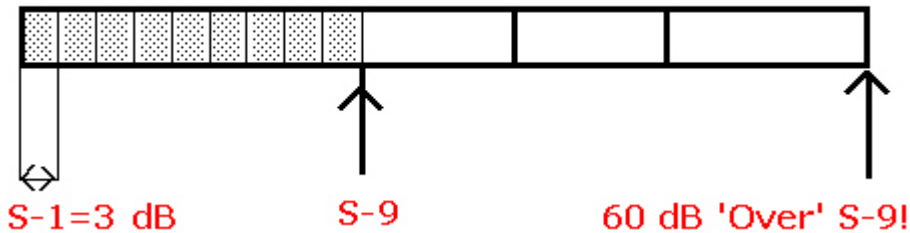


* dB Simplified *

Demystifying Decibels (dB)!

Transceiver S-Meter



dB, decibel=one tenth of a BEL (Alexander Graham Bell-Inventor of Telephone)

Decibel is nothing more than an expression of the ratio between two signals. However, the 'Logarithms' of the ratios are used rather than the straight arithmetical ratios.

$$\text{dB} = 10 \text{ LOG} (P_1/P_2)$$

1 'S' (Strength) Unit: Smallest change that is easily noted by the average listener.

S Meter calibration: **3 dB/S-unit**

50 micro Volt across a 50-ohm input impedance constitute a **S-9 signal**

S-9:..an extremely strong signal

60 dB 'Over' S-9: Signal is one million times stronger than an extremely strong signal, i.e. 50 micro Volt x 1,000000 = 50 Volts

Ratio	Factor	Power Decibels (dB)
1:1	1	0.00
2:1	2	3.01
10:1	10	10.00
100:1	100	20.00
1000:1	1000	30.00
10000:1	10000	40.00
100000:1	100000	50.00
1000000:1	1000000	60.00 dB

Finding dB without a calculator!

dB	Factor (X)		
10	10	Counting backwards from 10 by 2 's	John= 100 W Alex= 1 W John is 100 times stronger than Alex. How many dB's stronger John would be?
9	8		
8	6		
7	5	Counting backwards from 5 by 1 's	How many dB's stronger John would be? 10x5x2=100 10+7+3= 20 dB
6	4		
5	3		
4	2.5	Counting backwards from 2.5 by 0.5 's	
3	2.0		
2	1.5		

Datasheet by Sandeep Baruah, VU2MUE

(Courtesy: Decibels by Joseph J. Carr/Understanding Decibels without a Calculator by Jerry L. Bartachek

KD0CA/Decibel by Borking, Radio, Jan-July 1974)