

Understanding Amplifier Wattage

Okay, this is going to blow most of you away. It is the worst problem in the electronics industry. It needs to be taken care of, but it probably will not any time soon. You are probably asking, "What are you talking about?" Well, let me explain.

I have people tell me all the time that they or their friend has 2000 watts in their home or Car audio system. I have to bite my tongue, because I know they are lying or they just don't understand the truth about wattage.

This is going to be a long paragraph. Okay, let's say you are looking for a 300Watt amp to run 2-10" woofers. Well, me being a storeowner, I have got to explain the truth to you. The truth is that there is really no way I can sell you a 300-Watt amp! You ask why??? Well here is the truth.

THERE IS NO STANDARD RATING IN WATTAGE!!!!

That is the truth. Most electronics companies are guilty of lying about wattage. Especially if you get into the cheaper brands. I have 300-Watt amps for \$49 or I have 300-Watt amps for \$1000 as well as everywhere in-between.

It is the most confusing thing in the electronics market period.

Here are the questions I get, and the answers I give.

Q- How can the amp companies lie like that?

A-There is no standard for wattage in place, so one company's wattage can be measured totally different than another companies.

Q-Who else lies about the wattage?

A-Everyone is guilty in some way.

Let me explain...here is a perfect example. A good Kenwood Car Stereo which falls into category 2B some would say 2C as I listed the categories above. This is a great stereo for around \$150 to \$250 depending on what store you got it from. This Car Stereo on the outside of the deck says 50 Watts X 4. That would mean that this car stereo has the total wattage of 200 Watts when all 4 channels are added together. Well, here is the truth. This stereo really only has about 8 to 11 Watts of power coming out of each channel. It is true.

They lie. Alpine has pushed it to the limits. On their decks, they say that they have 65 Watts X 4 on some of the models. Some people will choose Alpine just because they lie a little more on the box. Can you believe it?

Here is another example of how wattage is rated wrong. Orion figures that you want it the other way. Take an Orion Car Amplifier model # 250HCCA (old school) this amplifier is rated at

50 Watts per Channel, Same with a Rockford Fosgate 100.2. This amp is also 50 Watts per Channel. Well the Orion, which costs \$400, has enough power to run 2-15" 400 Watt Subwoofers. The Fosgate, which is priced around \$200, has enough juice to run 2-10" 200 Watt subwoofers really well. They are both rated the same, but they are 2 totally different ball games.

UPDATE.....Orion and Fosgate "Old School" Amplifiers were rated this way. Now they too have labeled their amps at much higher output. Bigger stickers equal more sales I guess?

Hey...if these amplifiers only have 100 Watts (50 Watts X 2 Channels) and the Kenwood stereo has 200 Watts, doesn't that mean the Kenwood Car Stereo has more power then both of these amps?? NOT A CHANCE IN HELL. Does this make sense to you? Do you see what I mean?? The wattage rating game is a joke!! It is the most confusing thing to somebody who does not deal in electronics every day. Well I am here to help. I need to show you one more list. This is to pound it into your head, on how miss-leading wattage ratings are. This is a list of some 200-Watt Amps, by Price, Brand, and the truth on what these amps will actually run. This should open your eyes.

This is a list of 200 Watt Car Audio Amplifiers. They all say 200 Watts on the box!

Item Description	Price	What it will really power!
Pyramid 200 Watt EQ	\$39.00	Nothing (Speakers Sound Worse)
Jensen 200 Watt Amp	\$79.00	1 Pair of 6X9's (Okay)
LA Sound 200 Watt Amp	\$99.00	Single Low Wattage 8" Woofer
Majestic 200 Watt Amp	\$119.00	Single 10" Sub
Pioneer 200 Watt Amp	\$149.00	4-Door Type Speakers
Kenwood 200 Watt Amp	\$199.00	2-8" subwoofers or 1-10"
Kicker 200 Watt Amp	\$249.00	2-10" subs or 1-12" sub
McIntosh 200 Watt Amp	\$1299.00	3-12" subs or 2-15" subs

These are all 200-Watt Amps. Now does it make sense?? Do you see the difference?? Wattage means nothing. This is true in all Electronics. Subwoofers, Receivers, Amps, Speakers. From Home to Car, whatever you are dealing in, wattage is not even a term that should be considered when asking questions about audio products. It is Sad, but it is true.

Q-How then am I supposed to make a decision on what is good, or bad?
A-Very easy. I will give you some clues on how to figure it out!

#1 Remember, you always get what you pay for in electronics. If you pay good money, the odds are that you are going to get a good product. But to get a good deal, you must research everything I tell you in this book. Keep reading...

#2 You must do your research. A good store will tell you the truth about everything. A bad store will miss-lead you and try to get you to buy the item that they make the most money on.

Ask them to explain to you what “True Wattage” means to them. Once you understand how the store, or salesman thinks, then you can both get on the same level of conversation. Once the salesman knows you understand that the wattage game is a bunch of crap, he will be much more relieved to be able to talk to you about the truth.

#3 The bottom line is this. You are going to have to find somebody you can trust (Outrageous Audio). Also, only buy from stores that offer a guarantee (Outrageous Audio). If you are not happy with the product, can you bring it back? That should be your first question! If they say no, then go somewhere else! This is where price does not matter. You may pay a little more at another store, but for you to be happy with what you buy, it is worth it. At my stores, we make sure the customer is happy with their purchase. If they are not happy, then they can bring it back. No problem.

Q-We always tell our customers if the product is garbage....If it is a junky piece of equipment, then why do you carry it?

A-We have to carry something for everybody. Some people can't afford good stuff, so we have to have something in every body's price range. If you ask us, we will tell you the truth. We do carry better equipment, but if you need something to get by with for a short period of time, we carry the cheap stuff too. Most stores do! If you don't want this type of equipment, just refer to the rating system in the other section of this site.

Q-Is there any other way to tell good quality products?

A-Yes, there is a very clear way.

Here is a general rule of thumb when buying electronics.

#1 Buy brands that you have heard of.

#2 When shopping for good or High-end electronics, here is a general list by manufacturers location. (NO LONGER APPLIES) see UPDATE!

The Best electronic products are made in the USA. All of your top amplifiers, Home theatre speakers, Subwoofers are made in the USA, by US companies. You are going to pay a lot more for these products, but they are going to be worth it if you can afford it.

The next in line, is going to be all of your electronics from Japan. The brands you know generally come from Japan. Pioneer, Kenwood, Alpine, Sony, JVC, Eclipse. All of these products are very good to purchase. Japanese companies make the best stereos! They lack on amps and speakers. You really can't go wrong as long as you do your research.

The worst stuff comes from Taiwan, Korea, China, and other foreign countries. BEWARE if they are made in these countries. There are exceptions to this rule, but not that many. So as a general rule, if it has a little sticker on it, that says made in China or Taiwan, or someplace else, put it back on the shelf. Also, if it has a name you have never heard of, run for the hills.

MAJOR UPDATE.....Boy how things change over the years since I first wrote this book. I am leaving the above paragraph in for your amusement. I wrote the first version of this book years ago to help my friends understand.....and the above paragraph no longer applies at all!!! Hardly anything is made in the USA any more. It all comes from overseas to get a lower manufacturing cost. Some high end companies make a few products in the United States, but they will be “Super” expensive. So the above paragraph is VOID from a few years ago. And nothing is made in Japan anymore, because the manufacturing prices are so high. 99% all comes from China, Korea, and Taiwan. That is the fact.

Here is how it works. The Company, such as Kicker, is located in the United States. They design the products, and engineer them here in the states, and then send them to China for Mass production. This gives you a top quality product at a low price.

So to answer the question on “How to find Good Products”

#1 Stick to brands that you know.

#2 Read all of the Reviews on the Internet about that product.

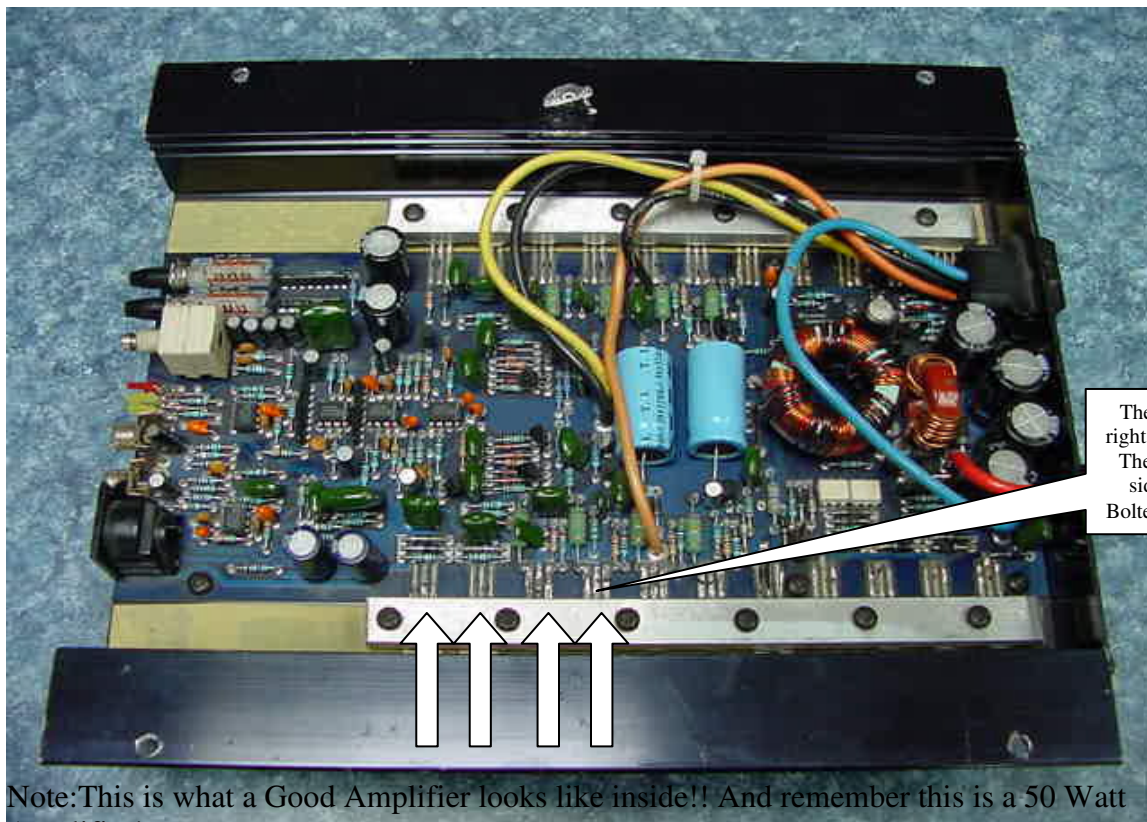
#3 Ask a store that you trust after reading the reviews (Outrageous Audio).

STOP THE PRESS!!!!

Okay, I just got the best idea to show you the truth about amplifiers, as well as the truth about wattage.

The first amp that I have opened up here for you is the Orion Model 250. This amplifier is a 25Watt X2 Amplifier. Many people would say that this is a 250-Watt amp because they would take a look at the model number and mistake the model number for the wattage. The model number on an amplifier will give you a clue to the wattage. In this case, the Orion model number tells you this. The first number tells you the number of channels this amplifier has. The second two numbers tell you the TOTAL wattage that amplifier puts out which is 50 Watts. NOT 50 Watts X 2. 50 Watts total. Now take a close look at the pictures below of this amplifier and notice all of the complex circuitry that is inside. A good amplifier will have a ton of electronics in it like this one. All good amps look like this. Take note of the Components that are bolted down under the rails of the amp. These components under the rails are what produce the monster power in an amplifier. There is no way around it. The more Components the more power, that is why the amps get so big because of the more components to produce such huge power from the 12 Volt Battery under the hood. The entire design of an amplifier is to keep these components cool. That is why these rails are bolted across the components to the heat sink of the amplifier. An amplifier will (In most cases) always gets warm or even hot to the touch when operated. This is normal. Most good amplifiers have incredible protection circuits that enable the amp to monitor how hot the amp gets inside. This circuit will shut down the amplifier

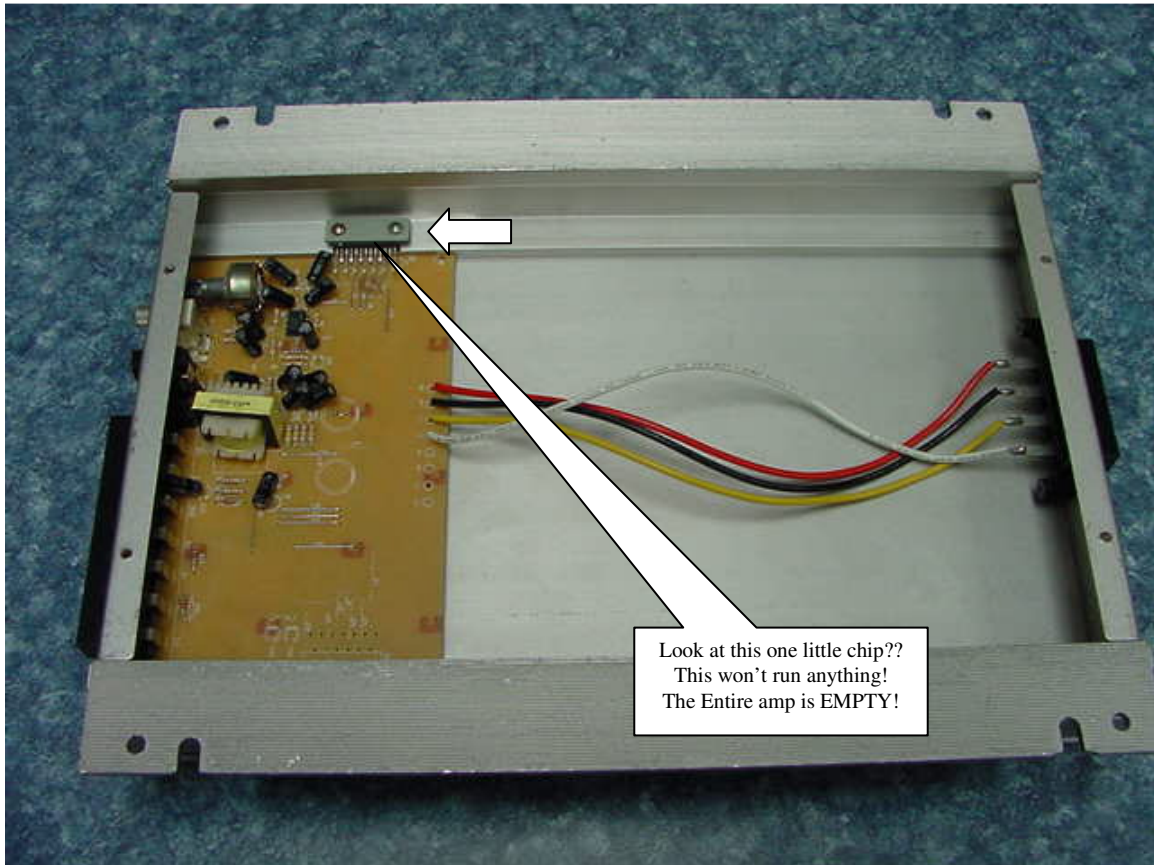
if it gets too hot and prevent any damage to the amp. Again, study the photos below, and make sure you understand what a good amp is supposed to look like.



The Transistors are right under these rails! They go down both sides of the amp! Bolted to the heatsink.

Note: This is what a Good Amplifier looks like inside!! And remember this is a 50 Watt Amplifier!

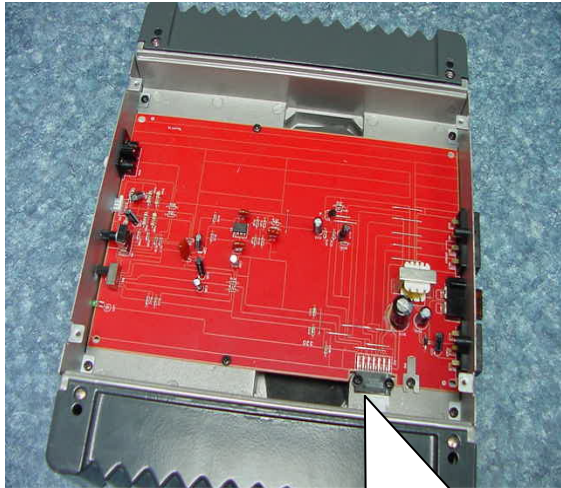
Now we get to have some fun, and some shocking news. You ever here one of your friends brag about how many thousands of watts he has in his car. Well, you are going to see the truth. This amp came into me with a great story. The guy came into my store looking for some subwoofers that would handle 1000 watts of power. I showed him some of the best subwoofers I had. I suggested the Kicker Solo-Baric 12" L7 that has a rated power of 500 "TRUE" Watts each. So he purchased two of them and was very happy. The next day, he came back to me and said the woofers that I sold him sounded like crap. He was very upset. I sold him one of the best speakers he could afford. I was very confused until I went out to his car. I asked to see the amplifier. I looked at the amp (Which I should have looked at the type of amp he had before I sold him his subs). He showed me the amplifier that he had purchased for \$400, which is pictured below. Without saying another word, I brought a screwdriver out to his car and pulled the amp out, and pulled the back of the amplifier off to see what was inside. NOTHING!!! This amp does not even have enough power to run a pair of 5" Door speakers. He was very embarrassed by the way he had yelled at me. I sold him a Kicker (True) 500 Watt amp, and he was very grateful for educating him on how he got ripped off. He even gave me the amplifier, and went to the guy who sold it to him and got all of his money back. The guy was so upset at the gentleman who sold him the amp; he was not going to leave until he got his money back. Take a close look at the amplifier. The front of the amplifier says 1000 Watts. Look inside.... only one small power chip. This happens to be the same power chip that is used in most cheap decks to power a couple of door speakers. Notice the wires run across the amp to get to the other side. These wires are used just to make the amp bigger. I have seen this same circuit board in many different wattage configurations. All the way up to 2000 Watts. The 2000-Watt Model uses the same circuit board and is twice as long. The only thing different inside is that the wires are twice as long to get to the other side. Can you believe it? Sometimes these amps have a BIG chunk of lead in them to make them feel heavier. And the name on this amp is even more ridiculous KINGWOOD. Sound familiar. Kingwood sounds like Kenwood, so this certain person that bought this amp was a Hispanic gentleman that did not speak perfect English. So KINGWOOD sounded like that brand he had heard about before Kenwood. Kenwood is a good amp, not KINGWOOD. So after we explained the truth to him, he was very happy to understand that I was telling him the truth. Again, take a look at this amp. I have seen this amplifier named everything from KINGWOOD to Pioneer. Don't get ripped off by buying one of these amps!! Most cheap amps look like this on the inside. They are worthless. They will do more harm to your system than good.



NOTE: Don't get burned by buying one of these!!

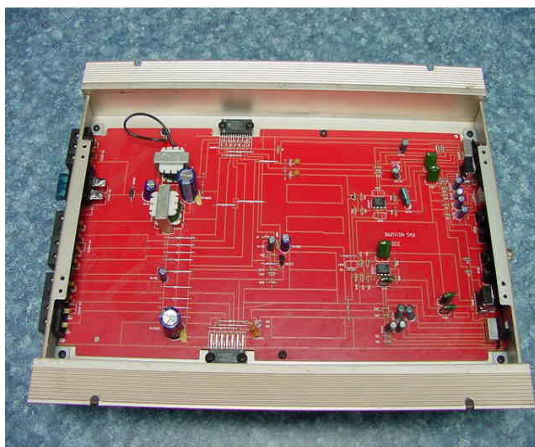
Okay, now that you know what to look for, I am going to show you some other fakes out there. You have to buy your electronics from the right sources or you will get burned. Take a look at this fake. This Amp is really heavy. It has two solid steel outer covers that make this amp appear to be very heavy. It also says KENWOOD 600 Watts. Also on the back it says, "MADE in JAPAN". Most Japanese companies no longer make their amps in Japan, so this is a LIE. It is just a sticker to make it appear as though the amp is a true KENWOOD. Kenwood has never made an amp that looks like this. Take the back cover off of it.... and what is inside...NOTHING. The same chip again that is used in cheap decks. This amp is a fake. It has about 5 Watts of power. Less than most car stereos. This amp was purchased for \$500. Also, the back plate of this amp weighs as much as the entire amp. It is made out of 1/4" Steel to make the amp feel heavier. Did he get a good deal?? Another case of being ripped off. Look at the photos.





Again, an empty amp with an empty circuit board just to take up space. Oh look, 1 little chip again!

I think you get the idea, but I have one last amp to show you. Here is another fake. Make sure you note the words used on the outside of the amp. Words like “Turbo Driven” or “Liquid cooled”. This should be a dead give-a-way that the amp is junk or a fake. This amp is labeled as a PIONEER. Pioneer, which makes good amps, has a fit when they see these. This is another fake. Pioneer has never made an amp like this, and I open up the back and what do we find...nothing. The same junk.



Again Don't get caught with your pants down buying one of these fakes!!!



Now that you understand what amps should look like on the inside and out, I will give you some names of all categories. Here is a list of Car Audio Amps divided into 3 categories. The order, in which they appear in the list, does not mean that they are the top of that category. Also, if you don't see a name of an amp on the list, don't worry, I just listed a few for you to get the idea of the different classes of amps!

The Best

Boston Acoustics
 Precision Power
 JL Audio
 Autotek (Old Only)
 Zapco
 Kicker
 Soundstream (Old School Only)
 HiFonics
 Phoenix Gold RSD
 Kenwood Excelon (Clean)
 Orion HCCA's
 McIntosh

Good Amps

Kenwood
 Pioneer
 Alpine
 JVC
 Sony
 Orion Cobalt
 Panasonic
 Cerwin Vega
 Phoenix Gold Ryval
 Autotek (New)
 Orion Cobalt

Worst Amps

Pyramid
 Jensen
 Kraco
 Rockwood
 Audiovox
 Road Gear
 JDX
 Legacy

Several of these amp companies have made some cheaper products to get into different markets, and lower price products. Do your research!

Also, if you have a cheap amp, and it sounds really good, please do not write me on how mad you are. These above categories are very accurate. Some people will argue with me, but that is the way it is! Some people swear that they have some cheaper stuff that they think is better than

the real thing. That is okay. I have been in this business for many years, and have heard every brand out there. You do not see \$100,000 systems built around Kraco or Pyramid! If you are one of these people, please do not write to me. There is some cheap stuff out there that will actually work, but in most cases, the life of the amp will be very short. Just buy right in the beginning and you will eliminate most problems. I hope you can sell your cheap stuff and move up to the good stuff one day. This is not meant to make you upset. If you ever have a chance to buy the good gear, you will hear and feel the difference.

Before I finish with this section, I wanted to write one last thing. Now that you understand that wattage ratings mean nothing. I never want you to come into Outrageous Audio and ask...

“How much is a 300 Watt Amp” That is the worst question you could ask as you have learned. The Best question you could ask is this (If you were looking for an amp)

“I have 2-12” 500 Watt Kicker Subwoofers, can you show me several amps, in different price and quality categories that would run these?”

If you ask this question at Outrageous Audio, he will fall over. Why? Because it is very rare that anybody ever walks into our stores with so much knowledge.

Again, if you asked this type of question at another store, the salesman will probably fall to his knees because he has an educated customer, rather than every other clueless person that asks the wrong questions. When you ask the wrong questions, you are most likely going to end up with something that will not be to your liking, or will not run your other items to 100% of what they could be doing. So try your best to get the proper questions ready when approaching a store. This will save time, and probably save you money by being so clear on what you want.

At Outrageous Audio...we will not mislead you!!