VNC Automotive
Connectivity that moves

MCS Control Guide

Cobalt Cube®

Contents

1 Introduction

The MCS Control application is designed to work with MCS hardware and firmware from Standby® RSG, such as the MCS-32, MCS-16 and MCS-8.

The Cobalt Cube works in harmony with the existing MCS configuration tool from Standby® (see Figure 1). Each MCS is configured as before to have the desired handsets, inputs and outputs, via the Windows configuration tool provided by Standby®. The Cobalt Cube MCS Control application works by reflecting the existing handset configuration of each MCS. On application start, the software reads the handset configuration, via the USB-serial interface, and reflects the instantaneous state of each handset button and shows this on the equivalent User Interface (UI). This button state includes the button colour set for its on and off states and also if it is currently illuminated.

2 Additional hardware requirements

Apart from the Cobalt Cube, the following hardware is required:

- Standby® MCS unit.
- Standby® MCS CAN Bridge (includes USB cable to connect to the Cobalt Cube).
- MCS handset (optional).

3 Connectivity instructions

Figure 1 shows the connections between the Cobalt Cube, MCS components, and the vehicle touchscreen.

1. Connect the MCS Controller to the MCS CAN Bridge via the included cable, plugging into the local CAN port of the MCS.
2. Connect the Cobalt Cube to the MCS CAN Bridge, via the USB-A cable included with the MCS CAN Bridge. Use the USB Host port on the Cobalt Cube.
3. If required, connect the MCS Handset to the MCS CAN Bridge, via the adapter provided.
4. Connect the Cobalt Cube to the vehicle touchscreen, via the USB OTG port on the Cobalt Cube. A USB-A to USB-C cable is required for this connection.

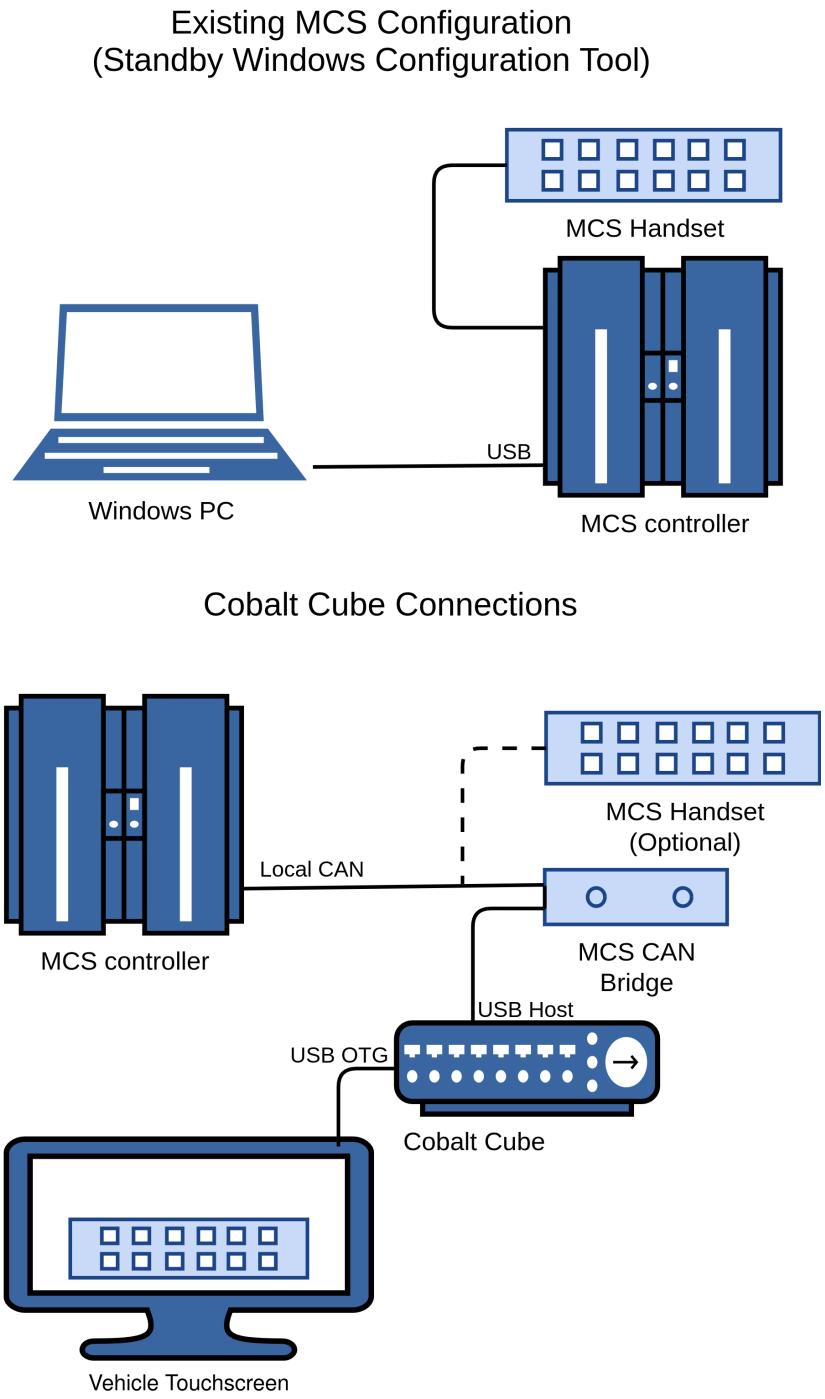

Figure 1: MCS Control connectivity diagram

4 Working with the MCS Control app

The MCS Control application can be run by tapping the “MCS Control” application icon from the Cobalt Cube app launcher screen, which appears on the vehicle touchscreen.

The UI for the handset can be individually tailored for your use case. For more information, please contact your VNC Automotive technical representative.

The following screenshots, for a typical T-16 handset, are provided as an example. Please note that the colours are for illustration purposes only, and in a real system would reflect the colours set in the MCS. Each button can be pressed on the vehicle touchscreen to operate the MCS in the same way that is done on the hardware handset. This operation happens with or without the hardware handset present in the vehicle.

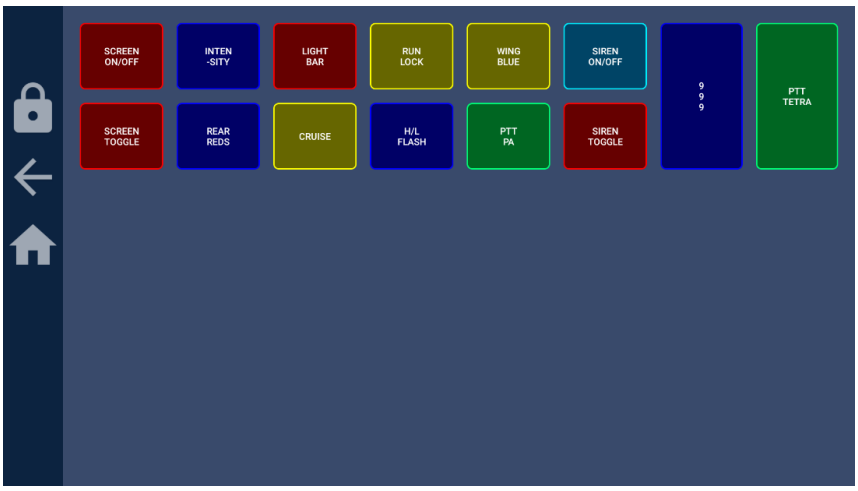

Figure 2: Example UI (no buttons pressed)

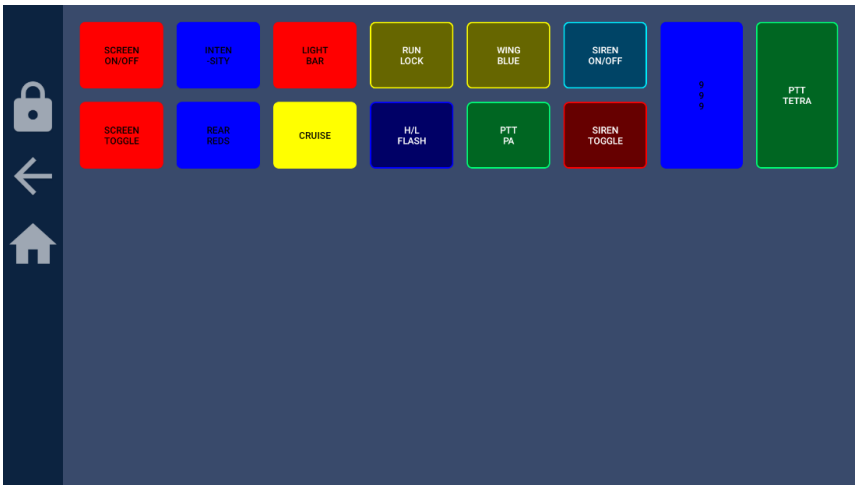

Figure 3: Example UI (some buttons pressed)

Tapping the back arrow at the top left takes the user back to the Cobalt Cube app launcher screen.

Please note that if the MCS is not connected to the Cobalt Cube via the USB-CAN bridge, the following error will be shown:

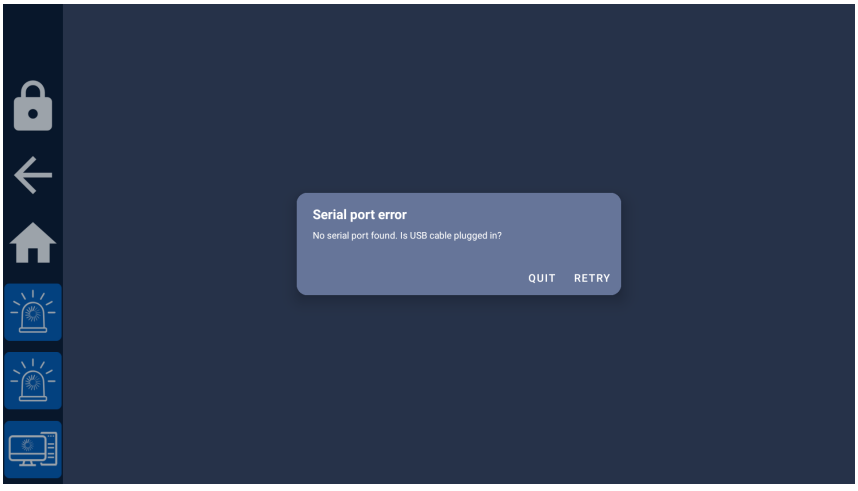

Figure 4: Error message when the MCS CAN Bridge USB cable is unplugged

In this case, check the USB Host port has the MCS CAN Bridge USB cable plugged in and tap “RETRY”. Tapping “QUIT” exits to the Cobalt Cube app launcher screen.

5 Configuring the MCS Control application

There is a configuration file for the MCS buttons at `/vnc/mcscontrol/`. The directory for the configuration will be created upon the launch of the main app or upon launch of the settings activity.

The MCS app will look for any file in the configuration directory that ends with a “.config” extension. If there is more than one file with that extension it will pick one to load. In this case the file is chosen arbitrarily in whatever order they are discovered by the application. You should not rely on this behaviour.

It is recommended that only a single configuration file called `mcs.config` is present in the configuration directory at any one time.

The file is a CSV file with the following layout:

<Handset ID>,<Button ID>,<Grid ID>,<Grid Position>,<Button Text>

Name	Possible Values	Description
Handset ID	0 - 127 inclusive	This is the value for the handset ID. This is typically 0.
ButtonID	0 - 127 inclusive	The ID of a specific button as configured in the MCS.
Grid ID	0 or 1	Specify if the button should be in the left grid of square buttons (0) or the right grid of rectangular buttons (1).
Grid Position	Grid ID 0: 0-11 inclusive. Grid ID 1: 0-1 inclusive.	The position in a grid that the button should be displayed. Indices start at the top left of a grid.
Button Text	Any text but must not contain a comma character.	The text to be displayed on the button.

If no configuration is specified, the application will use the following default preset:

```
0,15,0,0,Screen\nOn/Off

0,13,0,1,Inten\n-sity

0,11,0,2,Light\nBar

0,9,0,3,Run\nLock

0,7,0,4,Wing\nBlue

0,5,0,5,Siren\nOn/Off

0,14,0,6,Screen\nToggle

0,12,0,7,Rear\nReds

0,10,0,8,Cruise

0,8,0,9,H/L\nFlash

0,6,0,10,PTT\nPA
```

```
0,4,0,11,Siren\nToggle

0,2,1,0,9\n9\n9

0,0,1,1,PTT\nTetra
```

Configuration of these values is possible through the MCS settings application. See “Application specific settings” in the Getting Started Guide for details on how to access this.

Each row in the configuration file is represented by a row in the configuration application. Buttons can be modified, added and removed.

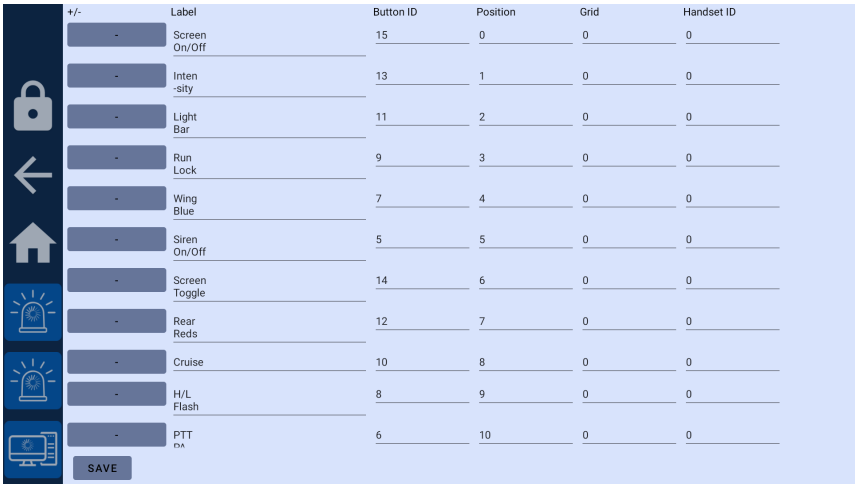

Figure 5: The configuration menu for the MCS Control app

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.

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