

S-meter reading FT-897D

When I first published the results of the S-meter readings of my Yaesu FT-897D, I realised that, although the measurements as such were laid down correctly, the info, as presented, was not really helpful.

Therefore we (PA3EGJ and PA0SNY) did a second attempt on Thursday, March 20th, 2008, in the shack of a station that already exists for over 70 years: P19KLM (originally the station for the training of navigators/telegraphists of KLM, the national airline of The Netherlands).

This time we followed a different approach: we set the signal (using a Hewlet Packard HP8640B signal generator) and read what the display showed.

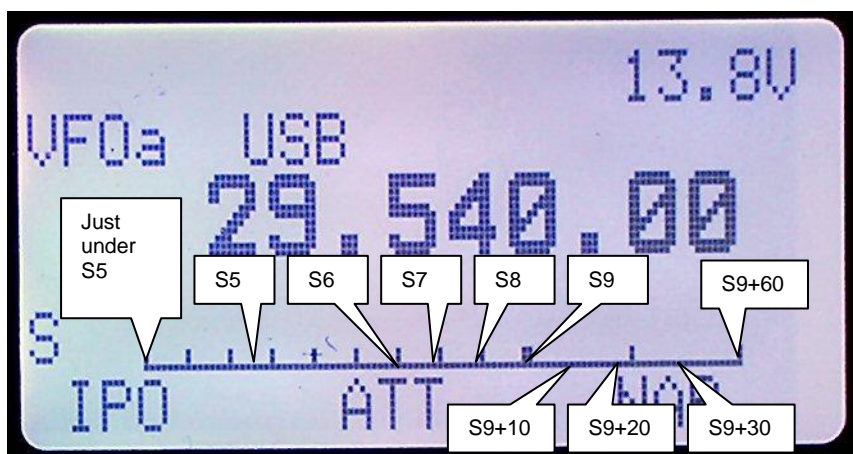
We did this using the HF S-meter reference (see next page). Applied the signal strength for a certain S-reading, and checked how it showed up on the display of the FT-897D transceiver.

And because "a picture paints a thousand words", I now present the results on a display of my FT-897D transceiver.

We measured for two logical settings: **[IPO]** (meaning Pre-Amp off) and **IPO** (standard setting, so with pre-amp).

Here are the results:

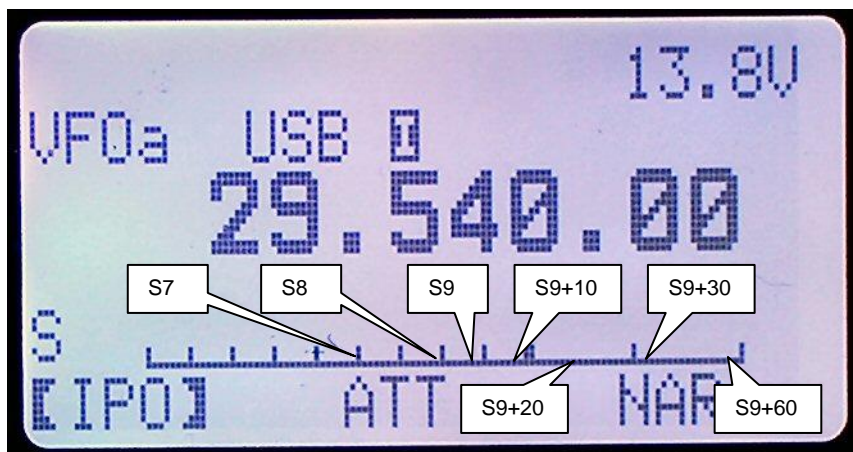
First in **the 'standard' screen (no IPO or ATT switched ON)**



What does this mean? In fact it shows that the first part of the scale until the S6 mark (so 6 S-points = 36 dB) covers actually only some 7 dB!

Further: S6 is measured where the scale means S7, and S9 is measured where the scale tells you that it is S9+10

Then with **[IPO] ON** (mind set: **the pre-amp is now OFF**, my standard for 80-meters)



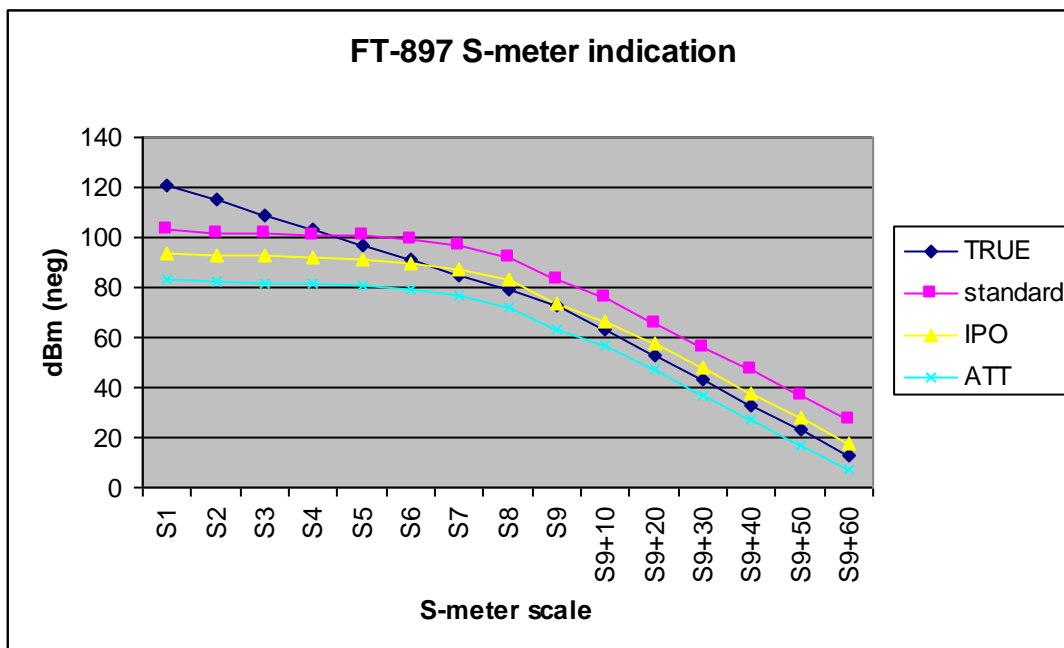
And what about this?

S8 is more or less exact on the scale. From S9 and on, it reads just under what it should be. Rule of thumb: Above S8 the scale overreads with approximately 5 dB.

This is best shown on the graph (next page)

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The measurements that we (Ben and I) did a week earlier, show the relation between various settings compared to what it should have been:



The black line in the graph above, is how HF S-meter readings should look like.
 Pink is ATT and IPO off (maximum sensitivity)
 Yellow is IPO active (preamp OFF), shown on screen as [IPO]
 Blue is ATTenuated (20 dB attenuator)

This is the basis for the black line:

S	dBm
S1	-121
S2	-115
S3	-109
S4	-103
S5	-97
S6	-91
S7	-85
S8	-79
S9	-73
S9+10	-63
S9+20	-53
S9+30	-43
S9+40	-33
S9+50	-23
S9+60	-13

Note that the black line is the truth, and that with [IPO] selected(again: IPO = Interception Point Optimization = front end preamp switched OFF).... The reading of the FT-897's S-meter is at least above S8 'not too bad'.

 But under S7... let's face it: **it is rubbish!**

I want to thank Ben, PA3EGJ and the crew of PI9KLM for their kind support, the equipment and the knowledge to perform the measurements on March 20, 2008.
 And of course I thank my 'mates' of the ProjectGroup .540 for that same reason in performing the measurements of Friday March 14, 2008.

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