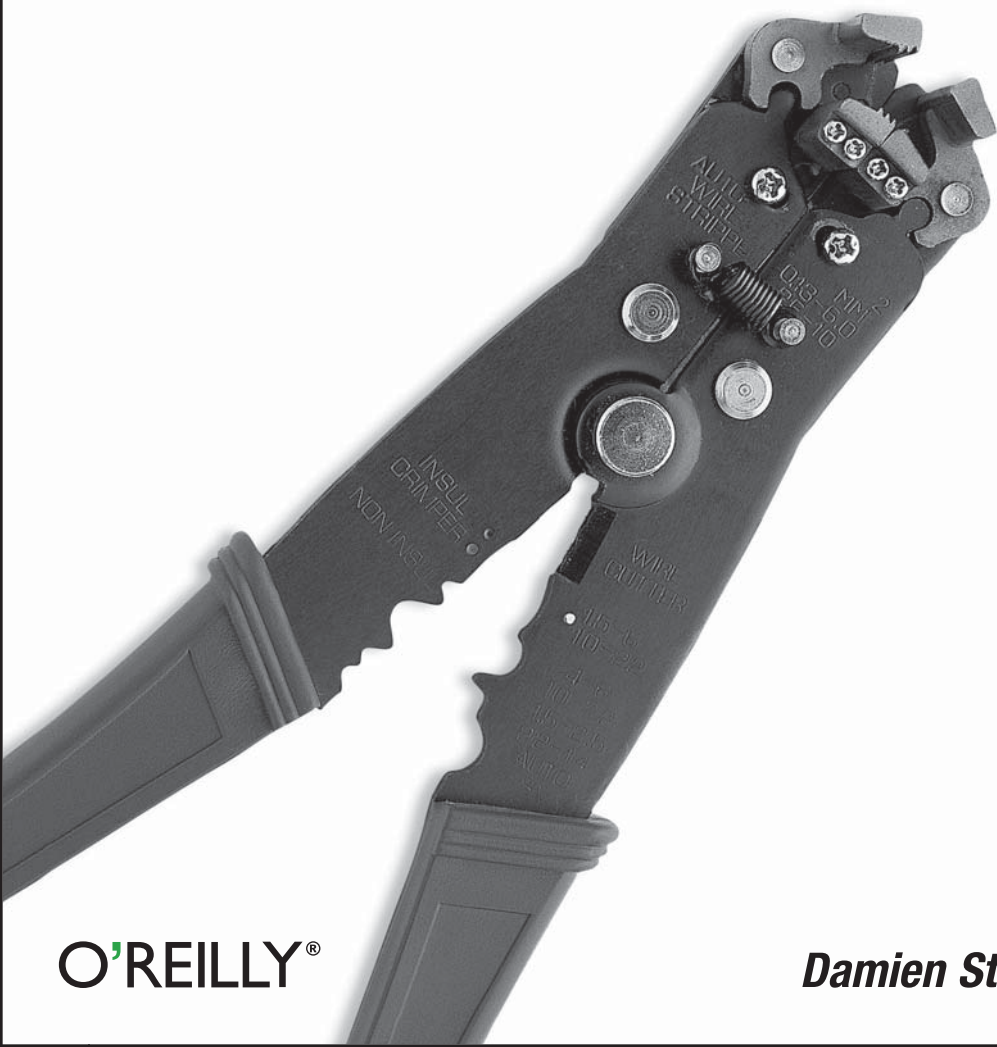


# CAR PC HACKS™

*Tips & Tools to Geek Your Ride*



O'REILLY®

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HACK  
#35

## Customize Each Passenger's Video

Imagine a peaceful cross-country road trip in which you never need to endure someone else's choice of music or movies, because everyone has a personalized entertainment center.

If you carry around many passengers on a regular basis, or if you just want to make sure that *everyone* is amused on a long road trip, provide your passengers with adequate facilities to enjoy themselves.

The number of video devices you can have in a vehicle is limited only by your budget and cargo space. I personally would not find it unreasonable to have one of each current video gaming console, a DVD player, and one or two computers in a vehicle. I even have a 12V VCR for showing old movies, and the very bored can always [check out the action from the rearview camera](#) [Hack #33].

Enabling all of these devices doesn't require you to have a switchboard operator climbing around in the trunk and trying to route video hookups between devices and screens. Instead, you need a video switcher.

There are several kinds of switchers to choose from.

### Built-in Switchers

Many of the better headrest screens can switch between two or three video sources via a button on the front of the monitor, and/or a handheld remote control. These units do not switch the audio, but if your goal is to tune into a head-to-head video game or a DVD movie, where the audio is already being piped into wireless headphones, then this solution does work.

For the scenario shown in [Figure 3-19](#), you need [one video booster per video source](#) [Hack #34], and you must run those outputs to each switchable screen. Each screen can then choose between multiple sources, such as a video game, a DVD player, or the computer.

### Automatic Switchers

Simple automatic switchers allow a screen to auto-select between two sources depending on a voltage line. This is good for situations where you don't want to have to select, but you simply want one device to override another. An example would be to have the overhead screen usually show the output from the DVD player, but for the 12V output of the computer to trigger the auto-selector when it gets turned on and make the computer the image that is shown. Precision Interface Electronics (<http://www.pie.net>)

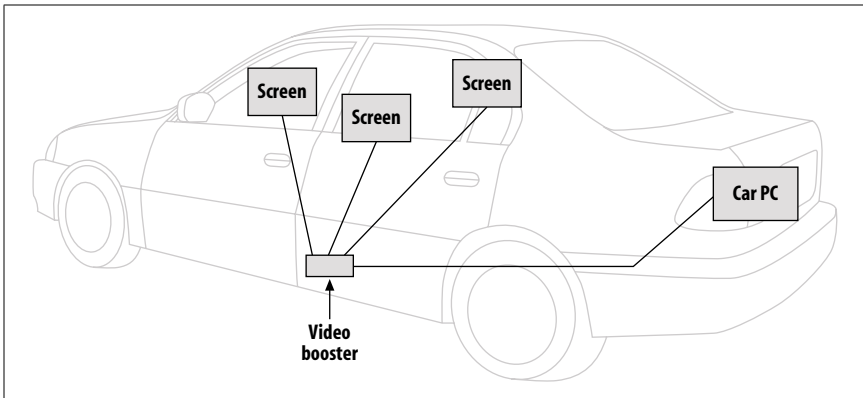


Figure 3-19. Use video boosters to provide a clean signal to all screens

makes this sort of adapter, and when you don't want to have to hit switches to get the right video, it's a good solution.

## Matrix Switchers

The third approach to switching video is to connect all the screens and video sources to a single video switcher, which incorporates routing and amplification features. These switchers can switch a number of inputs to a number of outputs (3×3 and 4×4 being common numbers), allowing each viewer to select any of the available video sources. (See Figure 3-14 in “Connect a Car PC to Your Factory Screen” [Hack #32].)

Some of these units come with a wired remote for each screen, which is intended to be installed near the screen. Viewers then use the remote to select the input signal for that screen. These units are relatively inexpensive, but you have to run additional wires and install unsightly switch boxes near each screen. Other units come with multiple wireless remotes, so that each viewer can wirelessly select his or her desired programming—but be sure you don't misplace the remotes!

Many video switching units incorporate audio switching as well, so you can use a single set of headphones for all audio sources. The best units broadcast the audio wirelessly and come bundled with wireless headphones. This provides for a customized A/V experience for any passenger, with a minimum of wiring. The audio lines of each video source need to be connected through the switcher, so that the passengers can select from the DVD player, game console, or computer, for instance, and their headphones will switch to the appropriate sound. One of these outputs should be routed to the car's head unit or amplifier, so that the DVD or computer sound can be put through the car speakers as well.



2.4 GHz is a great frequency for wireless audio—unless you're also trying to use WiFi and Bluetooth, which use the same frequency. My own experience with dueling 2.4 GHz audio/video repeaters, which mangled my home WiFi signal, revealed that these devices don't play well together.

## Proprietary Switchers

“Proprietary” is used here not in a critical sense, but merely to describe video selectors that work only with a specific hardware vendor. Blaupunkt, for example, has its own high-resolution RGB head unit screen that can be connected to a Blaupunkt navigation system. Instead of having to degrade the navigation signal down to composite video when you add AUX video inputs, their switch box has an RGB input as well as four additional video inputs for games, a DVD player, a computer, and so on. If you have a high-end aftermarket head unit, go to your vendor's web site to see what viewer customizations are available to you.