



Federal Communications Commission
Washington, D.C. 20554

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Small Entity Compliance Guide

Operation of Unlicensed Level Probing Radars in the 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz Bands

Report and Order
FCC 14-2
ET Docket Nos. 10-23 and 10-27
Released: Jan 15, 2014

This Guide is prepared in accordance with the requirements of Section 212 of the Small Business Regulatory Enforcement Fairness Act of 1996. It is intended to help small entities—small businesses, small organizations (non-profits), and small governmental jurisdictions—comply with the new rules adopted in the above-referenced FCC rulemaking docket(s). This Guide is not intended to replace the rules and, therefore, final authority rests solely with the rules. Although we have attempted to cover all parts of the rules that might be especially important to small entities, the coverage may not be exhaustive. This Guide may, perhaps, not apply in a particular situation based upon the circumstances, and the FCC retains the discretion to adopt approaches on a case-by-case basis that may differ from this Guide, where appropriate. Any decisions regarding a particular small entity will be based on the statute and regulations.

In any civil or administrative action against a small entity for a violation of rules, the content of the Small Entity Compliance Guide may be considered as evidence of the reasonableness or appropriateness of proposed fines, penalties or damages. Interested parties are free to file comments regarding this Guide and the appropriateness of its application to a particular situation; the FCC will consider whether the recommendations or interpretations in the Guide are appropriate in that situation. The FCC may decide to revise this Guide without public notice to reflect changes in the FCC's approach to implementing a rule, or to clarify or update the text of the Guide. Direct your comments and recommendations, or calls for further assistance, to the FCC's Consumer Center:

**1-888-CALL-FCC (1-888-225-5322)
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Compliance Requirements for Operation of Unlicensed Level Probing Radars in the 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz Bands

1. Objectives of the Proceeding

In the *Report and Order* released on January 15, 2014 in ET Docket Nos. 10-23 and 10-27, the Commission amended the Part 15 rules governing level probing radars (LPRs) operating on an unlicensed basis in the 5.925-7.250 GHz, 24.05-29.00 GHz, and 75-85 GHz bands, with the objective of providing needed flexibility and cost savings for LPR device operators, benefiting those operators and manufacturers of such devices, without causing harmful interference to authorized services. Moreover, the amended rules will, to the extent practicable, harmonize the Commission's technical rules for LPR devices with similar European standards and thereby improve the competitiveness of U.S. manufacturers in the global economy, leading to potential cost savings for small businesses.

LPRs are devices that can provide accurate and reliable target resolution to identify water levels in rivers and dams or critical levels of materials such as fuel or sewer-treated waste, reducing overflow and spillage and minimizing exposure of maintenance personnel in the case of high risk substances. The action taken by the Commission – which applies to LPR devices installed both in open-air environments and inside storage tanks (TLPR applications) and operated on the above frequency bands – revised the procedures for measuring the radio frequency (RF) emissions of these devices and modified the technical and operational limits on their use. These new measurement procedures specify more accurate and repeatable measurement protocols for LPR devices, and the revisions to the technical and operating rules will increase LPR flexibility without increasing the potential for harmful interference to licensed users, and without impairing access to spectrum shared with other unlicensed users. To permit LPR operation in the 75-85 GHz band, the Commission also modified Section 15.205 of the rules to remove the prohibition on intentional emissions in this band.

The Commission's action did not change the applicability of the general requirements for certification. Thus, LPR devices intended for installation inside tank enclosures made of steel or concrete may continue to be certified under the general intentional radiator requirements in Section 15.209 of the rules, when measured according to Sections 15.31(g) and (q) of the rules.

2. General Information

Part 15 of the Commission's rules contains the technical requirements for RF devices that may be operated without an individual license. All Part 15 devices are required to accept harmful interference from other authorized operations, and are prohibited from causing harmful interference to other authorized operations. 47 C.F.R. § 15.5(b). The requirements in Part 15 also include radiated and power line conducted emission limits for intentional radiators, which are devices that intentionally generate and emit RF energy. One example of Part 15 intentional radiators are the LPR devices operating in the above-identified bands in this proceeding. Other examples include cordless telephones, remote control transmitters, remote utility meter readers, and wireless local area networking equipment. Part 15 intentional radiators must be certified by

the FCC or a designated Telecommunication Certification Body (TCB) before they can be imported into or marketed within the United States.

3. What are the compliance requirements that apply to unlicensed level probing radars in the 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz bands?

- The devices operating under these provisions must comply with the RF safety requirements specified in §§ 1.1307(b), 2.1091 and 2.1093. Applications for equipment authorization of devices operating under these provisions must also contain a statement confirming compliance with the RF radiation exposure requirements specified under these rules for both fundamental emissions and unwanted emissions.
- The devices operating under these provisions must be labeled with an FCC identification number as required by § 2.925 and the statement required by § 15.19(a)(3) indicating that the device complies with Part 15 of the rules, may not cause harmful interference and must accept any interference received.
- The devices operating under these provisions must provide information to the user as specified in § 15.21.
- The bandwidth for fundamental emissions must comply with the limits in § 15.256(f).
- The levels of fundamental emissions must comply with the limits in § 15.256(g).
- The levels of unwanted emissions must comply with the limits in § 15.256(h).
- The antenna beamwidth must comply with the requirements in § 15.256(i).
- The antenna side-lobe gain must comply with the requirements in § 15.256(j).
- Compliance measurement of LPRs must follow the measurement procedures in § 15.256(l).

4. What Measurement Procedures may be used to demonstrate compliance with the Part 15 requirements for unlicensed level probing radar operation in the 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz bands?

Section 15.256(l) of the rules provides measurement procedures applicable to LPR devices. LPR devices intended for installation inside tanks made of steel and concrete may continue to operate under the general intentional radiator Section 15.209 of the rules instead of the new Section 15.256, but must follow the measurement standards in §§ 15.31(g) and (q).

The Commission has published a Measurement Procedure labeled “Measurement Procedure for Level Probing Radars”. This document can be downloaded at:

<https://apps.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?switch=P&id=20936>

The Commission also has a special website with Measurement Procedures for Part 15 devices where useful resources may be found, at the following link:

<http://transition.fcc.gov/oet/ea/eameasurements.html>.

5. What are the certification approval requirements for unlicensed level probing radar operation in the 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz bands?

All devices operating under the provisions of § 15.256 must be certified by the FCC or a TCB before they can be imported into or marketed within the United States. Please refer to 47 C.F.R. § 2.901 for information on the equipment certification procedures.

6. What are the penalties for non-compliance with the rules?

The Commission has the authority to investigate Part 15 violations and to take action as appropriate, including the imposition of forfeiture penalties. Willful or repeated violations of the FCC's equipment authorization, importation and marketing rules, including but not limited to operation of communications equipment that does not comply with one or more of those rules, can result in forfeitures of up to \$16,000 for each violation or each day of continuing violation, up to a maximum of \$122,500. See § 1.80 of the FCC rules. Individuals or organizations may also be subject to criminal penalties under Title 18 of the U.S. Code. FCC field personnel, working in conjunction with the Attorney General of the United States, may seize illegal equipment. See 47 U.S.C § 510(b).

7. Where can I find the Part 15 rules and information for unlicensed level probing radar operation in the 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz bands?

FCC Order adopting the Part 15 rules for LPR operation in the 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz bands: *Report and Order* in ET Docket Nos. 10-23 and 10-27, FCC 14-2, released Jan. 15, 2014, 29 FCC Rcd 761 (2014).

https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-2A1.doc (Word)

https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-2A1.pdf (Acrobat)

https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-2A1.txt (Text)

The Commission's Rules (47 Code of Federal Regulations (47 C.F.R.)) are available at http://wireless.fcc.gov/index.htm?job=rules_and_regulations.

Equipment authorization information:

<http://www.fcc.gov/oet/ea/>

8. What if I have further questions on the rules for Part 15 operations in the 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz bands?

The FCC maintains a web-based system that is used to submit inquiries to its Laboratory, as well as to search for previous rule interpretations and frequently asked questions. This system, called the OET Knowledge Database (KDB), can be accessed at www.fcc.gov/labhelp.