

# S Meter Data

## Greg Ordy, W8WWV, August 24, 2000

This note contains all of the raw data accumulated from the radios measured. The data is for S Meter Lite and the S Meter comparison web page. Measurements made with a Heathkit IG-102S RF signal generator, and an MFJ-762 Step Attenuator. The attenuator always had a minimum of 20 dB of attenuation, except for a handful of cases trying to measure the top of the meter range.

An **X** as an entry means that I could not conduct the test, usually due to the lack of sufficient signal from the RF generator.

The tables that have S Meter Lite in the title, and are one entry long, contain the data that has been placed in S Meter Lite as the default radio data.

### ICOM IC-756PRO

ICOM IC-756PRO S Meter Calibration Table (S Unit to dB)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
3.8	Off	-19	-17	-15	-14	-12	-10	-8	-6	-3	0	10	20	29	39	46	X
	1	-20	-18	-16	-14	-12	-10	-8	-6	-3	0	8	18	28	37	47	59
	2	-15	-13	-12	-11	-10	-8	-7	-5	-2	0	7	19	27	35	46	58
14.2	Off	-18	-17	-15	-13	-11	-10	-8	-6	-3	0	8	19	27	36	46	X
	1	-18	-16	-14	-12	-11	-10	-8	-5	-3	0	8	19	28	36	46	57
	2	-17	-15	-12	-10	-9	-7	-6	-4	-2	0	8	18	27	35	45	57
28.5	Off	-17	-15	-14	-12	-11	-9	-8	-5	-3	0	8	19	29	37	46	56
	1	-16	-14	-12	-11	-9	-8	-6	-5	-3	0	8	19	27	34	45	56
	2	-16	-13	-11	-10	-9	-8	-6	-5	-2	0	8	17	26	35	45	55

ICOM IC-756PRO S Meter Lite Calibration Table (S Units to data)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
All	both	0	14	28	40	54	68	80	94	108	120	138	162	180	200	221	242

ICOM IC-756PRO S Meter Lite dB Calibration Table (dB to data)																	
Freq.	Preamp	-18	-16	-14	-12	-10	-8	-6	-4	-2	S9	+2	+4	+6	+8	+10	+12
3.8	Off	0	10	27	45	60	76	89	100	110	120	124	129	133	137	142	146
	1	0	0	14	35	53	72	87	99	110	120	125	129	133	138	142	146
	2	0	0	0	16	43	65	83	97	110	120	125	130	134	139	144	148
14.2	Off	0	9	27	44	61	76	89	101	110	120	125	129	134	138	142	146
	1	0	0	14	37	52	71	87	99	110	120	125	129	133	138	142	146
	2	X	X	24	30	48	63	80	95	108	120	124	129	133	137	142	146
28.5	Off	0	6	24	44	60	74	88	99	110	120	125	130	134	138	142	147
	1	X	26	30	40	52	70	85	98	110	120	X	X	X	X	X	X
	2	X	X	X	X	X	X	X	X	X	120	X	X	X	X	X	X

ICOM IC-756PRO S Meter Lite Averaged dB Calibration Table (dB to data)																	
Freq.	Preamp	-18	-16	-14	-12	-10	-8	-6	-4	-2	S9	+2	+4	+6	+8	+10	+12
All	both	0	10	27	45	60	76	89	100	110	120	125	129	133	138	142	146

**Notes:** A number of readings were not possible due to instability in the setup. High gains and high frequency (28.5 MHz) caused the readings to be unstable, and unreliable. Preamp 1 was 10

dB at 14.2 Mhz. Preamp 2 was 16 dB at 14.2 MHz. The attenuator was accurate at 14.2 MHz, which is to say that it was 6, 12, and 18 dB of attenuation.

### ICOM IC-706MIIG

ICOM IC-706MIIG S Meter Calibration Table (S Unit to dB)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
3.8	Off	-26	-25	-24	-23	-22	-20	-16	-11	-5	0	5	10	15	21	26	35
	On	-26	-25	-24	-23	-22	-20	-16	-11	-5	0	5	10	16	21	26	35
14.2	Off	-27	-26	-25	-24	-23	-21	-16	-11	-5	0	5	10	16	21	26	35
	On	-25	-24	-23	-22	-21	-20	-16	-10	-5	0	5	10	16	21	27	36
28.5	Off	-26	-25	-24	-23	-22	-20	-16	-10	-5	0	5	10	16	20	27	35
	On	-27	-26	-25	-24	-23	-21	-16	-10	-5	0	5	10	16	20	27	35

ICOM IC-706MIIG S Meter Lite Calibration Table (S Units to data)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
All	both	46	54	64	76	84	94	104	113	123	133	144	156	170	181	192	204

ICOM IC-706MIIG S Meter Lite dB Calibration Table (dB to data)																	
Freq.	Preamp	-18	-16	-14	-12	-10	-8	-6	-4	-2	S9	+2	+4	+6	+8	+10	+12
3.8	Off	100	104	107	111	114	118	122	125	129	133	137	142	147	151	157	162
	On	100	104	108	111	114	118	121	125	129	133	137	142	146	151	156	161
14.2	Off	101	105	108	111	115	118	122	125	129	133	137	142	147	152	157	162
	On	100	104	108	111	114	118	121	125	129	133	137	141	146	151	155	161
28.5	Off	100	104	107	111	114	118	121	125	129	133	137	142	146	151	157	161
	On	100	104	106	111	114	118	121	125	129	133	137	142	147	152	157	161

ICOM IC-706MIIG S Meter Lite Averaged dB Calibration Table (dB to data)																	
Freq.	Preamp	-18	-16	-14	-12	-10	-8	-6	-4	-2	S9	+2	+4	+6	+8	+10	+12
All	both	100	104	108	111	114	118	121	125	129	133	137	142	146	151	156	161

**Notes:** S9 on the 756PRO was S9+5 on the 706, 14.2 MHz, no preamps. The preamp was 10 dB @ 14.2 MHz. The attenuator was 18 dB @ 14.2 MHz. Readings under S4 were less than 1 dB/S Unit.

### Yaesu FT-920

Yaesu FT-920 S Meter Calibration Table (S Unit to dB)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
3.8	Off	-31	-28	-27	-26	-24	-22	-19	-14	-9	0	11	25	37	47	X	X
	On	-30	-28	-27	-26	-25	-22	-19	-14	-9	0	11	25	36	47	57	X
14.2	Off	-30	-28	-27	-26	-25	-23	-19	-14	-9	0	10	23	35	46	X	X
	On	-30	-28	-27	-26	-24	-22	-18	-13	-8	0	11	23	36	47	57	X
28.5	Off	-30	-28	-27	-26	-24	-22	-19	-14	-9	0	11	25	37	46	X	X
	On	-30	-28	-27	-26	-24	-22	-19	-14	-9	0	11	25	37	47	58	65

Yaesu FT-920 S Meter Lite Calibration Table (S Units to data)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
All	both	46	54	64	76	84	94	104	113	123	133	144	156	170	181	192	204

All	both	6	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
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Yaesu FT-920 S Meter Lite dB Calibration Table (dB to data)																	
Freq.	Preamp	-18	-16	-14	-12	-10	-8	-6	-4	-2	S9	+2	+4	+6	+8	+10	+12
3.8	Off	104	112	119	126	131	138	142	146	149	152	155	158	161	163	166	168
	On	104	112	119	126	131	137	141	145	148	152	155	158	160	163	166	168
14.2	Off	104	112	119	126	131	137	141	145	149	152	155	158	160	163	166	168
	On	106	113	120	126	132	137	141	145	149	152	156	158	160	163	166	168
28.5	Off	105	113	120	126	132	137	142	145	149	152	155	158	160	163	166	168
	On	105	113	120	126	132	137	142	145	149	152	155	158	160	163	166	168

Yaesu FT-920 S Meter Lite Averaged dB Calibration Table (dB to data)																	
Freq.	Preamp	-18	-16	-14	-12	-10	-8	-6	-4	-2	S9	+2	+4	+6	+8	+10	+12
All	both	105	112	119	126	131	137	141	145	149	152	155	158	160	163	166	168

**Notes:** Readings between S1 and S4 were very close, often less than the 1 dB listed in the table. The preamp was 11 dB at 14.2 MHz. S9 on the 756PRO was S8.25 on the 920 at 14.2 MHz, without either preamp. The attenuator, 6 dB, 12 dB, and 18 dB, was accurate at 14.2 MHz.

### **ICOM IC-756**

ICOM IC-756 S Meter Calibration Table (S Unit to dB)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
3.8	Off	-24	-23	-21	-19	-18	-15	-12	-9	-5	0	11	23	33	41	50	X
	1	-25	-23	-21	-20	-17	-15	-12	-8	-5	0	11	23	33	41	50	57
	2	-25	-23	-21	-20	-17	-15	-12	-8	-5	0	11	24	33	41	50	58
14.2	Off	-25	-23	-22	-20	-17	-15	-12	-9	-5	0	11	25	35	41	50	X
	1	-26	-24	-22	-19	-18	-15	-12	-9	-5	0	11	32	35	41	51	61
	2	-33	-29	-25	-22	-19	-16	-13	-9	-5	0	11	23	34	42	50	58
28.5	Off	-26	-23	-21	-20	-18	-15	-12	-8	-5	0	11	23	33	40	50	57
	1	-27	-23	-22	-20	-18	-15	-12	-8	-5	0	12	23	33	41	50	57
	2	-29	-26	-24	-21	-19	-16	-12	-9	-5	0	11	23	33	41	49	57

**Notes:** At 14.2 MHz, Preamp #1 was 10 dB. Preamp #2 was 20 dB. The attenuator followed the markings, i.e. 6 dB, 12 dB and 18 dB. S9 on the 756PRO equals S9+5 on the 756.

### **Kenwood TS-440**

Kenwood TS-440 S Meter Calibration Table (S Unit to dB)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
3.8	None	-38	-32	-26	-22	-18	-15	-11	-7	-4	0	7	16	26	33	44	49
14.2	None	-40	-31	-25	-22	-18	-15	-10	-8	-4	0	7	16	25	33	44	48
28.5	None	-39	-32	-27	-22	-18	-14	-11	-7	-4	0	7	15	23	35	42	50

**Notes:** No preamp available. The attenuator on the 440 is 20 dB at 14.2 MHz. S9 on the 756PRO is S7 on the 440.

## Yaesu FT-1000MP

Yaesu FT-1000MP S Meter Calibration Table (S Unit to dB)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
3.8	Off										0						
	On										0						
14.2	Off										0						
	On										0						
28.5	Off										0						
	On										0						

Yaesu FT-1000MP S Meter Lite Calibration Table (S Units to data)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
14.2	Off																

Yaesu FT-1000MP S Meter Lite dB Calibration Table (dB to data)																	
Freq.	Preamp	-18	-16	-14	-12	-10	-8	-6	-4	-2	S9	+2	+4	+6	+8	+10	+12
3.8	Off										0						
	On										0						
14.2	Off										0						
	On										0						
28.5	Off										0						
	On										0						

Yaesu FT-1000MP S Meter Lite Averaged dB Calibration Table (dB to data)																	
Freq.	Preamp	-18	-16	-14	-12	-10	-8	-6	-4	-2	S9	+2	+4	+6	+8	+10	+12
All	both																

Notes: XXXXX

## ICOM IC-765

ICOM IC-765 S Meter Calibration Table (S Unit to dB)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
3.8	Off	-26	-24	-23	-21	-19	-17	-15	-10	-5	0	10	20	30	40	50	X
14.2	Off	-26	-25	-24	-23	-20	-17	-13	-9	-5	0	9	19	29	39	49	X
	On	-31	-29	-28	-25	-22	-18	-15	-10	-5	0	10	20	30	40	50	X
28.5	Off	-27	-25	-24	-20	-19	-18	-15	-10	-5	0	10	20	30	40	50	X

Notes: The preamp measured 9 dB at 14.2 MHz. The attenuator had 3 positions 10, 20, and 30 dB, and it was accurate at 14.2 MHz. The meter was very sensitive to weak signals and the inability to measure S9+60 dB was due to the signal output range of the signal generator.

## Kenwood TS-830

Kenwood TS-830 S Meter Calibration Table (S Unit to dB)																	
Freq.	Preamp	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	+10	+20	+30	+40	+50	+60
14.2	None	X	-28	-26	-24	-23	-20	-15	-10	-6	0	8	15	23	30	X	X

**Notes:** no preamp. The meter scale ended at S9+40 dB.