

FILE

18-1660-EC-CSS

00225189
Case Number

NC
Ohio

**Public Utilities
Commission**

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2018 NOV -7 PM 1:47

Public Utilities Commission of Ohio
Attn: Docketing
180 E. Broad St.
Columbus, OH 43215

Formal Complaint Form PUCO

Ricardo Nelson
Customer Name (Please Print)

90 Latta Ave
Customer Address

Columbus OH 43205
City State Zip

Against

102-948-910-5-3
Account Number

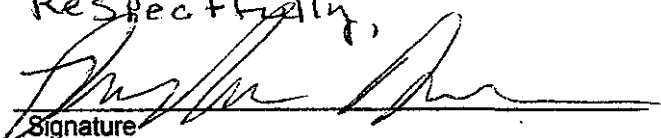
AEP OHIO
Utility Company Name

Customer Service Address (if different from above)

City State Zip

Please describe your complaint. (Attach additional sheets if necessary)

AEP wants to switch me to a new smart meter,
However I am protected under FCC Law Part 15
See attached letter and law

Respectfully,

Signature

614-257-0912
Customer Telephone Number

November 3, 2018

To whom it may concern;

As you know, AEP of Columbus Ohio wants to install a smart meter at my home and I requesting to keep my current meter. AEP has installed smart meters in my neighborhood and this is causing me to have problems with my amateur radio station (KD8QBV) which is a violation of part 15 of FCC Laws, part 15 of FCC Laws. Licensed radio services such as Amateur Radio also receive unconditional protection from harmful interference from all Part 15 devices, including smart meters, smart meters part 15 device.

As you may be aware, in the United States, smart meters in residential areas are required to meet absolute emissions limits for unintentional emitters and/or carrier-current devices and the transmit power limits for intentional emitters as specified in Part 15 of the FCC Laws. Licensed radio services such as Amateur Radio also receive unconditional protection from harmful interference from all Part 15 devices, including smart meters. In addition, Part 15 devices, such as smart meters, receive no protection from interference resulting from licensed radio services.

Amateur operation nearby can desensitize some meters so they can't hear commands. The smart meter is operating under Part 15 of the FCC Laws and rules, which stipulates that Part 15 devices are not protected from interference from licensed radio services, such as Amateur Radio. What this means is that the smart meter should never interfere with the amateur radio station and that the FCC gives unconditional protection against these smart meters.

Note: Although the frequencies typically used by smart meters are also ISM bands, which are covered by Part 18 of the FCC rules, they actually operate under Part 15. This is an important distinction. If a smart meter were operating under Part 18, the Amateur Service would have to accept any harmful interference such a meter might generate. Part 18 devices however, are prohibited from using RF for communications purposes. Since smart meters transmit data, they can't legally operate as Part 18 devices.

Notes:

For the technical component:

Amateur Band and the ISM Band

902 – 928 MHz 902 – 928 MHz 33 cm Amateur Band

2300 – 2310 MHz 2400 – 2483.5 MH The Amateur band is broken into two segments. The ISM band extends past the Amateur band at the upper end.

The results of electromagnetic radiation (EMR) test that was conducted at my home showed overexposed to electromagnetic radiation generated and transmitted by the smart meter installed on neighborhood houses or access point transmitter.

In addition, AEP offers a smart meter with the meter turned 'off' however this is not a viable option due to the following logic:

Radio frequency (RF) field measurements were taken at multiple locations on the grounds around the Smart Meter, Smart Meter is the subject of the tests conducted. Specifically, the radio transmitter in the opt out smart meter is turn off but the opt out meters still transmit high electromagnetic radiation (EMR) that interferes with my license (FCC license 0020814125) legal FCC my which is a violation of (part 15 of FCC Laws) (part 15 of FCC Laws) Licensed radio services such as Amateur Radio also receive unconditional protection from harmful interference from all Part 15 devices, including smart meters. The RF emission measurements were made in front of the smart meter, 5 feet away, 20 feet away and 50 feet away from the meter.

Electromagnetic radiation (EMR) measurements from the smart meter were recorded utilizing a Gigahertz Solutions HF-35C 800 MHz to 2.5 GHz RF Analyzer. The Gigahertz Solutions HF-35C RF Analyzer is fitted with a Log-Periodic antenna array, which when pointed in the direction of the transmitter, will measure the strength of the radiation field density around the smart meter.

The test instrument has a signal measurement range from 1 $\mu\text{W}/\text{m}^2$ to 2000 $\mu\text{W}/\text{m}^2$ to capture the expected signal levels. The instrument readings in microwatts per square meters can be converted to milliwatts per square centimeters in the range of 0.0000001 mW/cm^2 to 0.0002000 mW/cm^2 . I used The Gigahertz Solutions HF-35C test instrument the manufacturer calibrated the instrument. The accuracy of these standards is traceable to the National Institute of Standards and Technology (NIST) to the extent allowed by accredited NIST's calibration facilities.

Silver Springs, manufacturer of the (part 15 FCC) radio within the smart meter, stated that spurious peak readings could be caused in the near field due to the test equipment picking up reflections off the meter or other objects or noise by other RF sources. Therefore, the RMS readings are an industry standard measurement of the average continuous power density and best represents the effect of exposure over time to a human being.

Based upon these test results, the interpretation of the power density values with respect to a potential health hazard. The radiation being emitted by smart meter exposed to levels of radio frequency radiation higher than the International Radiation Protection Association (IRPA Standard exposure in excess of 0.08 W/kg or 2 mW/cm^2 or federal OSHA laws.

The FCC exposure limit is frequency dependent. The maximum permissible exposure (MPE) limits depend upon the frequency of the signal to which a person is exposed because the human body absorbs energy differently at some frequencies than at others. Since the body absorbs FM radio signals between 902 – 928 MHz, this is a problem. It is determined that the signal values measured do create a hazard to me, my

Amateur Radio Station and the opt out meters still transmit high electromagnetic radiation (EMR) that interferes with my license (FCC license 0020814125) legal FCC amateur radio station which is a violation of (part 15 of FCC Laws) I am exposed to levels of radio frequency radiation higher than the FCC standard.

In conclusion, I want to keep current Utility Meter. Smart meters can damage amateur radio station with high levels of EMF and RF and not be charged opt fees because this is a violation of Part 15 FCC Laws and the Federal Energy act of 2005, (No one should pay for public safety). Smart meters are not UL listed and have surge protector inside. That is a potential fire hazard, homeowner's insurance will not cover smart meters or electromagnetic radiation damage. Smart meters violate Fourth Amendment Rights to privacy.

I am Disabled according to Social Security Administrations standards. To charge me a opt-out Fee is a violation of the federal disability act (no one Should have to pay fees for Public Safety)

Should you have any questions please do not hesitate to contact me.

Respectfully,

Ricardo Nelson (KD8QBV)

90 Latta Avenue

Columbus, OH 43205

614-257-0912

Electronic Code of Federal Regulations Part 15

15.5 General conditions of operation.

- (a) Persons operating intentional or unintentional radiators shall not be deemed to have any vested or recognizable right to continued use of any given frequency by virtue of prior registration or certification of equipment, or, for power line carrier systems, on the basis of prior notification of use pursuant to §90.35(g) of this chapter.
- (b) Operation of an intentional, unintentional, or incidental radiator is subject to the conditions that no harmful interference is caused and that interference must be accepted that may be caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator.
- (c) The operator of a radio frequency device shall be required to cease operating the device upon notification by a Commission representative that the device is causing harmful interference. Operation shall not resume until the condition causing the harmful interference has been corrected.
- (d) Intentional radiators that produce Class B emissions (damped wave) are prohibited.

15.13 Incidental radiators.

Manufacturers of these devices shall employ good engineering practices to minimize the risk of harmful interference.

15.17 Susceptibility to interference.

- (a) Parties responsible for equipment compliance are advised to consider the proximity and the high power of non-Government licensed radio stations, such as broadcast, amateur, land mobile, and non-geostationary mobile satellite feeder link earth stations, and of U.S. Government radio stations, which could include high-powered radar systems, when choosing operating frequencies during the design of their equipment so as to reduce the susceptibility for receiving harmful interference. Information on non-Government use of the spectrum can be obtained by consulting the Table of Frequency Allocations in §2.106 of this chapter.
- (b) Information on U.S. Government operations can be obtained by contacting: Director, Spectrum Plans and Policy, National Telecommunications and Information Administration, Department of Commerce, Room 4096, Washington, DC 20230.

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15.101 Equipment authorization of unintentional radiators.

(a) Except as otherwise exempted in §§15.23, 15.103, and 15.113, unintentional radiators shall be authorized prior to the initiation of marketing, pursuant to the procedures for certification or Supplier's Declaration of Conformity (SDoC) given in subpart J of part 2 of this chapter, as follows:

Table 1 to Paragraph (a)

15.101 Equipment authorization of unintentional radiators.

(a) Except as otherwise exempted in §§15.23, 15.103, and 15.113, unintentional radiators shall be authorized prior to the initiation of marketing, pursuant to the procedures for certification or Supplier's Declaration of Conformity (SDoC) given in subpart J of part 2 of this chapter, as follows:

Table 1 to Paragraph (a)

Type of device

Equipment authorization required

TV Broadcast Receiver SDoC or Certification.

FM Broadcast Receiver SDoC or Certification.

CB Receiver SDoC or Certification.

Superregenerative Receiver SDoC or Certification.

Scanning Receiver Certification.

Radar Detector Certification.

All other receivers subject to Part 15 SDoC or Certification.

TV Interface Device SDoC or Certification.

Cable System Terminal Device SDoC or Certification.

Stand-alone Cable input selector switch SDoC or Certification.

Class B personal computers and peripherals SDoC or Certification.

CPU boards and internal power supplies used with Class B personal computers SDoC or Certification.

Class B personal computers assembled using authorized CPU boards or power supplies SDoC or Certification.

Class B external switching power supplies SDoC or Certification.

Other Class B digital devices & peripherals SDoC or Certification.

Electronic Code of Federal Regulations Part 15

Class A digital devices, peripherals & external switching power supplies SDoC or Certification.

Access Broadband over Power Line (Access BPL) Certification.

All other devices SDoC or Certification.

(b) Only those receivers that operate (tune) within the frequency range of 30-960 MHz, CB receivers and radar detectors are subject to the authorizations shown in paragraph (a) of this section. Receivers operating above 960 MHz or below 30 MHz, except for radar detectors and CB receivers, are exempt from complying with the technical provisions of this part but are subject to §15.5.

(c) Personal computers shall be authorized in accordance with one of the following methods:

(1) The specific combination of CPU board, power supply and enclosure is tested together and authorized under Supplier's Declaration of Conformity or a grant of certification;

(2) The personal computer is authorized under Supplier's Declaration of Conformity or a grant of certification, and the CPU board or power supply in that computer is replaced with a CPU board or power supply that has been separately authorized under Supplier's Declaration of Conformity or a grant of certification; or

(3) The CPU board and power supply used in the assembly of a personal computer have been separately authorized under Supplier's Declaration of Conformity or a grant of certification; and

(4) Personal computers assembled using either of the methods specified in paragraphs (c)(2) or (c)(3) of this section must, by themselves, also be authorized under Supplier's Declaration of Conformity if they are marketed. However, additional testing is not required for this Supplier's Declaration of Conformity, provided the procedures in §15.102(b) are followed.

(d) Peripheral devices, as defined in §15.3(r), shall be authorized under Supplier's Declaration of Conformity, or a grant of certification, as appropriate, prior to marketing. Regardless of the provisions of paragraphs (a) or (c) of this section, if a CPU board, power supply, or peripheral device will always be marketed with a specific personal computer, it is not necessary to obtain a separate authorization for that product provided the specific combination of personal computer, peripheral device, CPU board and power supply has been authorized under Supplier's Declaration of Conformity or a grant of certification as a personal computer.

Electronic Code of Federal Regulations Part 15

(1) No authorization is required for a peripheral device or a subassembly that is sold to an equipment manufacturer for further fabrication; that manufacturer is responsible for obtaining the necessary authorization prior to further marketing to a vendor or to a user.

(2) Power supplies and CPU boards that have not been separately authorized and are designed for use with personal computers may be imported and marketed only to a personal computer equipment manufacturer that has indicated, in writing, to the seller or importer that they will obtain Supplier's Declaration of Conformity or a grant of certification for the personal computer employing these components.

(e) Subassemblies to digital devices are not subject to the technical standards in this part unless they are marketed as part of a system in which case the resulting system must comply with the applicable regulations. Subassemblies include:

(1) Devices that are enclosed solely within the enclosure housing the digital device, except for: Power supplies used in personal computers; devices included under the definition of a peripheral device in §15.3(r); and personal computer CPU boards, as defined in §15.3(bb);

(2) CPU boards, as defined in §15.3(bb), other than those used in personal computers, that are marketed without an enclosure or power supply; and

(3) Switching power supplies that are separately marketed and are solely for use internal to a device other than a personal computer.

[82 FR 50832, Nov. 2, 2017]

Type of device	Equipment authorization required
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TV Broadcast Receiver	SDoC or Certification.
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FM Broadcast Receiver	SDoC or Certification.
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CB Receiver	SDoC or Certification.
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Superregenerative Receiver	SDoC or Certification.
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Scanning Receiver	Certification.
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Radar Detector	Certification.
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All other receivers	subject to Part 15 SDoC or Certification.
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TV Interface Device	SDoC or Certification.
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Cable System Terminal Device	SDoC or Certification.
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Stand-alone Cable input selector switch SDoC or Certification.

Class B personal computers and peripherals SDoC or Certification.

computers CPU boards and internal power supplies used with Class B personal SDoC or Certification.

or power Class B personal computers assembled using authorized CPU boards supplies SDoC or Certification.

Class B external switching power supplies SDoC or Certification.

Other Class B digital devices & peripherals SDoC or Certification.

supplies Class A digital devices, peripherals & external switching power SDoC or Certification.

Access Broadband over Power Line (Access BPL) Certification.

All other devices SDoC or Certification.

(b) Only those receivers that operate (tune) within the frequency range of 30-960 MHz, CB receivers and radar detectors are subject to the authorizations shown in paragraph (a) of this section. Receivers operating above 960 MHz or below 30 MHz, except for radar detectors and CB receivers, are exempt from complying with the technical provisions of this part but are subject to §15.5.

(c) Personal computers shall be authorized in accordance with one of the following methods:

(1) The specific combination of CPU board, power supply and enclosure is tested together and authorized under Supplier's Declaration of Conformity or a grant of certification;

(2) The personal computer is authorized under Supplier's Declaration of Conformity or a grant of certification, and the CPU board or power supply in that computer is replaced with a CPU board or power supply that has been separately authorized under Supplier's Declaration of Conformity or a grant of certification; or

(3) The CPU board and power supply used in the assembly of a personal computer have been separately authorized under Supplier's Declaration of Conformity or a grant of certification; and

(4) Personal computers assembled using either of the methods specified in paragraphs (c)(2) or (c)(3) of this section must, by themselves, also be authorized under Supplier's Declaration of Conformity if they are marketed. However, additional testing is not required for this Supplier's Declaration of Conformity, provided the procedures in §15.102(b) are followed.

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(d) Peripheral devices, as defined in §15.3(r), shall be authorized under Supplier's Declaration of Conformity, or a grant of certification, as appropriate, prior to marketing. Regardless of the provisions of paragraphs (a) or (c) of this section, if a CPU board, power supply, or peripheral device will always be marketed with a specific personal computer, it is not necessary to obtain a separate authorization for that product provided the specific combination of personal computer, peripheral device, CPU board and power supply has been authorized under Supplier's Declaration of Conformity or a grant of certification as a personal computer.

(1) No authorization is required for a peripheral device or a subassembly that is sold to an equipment manufacturer for further fabrication; that manufacturer is responsible for obtaining the necessary authorization prior to further marketing to a vendor or to a user.

(2) Power supplies and CPU boards that have not been separately authorized and are designed for use with personal computers may be imported and marketed only to a personal computer equipment manufacturer that has indicated, in writing, to the seller or importer that they will obtain Supplier's Declaration of Conformity or a grant of certification for the personal computer employing these components.

(e) Subassemblies to digital devices are not subject to the technical standards in this part unless they are marketed as part of a system in which case the resulting system must comply with the applicable regulations. Subassemblies include:

(1) Devices that are enclosed solely within the enclosure housing the digital device, except for: Power supplies used in personal computers; devices included under the definition of a peripheral device in §15.3(r); and personal computer CPU boards, as defined in §15.3(bb);

(2) CPU boards, as defined in §15.3(bb), other than those used in personal computers, that are marketed without an enclosure or power supply; and

(3) Switching power supplies that are separately marketed and are solely for use internal to a device other than a personal computer.

[82 FR 50832, Nov. 2, 2017]

15.107 Conducted limits.

(a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage

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that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of emission (MHz)

Conducted limit (dB μ V)

Quasi-peak

Average

0.15-0.5 66 to 56* 56 to 46*

0.5-5 56 46

5-30 60 50

*Decreases with the logarithm of the frequency.

(b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms LISN. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)

Conducted limit (dB μ V)

Quasi-peak

Average

0.15-0.5 79 66

0.5-30 73 60

(c) The limits shown in paragraphs (a) and (b) of this section shall not apply to carrier current systems operating as unintentional radiators on

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frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current systems containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μ V within the frequency band 535-1705 kHz, as measured using a 50 μ H/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.109(e).

(d) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

[54 FR 17714, Apr. 25, 1989, as amended at 57 FR 33448, July 29, 1992; 58 FR 51249, Oct. 1, 1993; 66 FR 19098, Apr. 13, 2001; 67 FR 45670, July 10, 2002]

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§15.109 Radiated emission limits.

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission (MHz)

Field strength (microvolts/meter)

30-88 100

88-216 150

216-960 200

Above 960 500

(b) The field strength of radiated emissions from a Class A digital device,

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as determined at a distance of 10 meters, shall not exceed the following:

Frequency of emission (MHz)

Field strength (microvolts/meter)

30-88 90

88-216 150

216-960 210

Above 960 300

(c) In the emission tables above, the tighter limit applies at the band edges. Sections 15.33 and 15.35 which specify the frequency range over which radiated emissions are to be measured and the detector functions and other measurement standards apply.

(d) For CB receivers, the field strength of radiated emissions within the frequency range of 25-30 MHz shall not exceed 40 microvolts/meter at a distance of 3 meters. The field strength of radiated emissions above 30 MHz from such devices shall comply with the limits in paragraph (a) of this section.

(e) Carrier current systems used as unintentional radiators or other unintentional radiators that are designed to conduct their radio frequency emissions via connecting wires or cables and that operate in the frequency range of 9 kHz to 30 MHz, including devices that deliver the radio frequency energy to transducers, such as ultrasonic devices not covered under part 18 of this chapter, shall comply with the radiated emission limits for intentional radiators provided in §15.209 for the frequency range of 9 kHz to 30 MHz. As an alternative, carrier current systems used as unintentional radiators and operating in the frequency range of 525 kHz to 1705 kHz may comply with the radiated emission limits provided in §15.221(a). At frequencies above 30 MHz, the limits in paragraph (a), (b), or (g) of this section, as appropriate, apply.

(f) For a receiver which employs terminals for the connection of an external receiving antenna, the receiver shall be tested to demonstrate compliance with the provisions of this section with an antenna connected to the antenna terminals unless the antenna conducted power is measured as specified in §15.111(a). If a permanently attached receiving antenna is used, the receiver shall be tested to demonstrate compliance with the provisions of this section.

(g) As an alternative to the radiated emission limits shown in paragraphs

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(a) and (b) of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment—Radio Disturbance Characteristics—Limits and Methods of Measurement" (incorporated by reference, see §15.38). In addition:

(1) The test procedure and other requirements specified in this part shall continue to apply to digital devices.

(2) If, in accordance with §15.33 of this part, measurements must be performed above 1000 MHz, compliance above 1000 MHz shall be demonstrated with the emission limit in paragraph (a) or (b) of this section, as appropriate. Measurements above 1000 MHz may be performed at the distance specified in the CISPR 22 publications for measurements below 1000 MHz provided the limits in paragraphs (a) and (b) of this section are extrapolated to the new measurement distance using an inverse linear distance extrapolation factor (20 dB/decade), e.g., the radiated limit above 1000 MHz for a Class B digital device is 150 uV/m, as measured at a distance of 10 meters.

(3) The measurement distances shown in CISPR Pub. 22, including measurements made in accordance with this paragraph above 1000 MHz, are considered, for the purpose of §15.31(f)(4) of this part, to be the measurement distances specified in this part.

(h) Radar detectors shall comply with the emission limits in paragraph (a) of this section over the frequency range of 11.7-12.2 GHz.

[54 FR 17714, Apr. 25, 1989, as amended at 56 FR 373, Jan. 4, 1991; 58 FR 51249, Oct. 1, 1993; 66 FR 19098, Apr. 13, 2001; 67 FR 48993, July 29, 2002; 69 FR 2849, Jan. 21, 2004; 80 FR 33447, June 12, 2015]

15.109 Radiated emission limits.

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission (MHz)

Field strength (microvolts/meter)

30-88 100

88-216 150

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216-960 200

Above 960 500

(b) The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency of emission (MHz)

Field strength (microvolts/meter)

30-88 90

88-216 150

216-960 210

Above 960 300

(c) In the emission tables above, the tighter limit applies at the band edges. Sections 15.33 and 15.35 which specify the frequency range over which radiated emissions are to be measured and the detector functions and other measurement standards apply.

(d) For CB receivers, the field strength of radiated emissions within the frequency range of 25-30 MHz shall not exceed 40 microvolts/meter at a distance of 3 meters. The field strength of radiated emissions above 30 MHz from such devices shall comply with the limits in paragraph (a) of this section.

(e) Carrier current systems used as unintentional radiators or other unintentional radiators that are designed to conduct their radio frequency emissions via connecting wires or cables and that operate in the frequency range of 9 kHz to 30 MHz, including devices that deliver the radio frequency energy to transducers, such as ultrasonic devices not covered under part 18 of this chapter, shall comply with the radiated emission limits for intentional radiators provided in §15.209 for the frequency range of 9 kHz to 30 MHz. As an alternative, carrier current systems used as unintentional radiators and operating in the frequency range of 525 kHz to 1705 kHz may comply with the radiated emission limits provided in §15.221(a). At frequencies above 30 MHz, the limits in paragraph (a), (b), or (g) of this section, as appropriate, apply.

(f) For a receiver which employs terminals for the connection of an external receiving antenna, the receiver shall be tested to demonstrate compliance with the provisions of this section with an antenna connected to the antenna terminals unless the antenna conducted power is measured as specified in §15.111(a). If a permanently attached receiving antenna is used, the

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receiver shall be tested to demonstrate compliance with the provisions of this section.

(g) As an alternative to the radiated emission limits shown in paragraphs (a) and (b) of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment—Radio Disturbance Characteristics—Limits and Methods of Measurement" (incorporated by reference, see §15.38). In addition:

(1) The test procedure and other requirements specified in this part shall continue to apply to digital devices.

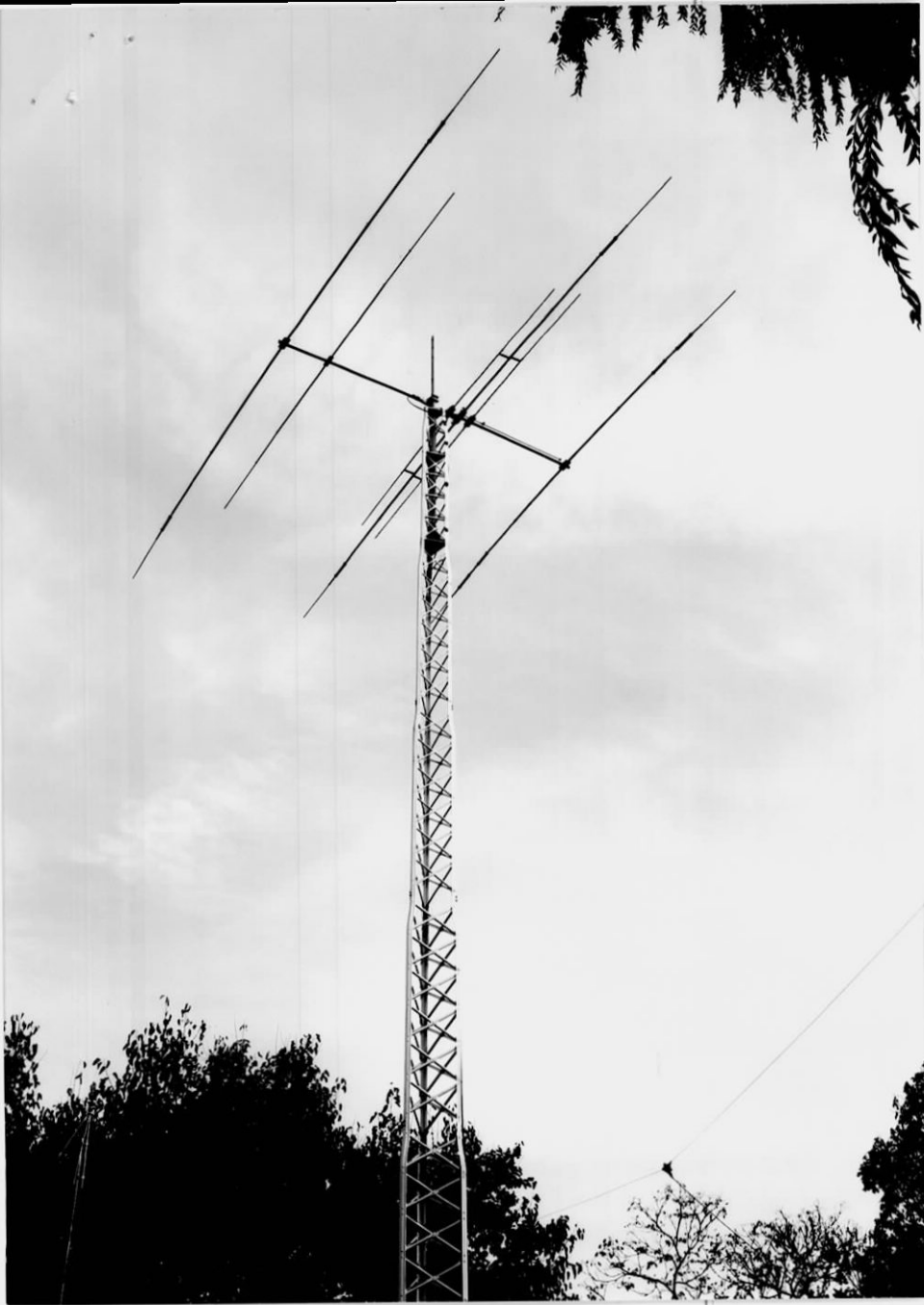
(2) If, in accordance with §15.33 of this part, measurements must be performed above 1000 MHz, compliance above 1000 MHz shall be demonstrated with the emission limit in paragraph (a) or (b) of this section, as appropriate. Measurements above 1000 MHz may be performed at the distance specified in the CISPR 22 publications for measurements below 1000 MHz provided the limits in paragraphs (a) and (b) of this section are extrapolated to the new measurement distance using an inverse linear distance extrapolation factor (20 dB/decade), e.g., the radiated limit above 1000 MHz for a Class B digital device is 150 uV/m, as measured at a distance of 10 meters.

(3) The measurement distances shown in CISPR Pub. 22, including measurements made in accordance with this paragraph above 1000 MHz, are considered, for the purpose of §15.31(f)(4) of this part, to be the measurement distances specified in this part.

(h) Radar detectors shall comply with the emission limits in paragraph (a) of this section over the frequency range of 11.7-12.2 GHz.

[54 FR 17714, Apr. 25, 1989, as amended at 56 FR 373, Jan. 4, 1991; 58 FR 51249, Oct. 1, 1993; 66 FR 19098, Apr. 13, 2001; 67 FR 48993, July 29, 2002; 69 FR 2849, Jan. 21, 2004; 80 FR 33447, June 12, 2015]







**UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
AMATEUR RADIO LICENSE
KD8QBV**



NELSON, RICARDO
90 LATTA AVE
COLUMBUS, OH 43205-3315

Licensee: This is your radio authorization in sizes suitable for your wallet and for framing. Carefully cut the documents along the lines as indicated and sign immediately upon receipt. They are not valid until signed.

The Commission suggests that the wallet size version be laminated (or another similar document protection process) after signing. The Commission has found, under certain circumstances, laser print is subject to displacement.

FCC Registration Number (FRN): 0020814125


Special Conditions / Endorsements

NONE

Grant Date	Effective Date	Print Date	Expiration Date
04-26-2011	08-08-2011	08-09-2011	04-26-2021

File Number	Operator Privileges	Station Privileges
0004831958	Amateur Extra	PRIMARY

THIS LICENSE IS NOT TRANSFERABLE


(Licensee's Signature)

FCC 660 - May 2007

Cut Along This Line

Cut Along This Line

Cut Along This Line