

**Before the
Federal Communications Commission
Washington, D.C., 20554**

In the Matter of)	
)	
Request by Auspion Inc. for Waiver of)	ET Docket No. 19-83
Section 18.107(c) of the Commission's Rules)	
)	
)	

REPLY COMMENTS OF OSSIA INC.

John L. Flynn
David M. Didion
JENNER & BLOCK LLP
1099 New York Avenue, NW
Suite 900
Washington, DC 20001

Counsel for Ossia Inc.

May 10, 2019

TABLE OF CONTENTS

I.	SUMMARY	1
II.	BACKGROUND	2
III.	WPT TECHNOLOGY IS CRITICAL FOR U.S. INNOVATION AND NECESSARY FOR A 5G FUTURE	5
IV.	NO WAIVER SHOULD BE REQUIRED FOR WPT AUTHORIZATIONS UNDER PART 18, AND THE COMMISSION SHOULD CLARIFY THE EQUIPMENT AUTHORIZATION PROCESS GOING FORWARD	8
	A. WPT is Local	9
	B. OET Should Release Guidance on How WPT Devices Can Satisfy Any Requirements for Equipment Authorization under Part 18	10
V.	IN THE ALTERNATIVE, THE COMMISSION SHOULD CONSIDER A RULEMAKING TO CLARIFY THE WPT EQUIPMENT AUTHORIZATION PROCESS WITH A PARALLEL CASE-BY-CASE APPROVAL PROCEDURE	11
VI.	CONCLUSION.....	12

**Before the
Federal Communications Commission
Washington, D.C., 20554**

In the Matter of)	
)	
Request by Auspion Inc. for Waiver of)	ET Docket No. 19-83
Section 18.107(c) of the Commission's Rules)	
)	
)	

REPLY COMMENTS OF OSSIA INC.

Ossia Inc. (“Ossia”) submits these reply comments in response to the Request for Waiver filed by Auspion Inc. (“Auspion”)¹ and the comments filed in the above-captioned proceeding. Like other commenters, Ossia supports unleashing the promise of wireless power transmission at a distance (“WPT”) by confirming a regulatory framework that will enable swift commercialization while fully protecting the public. WPT is a necessary catalyst for continued U.S. technology innovation and leadership. Simply put, the future of 5G and the Internet of Things (“IoT”) *requires* WPT. The billions of connected electronic devices that will soon proliferate cannot feasibly satisfy their needs for power from wired connections or batteries.

I. SUMMARY

The record in this proceeding underscores the critical importance of WPT for U.S. innovation, and Ossia agrees swift action is required from the Federal Communications Commission (“Commission” or “FCC”) to preserve American leadership on WPT and prevent

¹ See Request for Waiver, Docket No. 19-83, filed by Auspion USA, Inc. (filed Jan. 3, 2019) (“Waiver Request”); Office of Engineering and Technology Seeks Comment on Auspion Inc. Request for Waiver of ISM “Local Use” Requirement in Parts 2 and 18 for a 24 GHz Wireless Power Transfer Device Over Distance, Public Notice, DA 19-211, Docket No. 19-83 (rel. Mar. 26, 2019).

stagnation in the 5G and IoT revolutions. The largest global companies support WPT's central role in the wireless future and have forged partnerships with WPT developers, including Ossia, to usher in the economic, environmental, and technological benefits for the U.S.

The Commission should use this proceeding to dispel the years-long regulatory uncertainty restraining the safe and effective development of WPT. In particular, Ossia asks the Commission to pave the path forward for WPT approval as industrial, scientific, and medical ("ISM") equipment under Part 18 of the Commission's rules. No waiver is required for the Commission to authorize WPT equipment under Part 18 as long as the technology satisfies reasonable standards that the Office of Engineering and Technology ("OET") should clarify going forward. WPT uses RF energy to do work as required by Part 18, WPT has already been approved at close and intermediate ranges under Part 18, and WPT technology like Auspion's uses RF energy "locally," as required by Part 18, under reasonable interpretations of "local."

In this proceeding, the Commission should provide definitive guidance on how WPT devices can receive equipment authorization under Part 18, utilizing the deep expertise and familiarity OET staff has built while collaborating with WPT providers. Because WPT is critical to 5G and IoT, the Commission should ideally provide such guidance as part of this proceeding or a targeted KDB process. Alternatively, if the Commission chooses to initiate a rulemaking to clarify relevant elements of Part 18, it should contemporaneously adopt a path to approval for some WPT devices with appropriate conditions. Ultimately the Commission should prioritize clarifying a rapid regulatory path for safe and effective WPT equipment authorization so WPT can unlock the potential of 5G and IoT.

II. BACKGROUND

Ossia, a Washington state-based technology company, is a leader in the fast-growing WPT industry. Ossia was founded in 2008 by physicist and technologist Hatem Zeine, who

designed Ossia's Cota technology, a new category of wireless power that safely delivers targeted energy to devices at a distance. Ossia's RF smart antenna technology automatically keeps multiple devices charged without any user intervention, enabling an efficient and truly wire-free, powered-up world that is always on and always connected.

Cota wireless power is delivered over distance, while in motion, and without line of sight to multiple devices automatically and simultaneously, enabling unprecedented mobility for users—and safety from RF exposure—as shown below:

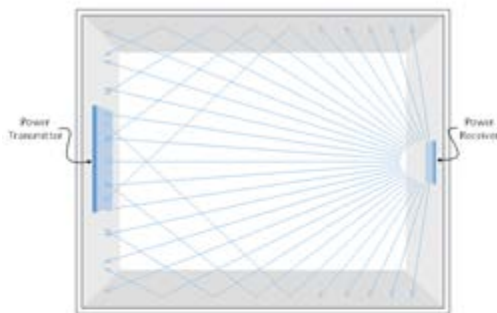


Figure 1: Power Receiver transmitting a Beacon Pulse - direct paths unobstructed.

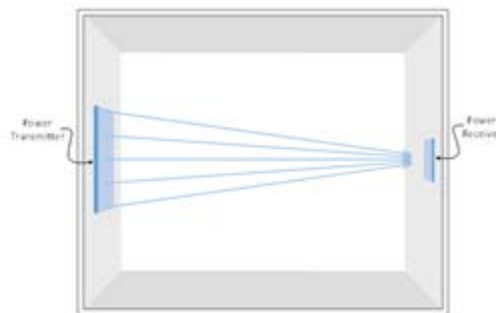


Figure 2: Power Transmitter transmitting RF Power - direct paths unobstructed.

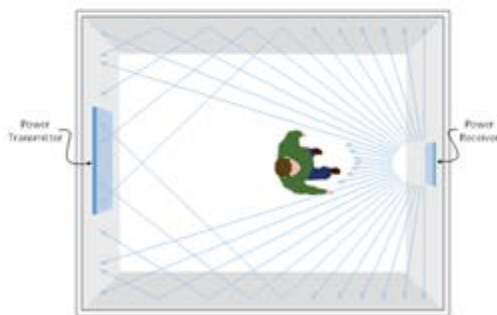


Figure 3: Power Receiver transmitting a Beacon Pulse - direct paths obstructed.

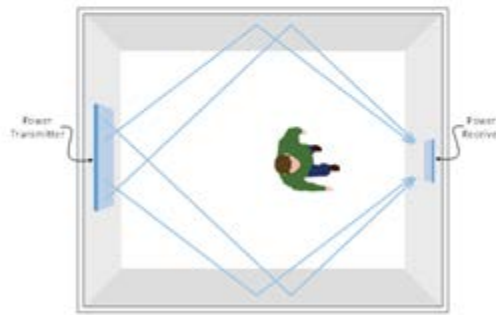


Figure 4: Power Transmitter transmitting RF Power - direct paths obstructed.

Ossia first publicly demonstrated its ability to deliver wireless power in 2013 and has since won many honors and awards four years running at the International Consumer Electronics

Show (“CES”) from 2016 to 2019.² It has also been awarded the 2019 Edison Gold Award in the wireless charging category and was demonstrated in the 2019 Mobile World Congress to reinforce WPT’s importance as a pillar of 5G and the Internet of Things.³

Ossia has worked closely with FCC staff for the past five years to demonstrate the safety and co-existence of its Cota technology. In connection with that careful testing and collaboration, Ossia has also applied for FCC equipment authorization within the “up to three feet” range that Auspion suggests is the staff’s current interpretation of the “local” requirement under Part 18.⁴

Ossia has garnered substantial investment and commercial traction from leading companies that have publicly expressed interest in the application of Cota technology for their use cases.⁵ Ossia’s experience highlights the significant demand from industry to evaluate and deploy WPT technology to satisfy business needs and realize the potential of new markets.

² See *CES 2019 Innovation Awards* (2019), <http://www.ces.tech/Events-Experiences/Innovation-Awards-Program/Honorees.aspx>; Charlie Osborne, *The best business gadgets of CES 2017*, ZDNET (Jan. 12, 2017), <http://www.zdnet.com/pictures/the-best-business-gadgets-at-ces-2017/2/>; Andrew Liszewski, *An iPhone Charging in Midair Is the Coolest CES Demo I’ve Ever Seen*, GIZMODO (Jan. 6, 2016), <https://gizmodo.com/an-iphone-charging-in-midair-is-the-coolest-ces-demo-i-1751438193>; *Ossia Wins 4th CES Award with Cota Forever Sleeve* (Nov. 8, 2018), <https://blog.ossia.com/press/ossia-wins-4th-ces-award-with-cota-forever-sleeve>.

³ *Ossia’s Cota Wireless Power System Wins Edison Gold* (Apr. 5, 2019), <https://blog.ossia.com/press/ossias-cota-wireless-power-system-wins-edison-gold>; *Ossia to Demonstrate Cota 5.8 GHz at Mobile World Congress - A Pillar in the 5G Infrastructure Roll Out* (Feb. 25, 2019), <https://blog.ossia.com/press/ossia-to-demonstrate-cota-5.8-ghz-at-mobile-world-congress-a-pillar-in-the-5g-infrastructure-roll-out>.

⁴ Waiver Request at 8.

⁵ See, e.g., *Walmart to test Ossia wireless power technology in retail stores* (Sept. 10, 2018), <https://blog.ossia.com/news/walmart-to-test-ossia-wireless-power-technology-in-retail-stores>; *MotherhoodOssia Joint Venture to Introduce Automotive In-Cabin Wireless Power Demonstrator at CES 2019* (Jan. 8, 2019), <https://blog.ossia.com/press/motherhoodossia-joint-venture-to-introduce-automotive-in-cabin-wireless-power-demonstrator-at-ces-2019>; *Ossia Partners with Spigen to Create Cota Power Transmitters To Wirelessly Power Cota-Enabled Phone Sleeves* (Feb. 25, 2019), <https://blog.ossia.com/press/ossia-partners-with-spigen-to-create-cota-power-transmitters-to-wirelessly-power-cota-enabled-phone-sleeves>; *SES-imagotag and Ossia announce partnership to develop wireless charging smart digital*

III. WPT TECHNOLOGY IS CRITICAL FOR U.S. INNOVATION AND NECESSARY FOR A 5G FUTURE

The record in this proceeding emphasizes the critical importance of WPT for U.S. innovation.⁶ WPT will make it dramatically more convenient for both enterprises and consumers to continuously power their devices for communication, health, education, entertainment, and safety. WPT will create opportunities for new categories of technological innovation: lighter and safer cars, more efficient pricing in physical stores, improved national security solutions, batteries that do not need replacing, more reliable and portable health care devices, higher performance mobile phones, and a new era of formerly battery-dependent equipment. The advent of WPT technology will also benefit the environment by greatly reducing the economic and environmental toll from the disposal of batteries. Finally, and most fundamentally, WPT will literally make the 5G/IoT future possible. As the IoT market develops, its scale will be vast—Cisco has forecast that over 500 billion devices will be connected to the Internet by 2030.⁷ The billions of new Internet-connected devices that are coming need power—and in the world there are not enough batteries to supply it or electricians to wire it.

Time is critical. As with the development of Wi-Fi, smartphones, and 5G, companies around the world are racing to be the first to develop WPT technology while global regulators are grappling with how to authorize safe WPT solutions under existing rules. A range of U.S. and international companies—including Ossia, Auspion, and several commenters—have been

labels (Jan. 13, 2019), <https://blog.ossia.com/press/ses-imagotag-and-ossia-announce-partnership-to-develop-wireless-charging-smart-digital-labels>.

⁶ See Waiver Request at 7-8, 14-15; Comments of Nikola Labs LLC, at 6, ET Docket No. 19-83 (Apr. 25, 2019) (“Nikola Labs Comments”); Comments of MetaPower, LLC, at 2, ET Docket No. 19-83 (Apr. 25, 2019) (“MetaPower Comments”); Comments of IT’IS Foundation, at 1-2, ET Docket No. 19-83 (Apr. 25, 2019) (“IT’IS Comments”).

⁷ See Cisco, *Internet of Things: Connected Means Informed* (2016), <https://www.cisco.com/c/dam/en/us/products/collateral/se/internet-of-things/at-a-glance-c45-731471.pdf>.

actively developing innovative approaches to WPT technology over the past decade. Right now U.S. companies are leading the charge to develop safe and effective WPT. But their leadership—and correspondingly American leadership—depends on the FCC’s clarifying its WPT equipment authorization process. If the Commission takes the steps in this proceeding to clear the way for WPT equipment authorization, U.S. companies could seize a first-to-market direction-setting position for WPT technology, giving the U.S. a critical competitive advantage in this new global race.⁸

The largest global companies recognize that we cannot move forward without WPT. Many have approached Ossia and forged collaborations and partnerships to revolutionize battery-powered devices and offer new solutions impossible without WPT. Ossia is working hand-in-hand with leading companies to solve demonstrated industry use cases.

Retail. In the retail sector, Ossia is collaborating with retailers and manufacturers to bring wireless power at a distance to stores—empowering brick and mortar retailing while saving the environment. Ossia’s Cota technology will power electronic shelf labels (“ESLs”) that will display real-time prices, updated dynamically and constantly to better compete with online and other retailers, thereby delivering better value and convenience for consumers. For large store-based retailers, ubiquitous ESLs are impossible without WPT technology—the costs of replacing billions of batteries or running wires to millions of store shelves would be impossibly high. And even if batteries could power a smaller number of ESLs, the environmental impact inflicted by their disposal (not to mention the cost) would be severe. Cota eliminates this environmental damage and makes possible a new era of brick and mortar competition for consumers’ benefit.

⁸ *See id.*

Batteries. Ossia has developed similar plans to disrupt traditional battery power by pairing the Cota-branded “Forever Battery” technology with an iconic and trusted battery maker.⁹ Working alongside one of the top battery manufacturers in the world, Ossia will bring to market a battery that never runs out of power using a familiar form factor that legacy battery-operated devices can immediately use. This partnership will allow previously unconnected devices to become smart connected devices while simultaneously reducing the dramatic environmental toll of disposable batteries. Imagine never having a battery run out of power—and never having to throw another one away.

Consumer. Ossia is collaborating with leading technology firms to bring to market wirelessly powered smart home devices such as video cameras, speakers, door locks, and mobile devices. For example, Ossia is building Cota transmitters designed to wirelessly power phones encased in Cota-enabled phone sleeves. This “Forever Sleeve”—which won the CES 2019 Innovation Award—is poised for manufacture and release by 2020, and would at last realize a truly wireless mobile device experience for modern and legacy phones.¹⁰

Automotive. Finally, Ossia is working with the leading automotive companies to bring to market WPT technology into vehicles. Offering wireless power within a car cabin provides untethered charging to phones and other consumer electronics. It also promises to eliminate burdensome wired power for internal automotive components. LED panels, rear-view mirrors, and dozens of smart sensors distributed within increasingly intelligent cars account for over 23.4

⁹ *Ossia to Collaborate With Top Global Battery Maker* (Mar. 26, 2019), <https://blog.ossia.com/press/ossia-to-collaborate-with-top-global-battery-maker>.

¹⁰ *Id.*

kilograms and up to 3 kilometers of extra wiring harness in an average car.¹¹ Wireless power delivery will change from luxury to necessity as cars rapidly become smarter and more autonomous and manufacturers struggle to efficiently run the required power cables.

These and other applications are commercially feasible *today*. And they are just the beginning of what is possible. The Commission should therefore facilitate the rapid and safe adoption of WPT technology by providing a clear path for WPT equipment authorization. By doing so, the Commission will ensure that U.S. consumers and businesses reap enormous public interest benefits and that the U.S. maintains its technological leadership.

IV. NO WAIVER SHOULD BE REQUIRED FOR WPT AUTHORIZATIONS UNDER PART 18, AND THE COMMISSION SHOULD CLARIFY THE EQUIPMENT AUTHORIZATION PROCESS GOING FORWARD

Ossia agrees with other commenters that no waiver should be required for the Commission to authorize WPT equipment under Part 18 as long as that technology satisfies reasonable standards that the OET should clarify going forward.¹² WPT is quintessential ISM equipment that uses RF energy to perform work rather than communications,¹³ and the Commission has already authorized wireless power transmission devices under Part 18 at both

¹¹ ICF News, International Cablemakers Federation, *Trends in Automotive Wiring* (Apr. 2015) at 7, 10, available online at https://www.icf.at/fileadmin/user_upload/News/2015/Issue_76_April_2015/ICF_NL_76-1504.pdf.

¹² See, e.g., MetaPower Comments at 3; Nikola Labs Comments at 3-5.

¹³ Part 18 defines ISM equipment as “[e]quipment or appliances designed to generate and use locally RF energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunication.” 47 C.F.R. § 18.107(c). Section 18.107(g) defines consumer ISM equipment as “[a] category of ISM equipment used or intended to be used by the general public in a residential environment, notwithstanding use in other areas.” 47 C.F.R. § 18.107(g).

close¹⁴ and intermediate ranges.¹⁵ Part 18 requires that ISM devices use RF energy “locally,” but no binding rule, interpretation, or precedent has been issued by the Commission or any other authority which defines the scope of locality.¹⁶ The types of technology proposed by Auspion and other WPT developers easily fall within a reasonable interpretation consistent with uses of the word “local,” with the Commission’s authorizations so far, and with the Commission’s own rules.

A. WPT Is Local

The Commission should avoid adopting any definition of “use locally” that generates tension with prior Commission definitions and plain language. The Commission’s rules use the term “local” in many contexts, usually in reference to non-national geographic regions,¹⁷ and

¹⁴ *RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications*, OET KDB 680106 D01 v02 § 2(1) (May 31, 2013) (“*RF Exposure Guidance*”).

¹⁵ See Grant of Equipment Authorization, FCC ID 2ADNG-MS300 (granted Dec. 26, 2017) (granting authorization under Part 18 for a wireless charging device allowing operation up to 90 centimeters from the transmitting device, with a total charging zone covering approximately 60 degrees horizontally and 90 degrees vertically).

¹⁶ In 1979, the World Administrative Radio Conference adopted its Final Acts defining “Industrial, Scientific and Medical (ISM) Applications (of radio frequency energy)” as: “Operation of equipment or appliances designed to generate and use locally radiofrequency energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunications.” See *Final Acts of the World Administrative Radio Conference*, Geneva, 1979 at 32, 783. The Final Acts contained no discussion clarifying the use of “locally” in the adopted definition. In 1984 and 1985 the Commission modified Parts 2 and 18 respectively to reflect the new ISM definition containing the term “use locally,” which had previously been omitted from the definition. See *Implementation of the Final Acts of the World Administrative Radio Conference*, 49 FR 2368 (Jan. 19, 1984); *Overall Revision of the Rules Regarding Industrial Scientific and Medical (ISM)*, 50 FR 36067 (Sept. 5, 1985). The Commission did not include any interpretation or discussion when it adopted the “use locally” language. KDB guidance and presentations are not binding precedent, including where the staff has informally suggested that “[u]ncontained far-field radiative wireless power transfer at a distance is not considered to generate and use locally RF energy, as discussed in 18.107,” KDB Publication 680106 D01 Presentation at 2, presented during Oct. 2015 TCB Workshop, Laboratory Division, Office of Engineering and Technology.

¹⁷ See, e.g., “local market” for television broadcast stations: “the designated market area in which a station is located,” including any stations licensed to a community within that same DMA, 17 U.S.C. § 122(j); 47 U.S.C. § 338(k)(4), or “local exchange carrier,” where the “local” refers, at a minimum, to a “service within a telephone exchange.” 47 U.S.C. § 153(54). This is a “specified area usually encompassing a city, town or village and its environs.” *Local, Local Toll, and Long Distance Calling*

occasionally to a particular location or premise.¹⁸ The Commission’s rules have *never* used “local” to demarcate an arbitrarily small area such as “within 3 feet,” nor have they isolated small subdivisions such as rooms.

In applying Part 18, the Commission has already taken steps in the right direction: OET’s willingness to grant authorization to at least one device operating at 90cm—albeit with no technical or legal reason to draw the line there—demonstrates that Part 18 and the ISM categories are legally and technically capable of supporting the authorization of distant WPT under the current rules.¹⁹ The Commission does not need to define “local” in this proceeding, but it should clarify how WPT developers can show compliance with Part 18 requirements for equipment authorization.

B. OET Should Release Guidance on How WPT Devices Can Satisfy Any Requirements for Equipment Authorization Under Part 18

Every commenter agrees that the Commission should give WPT providers definitive guidance on equipment authorization.²⁰ WPT developers and interested parties require predictability in this nascent yet critical industry. Auspion’s waiver request highlights both RF exposure and lack of interference as important gating elements for WPT authorization.²¹ Ossia agrees that guaranteeing RF safety and ensuring negligible interference are both essential to the approval of WPT. Fortunately, these elements have already been demonstrably addressed by a

(last updated Sept. 8, 2017), <https://www.fcc.gov/consumers/guides/local-local-toll-and-long-distance-calling>.

¹⁸ See, e.g., “locally originated” broadcast programming: “program signals generated at the transmitter site” or otherwise programming where “the parameters of the program source signal, as it reaches the transmitter site, are under the control of the . . . station licensee.” 47 C.F.R. § 74.701(h).

¹⁹ See Grant of Equipment Authorization, FCC ID 2ADNG-MS300 (granted Dec. 26, 2017).

²⁰ Nikola Labs Comments at 5 n.14; MetaPower Comments at 4; IT’IS Comments at 2.

²¹ Waiver Request at 6, 15-17.

number of WPT technologies, including Ossia's. Ossia, and undoubtedly other WPT developers, have shared years of testing data with the Commission as part of a collaborative effort with OET staff.

With this data and expertise, the Commission is now in an ideal position to define effective standards for WPT equipment authorization. And, as explained above, it has the legal authority under Part 18 to do so.²² Because WPT is critical to the ongoing 5G and IoT wireless revolution, the Commission should define these standards as part of this proceeding or, to the extent necessary, should utilize the KDB process to take any additional steps necessary to engage the industry and the public while facilitating the authorization of safe WPT technology under Part 18.

V. IN THE ALTERNATIVE, THE COMMISSION SHOULD CONSIDER A RULEMAKING TO CLARIFY THE WPT EQUIPMENT AUTHORIZATION PROCESS WITH A PARALLEL CASE-BY-CASE APPROVAL PROCEDURE

Ossia agrees with commenters that if the Commission declines to define an immediate waiver-free path for WPT under the existing rules, in the alternative it should consider a rulemaking to define WPT within the scope of "local" under Part 18 and to clarify all outstanding issues with the WPT equipment authorization process. Because a rulemaking would take considerably longer than the procedures favored by commenters and Ossia, it would risk significantly harming WPT, other technology innovators, and the U.S.'s technological edge in the interim. If the Commission chooses this route, therefore, the Commission should adopt a case-by-case evaluation procedure that WPT developers can use to receive equipment

²² Insofar as the Commission adopts a conditional waiver or promulgates WPT standards, Ossia agrees with commenters that the Commission should not limit WPT authorizations or waivers to the broad conditions sought by Auspion and should bear in mind the specific technology types and use cases. *See* Nikola Labs Comments at 8.

authorizations during such a pending rulemaking, even if these case-by-case evaluations are limited to conditioned authorizations. For example, OET could release KDB guidance defining testing procedures for consumer WPT operating within X meters and for WPT in an industrial or commercial setting that controls for RF and/or human exposure. Ultimately, even if it pursues a rulemaking, the Commission should prioritize steps that encourage rapid and safe deployment of WPT and avoid prolonging the present regulatory uncertainty or a drawn-out waiver process.

VI. CONCLUSION

Ossia urges the Commission to grant equipment authorizations to qualified WPT technology without the need for a waiver and to use this proceeding to issue much-needed guidance on how WPT developers can receive equipment authorizations under Part 18. U.S. WPT innovators have gained an early lead in this industry, but the Commission must rapidly remove the roadblock of regulatory uncertainty before safe and effective WPT can play its critical role in helping America win the global 5G race and unlock the potential of a wireless future.

Respectfully Submitted,

/s/ John L. Flynn
John L. Flynn
David M. Didion
JENNER & BLOCK LLP
1099 New York Avenue, NW
Suite 900
Washington, DC 20001

Counsel for Ossia Inc.