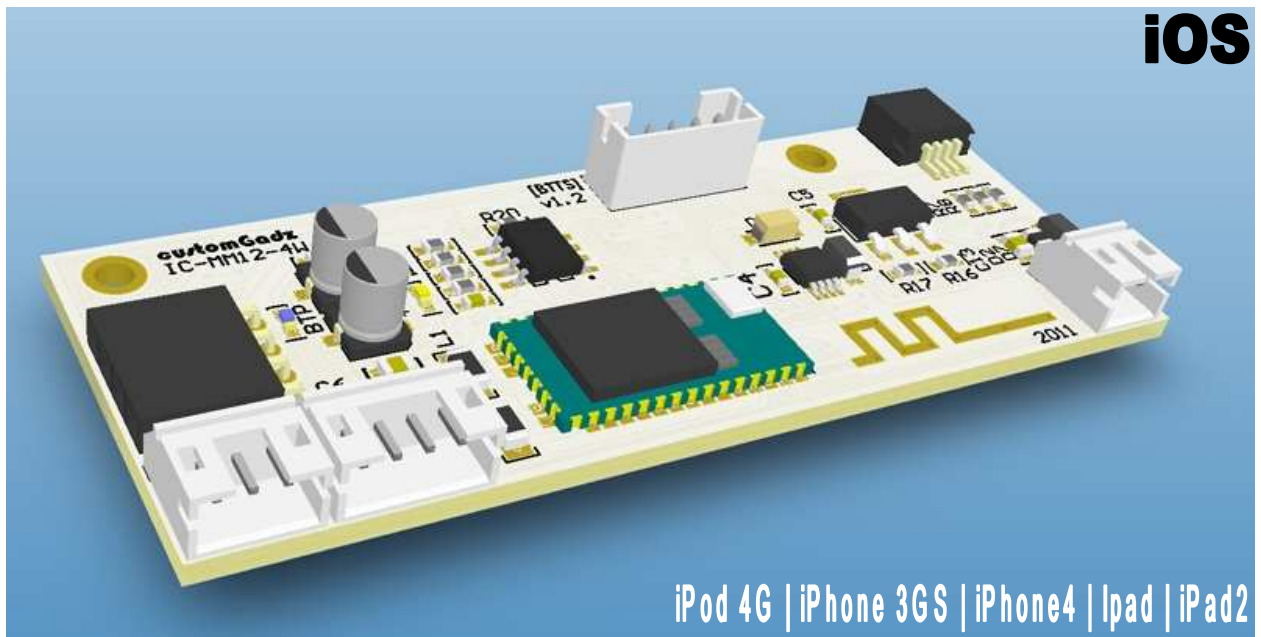


customGadz

mimics

Version 1.2.3

USER MANUAL



IC-MM12-4W

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1. Quick Overview

The mimics is a device that allows you to remotely control an Apple iOS device using an external 4wire resistive touch screen monitor. Mimics has onboard ports available for optional inputs/outputs and communication with other devices such as microcontrollers.

This device is to be used in conjunction with the "mimics driver" available in Cydia. Currently the mimics can only be used with a jailbroken iOS device. Jailbreaking is perfectly legal and reversible.

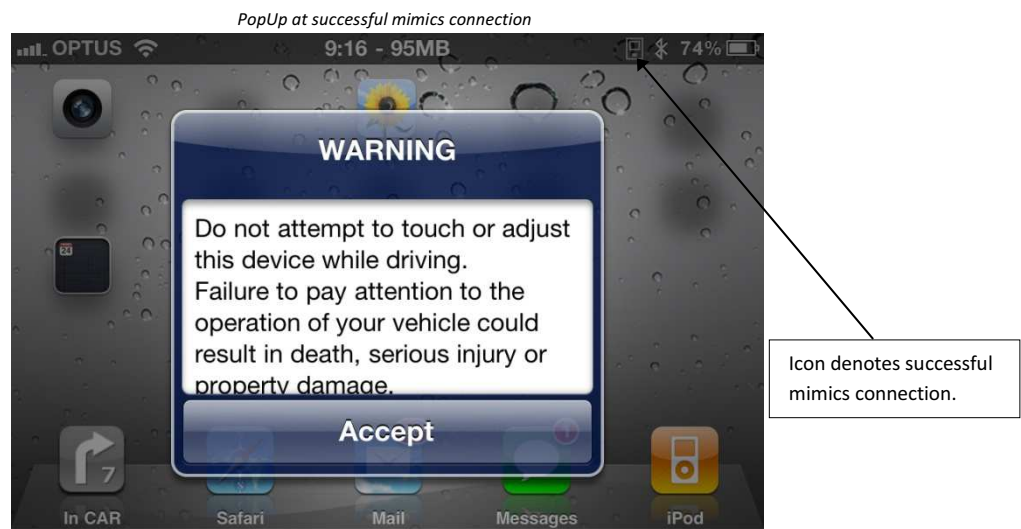
For optimal operation the following apps (available in Cydia) can also be optionally used.

- DisplayOut - Mirrors the iPhone/iPod display to an external display device. (not required for iPads)
- SBRotator - Rotates the main iOS screens to a landscape format. (Again, not required if using an iPad)
- Rotation Inhibitor - Can "Lock" the iPhone in landscape mode while iPhone is docked in portrait mode.

How to use:

Once the mimics driver is installed, simply plugging in an AV/VGA/HDMI cable into the 30-pin dock connector will automatically pair up the mimics with the iPhone. Removing the cable will automatically un-pair the mimics with the iPhone to reduce power consumption.

When the mimics is successfully connected you will receive a warning message, simply click "Accept" and start using the touch screen as you would the iPhone.



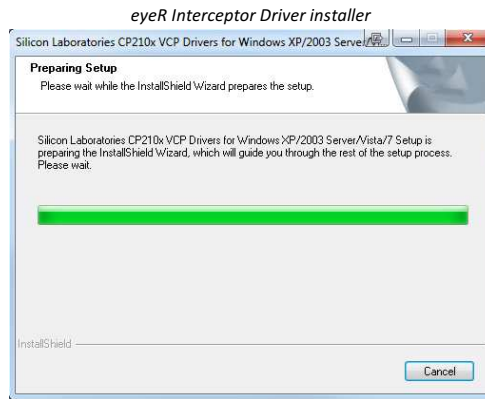
Obviously at this point you can press the "Accept" button on your external touchscreen!

2. Setting Up The USB Driver For Firmware Updates

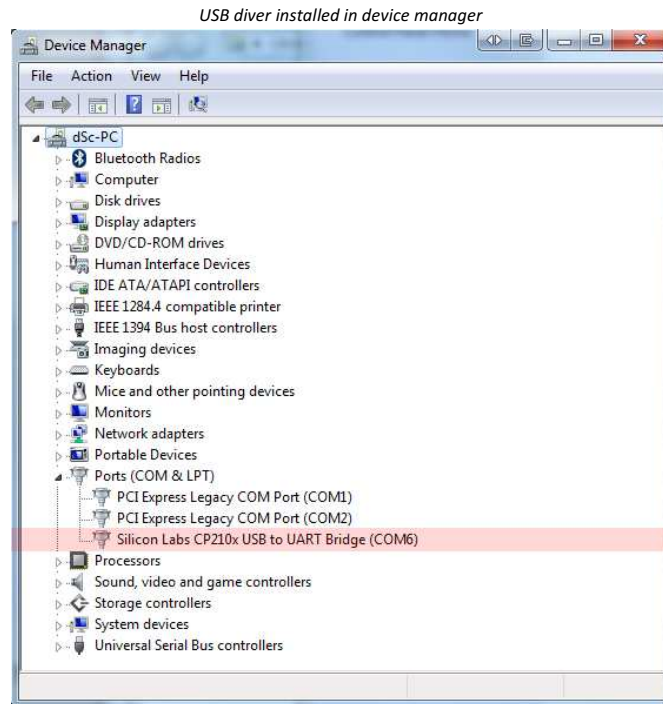
The mimics requires a USB interface which enumerates as a COM port for connection to the PC. Any standard USB to TTL (such as CP2102) will work.

USB to TTL converter needs be plugged in after the drivers are installed.

1. Run the " USB CP2102 Driver.exe" file and then click install.



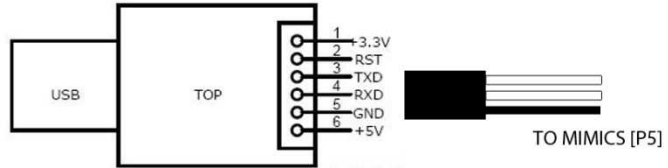
To confirm driver installation, right click on "My computer" and click on "properties" then select device manager. Under "Ports (COM & LPT)" you should see "Silicon Labs (COMx)" installed correctly.



USB Driver successfully installed

3. Updating The Firmware

Required USB to TTL converter

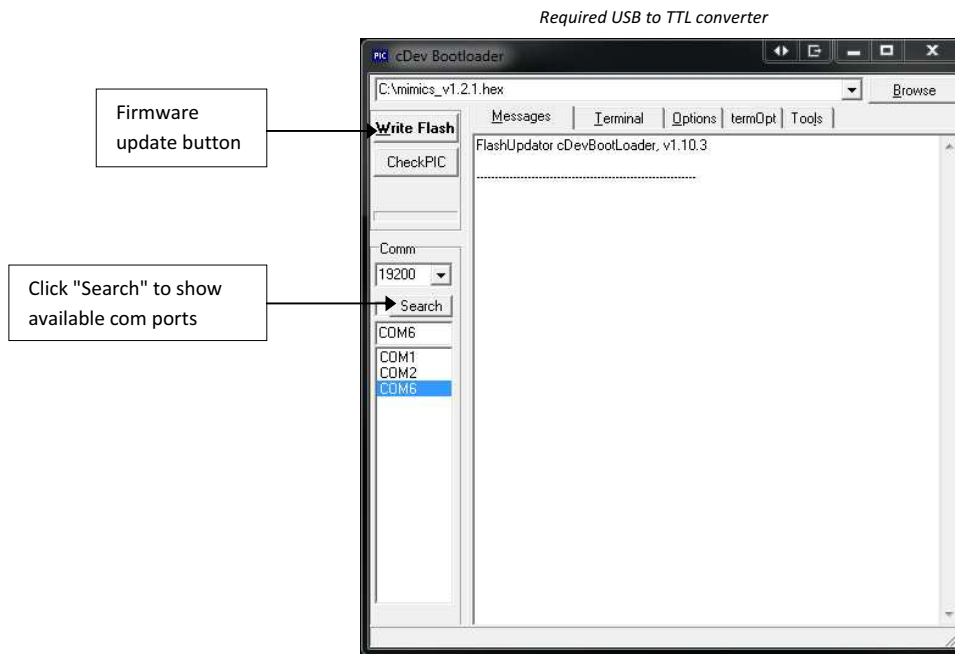


Connecting the adapter cable to the mimics

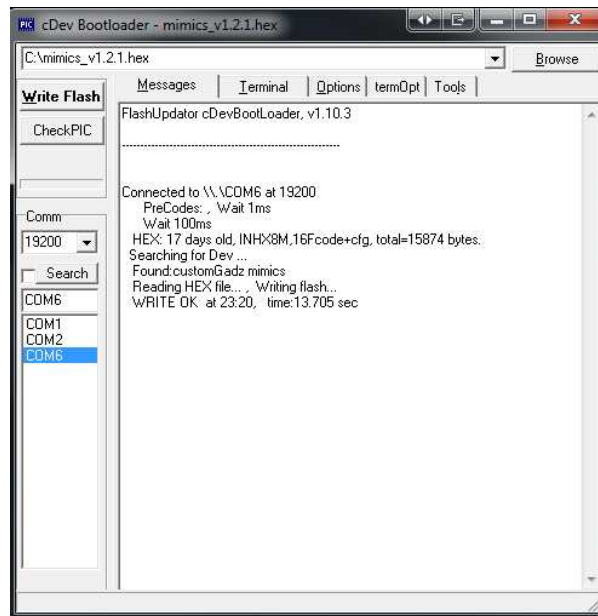
The mimics functions as normal with/without the firmware update cable connected.

To upload new firmware:

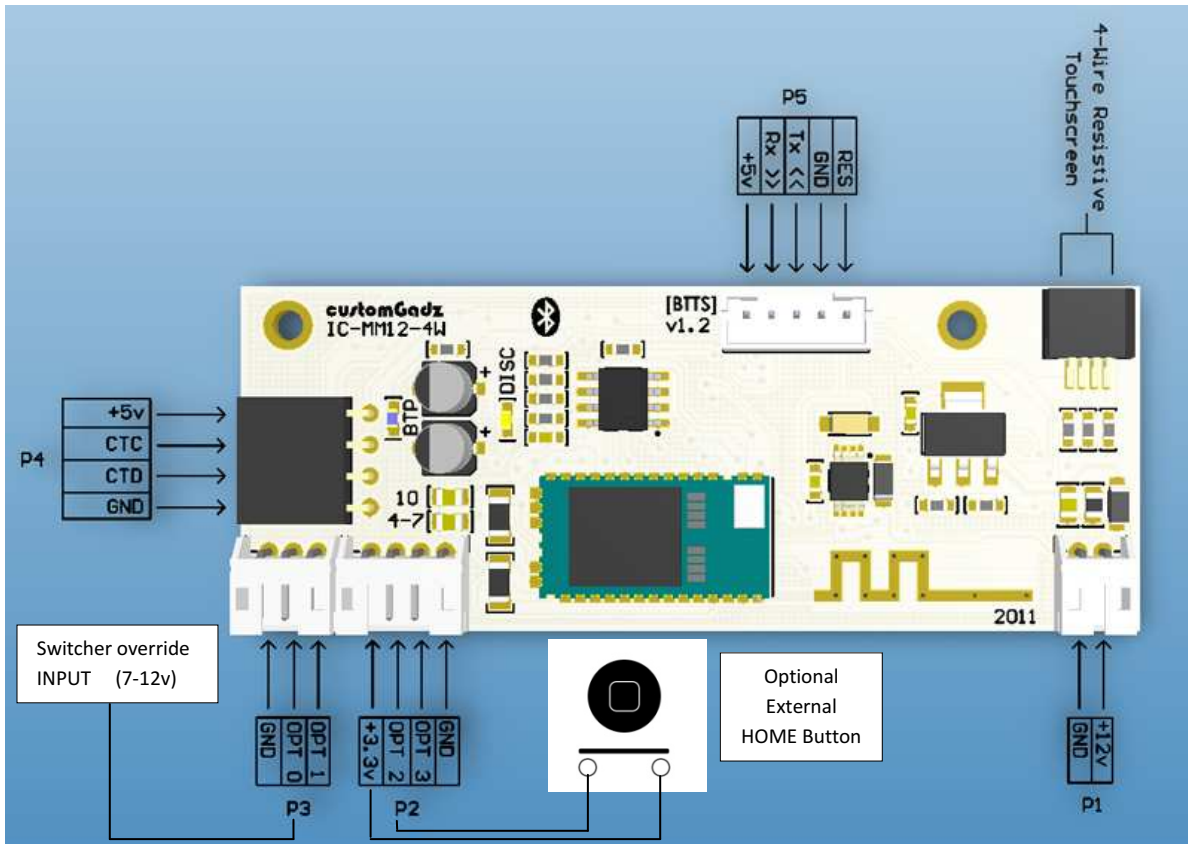
- Open up the firmware loader application
- Ensure the firmware harness is plugged into the PC and mimics [P5]
- Click on "Browse" and locate the "mimics_vx.x.x.HEX" file
- Turn off the mimics power, ie. turn monitor off
- Click on the "Write Flash" button
- Now turn on the monitor, and you should see the firmware being updated



Successful firmware update



4. mimics Technical Specifications



Mimics board Port connections

Connector	ID	Description
P1	+12v	7-12v Power supply
P1	GND	0v
P2	GND	0v
P2	OPT 3	External Output, ie. LED
P2	OPT 2	External "HOME" button
P2	+3.3v	+3.3v Output (50mA MAX)
P3	OPT 1	External 3-15v Input (*1)
P3	OPT 0	3-15v Switcher override input
P3	GND	0v
P4	+5v	+5v Output (*2)
P4	CTC	Reserved
P4	CTD	Reserved
P4	GND	0v
P5	RES	Reserved
P5	GND	0v
P5	Tx <<	Transmit RS232 Output (*3)
P5	Rx >>	Transmit RS232 Input (*3)
P5	+5v	+5v Output (*2)

***Note**

- (*1) Currently **NOT** implemented
- (*2) 5v Output. Do not exceed more than 10ma current draw. (internally current limited)
- (*3) Communication port for firmware updates. Logic level pins. Requires USB-to-TTL converter for PC connection. These pins can also be optionally connected to other devices such as "Arduino" etc. This port is also shared with the "Switcher" Add-on.

5. TouchScreen Calibration



The mimics is factory loaded with basic calibration values that should be very close to support most touchscreens. If you are having issues you can perform an optional screen calibration.

Calibration technique in detail:

1. Ensure mimics is fully connected to touch screen and device.
2. Open the mimics "Calibrate" application on iOS device.
3. Power off the mimics.
4. Press and hold firmly anywhere on the touchscreen
5. Keep pressing the touchscreen until the "BLUE" light on the mimics turns off. (mimics now in calibration mode)
6. Press point "1", and then point "2". Make sure you only press these points once for correct calibration.
7. Turn the mimics off, then on and mimics should be calibrated to current touchscreen

6. Optional TouchScreen Calibration Verification

Open up the firmware update utility and click on the "Terminal" tab. Power on the mimics and after a short time you will see some diagnostic information displayed.

Verify touch values using firmware loader application

The screenshot shows the PIC cDev Bootloader application interface. The 'Terminal' tab is selected, displaying the following output:

```
Released By >> customGadz
Firmware MODE >> Resistive 4W
Firmware UERSION >> v1.2.1
iOS MODE >> iPhone

Current Calibration Parameters
EEPROM TLX-> 823
EEPROM TRX-> 158
EEPROM TLY-> 234
EEPROM BRX-> 718

DEBUG = [OFF]
```

Annotations in the image point to the following elements:

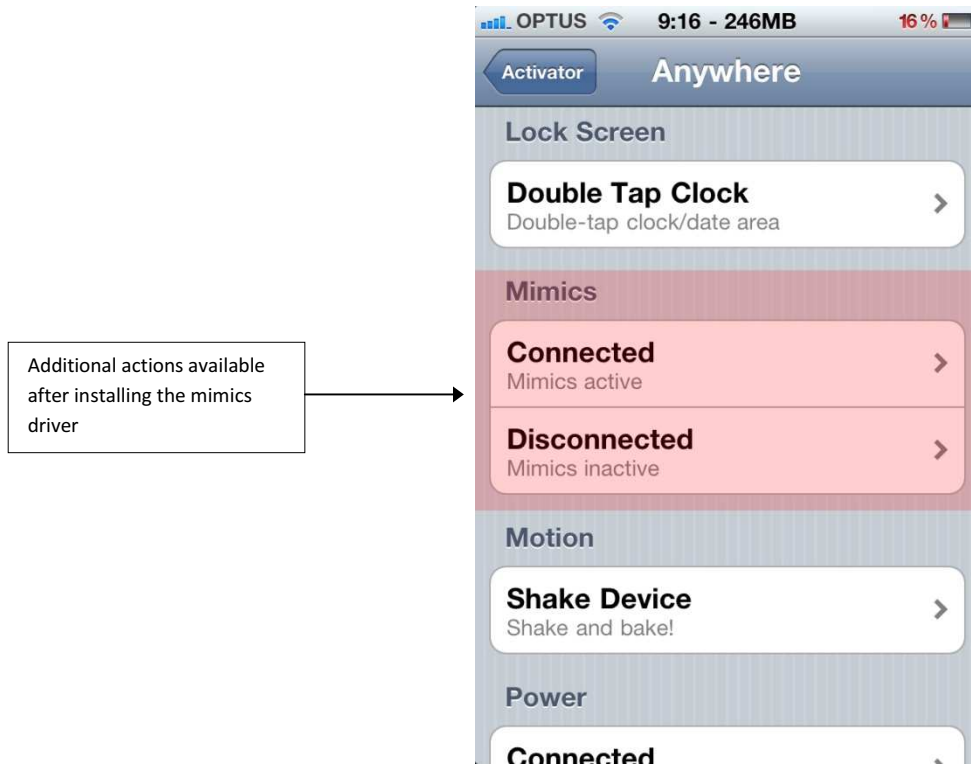
- Terminal BAUD Rate:** Points to the '57600' dropdown menu in the terminal options.
- Firmware BAUD Rate:** Points to the '19200' dropdown menu in the 'Comm' section.
- Click tab to open up terminal:** Points to the 'Terminal' tab in the application's menu bar.
- For correct calibration the two "X" and the two "Y" values should be much different from each other. If the two "X" or the two "Y" values are equal, calibration was not performed correctly.** Points to the calibration values: TLX (823), TRX (158), TLY (234), and BRX (718).

****Note:** By default the com baud rates are set, and these shouldn't be modified. Baud rate for firmware updating should be set to 19200, and Terminal mode should be 57600.

8. mimics "Activator" Actions

One of the most useful functions on a jailbroken iOS device is the "activator" tweak. This allows you to activate almost any feature of the device using gestures. For example, you can set it up to open up your favorite app simply by tapping twice on the status bar. For all the available actions go to Settings>Activator on your iOS device.

The mimics takes advantage of these "actions" and two mimics activators are added after installing the mimics driver.



Mimics > Connected: Is active after the mimics has been successfully paired.

Mimics > Disconnected: Is active after the mimics has been successfully un-paired.

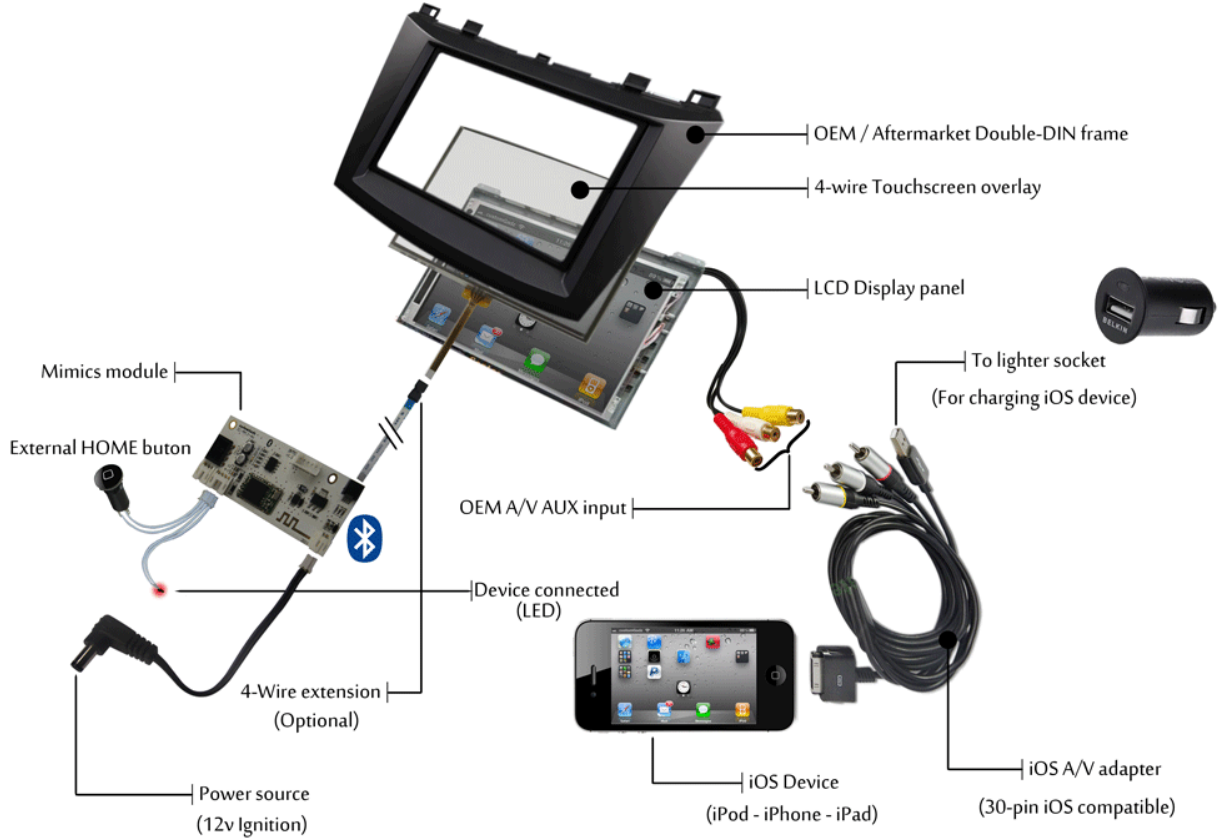
Pairing/un-pairing is done automatically by "mimics driver" when the iOS device is connected/released from any video cable.

One example of this feature is to use "mimics > Connected" to open up your favorite music application, and "mimics Disconnected" to close it.

7. Standard installation diagram - Adding touchscreen overlay to a non touchscreen system

Mimics Module standard installation

(OEM Installation WITHOUT existing touchscreen overlay)



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8. Standard installation diagram - Adding touchscreen "Switcher add-on" to retain OEM touchscreen operation

Device connec



*Installation notes:

Most installations will only require a standard 30-pin A/V cable to enable external mirroring on your iOS devices. Some vehicles do not have an A/V input and will require an additional adaptor to convert the iOS devices video format to the correct one accepted by your vehicle.

Common automotive video inputs:

- A/V composite
- VGA
- VGA Sync
- GVIF (Nav input)

9.Important Information

General

Due to the fact that using the iOS bluetooth hardware for A2DP streaming or a Bluetooth Headset is very demanding on the iOS device hardware, the use of these type of devices are not possible while using the mimics.

Benefits

The mimics takes complete low intensive control over the iOS bluetooth device for reliable trouble free operation. As are result you can stream audio from the internet, use GPS, display video out to an external monitor and use the mimics simultaneously.

Audio

High quality audio can be easily obtained via the 30 pin dock connector on the device. Since this is a high quality line audio output, volume control can be done via you OEM vehicle controls or using an external amp/head unit. A slightly lower quality can be obtained from the 3.5mm headphone jack, and in this case the iOS device can be used to adjust the volume.

Phone Calls

If using the mimics in a vehicle and wish to make/receive a phone call, the loud speaker or a headset plugged into the 3.5mm jack can still be used for handsfree communication.

Landscape/Portrait Apps

The mimics is designed for landscape and portrait use. However, if using apps that do not support "Landscape" mode, they will appear to be sideways on the screen when the mimics is in its landscape mode. This is no issue when using an iPad.

More info/technical support

Contact us at www.customGadz.com