

VNC Automotive

Cobalt Cube® Onboarding

Agenda

- Who are VNC Automotive
- What is the Cobalt Cube
- Why integrate the Cobalt Cube
- Ports and installation into vehicle
- System updates
- Resources and support
- PC mirroring
- Smartphone mirroring
- Q&A

Company Brief

World leaders in transport entertainment and connectivity technology



15 years in Automotive business

2009 – 2018

Automotive Division of RealVNC

2018

Spun-off (MBO) as VNC Automotive Limited



More than 100 publicly listed companies as customers globally



Global presence in Europe, Asia and Africa



100% developed in Cambridge

All our products are developed in-house at R&D Centre in Cambridge, UK



35

Million Vehicles



100

Vehicle Models



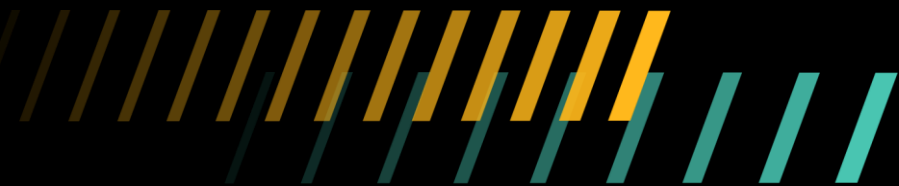
250

Million Devices



20

Automotive OEM's



What is the Cobalt Cube

- Plug-n-Play
- Enables mirroring of devices onto vehicle screen
- Can additionally control other equipment

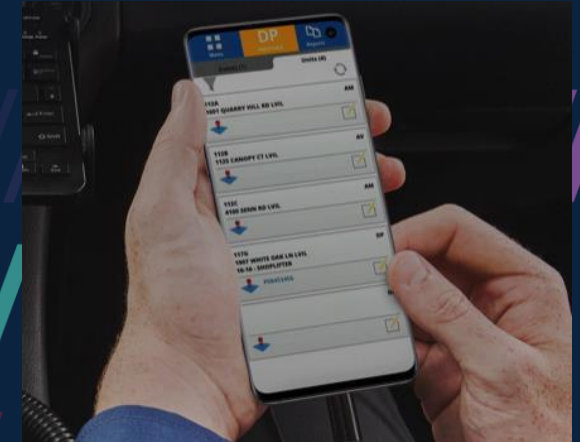


Why Integrate the Cobalt Cube



Critical equipment

MDT / lights controller / mobile device / radio / camera / message board



Typical front cabins

Cradles, centre console / dashboard replacements



Challenges

Traditional

- Poor ergonomics (comfort, productivity, safety)
- High cost (installation, maintenance, decommission)
- Vendor lock-in (equipment, vehicle model)
- Important functionality blocked (climate, cameras)



Challenges

Developing

- Reduced space (screens, air bags)
- EV transition (range impact)
- New regulations (driver distraction)



Screen integration

Plug and play

- Leverages existing vehicle standards, consistent experience across wide range of make and models
- Simple connection, dashboard remains intact and clutter-free
- Full advantage of screen and audio system integration
- Coexists with standard vehicle interface



Cobalt Cube

Hardware details

- Supports any vehicle with Android Auto over USB cable
- Android device powered by 12V with secure adapter
- Can connect to wide range of companion devices over USB/Ethernet/Wi-Fi/Bluetooth
- Designed in-house in Cambridge, UK



Dimensions: 14cm x 9cm x 2cm

Cobalt Cube

Software details

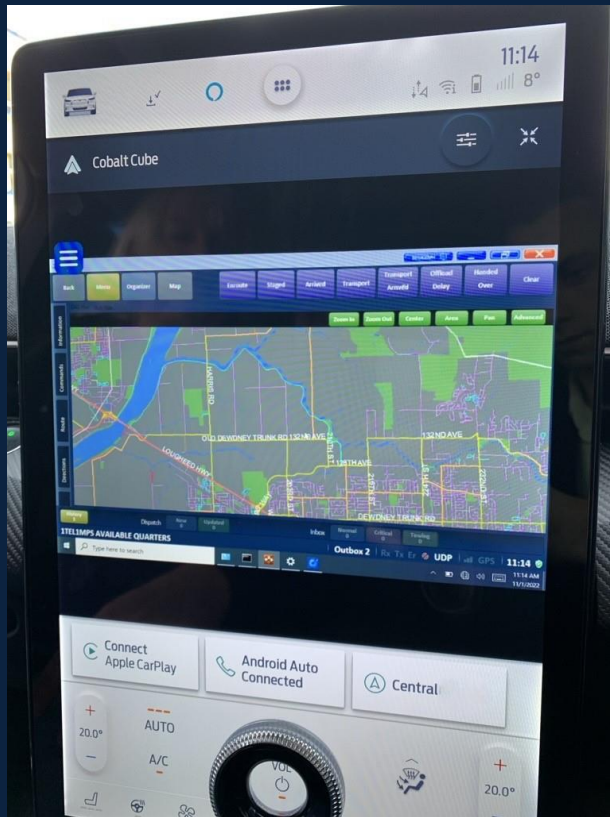


- Regular software updates for compatibility and improvements delivered via OTA or USB
- Screen mirroring of companion devices means no sensitive data is stored locally
- Applications provided for Windows / Android / iOS companion devices
- Highly configurable (authentication, networking, user interface, etc.)

Case studies

Police Departments

Dispatch and ANPR software on PC / traffic management message board



Case studies

Fire Services

Lights and siren controller / dispatch software on PC



Case studies

Health Services

Medical records software on PC / communication with talkgroups through radio



Ports and Installation



Ports

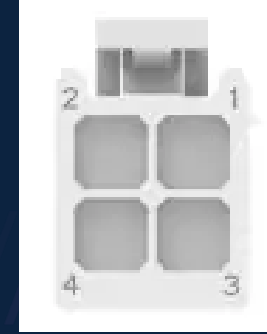
- POWER: 12V power input
- OTG: to connect to vehicle via USB-C cable
- ETHERNET: Connect to PC
- HOST: Connect to USB thumb drives or USB peripherals (e.g. a mouse, light & siren controller, cameras)



This is the port to
connect to vehicle

Power

- Always use 12V power supply to power the Cobalt Cube. Using an auxiliary battery ensures it connects to the vehicle screen as quickly as possible
- Ensure that the power is consistent. There were cases where large power draw on the power circuit caused the Cobalt Cube to reboot
- Average power consumption: 4.6 W during mirroring



Pin number	Function
1	Ground
2	-
3	Battery plus
4	Accessory

Installation video



Vehicle connectivity

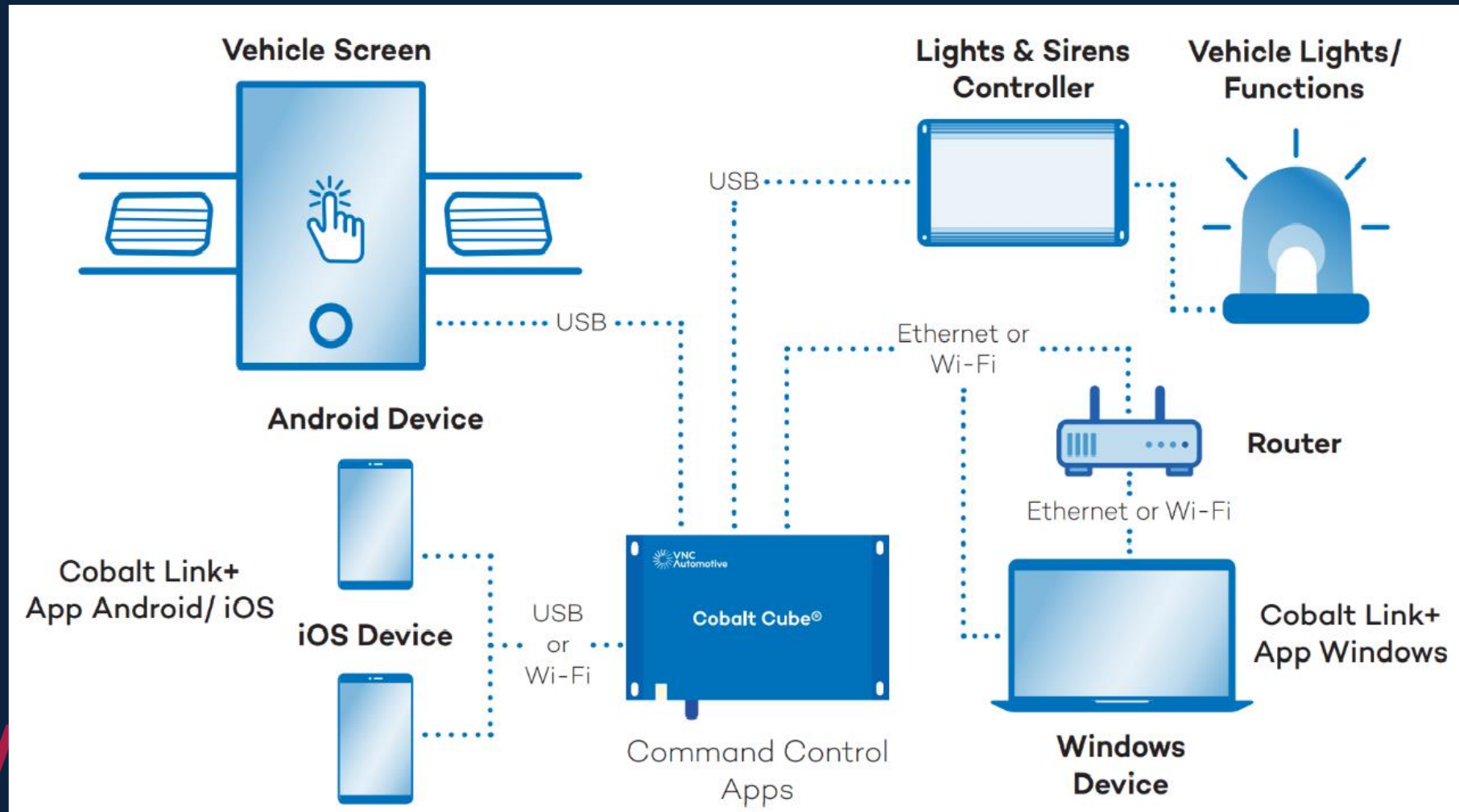
- Before connecting to a vehicle, it is useful to use an Android phone to confirm the vehicle supports wired Android Auto
- For reliable connection between the Cobalt Cube and the vehicle, follow Google's recommendations for Android Auto:
 - Less than 3 feet (1 metre) long and avoid USB hubs or cable extensions
 - USB-IF certified within the last two years
- Android Auto setup
 - First-time connection will take slightly longer
 - Fully automated process

USB cabling

- If the vehicle has USB-A ports:
 - USB-A to USB-C cable
- If the vehicle has USB-C ports:
 - USB-C to USB-A converter connected to the vehicle
 - USB-A to USB-C cable from the converter to the Cobalt Cube
 - Note that a single USB-C to USB-C cable instead may work in most vehicles but it's not guaranteed



Wire diagram

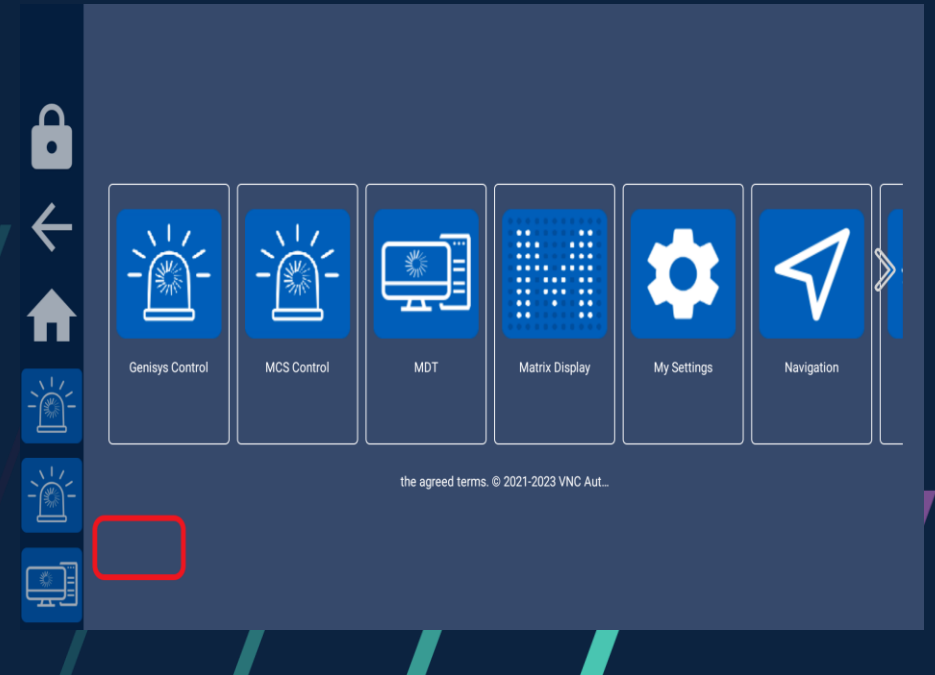


Customisation and Updates



Customisation

- Admin-level options accessible from a hidden menu
 - PIN CODE: 2823
 - Navigation bar position and apps
 - Setting up the home screen apps
 - Setting a startup app
 - App specific settings
 - Networking configuration
- User-level options are accessible from My Settings app
 - Connect to Bluetooth devices
 - Check system version



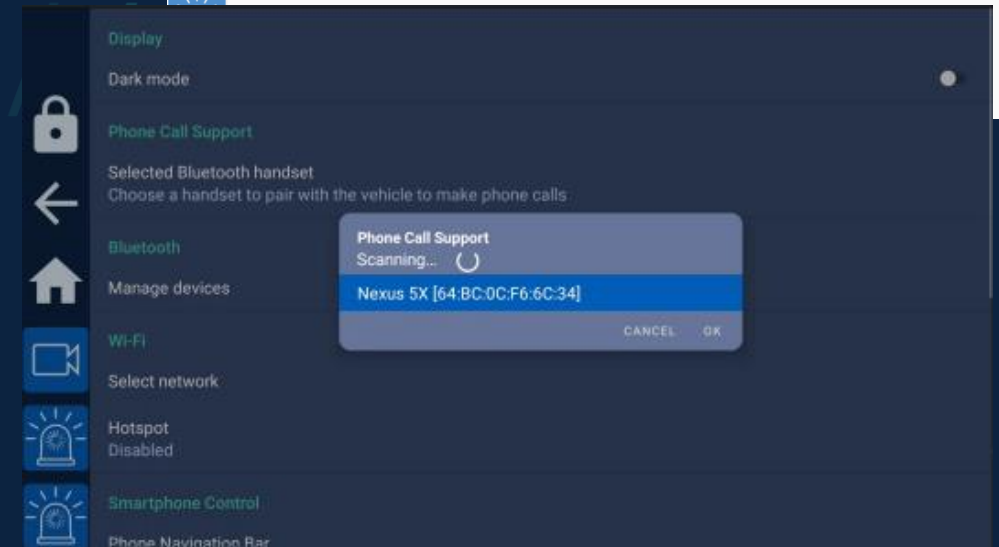
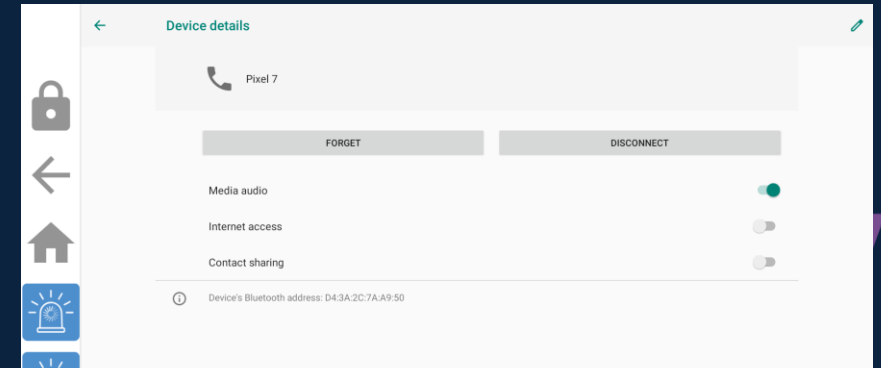
Activation

- After factory resetting the Cobalt Cube, an activation code is needed to reactivate the device
- Controls which applications are enabled, and the specific settings to apply
 - Navigation bar position
 - Setting a startup app
 - Ethernet mode: DHCP Client/DHCP Server/Static IP
- New activation codes can be used to enable/disable additional apps or settings via the admin option “Upgrade”



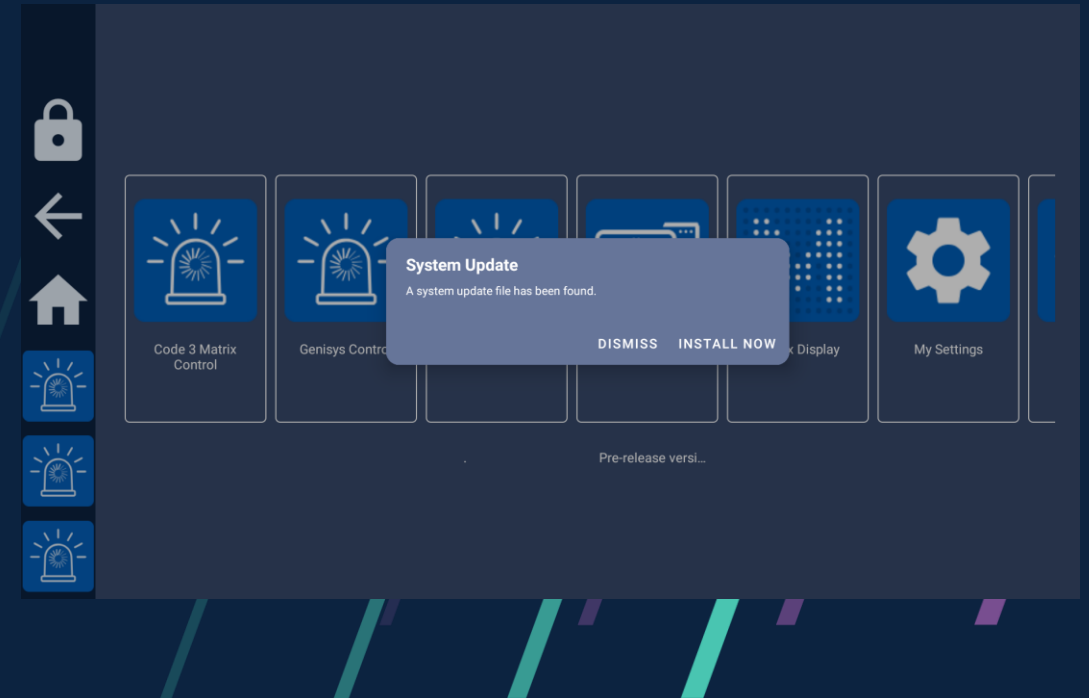
Audio support

- To receive the media/app audio from the PC or mobile device through the vehicle speaker
 - Pair the PC or device with the Cobalt Cube over Bluetooth from My Settings
- To receive phone call audio from the mobile device through the vehicle speaker
 - First link the device with the Cobalt Cube from My Settings
 - Then pair the device with the vehicle over Bluetooth



Updating the system

- Cobalt Cube must be updated every three months to keep it functioning in all vehicles, as determined by Google
- Includes security and feature updates for the lifetime of the product
- Possible methods
 - Via the Internet using our OTA Update Service
 - Via a PC over the Cobalt Link+ connection
 - Via a USB thumb drive



Resources and Support



Demonstrating Cobalt Cube

- In-vehicle demos
 - Use a cigarette lighter adapter for power
- Tabletop demos
 - Use 12V 5A mains power supply
 - Use after-market head units for a realistic experience
 - Or use an HDMI touchscreen for simplicity



Resources

- Knowledge Base
 - Technical documentation, video tutorials, FAQ's
 - <https://pages.vncautomotive.com/cobalt-cube-knowledge-base>
 - Password: CoB4LT_Cub3*
- Technical support
 - Technical Account Manager
 - technicalsupport@vncautomotive.com

How can we help you?

Welcome to the Cobalt Cube knowledge base for VNC Automotive resellers. Here you will find useful resources to help you and your customers get started with the integration and operation of Cobalt Cube.

 Getting started Your guide to getting started with Cobalt Cube®	 Video tutorials On-demand video tutorials to help you set-up Cobalt Cube®	 FAQ's Typical questions and answers around Cobalt Cube® installation and set-up
 Sales and marketing Brochures, brand guidelines, logos and more to help you promote Cobalt Cube®	 Support Still can't find what you need? Submit a support request	 Project registration Register your Cobalt Cube® opportunities via the online form

Essential debugging information

- When requesting support, please provide the following details:

1. Device serial number or ID
2. Cobalt Cube system version
3. Issue description, including vehicle details
4. How often the issue occurs
5. Reproduction steps, including photos/videos
6. If the issue can be reproduced using an Android phone
7. Version number of Server app (if appropriate)
8. Log file exported from the Cobalt Cube using USB stick
9. Log file exported from the Server app (if appropriate)

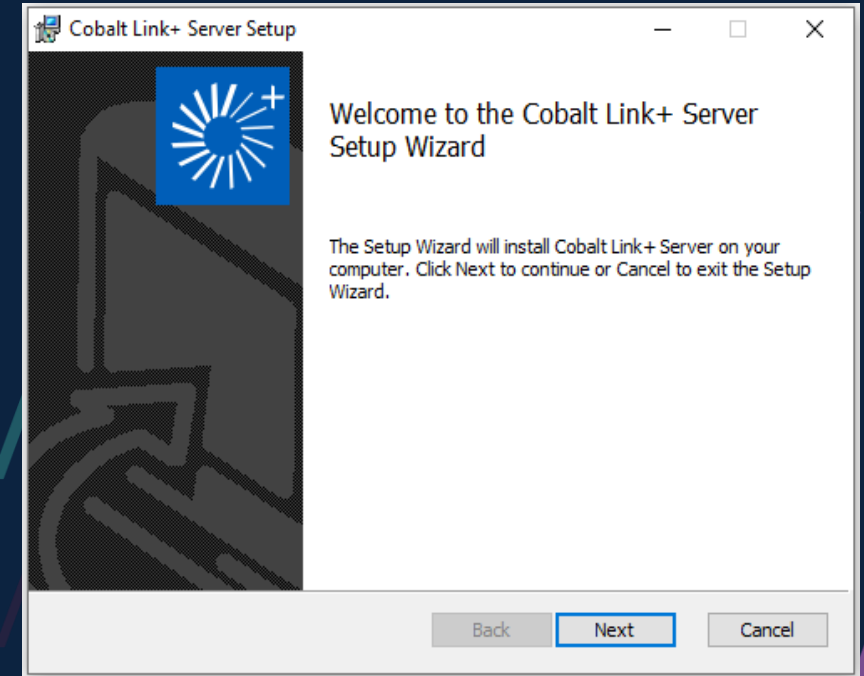
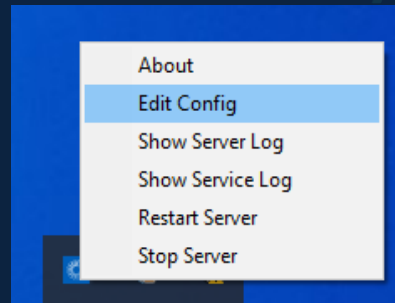
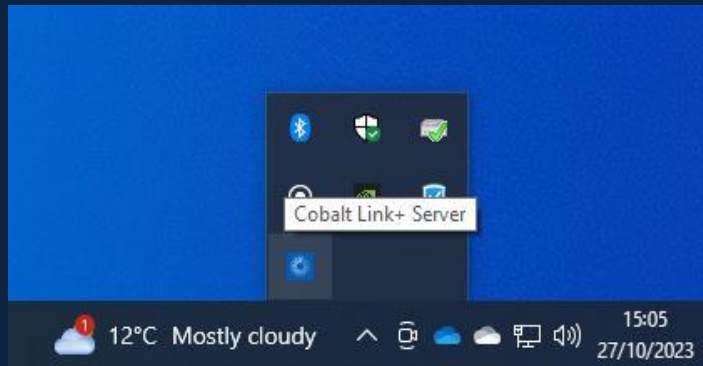
Large files can be sent using our secure file server

PC Mirroring (MDT Control)



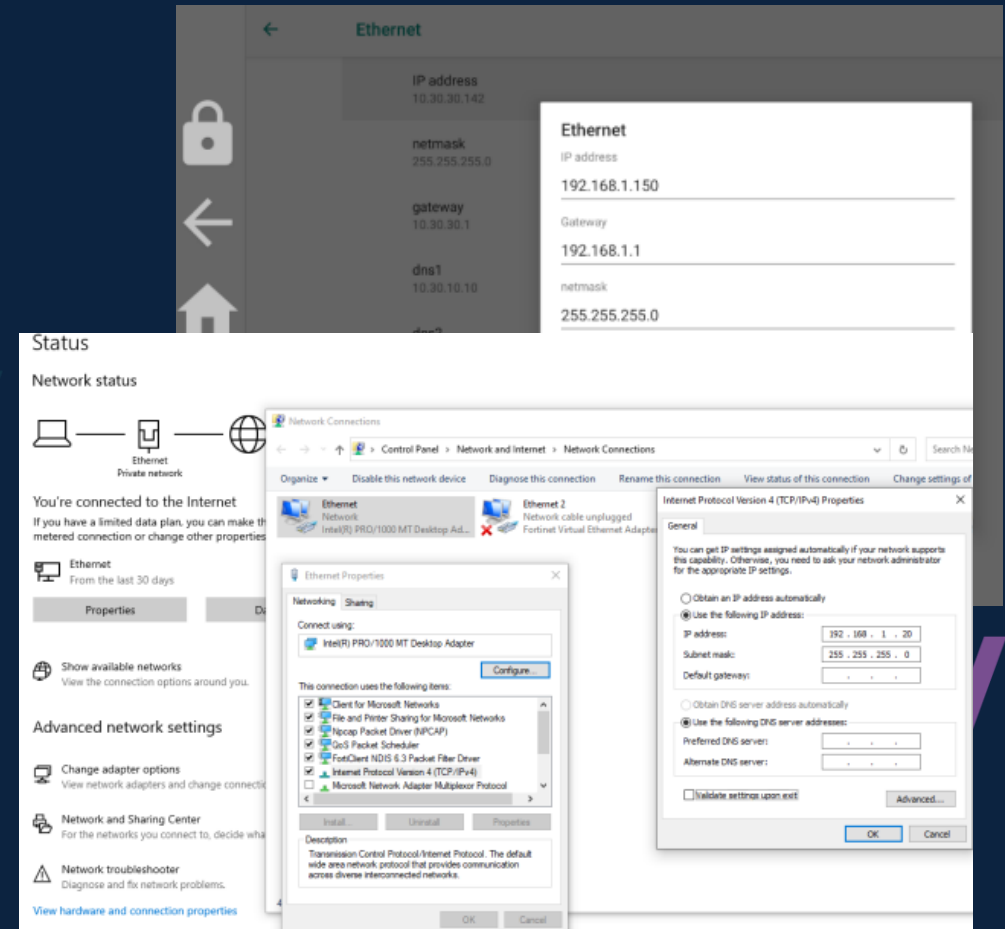
Cobalt Link+ for Windows PC

- The MDT Control app is designed to connect with and control software running on a separate PC, laptop or tablet running Microsoft Windows
- Cobalt Link+ Server needs to be installed on the PC with admin access to add firewall rules
- Once installed, there will be a tray icon that you can interact with



Networking configuration

- The PC and the Cobalt Cube must be connected to the same network over Ethernet. Configurations supported:
 - a) Connect to existing vehicle router handling IP addresses (default mode)
 - b) Direct connection via a single Ethernet cable with Cobalt Cube handling IP addresses
 - a) Configure DHCP Server from admin options
 - c) Direct connection via a single Ethernet cable with both devices using static IP addresses
 - a) Configure Cobalt Cube address from My Settings app
 - b) Configure PC address from Windows network settings



MDT Control configuration

- Available from admin options
- Change app name and icon
- Image quality/performance
 - Fit to screen
 - Server display resize
 - Scaling factor

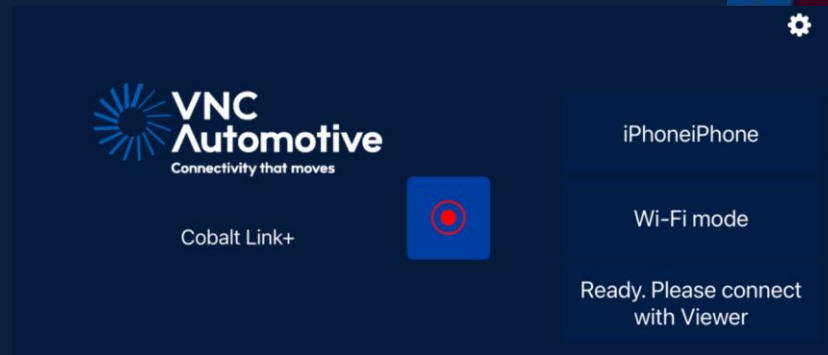
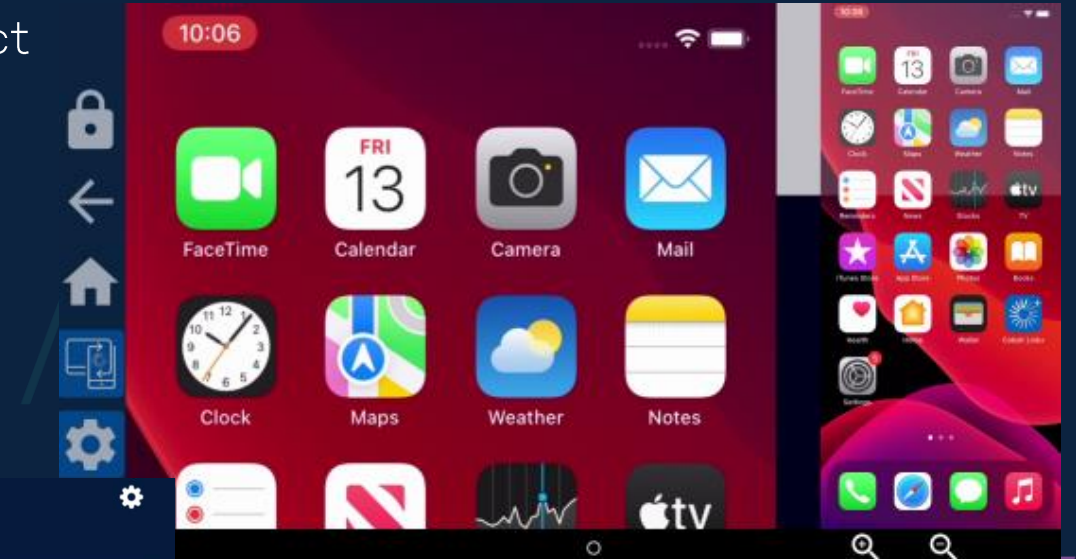


Android and iOS Mirroring (Smartphone Control)



Cobalt Link+ for mobile devices

- The Smartphone Control app is designed to connect with and control any Android or iOS device such as smartphone and tablet
- Cobalt Link+ app available from:
 - [Google's Play Store](#)
 - [Apple's App Store](#)



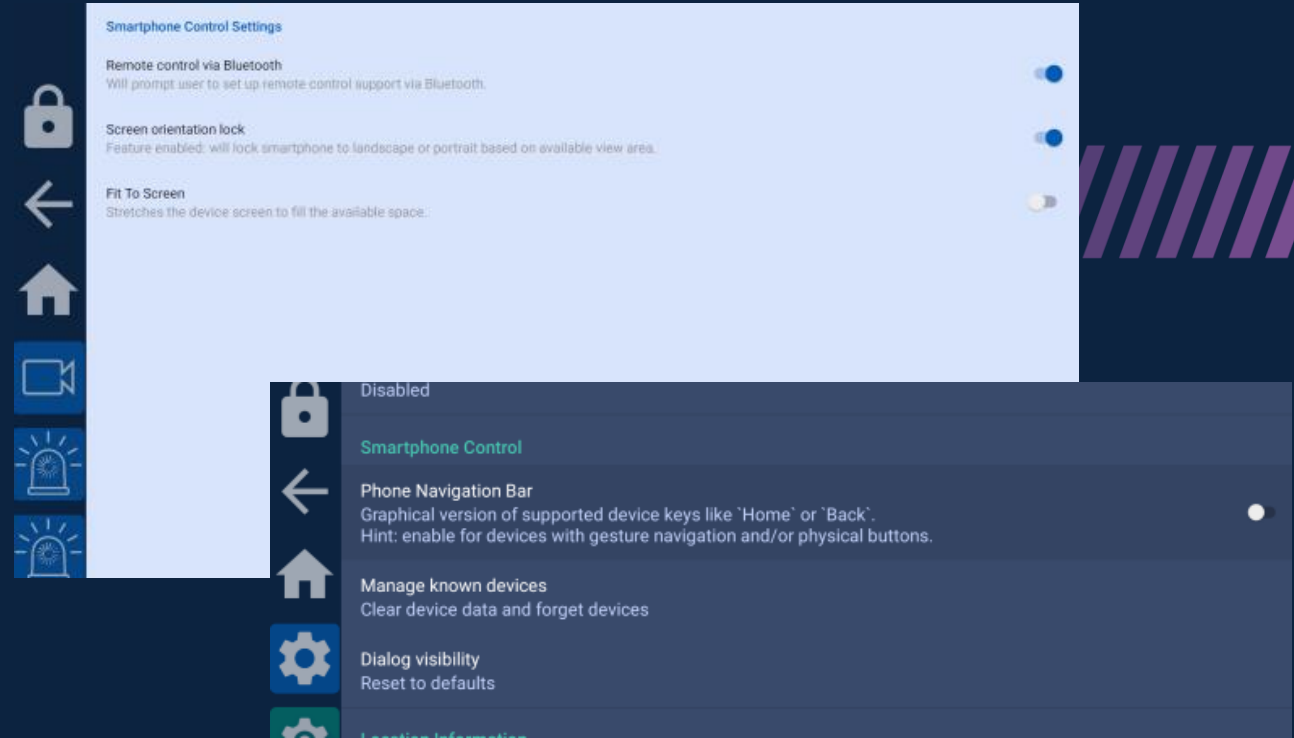
Cobalt Link+ for mobile devices

- Multiple devices can be connected at same time over:
 - USB connection (Android only)
 - Wi-Fi connection
 - Bluetooth pairing also required for touch events
 - Enable Cobalt Cube's Wi-Fi hotspot from admin options
- <https://youtu.be/KfM1ZuU4hLw>



Smartphone Control configuration

- Available from admin options
 - Fit to screen
 - Screen orientation lock
- Available from My Settings
 - Phone navigation bar



Thank you for your time

Any questions?



vncautomotive.com