



Antenna Gain Report for HUB522 Location Hub

See Theory of Operation for antenna design details.

Measurements:

Highest Field Strength at 3m: 106.07 dB μ V/m
Power delivered to antenna: +10.11 dBm
Distance: 3m

Calculate *EIRP*:

$$EIRP(\text{dBm}) = E(\text{dB}\mu\text{V/m}) + 20\log_{10}(d) - 104.8$$

$$EIRP = 106.07 + 20\log_{10}(3) - 104.8$$

$$EIRP = 106.07 + 9.542 - 104.8$$

$$EIRP = 10.812 \text{ dBm}$$

Calculate Gain:

$$G(\text{dBi}) = EIRP - P_{\text{antenna}}$$

$$G = 10.812 - 10.11$$

$$G \approx 0.70 \text{ dBi}$$