

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

2108 Biennial Review of)	
Telecommunications Regulations)	
)	
Office of Engineering and Technology)	ET Docket No. 18-370
)	
Amending Parts 1 (Section 1.1307 and)	
1310), 2 (Subparts A, B, I, J and K),)	
5, 15, and 18)	

Comments of CKC Laboratories, Inc.

Introduction:

This comment responds to the Commission’s Public Notice of its 2018 Biennial Review and is directed to rules administered by the Office of Engineering and Technology¹. Pursuant to the Commission’s invitation to comment on rules that should be candidates for deletion or amendment because they are no longer in the public interest, CKC Laboratories, Inc. (hereinafter CKC) proposes to amend the 47 CFR Part 18 rules for Industrial, Scientific and Medical (hereinafter ISM) devices and proposes to amend the 47 CFR Part 2 Subpart J 2.1033 rules.

¹ FCC Bureaus and Offices Seek Public Comment in 2018 Biennial Review of Telecommunications Regulations, Public Notice, CG Docket No. 18-375, EB Docket No. 18- 379, IB Docket No. 18-377, ET Docket No. 18-370, PS Docket No. 18-376, WT Docket No. 18- 374, WC Docket No. 18-378, Public Notice, DA 18-1260, released December 17, 2018. The original comment due date was scheduled for January 17, 2019. This comment is being filed on February 8, 2019 pursuant to instructions from the Public Notice, “Revisions to Filing and Other Deadlines Following Resumption of Normal Commission Operations,” DA 19-26, released January 29, 2019.

Discussion: Proposal for amendment to 47 CFR Part 18 Rules

Technology developments have made the existing 47 CFR Part 18 rules obsolete and portions of the text need to be modernized. The technical requirements under 47 CFR part 18 subpart C have seen few modifications since the time of its inception². With advancements in technology and current trends of merging previously independent technologies such as intentional radiators with ISM devices³, the Commission must now consider modern approaches to ISM device requirements and measurement procedures.

One example of outdated rules is the limits and measurement distances cited in 47 CFR 18.307. The current measurement distances of 30 meters, 300⁴ meters or 1600⁵ meters are inconsistent with the practical separation distances between ISM devices and victim receivers. Practical laboratory measurements of even 30 meters on open area test sites (OATS) are becoming less common due to sparse commercial availability. The majority of test laboratories utilize measurement distances significantly smaller (e.g. 10 meters) and extrapolate the measurement data for comparison to the limit. This extrapolation is prone to some uncertainty, especially when extrapolating multiple orders of magnitude in distance. The limits which accompany these large and cumbersome measurement distances are unique among global economies. The protections provided by the current limits can be replicated using shorter measurement distances accompanied by adjustments to the prescribed limits.

CKC proposes that the commission adopt internationally accepted limits and measurement distances consistent with the needs for and protections from ISM devices. The international standard CISPR 11⁶ is utilized in many economies⁷ with which the United States has mutual recognition agreements. Adoption of CISPR 11 limits would harmonize requirements and minimize impact to manufacturers.

² 51 FR 17970, 52 FR 43197, 64 FR 37419, 67 FR 45671

³ e.g. Cellular telephones incorporating wireless power transfer coils without telecommunications capability.

⁴ Any ISM unless otherwise specified. Also includes medical diathermy

⁵ Industrial heaters and RF stabilized arc welders

⁶ Current version: CISPR 11(2015) +A1(2016) +A2(2019)

⁷ Canada: ICES-001; EU: EN 55011; Republic of Korea: KN11, Australia: AS/NZS CISPR 11, etc.

Another example of outdated technical requirements is the measurement procedure cited in 47 CFR 18.311. The measurement procedure of MP-5 (1986) is outdated and could easily be replaced by another nationally accepted procedure such as ANSI C63.4 or internationally accepted procedure of CISPR 11, itself a measurement procedure. A particular element of MP-5 (1986) which provides unfair and inconsistent application of limits is the distance extrapolation requirements of $1/d$ (20 dB per decade)⁸ for all frequencies of investigation. Even the requirements for unintentional radiators permit relaxation for low frequency electromagnetic fields using $1/d^2$ (40 dB per decade)⁹. Along with specifying alternate measurement distances, the Commission must update the extrapolation requirements for measurement distances to be consistent with other rule parts. The adoption of ANSI C63 measurement procedures cited elsewhere within FCC rules¹⁰ would promote consistency of measurement procedures. Therefore CKC proposes the commission adopt ANSI C63.4: 2013 as the measurement procedure for ISM devices under 47 CFR Part 18.

⁸ MP-5 (1986) section 2.2.6

⁹ 47 CFR 15.31(f)

¹⁰ 47 CFR 2.910 and 47 CFR 15.38

Discussion: Proposal for amendment to 47 CFR Part 2 Subpart J rules

The current rules prescribing content for applications for certification filings include for licensed devices some outdated requirements. For example, 47 CFR 2.1033(c)(9) requires a tune up procedures for the licensed device. With modern advances in technology, especially new capabilities with self-monitoring circuitry a ‘tune-up’ procedure is an antiquated requirement. Similarly, 47 CFR 2.1033(c)(8) requires “the dc voltages applied to and dc currents into the several elements of the final radio frequency amplifying device....” which for many modern technologies where the amplifier is imbedded into the silicon is an impractical requirement given that such measurements may be physically impossible. Furthermore, given that the FCC has not disclosed the purpose of this requirement, it stands to reason why many manufacturers question the rule’s importance.

Antiquated requirements exist within these rules such as the photograph requirements of 47 CFR 2.1033(b)(7) and 2.1033(c)(12). These sections require “8x10” photographs of “sufficient clarity to reveal equipment construction and layout...” Such requirements are currently met using smaller photo sizes and yet meeting the sufficiency clause necessary for required showing. Other inconsistencies exist when reviewing the differences between licensed and unlicensed documentation requirements, such when 47 CFR 2.1033(b)(5) requires a block diagram for an unlicensed device however does not require such documentation for a licensed device. The modern differences between a licensed and unlicensed device is becoming much smaller; even the power output cannot be used to differentiate between such devices. Many devices include multiple licensed and unlicensed devices within a single product¹¹. In order to clarify, streamline and facilitate better understanding of certification requirements, the Commission must revise these requirements to be consistent.

With the abolition of FCC’s Office of Engineering and Technology directly accepting FCC Form 731 applications¹², the contents of the FCC filing may require further clarification. Specifically,

¹¹ e.g. a modern ‘smart’ phone.

¹² FCC Report and Order 14-208

the TCB¹³ is required to pass on to the manufacturer the FCC mandated application form requirements. Furthermore, with recent changes to certification options for unintentional radiators¹⁴, there is a need to clarify the documentation requirements pertaining to such equipment. Therefore, CKC proposes amendment to the 2.1033 rules to harmonize the certification requirements between licensed and unlicensed devices and reference the application form requirements in the FCC electronic filing system. CKC proposes to rescind the present 2.1033(c)(8) and 2.103(c)(9) requirements and to revise the remainder of 2.1033 as indicated in attached appendix 1.

Conclusion:

With modern advancements in available technology and developments in government-to-government international agreements, the requirements, practices and procedures of the FCC must be modified to promote international trade while at the same time protecting the public interest. The proposed changes to 47 CFR Part 18 limits and measurement procedure are designed to facilitate these goals. The proposed changes to 47 CFR Part 2.1033 application filing requirements serve to provide clarity and promote consistency within the FCC certification program.

CKC thanks the FCC for providing this opportunity to offer comment regarding outdated policies and looks forward to discussion regarding this proposal.

Respectfully submitted,

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¹³ 47 CFR 2.960, 2.962 and 2.964.

¹⁴ 82 FR 50832 (e.g. changes to 47 CFR 15.101 permitting certification for all unintentional radiators)

Appendix 1: Proposed changes to 2.1033.

CKC recommends the following modification to filing requirements to promote better clarity with required documentation and harmonize requirements between licensed and unlicensed certification filings.

§2.1033 Application for certification

- (a) An application for certification shall be filed in accordance with §2.907, including all application form items required by FCC electronic filing system.
- (b) Applications for certification for an unintentional radiator (including a receiver) shall be accompanied by a technical report (which may be in separate exhibits) containing the information required in 2.1033(c)(1) through (9) inclusive.
 - (1) Applications for the certification of scanning receivers shall include a statement describing the methods used to comply with the design requirements of all parts of §15.121 of this chapter. The application must specifically include a statement assessing the vulnerability of the equipment to possible modification and describing the design features that prevent the modification of the equipment by the user to receive transmissions from the Cellular Radiotelephone Service. The application must also demonstrate compliance with the signal rejection requirement of §15.121 of this chapter, including details on the measurement procedures used to demonstrate compliance.
- (c) Applications certification for an intentional radiator shall be accompanied by a technical report (which may be in separate exhibits) containing the following information:
 - (1) A copy of the installation and operating instructions to be furnished the user. A draft copy of the instructions may be submitted if the actual document is not available. The actual document shall be furnished to the TCB prior to receiving the final grant of equipment authorization.
 - (2) A report of measurements showing compliance with the pertinent FCC technical requirements. This report shall identify the test procedure used (e.g., specify the FCC test procedure, or industry test procedure that was used), the date the measurements were made, the location where the measurements were made, and the device that was tested (model and serial number, if available). The report shall include sample calculations showing how the measurement results were converted for comparison with the technical requirements.
 - (3) At least one drawing or photograph showing the test set-up for each of the required types of tests applicable to the device for which certification is requested. These drawings or photographs must show enough detail to confirm other information contained in the test report. Any photographs used must be focused originals without glare or dark spots and must clearly show the test configuration used

- (4) A sufficient number of photographs to clearly show the exterior appearance, the construction, the component placement on the chassis, and the chassis assembly. The exterior views shall show the overall appearance, the antenna used with the device (if any), the controls available to the user.
 - (5) A sufficient number of photographs to clearly show the required identification label and label location in sufficient detail so that the name and FCC identifier can be read. In lieu of a photograph of the label, a sample label (or facsimile thereof) may be submitted together with a sketch showing where this label will be placed on the equipment.
 - (6) If the equipment for which certification is being sought must be tested with peripheral or accessory devices connected or installed, a brief description of those peripherals or accessories. The peripheral or accessory devices shall be unmodified, commercially available equipment.
 - (7) A block diagram showing the frequency of all oscillators in the device. The signal path and frequency shall be indicated at each block. The tuning range(s) and intermediate frequency(ies) shall be indicated at each block.
 - (8) A schematic diagram.
 - (9) A brief description of the circuit functions of the device along with a statement describing how the device operates. This statement should contain a description of the ground system and antenna, if any, used with the device.
 - (10) For equipment employing digital modulation techniques, a detailed description of the modulation system to be used, including the response characteristics (frequency, phase and amplitude) of any filters provided, and a description of the modulating wavetrain, shall be submitted for the maximum rated conditions under which the equipment will be operated
 - (11) Range of operating power values or specific operating power levels, and description of any means provided for variation of operating power.
- (d) Applications certification for an intentional radiator in specific categories shall be accompanied by a supplemental technical report (which may be in separate exhibits) containing the following information:
- (1) For equipment subject to the provisions of part 15 of this chapter, the application shall indicate if the equipment is being authorized pursuant to the transition provisions in §15.37 of this chapter.
 - (2) Applications for certification of transmitters operating within the 59.0-64.0 GHz band under part 15 of this chapter shall also be accompanied by an exhibit demonstrating compliance with the provisions of §15.255(g) of this chapter.
 - (3) An application for certification of a software defined radio must include the information required by §2.944.

- (4) Applications for certification of U-NII devices in the 5.15-5.35 GHz and the 5.47-5.85 GHz bands must include a high level operational description of the security procedures that control the radio frequency operating parameters and ensure that unauthorized modifications cannot be made.
- (5) The application for certification of an external radio frequency power amplifier under part 97 of this chapter need not be accompanied by the data required by paragraph (b)(14) of this section. In lieu thereof, measurements shall be submitted to show compliance with the technical specifications in subpart C of part 97 of this chapter and such information as required by §2.1060 of this part
- (6) An application for certification of an AM broadcast stereophonic exciter-generator intended for interfacing with existing certified, or formerly type accepted or notified transmitters must include measurements made on a complete stereophonic transmitter. The instruction book must include complete specifications and circuit requirements for interconnecting with existing transmitters. The instruction book must also provide a full description of the equipment and measurement procedures to monitor modulation and to verify that the combination of stereo exciter-generator and transmitter meet the emission limitations of §73.44.
- (7) Applications for certification required by §25.129 of this chapter shall include any additional equipment test data required by that section.
- (8) Applications for certification of equipment operating under part 27 of this chapter, that a manufacturer is seeking to certify for operation in the:
 - (i) 1755-1780 MHz, 2155-2180 MHz, or both bands shall include a statement indicating compliance with the pairing of 1710-1780 and 2110-2180 MHz specified in §§27.5(h) and 27.75 of this chapter.
 - (ii) 1695-1710 MHz, 1755-1780 MHz, or both bands shall include a statement indicating compliance with §27.77 of this chapter.
 - (iii) 600 MHz band shall include a statement indicating compliance with §27.75 of this chapter.
- (9) Before equipment operating under part 90 of this chapter and capable of operating on the 700 MHz interoperability channels (See §90.531(b)(1) of this chapter) may be marketed or sold, the manufacturer thereof shall have a Compliance Assessment Program Supplier's Declaration of Compliance and Summary Test Report or, alternatively, a document detailing how the manufacturer determined that its equipment complies with §90.548 of this chapter and that the equipment is interoperable across vendors. Submission of a 700 MHz narrowband radio for certification will constitute a representation by the manufacturer that the radio will be shown, by testing, to be interoperable across vendors before it is marketed or sold.
- (10) Applications for certification of equipment operating under part 20 of this chapter, that a manufacturer is seeking to certify as hearing aid compatible, as set forth in

§20.19 of this chapter, shall include a statement indicating compliance with the test requirements of §20.19 of this chapter and indicating the appropriate M-rating and T-rating for the equipment. The manufacturer of the equipment shall be responsible for maintaining the test results

- (e) A single application may be filed for a composite system that incorporates devices subject to certification under multiple rule parts, however, the appropriate fee must be included for each device. Separate applications must be filed if different FCC Identifiers will be used for each device.