

TECHNOLOGY DUE DILIGENCE

Wichargless

Wireless power claim assessment

Investor technical assessment of the gap between advertised output and the configuration submitted for FCC testing.

The claim under review

200 mW (0.2 W) of continuous DC power delivered to one load at both 2 and 3 meters. FCC submission: Wichargless submitted a lower-power 4 W EIRP configuration for FCC testing, rather than the power required for this advertised output.

Investment recommendation No go

Do not proceed with the investment on the stated technical claims. The submitted 4 W configuration produces only **0.340 mW at 2 m** and **0.151 mW at 3 m** in the model: **588 times** and **1,324 times** below the 200 mW claim. [1,2]

The core performance promise fails under the case specifications. FCC approval of the submitted lower-power configuration does not validate the advertised output. This mismatch is sufficient for the no-go decision.

Assessment assumptions

Parameter	Assumed specification
Radio path	915 MHz; free-space, far-field propagation; ideal alignment and impedance matching.
Submitted configuration	4 W effective isotropic radiated power (EIRP) submitted for FCC testing in a qualifying Part 15.247 digital mode. Not a universal FCC cap. [2]
Receiving antenna	0 dBi gain toward the transmitter, equivalent to linear gain 1. This gain is specified, not inferred from physical size.
Conversion and load	50% RF-to-DC conversion; continuous output into a load, not a short burst powered by stored energy.

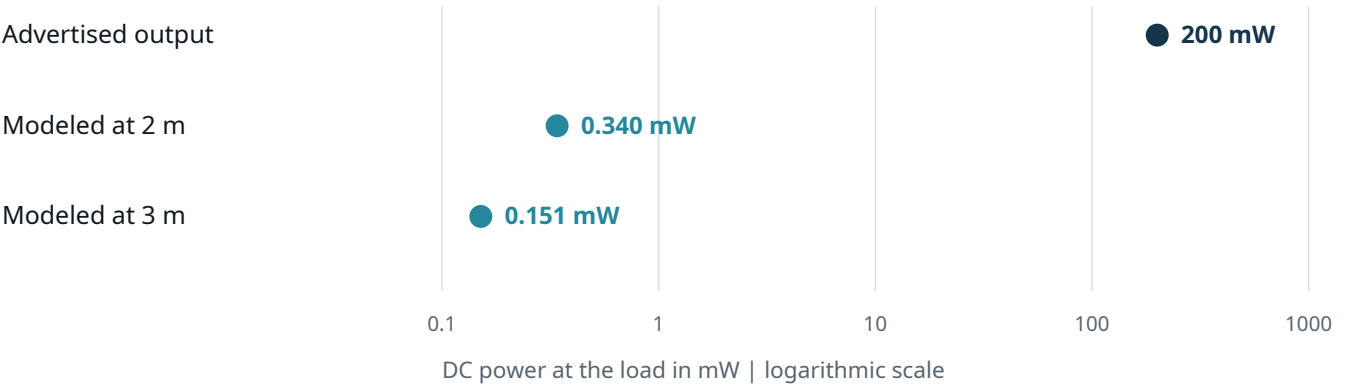
Risk: High - the submitted configuration does not support the marketed output. **Confidence: High in the calculation,** conditional on those inputs.

Power at the load falls short

Free-space power spreads with distance. The receiver captures only a fraction of that field; conversion efficiency then reduces the usable DC output. These are calculated values, not measurements. [1]

$$P_{DC} = \eta \times EIRP \times G_R \times (\lambda / (4\pi r))^2$$

$\lambda = c/f = 0.32764 \text{ m}; G_R = 1; \eta = 0.50; EIRP = 4 \text{ W}; r \text{ is distance in meters.}$



Calculated quantity	At 2 meters	At 3 meters
Free-space path loss	37.70 dB	41.22 dB
RF power received	0.680 mW	0.302 mW
DC delivered at 50% conversion	0.340 mW	0.151 mW
Shortfall against 200 mW claim	588 times	1,324 times
EIRP needed for 200 mW DC	2.35 kW	5.30 kW

Efficiency improvements do not close the gap

Even at 100% RF-to-DC conversion, output would still be only **0.680 mW at 2 m** and **0.302 mW at 3 m**. Increasing transmitter power to close the gap would exceed the assumed Part 15.247 configuration by hundreds of times. [1,2]

Model boundary. No extra feed, polarization, blockage, or circuit losses are deducted. Free space is a benchmark, not a universal indoor upper bound: reflections can raise or lower local fields. Near-field coupling, different receive gain, and other transmission architectures require a new analysis.

03 / FCC ROUTE AND DECISION GATES

The FCC route is decisive

The stated Part 15 route does not support the required power

For qualifying digital modulation at 915 MHz, Section 15.247 allows up to 1 W conducted power with 6 dBi antenna gain: approximately 4 W EIRP. Above 6 dBi, conducted power must be reduced by the excess gain. The rule also imposes bandwidth and spectral-density conditions; an unmodulated carrier cannot simply claim this route. [2]

Approval does not prove delivered power

4 W is not a universal FCC ceiling. Eligible 915 MHz RF wireless power can use Part 18, including transfer beyond one meter with prior FCC concurrence. [3,5] That does not prove 200 mW output. A different authorization route, emissions compliance, and RF-exposure conditions must be verified for the same configuration.

More transmitted power creates an exposure question

Under this receiver and 50% conversion assumption, 200 mW DC requires an incident power density of about **46.8 W/m²**. The public/uncontrolled MPE reference at 915 MHz is **6.1 W/m²**, so that target power density is about **7.7 times the reference**. This is only a screening comparison: accessible locations, averaging, occupancy controls, geometry, and device-specific SAR or MPE evaluation determine compliance. [1,4]

Reconsideration conditions only

These are optional conditions for reopening a declined opportunity, not prerequisites for the no-go decision.

- 1. Present a revised claim or design.** Specify frequency, waveform, EIRP, antenna gains, duty cycle, and authorization route.
- 2. Demonstrate continuous DC.** Independently log voltage and current into a defined load at 2 m and 3 m; demonstrate sustained output without net depletion of stored energy or reliance on peak-only readings.
- 3. Reconcile performance and compliance.** Require the applicable authorization records, RF-exposure evaluation, and measured output for the same hardware and operating mode.

Primary sources and scope

[1] NTIA TN 89-2, p. 2-4, equations 2-4 and 2-7: antenna aperture and incident power density.

[2] 47 CFR 15.247, paragraphs (a)(2), (b)(3)-(4), and (e): eligible modulation, power, gain, and density.

[3] 47 CFR 18.301, 18.305, and 18.313: ISM bands, emissions, and exposure. [4] 47 CFR 1.1310, (d)-(e), Table 1: exposure limits.

[5] FCC KDB 680106 D01 v04, Section 5.3 (24 October 2023). FCC-authored guidance; linked copy is hosted by a third party.

Sources checked 30 October 2026. Calculations and conclusions are conditional on the stated configuration. The recommendation is based on technical diligence; valuation and commercial prospects are outside scope.