



Licensed Services Equipment KDB Pub. 971168 D01 Update

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KDB Pub. 971168 Update

- Version v03r01 of 971168-D01 replaces the preceding v03 (10/27/2017)
 - Document title: *Measurement Guidance for Certification of Licensed Digital Transmitters*
- Change highlights (further to various recent inquiries):
 - Misc. clarifying edits in Sec. 6 antenna-port emissions
 - Clarifications in Sec. 7 spurious-radiation field strength
 - Basic limits in some rules apply for both radiated and conducted emissions
 - Broadcast transmitters exception
 - Frequency range for emission measurements
 - See also the change notes in the KDB Pub.



971168 Sec. 6 Conducted (1)

- Per ITU-R publications and some FCC radio services, “reference bandwidth” (ref-BW) is the BW required for uniquely defining (thus *standardizing*) an out-of-band (domain) emission limit
 - For uniform compliance demonstration and reporting purposes, generally results should be converted to be in terms of the ref-BW when a measurement (resolution) BW narrower than the emission-limit ref-BW is used
 - Example default ref-BWs are 100 kHz (30-1000 MHz) and 1 MHz (above 1 GHz)



971168 Sec. 6 Conducted (2)

- Emission power measurement results typically can be expressed in peak, average, mean, or power-averaging (rms) values
 - The same parameter used to establish the reference level (in-band transmitter power) should be used for the (out-of-band) emission measurements (i.e., dBr, dBsd)
 - The same parameter as used for output power (e.g., §24.232) compliance reporting is not required for the OOBE (e.g., § 24.238) measurements
- For displaying attenuation levels, the maximum or mean emission signal should be "aligned" with the 0 dB reference level of the mask
 - "Unmodulated carrier" reference level generally is not applicable for digital transmissions



971168 Sec. 7 Radiated (1)

- Unwanted emission limits generally apply for both antenna-port conducted (§ 2.1051) and radiated (§ 2.1053; aka cabinet radiation) emissions – unless otherwise specified in an applicable service rule
- Example 1: § 24.238(a) OOBE generally applies for conducted and radiated unwanted emission test data compliance reporting [§§2.911(c) and 2.1033(c)(14)]



971168 Sec. 7 Radiated (2)

- Example 2: For Part 96 CBRS equipment
 - When antenna-port conducted measurements (§2.1051) are used for § 96.41(e), separate radiated measurement (§ 2.1053) is also required
 - § 96.41(e) limits generally apply for both conducted and radiated unwanted emissions
- Example 3: SDoC broadcast transmitters (e.g, DTV)
 - Requirement to use the same limit for conducted and radiated emissions generally is not applicable for broadcast transmitters using SDoC (§ 73.1660)
 - § 73.622(h) specifies out-of-channel emission measurements at DTV transmitter output terminals
 - Responsible parties are not required to measure cabinet emissions as part of SDoC testing



971168 Sec. 8 Freq. Range

- Basic requirements for frequency ranges “to be investigated” in conducted and radiated emission measurements (§§ 2.1051 and 2.1053) are specified in § 2.1057
 - Certification basics §§ 2.1033(c)(14), 2.911(c), etc.
- Per § 15.33(a)(4), § 2.1057 frequency ranges also apply for composite-system equipment
 - Composite systems §§ 2.947(f), 2.947(g), 15.31(k)
 - Example: personal computer (digital-device unintentional radiator) containing a CMRS transmitter
- See KDB Pub. 896810 for guidance
- Policy and procedure clarifications are also under consideration in FCC review of the TCB Modular Approval Committee activity



QUESTIONS?

Test labs, applicants, TCBs please let us know in case of other KDB Publication change requests