

RF LED Lighting devices

Presenter: Chad Beattie
TCB Workshop
October 2016

Federal Communications Commission
Office of Engineering and Technology
Laboratory Division



KDB Publication 640677 D01 v01

- Published June 17, 2016
- Clarifies how FCC rules apply to Part 15 Subpart B LED products
 - Applies to LED lamps operating above 9 kHz
 - Focus on LED's employing single or multiple LED chips, including Organic LEDs (OLED), polymer LEDs and/or Quantum Dots
- Publication does not address
 - Legacy lighting products such as incandescent, fluorescent, high intensity discharge (HID) or Part 18 RF ballasts/CFL's
 - Large LED digital displays used for visual or advertisement purposes- considered digital peripheral devices under Part 15



LED General Conditions of Operations

- Subject to condition that no harmful interference is caused (§15.5)
- Manufacturers/users are required to cease operation if harmful interference occurs (§2.909)
- Responsible parties are encouraged to help mitigate interference (§15.15)



FCC Technical Requirements for LED's

- Subject to Part 15 Subpart B as an Unintentional Radiator
 - Verification equipment authorization procedure
- Required to meet line conducted emission limits
 - Conducted emissions §15.107 Class A or B limits, as appropriate.
- Expanded radiated emission requirements (§15.33b)
 - Regardless of LED's highest used or produced frequency ($9\text{kHz} \leq f \leq 1.705\text{MHz}$), we require Radiated Emission testing 30-1000 MHz using §15.109 Class A or B limits, as appropriate.
- Emission measurement procedure guidance
 - Use ANSI C63.4-2014
 - Until ANSI C63.29 final release (currently in draft)



Online references for LED devices

- FCC KDB Publication 640677 D01 v01

- <https://apps.fcc.gov/oetcf/kdb/index.cfm>

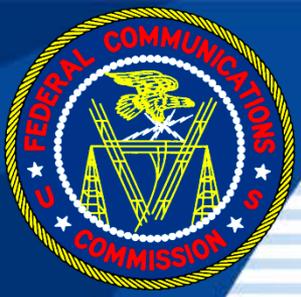
- ANSI-ASC C63

- http://www.c63.org/documents/misc/matrix/c63_standards.htm

- Energy Star LED definition list

- <https://www.energystar.gov/sites/default/files/Luminaires>

- Energy Star uses Illuminating Energy Society (IES) RP-16-10 definitions



Questions?

Thank You!