

For HF bands up to 30MHz and 50Ω impedance systems IARU technical recommendations defines **S9** to be a receiver **input power of -73 dBm or 50 microvolts** at the receiver's antenna input.

A signal strength of **S2** corresponds to a **received power of -115 dBm or 0.40 microvolts**.

A strong signal of **S8** corresponds to **received power of -79 dBm or 25 microvolts**.

For VHF bands and 50Ω impedance systems IARU technical recommendations defines **S9** to be a receiver **input power of -93 dBm or 5 microvolts** at the receiver's antenna input.

The recommendation defines one S-unit as a change of 6dB in signal strength, which corresponds to **Double the VOLTAGE or Four times the POWER** at the receiver input.

Signals stronger than S9 are given with an additional dB rating, i.e. S9 +10, S9+20, etc.

S-units below 30MHz (50Ω impedance systems)

Signal strength	Relative intensity	Received	Voltage	Received Power
S1	-48dB	0.20uV	-14dBuV	790aW* or -121dBm
S2	-42dB	0.40uV	-8dBuV	3.2fW or -115dBm
S3	-36dB	0.79uV	-2dBuV	13fW or -109dBm
S4	-30dB	1.6uV	4dBuV	50fW or -103dBm
S5	-24dB	3.2uV	10dBuV	200fW or -97dBm
S6	-18dB	6.3uV	16dBuV	790fW or -91dBm
S7	-12dB	13uV	22dBuV	3.2pW or -85dBm
S8	-6dB	25uV	28dBuV	13pW or -79dBm
S9	0dB	50uV	34dBuV	50pW or -73dBm
S9+10	10dB	160uV	44dBuV	500pW or -63dBm
S9+20	20dB	500uV	54dBuV	5.0nW or -53dBm
S9+30	30dB	1.6mV	64dBuV	50nW or -43dBm
S9+40	40dB	5.0mV	74dBuV	500nW or -33dBm
S9+50	50dB	16mV	84dBuV	5.0uW or -23dBm
S9+60	60dB	50mV	94dBuV	50uW or -13dBm

S-units above 30MHz (50Ω impedance systems)

Signal strength	Relative intensity	Received	Voltage	Received Power
S1	-48dB	20nV	-34dBuV	7.9aW or -141dBm
S2	-42dB	40nV	-28dBuV	32aW or -135dBm
S3	-36dB	79nV	-22dBuV	130aW or -129dBm
S4	-30dB	160nV	-16dBuV	500aW or -123dBm
S5	-24dB	320nV	-10dBuV	2.0fW or -117dBm
S6	-18dB	630nV	-4dBuV	7.9fW or -111dBm
S7	-12dB	1.3uV	2dBuV	32fW or -105dBm
S8	-6dB	2.5uV	8dBuV	130fW or -99dBm
S9	0dB	5.0uV	14dBuV	500fW or -93dBm
S9+10	10dB	16uV	24dBuV	5.0pW or -83dBm
S9+20	20dB	50uV	34dBuV	50pW or -73dBm
S9+30	30dB	160uV	44dBuV	500pW or -63dBm
S9+40	40dB	500uV	54dBuV	5.0nW or -53dBm
S9+50	50dB	1.6mV	64dBuV	50nW or -43dBm
S9+60	60dB	5.0mV	74dBuV	500nW or -33dBm

* attoWatt equal to 10^{-18} watts.