S-meter measurements ICOM IC-7300

S-reports are a challenge in amateur radio. Is your S-meter calibrated?
Since I own an IC-7300, the S reports that I give are somewhat 'better' than those of my previous rig the Kenwood TS-820 / R-820.

In the shack of PI9KLM, we occupy the ADRET 7100B signal generator to generate a calibrated signal. When applying – 73 dBm for the first time……… the S-meter indicated exactly S9!


Method of measurement:

Generate a signal that indicates S1 (S2, etc) on the IC-7300 S-meter, and record the applied value.
We (PA0WBZ/PA0SNY) did this for 80m (3.650 kHz) and 10m (28.500 kHz).

IC-7300 S-meter scale with no signal applied

Recorded values:

Signal strength	What it should be	IC-7300 S-scale	
		no amps	no amps
S	TRUE	80m	10m
S1	121	100	98
S2	115	97	95
S3	109	94	92
S4	103	91	89
S5	97	88	86
S6	91	85	83
S7	85	83	80
S8	79	78	76
S9	73	73	72
S9+10	63	64	64
S9+20	53	55	54
S9+30	43	47	46
S9+40	33	37	36
S9+50	23	27	26
S9+60	13	18	15
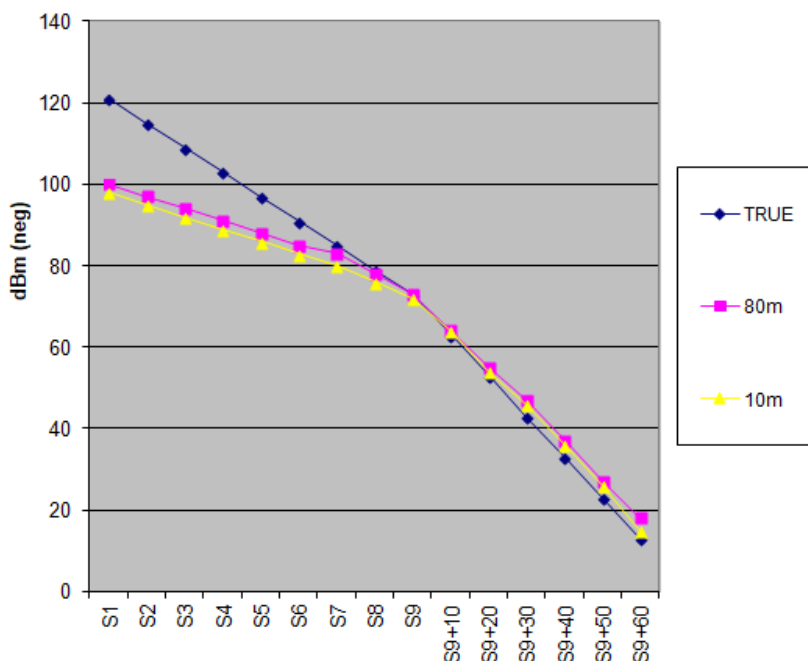
When plotted in a graph, it can be seen that every S-reading above S8 is more or less correct.
Below S8 the S-meter reads increasingly incorrect. I plotted the (black) correct table value in the S-meter graph, to indicate the difference.
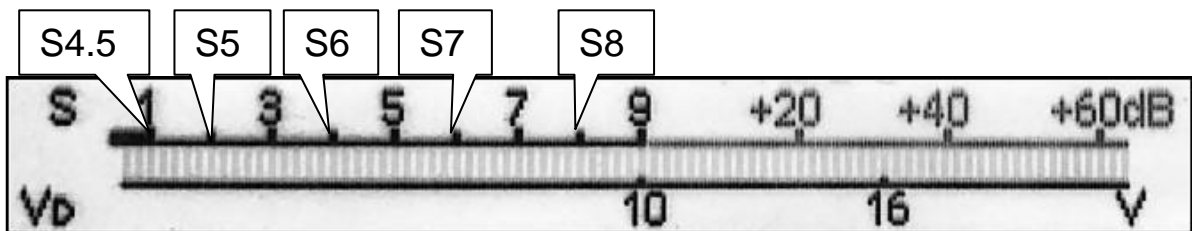
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Actual: S4.5 S5   S6   S7   S8

A more or less similar picture was found for the Yaesu FT-897D, be it that the FT-897D scale was 5 dB too optimistic above S8. These measurements were performed in 2008, also in the shack of PI9KL at Schiphol Hangar 12

This results in a final picture, that will be used for my 'real S-reading overview' cheat sheet:
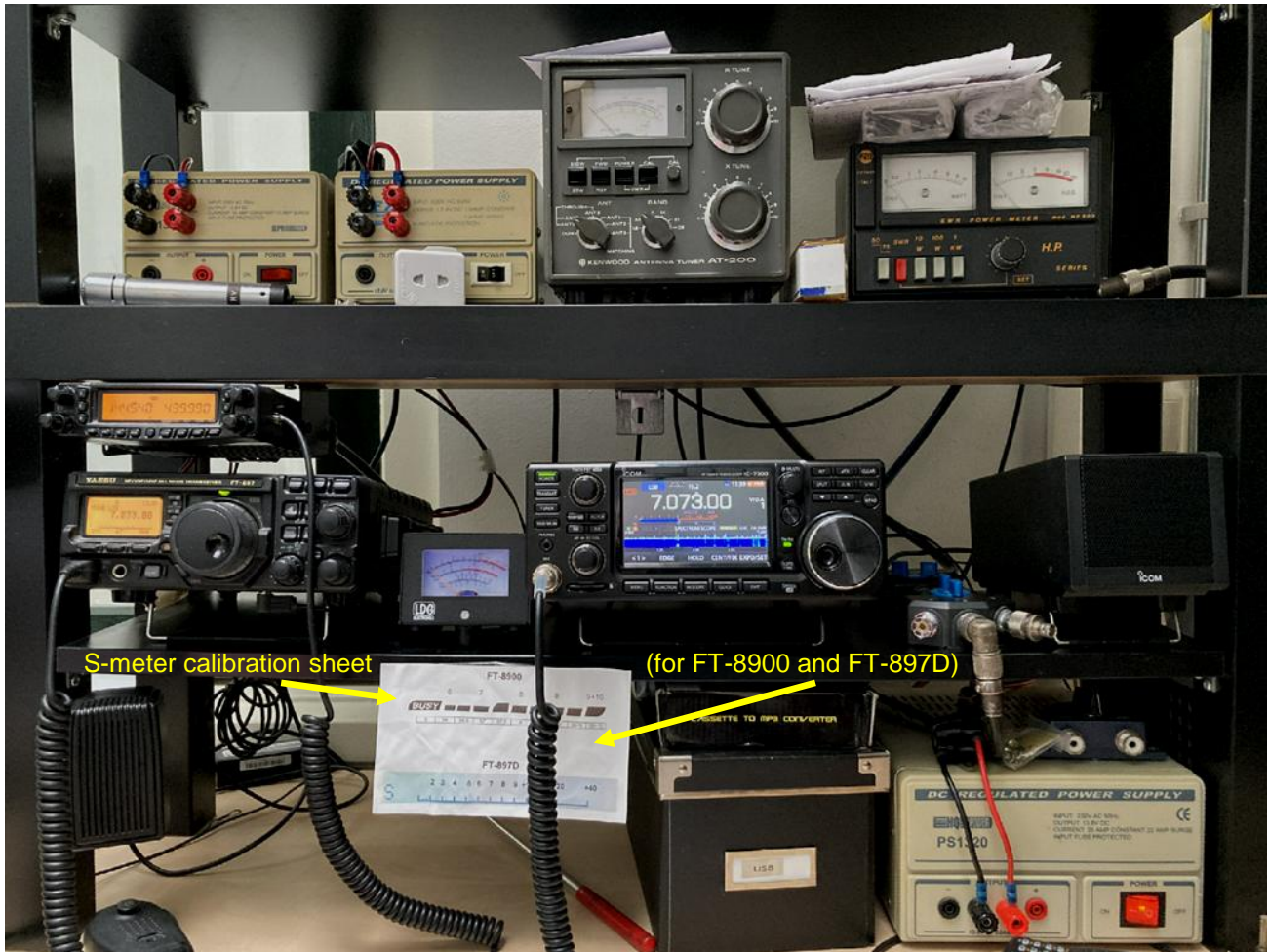

VHF S-meter measurements
We performed no VHF (50/70 MHz) measurements yet.

Hans PA0SNY together with Wim PA0WBZ

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Finally some additional information, nor relevant to the subject

My shack (November 2021):

It looks chaotic, but it is not. See the paper with the S-meter true value for FT-8900 and FT-897D. I will make a new one, with the IC-7300 scale on it as well.

Hans