ESE su dB e dBm

Convertire in W i seguenti valori logaritmici di potenza:

$$-70\text{dBm}$$
$$-27\text{dBm}$$
$$-3\text{dBm}$$
$$+6\text{dBm}$$
$$+24\text{dBm}$$

ESE su dB e dBm

$$-70\text{dBm} =$$
$$= 0\text{dBm} + (-10\text{dB}) + (-10\text{dB}) + (-10\text{dB}) +$$
$$+(-10\text{dB}) + (-10\text{dB}) + (-10\text{dB}) + (-10\text{dB})$$

Ricordiamo che:

$$0\text{dBm} = 1\text{mW}$$
$$-10\text{dB} = 10^{-1}$$

Quindi:

$$-70\text{dBm} = 1\text{mW} \times 10^{-7} = 10^{-10}\,\text{W} = 0.1\,\text{nW}$$

ESE su dB e dBm

$$-27\text{dBm} = -30\text{dBm} + 3\text{dB} =$$

$$= 10^{-3}\ \text{mW} \times 2 = 2 \times 10^{-6}\ \text{W} = 2\ \mu\text{W}$$

$$-27\text{dBm} = -20\text{dBm} + (-7\text{dB}) =$$

$$= 10^{-2}\ \text{mW} \times \frac{1}{5} = 2 \times 10^{-6}\ \text{W} = 2\ \mu\text{W}$$

ESE su dB e dBm

$$-3\text{dBm} = 0\text{dBm} + (-3\text{dB}) =$$

$$= 1\ \text{mW} \times \frac{1}{2} = 0.5 \times 10^{-3}\ \text{W} = 500\ \mu\text{W}$$

ESE su dB e dBm

$$+6\text{dBm} = 0\text{dBm} + 3\text{dB} + 3\text{dB} =$$

$$= 1\ \text{mW} \times 2 \times 2 = 4 \times 10^{-3}\ \text{W} = 4\ \text{mW}$$

ESE su dB e dBm

$$+24\text{dBm} = 30\text{dBm} + (-3\text{dB}) + (-3\text{dB}) =$$
$$= 10^3\ \text{mW} \times \frac{1}{2} \times \frac{1}{2} = 0.25\ \text{W}$$

$$+24\text{dBm} = 0\text{dBm} + 3\text{dB} + 3\text{dB} + 3\text{dB} + 3\text{dB} +$$
$$+ 3\text{dB} + 3\text{dB} + 3\text{dB} + 3\text{dB} =$$
$$= 1\ \text{mW} \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 =$$
$$= 1\ \text{mW} \times 2^8 = 256\ \text{mW} = 0.256\ \text{W}$$