



As a result of numerous interesting comments I offer the following in the best HAM spirit as help to those that obviously need it. The following two paragraphs I gratefully acknowledge the text from Andy G3SVD an excellent explanation of ALC and SPLATTER:-

ALC is "automatic level control" and is a system applied to power amplifiers in order to force them to operate only in the linear portion of the operating curve. In a so called linear amplifier if you plot the power output against power input at the bottom of the graph it will be a straight line, then it tends to curve off. The ALC system takes a sniff of the output voltage and applies that back to the input as a negative voltage in order to reduce the gain of the amplifier as the output increases. The ALC voltage can just be applied within the PA itself or it can be applied back to the driving device, ie transceiver. However this does have limits and if one really applies too much drive you can still operate outside the linear portion.

SPLATTER is caused when a PA is over driven and it is operating in the non-linear portion of the curve. This causes the PA to produce harmonics of the input signal which then modulate each other (inter-modulation) and these will produce signals outside the original width of the SSB signal. This also applies, of course, to PSK as it is a signal comprising two continuously transmitted tones. The splatter is what you can hear on sideband and see on the waterfall in PSK.

Thank you Andy....

Now for how I setup for PSK mode and note I have this setup as a macro to fire off at any time to assist a fellow ham with a problem setting up.

The ability to set up your radio for PSK modes comes with experience. Many stations are finding the PSK modes popular but do not fully understand how to set up the computer and radio for the mode. I hope the following advice will help.

The important thing to remember is that it is very easy to overdrive the radio with too much audio from the computer sound card causing QRM and SPLATTER to every other operator on the band.

I find the following is a good way to start:-

1. Tune your transmitter to say 40 watts output (this is plenty of power for psk mode) to a good aerial vswr having made sure you have a clear frequency first.
2. Accessing the soundcard drive sliders (Volume + Wave) whilst keying the radio move them up or down to achieve just under the 40 watts drive level. Or, use the rotary level control on Signalink types. If you push the drive level over it WILL splatter.
3. Set your radio to read the ALC meter and if its any more that ZERO then reduce the soundcard drive sliders slightly to achieve the ZERO ALC. This is very IMPORTANT and is the worst cause of overdriven signals.
4. Make double SURE the speech processor is OFF.
5. Double check your interface is OK.

That's all there is to it and you will have a clean signal with NO splatter with excessive sidebands which cause qrm and spoil the mode for others. I hope this will help you to set up correctly and you enjoy the mode as much as I.

Regarding the queries about signal reports:-

Normally a clean waterfall signal with NO sidebands being also perfectly readable and good signal strength would merit a 599 report. A received signal may be perfectly readable (5) and a good strength (9) but the last number on the report is the CRITICAL one. Ranging from 1-9 report 1 would be a signal that is SPLATTERING so wide it blots out almost the entire waterfall upto a 9 which would be perfectly narrow with NO visible sidebands splatter which is achieved and the result on ZERO ALC level.

As for our colleagues being taught otherwise then that is basically wrong. To give a 599 report then to add " you are a bit wide" is a nonsense and must be avoided. Simply give a correct report eg 595 would mean you are perfectly readable with a good signal strength but you are overdriving causing some splatter with sidebands. The habit of automatic 599 reports are ok so long as it is true. If you must rely on auto mode reporting then with a quick mouse-click on the second 9 you can easily change that to eg. a 5.....As for it being considered "RUDE" to give a correct report however poor, I wonder what manual that comes from, certainly not in any of mine hi. As was also commented on that "Yes, please tell me if my signal is poor as I want to enjoy the mode and NOT spoil it for others"... again YES tell me.

I do hope this screed helps those in need of guidance and a reminder to those who know it all.

73 de Mike G3PGA