

Chapter 1

Exploring the World of Car Audio

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If you're like me, some of your most treasured memories are listening to an awesome audio system in an automobile. Picture this: It's a beautiful day on a fun road and you're behind the wheel of your car, jamming to your favorite music. Now think of the same situation if you were driving in silence. It's just not the same.

Music makes a good drive even better, a long road trip more fun, a daily commute more bearable. Think of your best times behind the wheel, and chances are there's a soundtrack that goes along with it.

After all, cars and music go together like . . . well, cars and music. Just think of all the great rock, pop, and rap songs that have been written about cars: from The Beach Boys "Little Deuce Coupe" to Prince's "Little Red Corvette" to The Game's "How We Do." In this chapter, I set you on the road to a great car audio system: I cover how to decide what kind of system you really need and want, how to factor in your budget, and how to make the most of what your system already has.

Taking the Car Audio Plunge

For my money, there's no better place to listen to music than in a car. When you're listening at home, the phone always rings or someone tells you to turn it down. Even with headphones, distractions occur and the music is all in your head, so to speak. But the car is like your own private listening room: a mobile sound cocoon that isolates you from the outside world. You can turn it up as loud as you want (as long as you're not disturbing others) and feel the visceral impact that comes from the music pulsing around you.

I've been fortunate enough to hear some ultra high-end home-audio systems and I've been in state-of-the-art recording studios and witnessed some amazing live performances. But none of these live up to the feeling I get while listening to a well-designed car audio system in a cool car on a fun road. Music just seems to sound better when asphalt is flying under your feet!

The best time ever for car audio fans

There's never been a better time to be a mobile music lover. Not only have components such as amplifiers and speakers reached an apex of performance and offer more bang for the buck than ever, but the recent explosion in media options has made the DVD radios that were state-of-the-art a decade ago seem almost antiquated now. The advent of MP3 has freed music from a disc-based format so that now you're able to carry your entire music library on a small portable player such as an iPod. Alternatively, you can load hundreds of songs onto a single disc or even a USB thumb drive. Satellite radio has gained ground against traditional terrestrial radio, while high-definition (HD) radio promises to make AM and FM better and offer more content. Plus, in just a few short years, mobile video has turned "Are we there yet?" to "Are we here already?"

Your roadmap to awesome car tunes

Consider *Car Audio For Dummies* your roadmap to awesome car tunes. You know that there's this wonderful world of car audio out there, but you don't know how to get started planning a sound system, shopping for components, or installing everything, let alone getting the most out of your system, protecting it, and fully enjoying it. In this book, I take you through each step of the process so that you can make informed decisions without wasting time and money and so that you'll ultimately end up with a car audio system that will give you years of listening pleasure.

You've come to the right place

You probably heard someone's car audio system — a friend's, your older sibling's, or maybe one at a car show — and now you want something similar. You used to think your car's system sounded pretty good, but now that you've heard something better, it just doesn't stack up. I've always referred to this as the *ice cream theory*. After you've tasted Ben & Jerry's, for example, you can't go back to the grocery-store brand. It's just not the same.

You know what you want, or at least have a vague idea in mind. You just don't know how or where to get it. The fact that you're reading this book means that you're off to a solid start!

Deciding What Kind of Mobile Music Listener You Are

One of the first things you'll need to determine is how you like your car tunes. Do you like to crank the bass so that people can hear you coming down the road for blocks? Or do you like to hear every subtle nuance of a Mahler symphony? Do you like to be blown away by every note of a great rock-guitar solo and feel the bass drum beating against your chest? Or do you want your system to sound as if Norah Jones and her piano were sitting on your car's hood? Maybe you want your system to do all of these things. The cool things about car audio is that you can have it almost anyway you choose.



Deciding what kind of music listener you are helps you determine a starting point. Most people have wide-ranging musical tastes, and it is possible to put together a system that bangs out the bass in a rap song and produces the subtle sound of a symphony. Defining those parameters will help you when planning your system.

Besides thinking about what kind of music you mostly listen to, you should also consider how you like to listen to it. Do you mostly drive alone during a daily commute? Or do you want a system that you can crank when you're out driving with your friends? Most people will want a little of both.



Also think about what type of media options you'll want. Do you keep all your music on an MP3 player, or do you mostly listen to CDs? Are you an FM radio listener or do you like to tune into AM talk radio? Thinking about these things can help you pick out the best components and hopefully avoid some potentially costly mistakes down the road.

In the not-too-distant past, you had just a few choices in music formats: AM, FM, CD, or cassette. But MP3s, the iPod, and satellite radio have changed the way people listen to music in the car. And now it's not uncommon for in-dash radios to sport USB drives or even SD card slots that allow you to play dozens of digital music files on these handy devices. Plus, it's possible to burn as many MP3 and WMA tracks on a single CD as a clunky old CD changer once held on multiple discs. Now, devices such as phones and portable media players (PMPs) that use Bluetooth Advanced Audio Distribution Profile (A2DP) technology to wirelessly wing music to a compatible car radio are starting to become available.



With so many different ways to bring your tunes on the road, it pays to think long and hard about how you'll listen to music in the car. It's a way to hopefully future-proof your car audio system so that you're not shut out from using new technology or having to do expensive upgrades later on.

Finally, creating a car audio system can be an extension of your personality, in much the same way that customizing your car says something about you. After all, if you wanted to be like everyone else, you'd just keep your stock stereo system. Car audio is about creating a system that sounds the way you like it, plays the media that you choose, and looks the way you want it to.

Knowing Your Car, Your Needs, and Your Budget

It's not uncommon to start out with grand expectations when fantasizing about your future car audio system. It's nice to dream, and it's free! But when it's time to come down to reality, you'll need to accurately assess your car, your needs, and your budget to determine what works best for you.

Your car

Although you may want a wall of 18-inch subwoofers that will blow away the boys (and girls) down at the local hang site, if you're driving a Ford Focus, such a scenario is obviously unrealistic. Even if you drive a large SUV, you probably can't fill it up with bulky amplifiers and subwoofers if you use it to transport stuff like kids, groceries, or tools for your work.



You'll also need to consider how long you plan to keep your car. If it's yours for life, you can probably go crazy and turn it into the ultimate sound machine. But if you plan to trade it in or sell it in a few years, keep in mind that prospective buyers may not be as thrilled as you are about the custom car audio system. In fact, contrary to what you may think, a mega sound system sometimes *detracts* from the value of a vehicle.



This is especially true of cars that are traded in at the dealer level. The last thing they want to see is a bunch of non-factory authorized accessories “hanging off of a vehicle,” as one auto insider once told me. Consequently, you'll take a big hit on the value. And if you're driving a leased vehicle, you'll want to tread *very* lightly when adding car audio components or any accessories that may alter the car. Otherwise, you could be hit with a penalty at lease end.

Your needs

Have you ever bought something and went with all the bells and whistles and later found out that you don't need them all? Shopping for a car audio system is not much different. You'll want to make sure you get what you need and aren't buying stuff you don't. Although a car's physical space will dictate how much car audio equipment you can install in it, your appetite for the latest and greatest doesn't have such built-in limitations. Consequently, it can sometimes be difficult not to go overboard and overspend on items and features you don't need or will never use.



Think about your listening habits and media preferences as well as your own aesthetics preferences. For example, although it may be cool to buy a head unit with a display that offers 1,000 different colors, is it really worth the extra money you may spend? Or will a subwoofer with lights that blink to the beat really add anything in terms of sound quality — or improve your image on the street? These are questions only you can answer, and you should ask.

Your budget

I like to think of a budget as a self-correcting system. Although anyone can come up with an awesome car audio system on paper — and many enthusiasts both experienced and inexperienced often do — when it comes down to plunking down your cash, writing a check, or whipping out your credit card, the reality of your financial situation takes over.



Therefore, it's essential to take stock of what you can afford and plan accordingly. One of the great things about car audio is you don't have to buy everything at once and you can add on to your system as funds become available. You can start off with a head unit, for example, that powers the factory speakers, and then add aftermarket speakers later on. After that, you can add an amplifier and maybe a subwoofer.

If you do splurge and go for the whole system at once, it's important to allocate your money wisely. For example, you don't want to blow your wad on a super-duper head unit and then skimp on the amplifiers and speakers if you later have to replace them. That's counterproductive and wasteful.

Although there's no magic formula on how to spread a given amount of funds on a car audio system, here's a general guideline on the percentage you should allocate to a given area:

- ✓ Amplifier(s): 40%
- ✓ Speakers: 30%
- ✓ Head unit: 20%
- ✓ Accessories: 10%

Use this as a general guideline when you start planning your component-buying budget, but take it with a few grains of salt. You may, for example, decide to spend more on a high-end head unit and less on amplifiers and speakers.



If you don't plan to install your system yourself — and the fact that you're reading this book should indicate that you probably will not — remember to allot a large percentage of your funds to cover professional installation. Installation generally absorbs up to 40 percent of your overall budget, so adjust your planning accordingly.



I've heard too many stories of over-eager enthusiasts maxing out their credit cards and damaging their credit ratings to get a car audio system they couldn't otherwise afford. As badly as you may want a system for your ride, think long-term and don't do anything stupid. You can add to your system as you have the dough, and many reputable independent car audio shops will work with you if they know you're in it for the long haul and will be back to buy more. They may even cut you a great deal on used or discontinued equipment. So before you go into debt to get that system, think about whether it's worth it in the long run.

Choosing between Mild and Wild

For many people, car audio is as much about show as it is about sound. After all, chrome wheels won't make your car go any faster, but they look good, they're fun, and they tell people you care about your car. Nothing wrong with that. After all, people have been pimpin' their rides for years.

If you want a flashy car audio system, go for it. Just keep in mind that there are trade-offs. If your car is a daily driver and you use it to haul people and other things, then going with a flashy system may be impractical. For instance, I once put a *show* system in my 1996 Chevy Impala for a cross-country promotional trip I did for a magazine. It was the first time I installed a huge system in my own personal car after nearly 10 years in the car audio business. Although the interior was kept pretty low-key except for custom door and rear-deck panels for the speakers, the car's trunk was turned into a veritable car audio showcase. It included five amps in a rack in the floor and three 10-inch subwoofers in a bandpass box with a see-through Plexiglas panel under the rear deck. A

massive 100-disc CD changer was installed against the driver's side trunk wall, with a bank of capacitors and power-supply accessories on the other. It was all trimmed with custom vinyl-covered wood and Plexiglas panels.

It sounded great and looked awesome. The car was a hit at the shows I attended and my neighbors would bring their friends over just to see it and listen to it. It was covered in magazines several times, and it was cool to have a celebrity car.

But the car didn't handle and accelerate the same due to all that extra weight from the car audio components. About a year or so later, after my first child was born, my wife and I couldn't even fit a baby stroller in the trunk because of all the car audio gear.



The reason I relate this story is to show you both sides of the coin. You can go with a mild system, like the one shown in Figure 1-1. Or, go nuts with a system like that in Figure 1-2. If you want that showy system, by all means, you should have one. But a great-sounding but more discreet system can usually serve the same purpose. Plus, with a showy system you run the risk of attracting the wrong kind of attention: from thieves.



Figure 1-1:
A mild system can sound good and leave you with trunk space.



Figure 1-2:
A *wild*
system
looks great
but can
leave you
with no
trunk space.

Upgrade your factory-installed system

If you really want to stay on the mild end of the scale and keep from altering your car too much — as well as protect against theft — you can keep the factory radio and add components such as amplifiers and subwoofers. Inversely, you could always change out your factory radio and keep your factory speakers intact.

I did this in one of my own vehicles, a 1997 VW Eurovan Camper that's a family-mobile. After talking it over with my installer, we decided I could get the sort of performance I needed in the vehicle (after all, my wife mostly drives it, and I can't really crank it up with the kids around) just by swapping out the radio. This also gave me the option to add satellite radio and an auxiliary input that allowed me to easily jack in an iPod. And I could always decide to upgrade the speakers and add an outboard amplifier later.



There are several options for upgrading your factory audio system. You should consider these first if you're primarily looking for better sound. The easiest and least expensive path to better sound is to swap the factory speakers for higher quality aftermarket ones. Many car audio manufacturers offer *drop-in* speakers that are specifically designed to fit factory provisions in a vehicle with a minimal amount of hassle and little to no modification. Often it's just a matter of taking out the factory speakers and *dropping* in new ones. This approach generally offers the most bang for your buck because many stock car audio systems use cheap and poor performing speakers, and even inexpensive aftermarket speakers can offer a dramatic difference in sound quality.

Keep your factory radio

When most people think of a *car stereo*, they think of the thing in the dash with buttons and a display. But such *head units* are just part of the system, although a major part. They generate an audio signal, let you select among various music formats, show what's playing, allow you to crank the volume, and sometimes include some signal processing functions, such as equalization, which tweaks the sound to better suit the car's interior space.

Then they send a signal on to the speakers in a system and sometimes to amplifiers in between to boost the signal. Truth is, many modern stock head units do this quite well, and they are getting harder and harder to extract from the dash. Some are oddly shaped or control other functions of the car, such as climate controls. So it isn't always practical — or even necessary — to replace the radio in some vehicles.

Understanding OEM upgrade options

The increasingly difficult-to-replace head units are why a growing trend in the car audio industry is to leave the factory head unit intact and add components *downstream* in the audio signal path. This is happening for the reasons I mentioned earlier in the chapter, as well as the fact that many people lease their vehicles these days and are reluctant to modify them in any way. Because of this, the aftermarket car audio industry has started to respond with a growing number of components specifically designed to allow upgrading a stock stereo system.



Almost all stock head units have only amplified *high-level* outputs that are designed to drive speakers, not amplifiers, which usually require an unamplified *low-level* signal. That's why it's typically easier to add speakers to a factory system than amplifiers. Some aftermarket amplifiers do, however, accept both high- and low-level signals, making them ideal for OEM (or Original Equipment Manufacturer — meaning the equipment that came with the vehicle) upgrades. And as with drop-in speakers, adding an amplifier is a surefire way to improve the sound of an anemic stock system.

But it isn't always that easy. More and more stock systems, particularly *premium* systems, also incorporate proprietary signal processing that's designed to work only within the *closed* system. When aftermarket components are added, it can actually make the sound worse because they aren't compatible with the system's signal processing.

But the aftermarket has been performing end-runs around the carmakers for decades. Being the resourceful bunch that they are, car audio manufacturers have responded to being locked out of such systems with products specifically designed to drop a signal from a stock head unit down to line-level *and* filter out any signal processing. Many of these also have an auxiliary input that also allows you to add an iPod or some other audio source to a factory system. If a stock system doesn't use proprietary signal processing, a simple *line-level* output converter will knock a high-level signal from a stock head unit down to *line* or a low-level so that an amplifier can be added.

Regardless, a savvy specialty car audio retailer will be able to help you upgrade your factory system so that you can add almost anything you like to it.