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```
close all; clearvars; clc
```

## Vpp to dBm conversion (50 ohm impedance)

```
Vpp = 1;
    % Input peak-to-peak voltage [V]
R = 50;
    % Matching impedance [Ohm]
Vrms = Vpp/(2*sqrt(2));
    % RMS voltage
Pw = Vrms^2/R;
    % Power [W]
PdBW = 10*log10(Pw);
    % Power [dBW]
PdBm = PdBW+30;
fprintf(" * Vpp = %1.1f mV -> P = %1.1f dBm\n", Vpp*1e3, PdBm);

* Vpp = 1000.0 mV -> P = 4.0 dBm
```

## dBm to Vpp conversion (50 ohm impedance)

```
PdBm = 20;
    % Input power [dBm]
R = 50;
    % Matching impedance [Ohm]
PdBW = PdBm-30;
Pw = 10^(PdBW/10);
Vrms = sqrt(Pw*R);
Vpp = Vrms*2*sqrt(2);
fprintf(" * P = %1.1f dBm -> Vpp = %1.1f mV\n", PdBm, Vpp*1e3);

* P = 20.0 dBm -> Vpp = 6324.6 mV
```

## Notes

```
% 1. Remember the relation between dB and dBm is : X dB = X+30 dBm.
```

*Published with MATLAB® R2022a*