

Calculation: RF-Exposure for Unlicensed Transmitter

FCC ID: **QKWPilot1**

Type of Device: **Control and steering unit for solar inverters**

In accordance with **CFR47, §1.1310 Radiofrequency radiation exposure limits** and

- 447498 D01 General RF Exposure Guidance v06
- 447498 D04 Interim General RF Exposure Guidance v01

The device operates in the frequency band **2400 ~ 2483.5 MHz**

S: Limit for power density according to Table 1 to
§ 1.1310(e)(1) Limits for Maximum Permissible Exposure (MPE)
 (i) Occupational / Controlled Exposure
 (ii) General Population / Uncontrolled Exposure
Limit for **1,500~100,000 MHz** leading to highest output power: **1.0 mW/cm²**

P: **205 mW** (max conducted output power leading to highest radiated power)

G: **2.37** (numeric gain of max gain 3.74 dBi)

D: Duty cycle: **1** (100%)

R: Distance in what the limit of S must be reached: **20 cm**
(refer also to the manufacturers installation / user manual)

$$S = \frac{P \cdot G \cdot D}{4 \cdot \pi \cdot R^2} \Rightarrow S = \frac{205 \text{ mW} \cdot 2.37 \cdot 1}{4 \cdot \pi \cdot (20 \text{ cm})^2} = \underline{\underline{0,11 \frac{\text{mW}}{\text{cm}^2}}}$$

Conclusion: The maximum value of the calculated power density at the declared minimum separation distance of 20 cm is well below the limit.