB port must be connected to the Cobalt Cube's "HOST" port.

3.4 Touch Control

Smartphone Control offers two touch control methods: Bluetooth and USB. The following table shows which devices are compatible with each method:

Touch Control Type	iOS	Android
Bluetooth	✓	✓
USB		✓

3.5 Working with the Smartphone Control app

Smartphone Control opens to the landing screen shown in Figure 4.

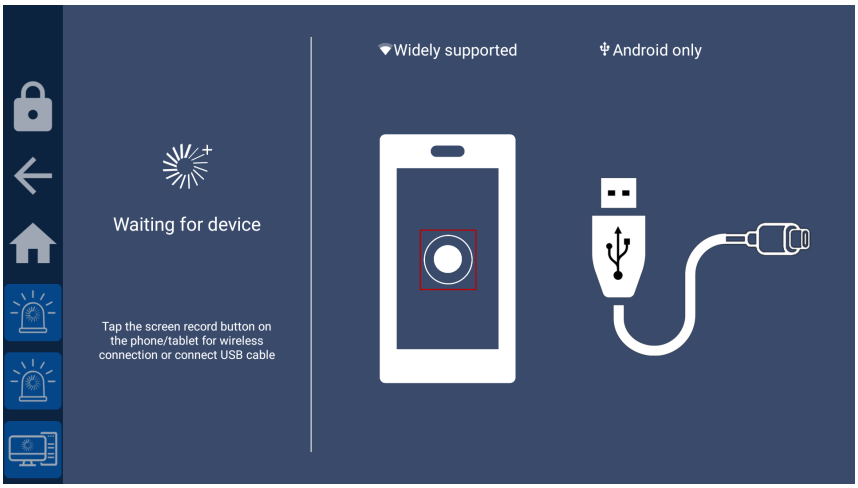

Figure 4: Smartphone Control Link+ device selection screen

Available mobile devices will appear on the right-hand side of the screen when they are detected. If no devices appear, make sure that your device is available for connection with one of the methods in section 3. For wireless connections, the mobile device must have the Cobalt Link+ app running (this can be in the background, and can be checked in the device's notifications). For USB connections, there must be a USB cable connecting the mobile device with the Cobalt Cube.

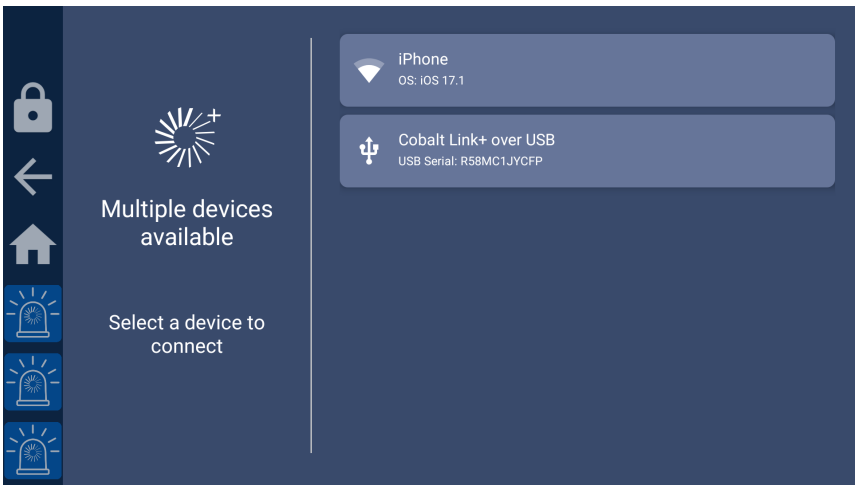

Figure 5: Multiple available Cobalt Link+ devices

The icon to the left of each device shows whether it will be connected with USB or Wi-Fi. The mobile device will be connected for screen mirroring upon selection, but must also be connected via either Bluetooth or USB to enable remote control. If the selected device is new and connects via USB, the app will automatically establish remote control connection via USB and redirect the user to the projection screen Figure 11 to start screen mirroring.

Otherwise, for devices that require Bluetooth for remote control, see section 3.5.1.

3.5.1 Connecting Bluetooth

For devices requiring Bluetooth for remote control, selecting a device will navigate forwards to one of two pairing screens, this is so we can best optimise the connection process for the device type. Android devices will first use the device side pairing as described in section 3.5.2 and iOS devices will only use the pairing screen seen in section 3.5.3.

3.5.2 Device Side Pairing

Device side pairing is a streamlined pairing process that improves the connection experience on Android devices.

Figure 6: Device side Bluetooth pairing screen

The Cobalt Cube will send a pairing request to the Cobalt Link Plus app, accept this request and then the system pairing dialog will be shown. For your security, please check that the pairing code in the dialog on the device matches with the code shown on the the Cobalt Cube screen as seen in Figure 7 before accepting the dialog. Once the device is paired to

the Cobalt Cube, Smartphone Control will start screen mirroring and touch control will be available.

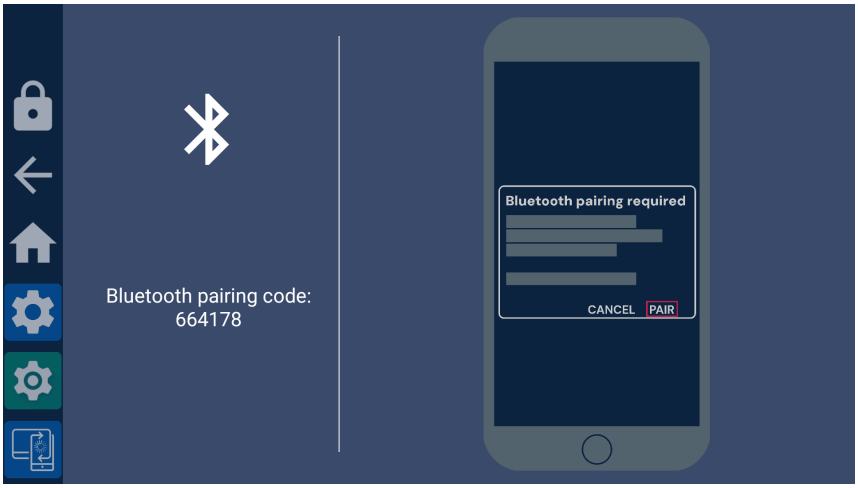

Figure 7: Showing the Bluetooth pairing code

If the request on the mobile device is declined, or if the pairing attempt fails, it will automatically retry up to a maximum of two attempts. After this, if no Bluetooth connection has been established, Smartphone Control will fallback to using manual pairing as described in section 3.5.3.

Note: If the device is already paired over Bluetooth to the Cobalt Cube when it first connected to Smartphone Control, a new pairing will need to be made to allow touch control over Bluetooth. In this case manual pairing will be used instead of device side pairing.

3.5.3 Manual Pairing

Figure 8 if there are no devices currently paired, or Figure 9 otherwise. It is important that Smartphone Control connects to the same device for mirroring and remote control. If a different device is selected for the Bluetooth connection, use the “Manage known devices” setting shown in Figure 18 to clear the device data.

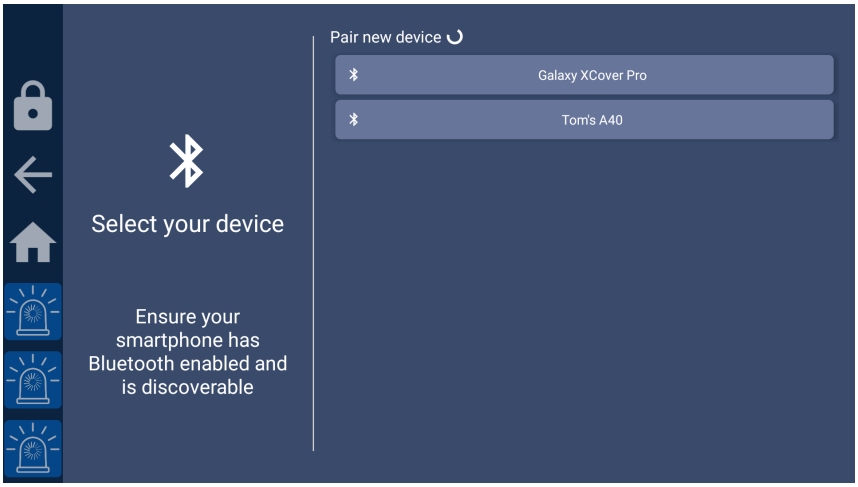

Figure 8: Bluetooth device selection screen when no devices are paired

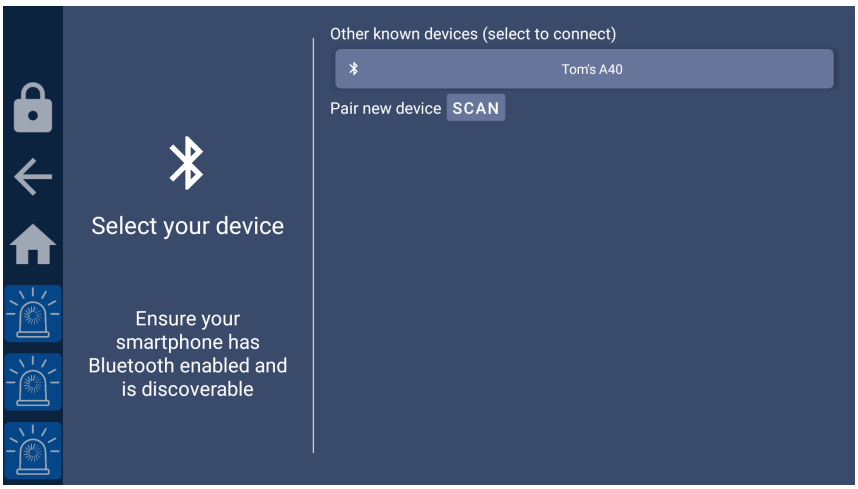

Figure 9: Bluetooth device selection screen when at least one device is paired

If a device is already paired, it can be selected in the “Other known devices” list shown in Figure 9. Otherwise, it will show in the “Pair new device” list. The “SCAN” button must be pressed for this list to populate if there are already paired devices. Selecting an unpaired device will cause Smartphone Control to attempt to pair it with the Cobalt Cube. This is shown in Figure 10.

Note: In rare cases when using manual pairing with Android 13+ devices, Bluetooth may connect but without touch control. This can be fixed by going into Bluetooth settings on the Android device, clicking on the connection to the Cobalt Cube and enabling ”Input device”.

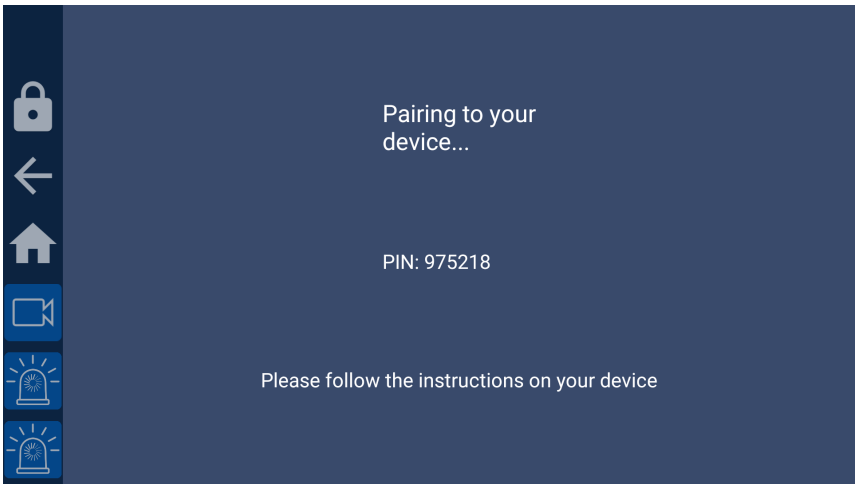

Figure 10: Bluetooth device pairing

After pairing to a new device, or selecting a known device, Smartphone Control will complete the connection. Follow the instructions on Smartphone Control and the Cobalt Link+ mobile app to begin screen mirroring.

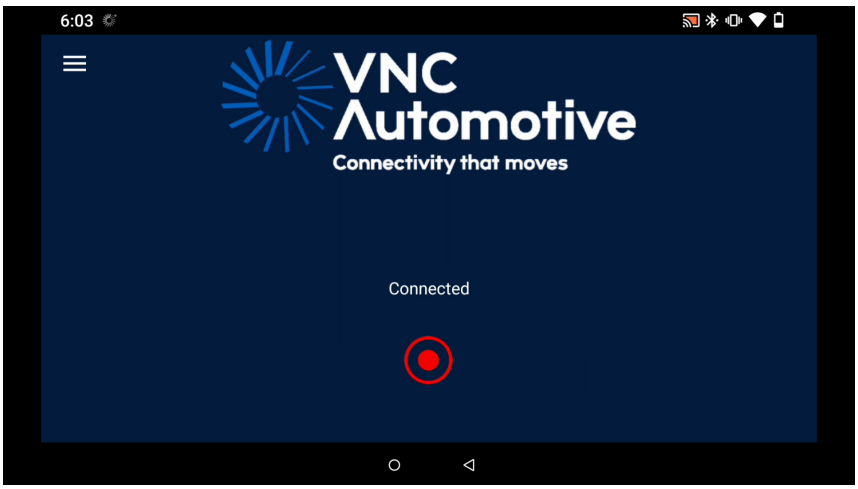

Figure 11: Projected device screen

To stop mirroring, press the broadcast button again if using Wi-Fi, or unplug the USB cable from the mobile device. Pressing back or home will only exit Smartphone Control, but the mirroring connection will be maintained in the background.

If the mobile device is an iPhone or iPad, a dialog will show to remind the user that they should rotate their device so that it matches the orientation of the vehicle screen. To prevent this dialog appearing every session, select “DON’T SHOW AGAIN”.

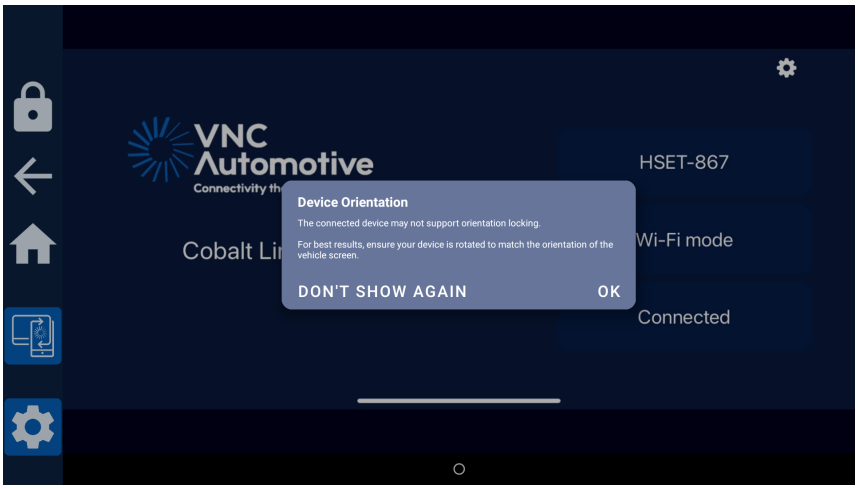

Figure 12: Device orientation reminder

4 Auto-connection

When opened into the screen in Figure 5, Smartphone Control will automatically connect to known devices when they become available. The most recently connected device will be prioritised. The user will be alerted to the auto-connection by the text shown in Figure 13.

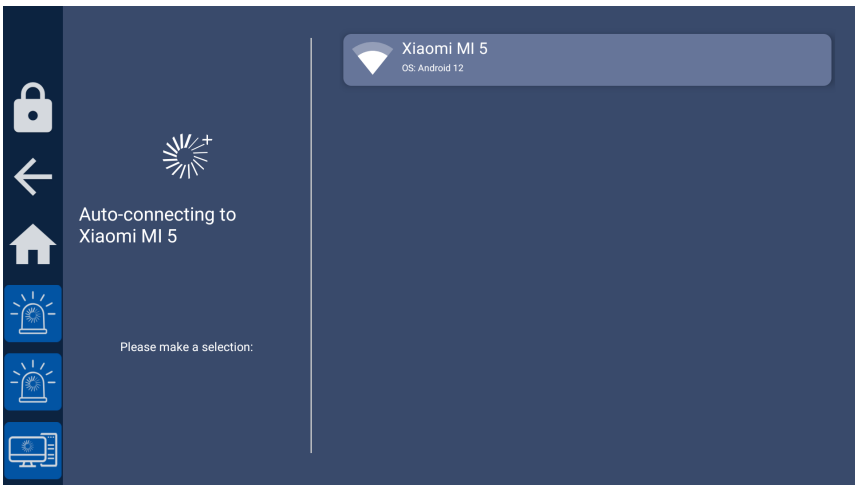

Figure 13: Smartphone Control Auto-connection

You do not need to do anything in this stage; Smartphone Control will automatically connect and start the session.

5 Authentication (optional)

For enhanced security, authenticated connections can be enabled by specifying credentials in the activation code (see “Product activation” in the Getting Started Guide). This will require those same credentials to be entered in the Cobalt Link+ mobile app on first use.

This is an optional feature - however, leveraging authentication enhances the overall security of sessions. For those seeking assistance or specific password options, contacting the VNC Automotive technical representatives is recommended.

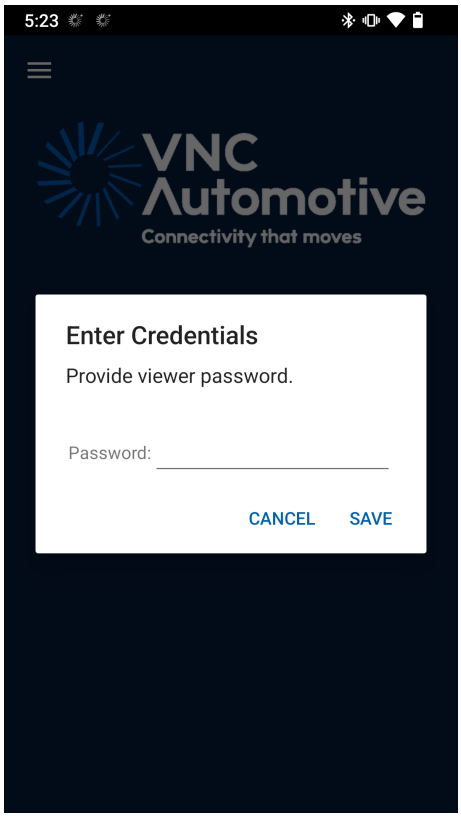

Figure 14: Cobalt Link+ app credentials entry

6 Interacting with the mobile device

When a session is active and touch control is enabled, the mobile device can be controlled with through the mirrored screen on the head unit.

6.1 Android

While Cobalt Link+ natively supports multitouch on Android, it is not supported by all vehicle models. We recommend checking the specifications of the vehicle model if multitouch capabilities are required.

6.2 iOS

Cobalt Link+ on iOS supports single finger touch gestures only. Nevertheless double tap and drag can be used in many maps apps to zoom in or out. Also, AssitiveTouch can be used to send multitouch gestures and other inputs to the iOS device. For more details on setting up AssitiveTouch see the "Touch Input" tutorial in the Cobalt Link+ app. It can be found by navigating to "Settings" -> "Tutorial" -> "Touch Input" in the Cobalt Link+ app.

7 Zoom mode

Sometimes, it is not possible for Smartphone Control to lock the orientation of the mobile device (see section 8.4). This applies to all iPhones and iPads. In rare cases, it also applies to Android devices when certain apps are in the foreground.

A result of this is that the screen is not used effectively when the mobile device is oriented differently to the vehicle screen e.g. the mobile device is in portrait and the vehicle screen is landscape. In this case, a zoomed-in mirror of the mobile device is also presented (see Figure 15). This offers more precise control of the mobile device.

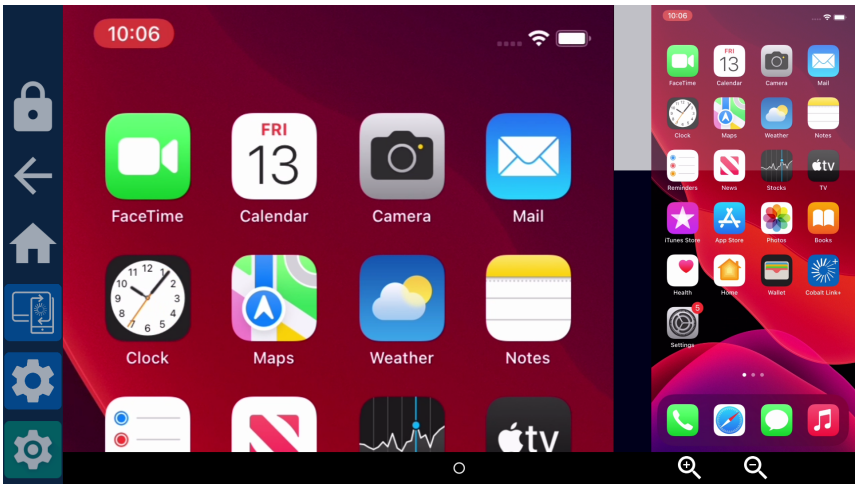

Figure 15: Zoom mode

On the right is the 'overview' pane, which shows the whole screen of the mobile device. On the left is the 'zoom' pane, which shows a zoomed-in portion of the mobile device. The translucent white rectangle over the overview indicates which portion is magnified. This is called the 'minimap'.

Between the two panes is the scrollbar. This can be dragged up and down to change the portion of the screen that appears in the zoom pane. Tapping anywhere in the scrollbar outside the scroll thumb will scroll immediately to that position.

The zoom level can be controlled by the +/- buttons in the bottom-right of the screen. Note that the phone navigation bar (section 8.1) must be enabled to use these buttons.

By default, the zoom pane is at maximum zoom and scrolled to the top. Figure 16 shows the zoom pane zoomed out and scrolled to the bottom.

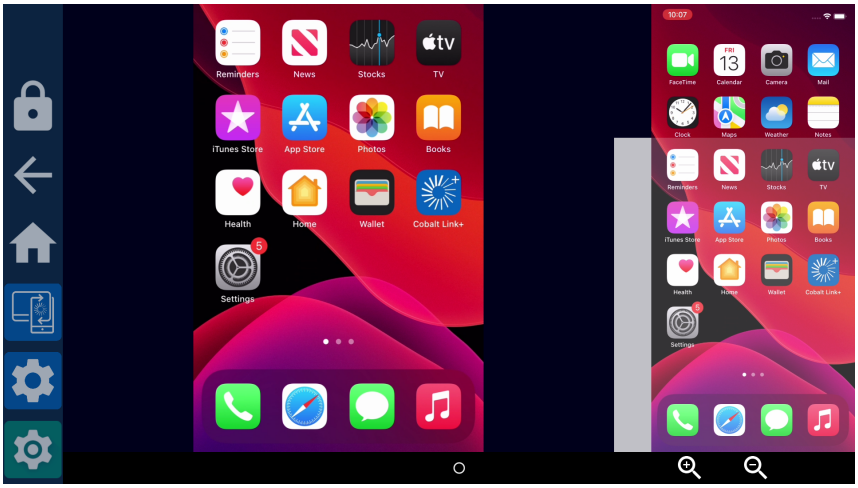

Figure 16: Zoom mode, zoomed out and scrolled to the bottom

Any changes made to the scroll or zoom settings will be saved automatically, so that they can be used from the start of the next session.

The mobile device can be controlled by touching either the zoom pane or the overview pane. However, only one pane can be interacted with at once. Do not attempt to scroll the zoom pane with the minimap, as this will be interpreted as touches in the overview pane.

Note: there is no zoom mode support for portrait vehicle screens with landscape mobile devices.

8 Smartphone Control settings

User-facing settings can be accessed in the My Settings app, shown in Figure 17.

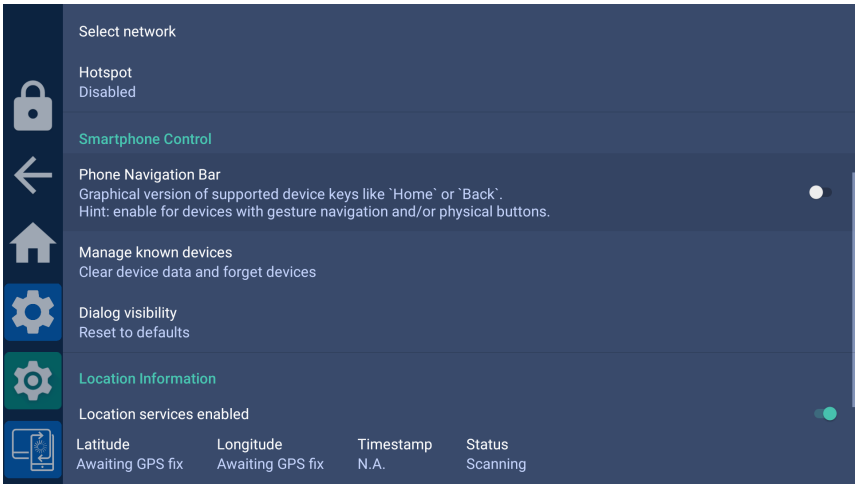

Figure 17: Smartphone Control app settings

8.1 Phone navigation bar

This setting is used to enable virtual device keys for the connected mobile device. This is disabled for Android and enabled for iPhone and iPad by default.

Additionally, on the next successful Link+ session with remote control via USB, this setting will be automatically disabled, allowing the app to revert to USB for remote control. This

ensures the app always uses the most efficient connection type while providing flexibility for user preferences.

8.2 Manage known devices

This interface shows which devices have previously been connected to Smartphone Control, to show more detailed information (as seen in Figure 19), press and hold on the device name.

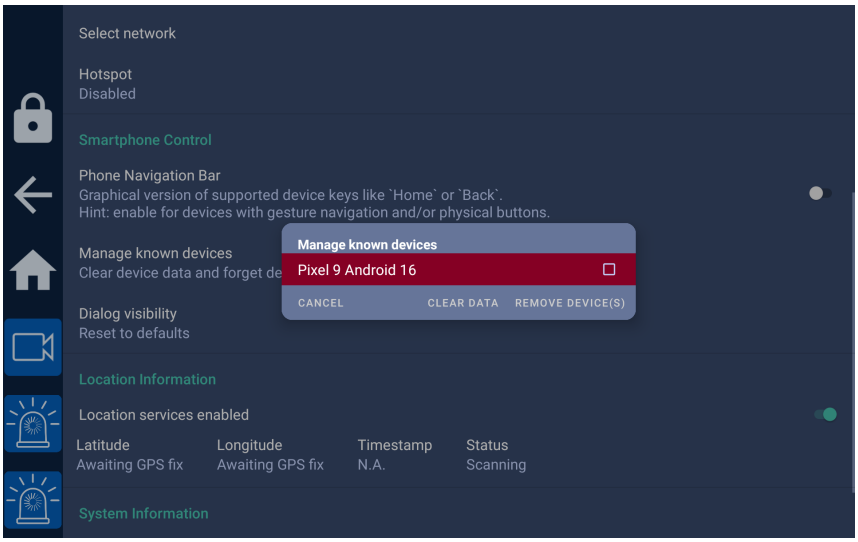

Figure 18: Manage known devices

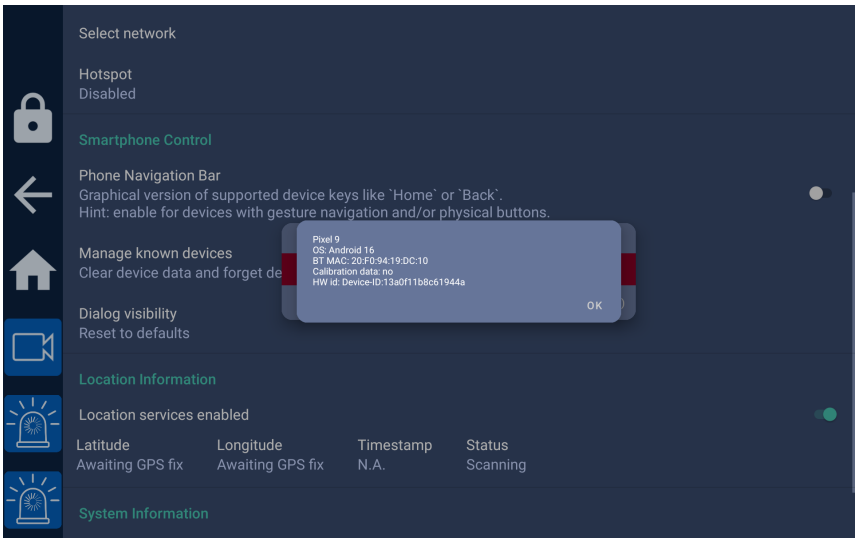

Figure 19: Show detailed device information

Manage known devices can also be used to forget Cobalt Link+ devices which have previously been connected and/or clear their data (such as iOS device calibration data). “Clear Data” clears app specific data for iOS devices. “Remove device(s)” forgets devices for auto-connection and optionally allows Bluetooth unpairing (Figure 20).

If touch control of the mobile device is not behaving as expected, do the following:

1. Unpair the device using the “Manage known devices” setting.
2. Unpair the Cobalt Cube from the Bluetooth settings page on the mobile device.

This will prompt a new pairing request the next time the mobile device is selected, which should restore touch control to its correct behaviour.

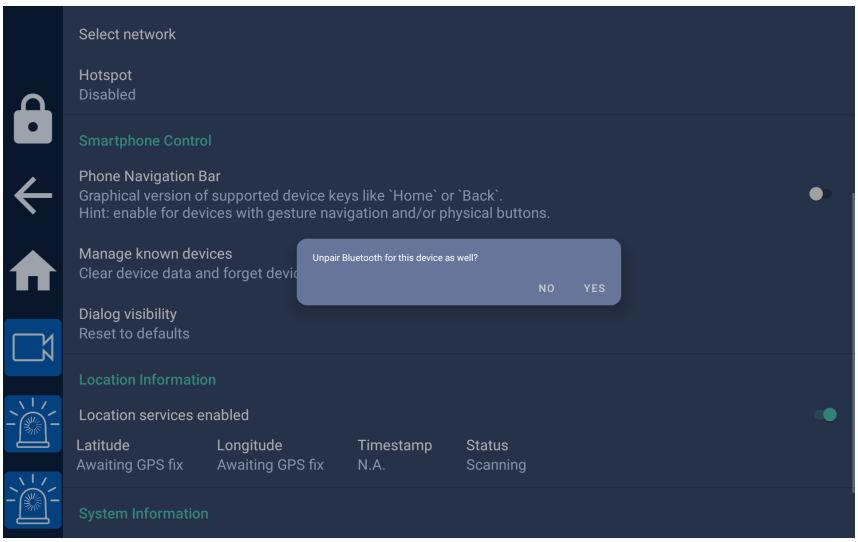

Figure 20: Unpair Bluetooth prompt

Admin-specific settings can be accessed through the Smartphone Control icon shown in app settings (see “Application specific settings” in the Getting Started Guide).

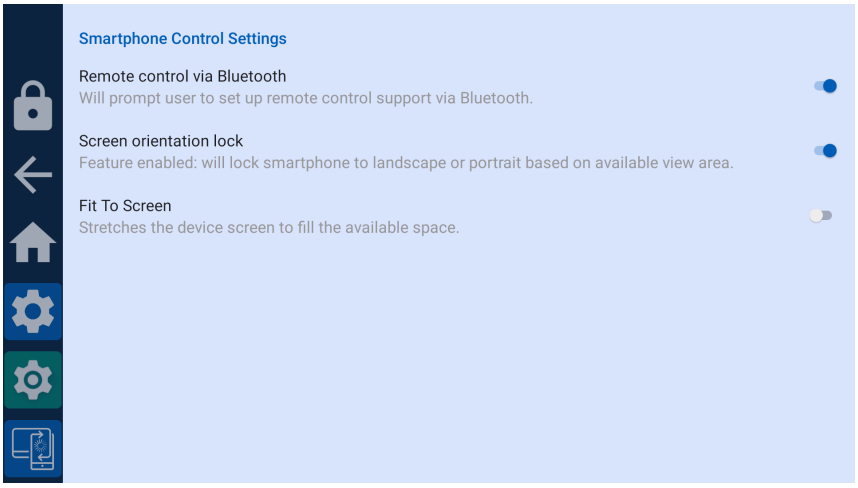

Figure 21: Smartphone Control app settings

8.3 Touch control Set-up via Bluetooth

For devices that can use Bluetooth for remote control, this setting is enabled by default, but if remote control of mobile devices from Smartphone Control is not required, this can be disabled. This will skip the Bluetooth pairing stage of the connection process, streamlining first-time connections.

Note: This setting is specifically designed for Bluetooth functionality and will not alter or influence the behaviour of devices that can use USB for remote control.

8.4 Screen orientation lock

This is enabled by default, and will cause the mobile device to lock to the same orientation as the head unit. This allows the mobile device to make the most of the available screen space. Disable this setting to allow the device to determine its own orientation.

8.5 Fit To Screen

This setting will allow the mirrored image of the device to be stretched to fill all available screen space. Some distortion in the original screen may be noticed if the vehicle screen’s

aspect ratio differs somewhat from the connected device's. This option is disabled by default.

Let’s discuss your project

As industry pioneers, we will help you cut through the complexity and deliver ingenious connectivity technology for the vehicles of tomorrow.

Get in contact via:

www.vncautomotive.com
technicalsupport@vncautomotive.com