



PUBLIC NOTICE

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WIRELESS TELECOMMUNICATIONS BUREAU AND OFFICE OF ENGINEERING AND TECHNOLOGY SEEK COMMENT ON RADIO PHYSICS SOLUTIONS LTD. WAIVER REQUEST FOR 71-86 GHZ BAND STAND-OFF THREAT DETECTION DEVICE

GN Docket No. 19-158

Comment Date: July 5, 2019

Reply Comment Date: July 22, 2019

On April 17, 2019, Radio Physics Solutions Ltd. (Radio Physics) filed a request for waiver of certain Part 101 rules to permit certification, site registration, and operation of its stand-off threat detection device across 15 gigahertz of bandwidth between 71 and 86 GHz (Request).¹ Alternatively, Radio Physics seeks waiver of certain Part 90 or Part 95 rules if a Part 101 waiver is unavailable.² Radio Physics asserts that its stand-off threat detection device can detect concealed weapons and threats as far as 150 feet away, using scans completed in less than one second.³ Radio Physics says that its device differs fundamentally from existing security methods and could be used, for example, to enable guards to detect and intercept bombs before they reach crowded checkpoints.

Radio Physics states that its device will not cause harmful interference to other radio services because the device (1) uses a highly directional antenna tilted downward at fixed locations about 15 feet above ground, and (2) employs a duty cycle no greater than 50% and a 15 gigahertz bandwidth sweep time of up to 300 microseconds. It submitted with the Request a test report concluding that operation of the device will not degrade the performance of nearby Part 101 microwave links or Part 95 vehicular radar. Radio Physics proposes that the Commission subject its device to the licensing and site-registration requirements of rule 101.1523, which provides for sharing and coordination among non-federal and federal services in the 71-76 and 81-86 GHz bands.⁴ To prevent interference with vehicular radar in the 76-81 GHz band, Radio Physics proposes that the Commission prohibit its device from illuminating any public roads. As a further precaution, it proposes that the Commission adopt a condition limiting the deployment of the device “to no more than 1,000 units during the first year after grant of waiver to allow the market to monitor deployments for potential impacts.”⁵

¹ Radio Physics Solutions Limited, *Petition for Waiver to Certify and Operate Stand-Off Threat Detection Device in 71-86 GHz Band*, Petition for Waiver (filed Apr. 17, 2019) (Request).

² Request at 6, n.6.

³ Request at 2.

⁴ 47 CFR § 101.1523.

⁵ Request at 15.

Radio Physics requests waiver of the following Commission rules:

- Section 101.109(c), which limits bandwidth to 5 gigahertz. The applicant seeks to use 15 gigahertz of bandwidth.
- Section 101.111(a)(2)(v), which applies the emission mask used in the equation in section 101.111(a)(2)(ii) at the edge of each channel (71-76 GHz and 81-86 GHz). The applicant seeks to apply the emission mask at the edges of 71-86 GHz.⁶
- Section 101.115(a), which requires that the transmitter's major radiation lobe be pointed at a receiver. Radio Physics is proposing to receive a reflection from main lobe emissions instead.
- Section 101.115(b), which requires that antennas for transmissions in the 71-76 and 81-86 GHz bands have a minimum gain of 43 dBi. Radio Physics seeks permission to use 42 dBi antennas.
- Section 101.1507, which requires point-to-point operation. Radio Physics proposes radar operations.⁷

Radio Physics states that it is requesting waiver of certain Part 101 rules, because it is proposing Part 101 licensing with conditions including registration of device operations, as described above.⁸ Alternatively, if the Commission determines that a waiver is not appropriate under Part 101, Radio Physics requests that its Request be considered under Parts 90 or 95 of the rules. It identifies sections 95.3331 (permissible use), and 95.3379 (power limits outside of 76-81 GHz band)⁹ and 90.103(b) (frequencies available for stations in the Radiolocation Service),¹⁰ and proposes that the same coordination and registration conditions proposed herein would be applied under a Part 95 licensing-by-rule regime or Part 90 licensing.¹¹

The Wireless Telecommunications Bureau and the Office of Engineering and Technology seek comment on the Request.

Filing Requirements. Interested parties may file comments and replies on or before the dates indicated on the first page of this document.¹² All filings must reference GN Docket No. 19-158. Comments and replies may be filed using the Commission's Electronic Comment Filing System (ECFS).¹³

- Electronic Filers: Comments may be filed electronically using the Internet by accessing ECFS: <https://www.fcc.gov/ecfs/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing.

⁶ Based on a May 2, 2019, telephone conversation with counsel, we understand that the second bullet on page 6 of the Request has two typographical errors and should read: "47 C.F.R. § 101.111(a)(2)(v): Provides out-of-band emission limits based on a 5000 MHz bandwidth. Radio Physics requests 15 GHz bandwidth."

⁷ 47 CFR §§ 101.109(c), 101.111(a)(2)(v), 101.115(a), 101.115(b), and 101.1507.

⁸ Note 2, *supra*.

⁹ 47 CFR §§ 95.3331, 95.3379. *See also* 47 CFR Part 95, subpart M (The 76-81 GHz Band Radar Service).

¹⁰ 47 CFR § 90.103(b). *See also* 47 CFR Part 90, subpart F (Radiolocation Service).

¹¹ *See supra* note 2.

¹² 47 CFR § 1.925(c). *See generally* 47 CFR §§ 1.415, 1.419.

¹³ *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.
 - All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th Street, SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
 - Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
 - U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

Ex Parte Rules. WTB and OET have concluded that, to develop a complete record on the issues presented by this request, this proceeding will be treated, for *ex parte* purposes, as a "permit-but-disclose" in accordance with Section 1.1200(a) of the Commission's rules, subject to the requirements under Section 1.1206(b).¹⁴

People with Disabilities. To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer and Governmental Affairs Bureau at 202-418-0530 (voice), 844-432-2275 (videophone), or 202-418-0432 (TTY).

Additional Information. For further information regarding this Public Notice, please contact Charles Oliver, Broadband Division, Wireless Telecommunications Bureau, at (202) 418-1325 or charles.oliver@fcc.gov, or Nicholas Oros, Policy and Rules Division, Office of Engineering and Technology, at (202) 418-0636 or nicholas.oros@fcc.gov.

By the Chief, Wireless Telecommunications Bureau and the Chief, Office of Engineering and Technology.

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¹⁴ 47 CFR § 1.1206(a), (b). Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules. 47 CFR §§ 1.1200 *et seq.*