

System Setup

Thank you for choosing STARGUN antenna system.

Several issues must be addressed then performance will come alive.

There are many opinions on how to setup a system, so they surely should be considered then probably forgotten. Many like to buy more watts before they invest in a real antenna. So many antennas I have seen since 1955. There was no such thing a cb band only police used and many used Johnson equip.

I remember in 1962 talking to the Colorado state police via skip, illegal off course, but fun. So lets go beyond the normal setup present today back to the basics of the old way. We'll use analyzer equipment later.

Lets begin with the radio, tuned properly and internal circuits grounded bypassing the positive ground option (call me and we can talk about it)

The pl259 connector: many on the market so beware of top brands coming from out of USA. I normally use a high voltage teflon 7 piece rather than the 2 piece, it will carry twice the rf voltage. If heat builds up the ohms will change and blow your equipment up (pills). So use the best and they vary, do a little research or call me. Now just as important the coax cable, folks say why so important, take a loose from system, throw away, then see how far you can talk! Well we first need to know the frequency and wattage level then the length run for your application.

So as example RG 213 most often used, which I do not for many

reasons, the rg213 is only rated at 1.5kw on the 11 meter band (cb), some say they run much more watts and get by but what is the real key down time you experience. Remember cable should not run hot or even barely warm when transmitter is running (keyed down) for a week if choose. Folks say you can't do that it would destroy you amplifier and I agree so therefore use a real coax rated for your application, my test are for key up for hours or even days, example: alpha wire 9058c/u 500w, rg213 1.5kw, rg214 2.5kw, rg217 3.5kw, rg 218 8.5kw, heliax 1/2" 10 kw, rg 393 15kw.

Now there are others but these are most often used. The higher the frequency the less the power rating, the lower frequency more watt rating. So basically we need to consider all specifications of the cable used like capacitance per foot meaning we want the capacitance to match the capacitance in the amplifier so little tuning will be needed, most amps use a fixed ball park value because most amps are copies from other builders and they don't have a clue what it takes to really match cable and antenna. Some have tuners which are helpful but a lot of time to cheap to even be in a amp much less try to tune (balance) the amp. The rating of the tuner should be of high quality and exceeds your rf voltage rating so no failure in pills. Many time a long antenna 102" whip etc. will match out on most cables but now if we move to a short antenna we need a way to match, therefore variable capacitor, a real one,

questions ask me.

So now we left the transmitter thru a real pl259 then down the high quality proper rated coax cable to the gate (mount).

First the mount has to be the best, it has to open and allow all the little ducks to leave at same time at the speed of light and not some hang out at the mount. Many times the center hole thru the metal is too small, barely get your thumb thru and again a long antenna will not see the metal being close at low power but when running a large amount of watts it will then see metal and change capacitance and heat up now breakdown. You want to make the center hole as big as you can make it. The mount has to be high rated like extreme high rf voltage, with strength to hold an antenna steady.

The Stargun mounts are for real. Several options of mounts will be the style you need are on this site for reference. Brackets are most often used like on truck mirror arms, etc. Strength is the key, now magnetic mounts are another way of mounting, they are good if setup properly, they are like an iced over bridge, if you don't let off your gas you may destroy engine, transmission or the rear end. So rf has to wander all over until we have a direct path to leave, by grounding mounting plate attached to the magnetics with a # 4ga with lugs to the frame will allow a current return path to be present rather than a path thru the coax shield which would heat up and breakdown and won't have the opportunity to do its job (coax shield).

Now on to the antenna, many styles are on the market but none will do what the Stargun antenna system offers. I have seen 10kw on a 7" tall (93 series) antenna, I would not believe if I had not see with my eyes. Stargun beams are so far beyond the technology of today and that is why they are number 1 in world competition (no one makes what Stargun makes) covers all bands with simple changes. See master kit 22 for example. Frequency, bandwidth, rf voltage ratings and many other features are beyond all others. And now that is the easy part. I have in the past so many comments concerning the Stargun that turned from negative to positive once the negative were making progress on their technical expertise. Most use the analyzer (which is good) if you know what you're looking at. The way to avoid setup problems is to use a simple swr meter with calibrate knob fully clockwise to set antenna to 1.0:1 then use the analyzer to get the characteristics of the antenna system. You could make a simple change such as a pl259 and read 1:1 swr and read 49ohm you would not have any loss in performance but it is nice to be perfect. You could change location of antenna on vehicle and the ohms may change or you may have a change in the return/loss factor and get out of phase. However, these changes will need to be explored by all the smart guys. Come on guys the one that think they know everything are particular aggravating to those of us who do. Antenna will make you look silly so careful with you post online and later look in the mirror and promise yourself you will not do that again.

Just had to add that for after 55 years in the business I have made myself look silly when I thought I knew but I learned and realized the Stargun is for real and the only one that is. I challenge any engineer to show me wrong. So, the bottom line is if you have any questions or problems setting up any system, let me know.

Now you may want to review other system info posted, it may help you and save a lot of time and money. I hope this post will head you in the right direction.