



NEW POLICIES FOR PART 15 DEVICES

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Overview

- New RFID Passive Tag Testing Policy
- New PC Motherboard with Integrated TX Module Policy
- New EMC Co-location Testing Policy
- AC line-conducted emissions measurements of Part 15 transmitters that operate below 30 MHz.



New RFID Passive Tag Testing Policy

- A passive tag does not contain batteries and is not certified individually.
- Only the tag reader needs to be tested. At this time, the current technology for passive tags is such that the emission levels from the passive tags are much lower than the allowed levels for the tag reader.
- The fundamental passive tag emissions may not operate within a restricted band, just as the tag reader is prohibited from operating in a restricted band.



New RFID Passive Tag Testing Policy

Part 15.247 Frequency Hopping RFID Systems

- ❑ Compliance with the transmit and receive nominal bandwidth matching requirement in Section 15.247(a)1, is achieved by the tag reader, not the passive tag. The receive bandwidth in the reader must nominally match or can be less than either the modulated signal from the tag reader signal or the passive tag signal.

- ❑ The maximum 20dB bandwidth of the modulated signal from the tag reader is used to determine the Channel separation requirements for the tag reader. This considered when there is a minimum number of hop frequencies required.



New RFID Passive Tag Testing Policy

Part 15.247 Frequency Hopping RFID Systems

- ❑ Under Section 15.247, a tag reader system can send CW signals as part of a half duplexed signal on each hop frequency. The half-duplexed signal consists of the modulated reader signal followed by the CW signal. The modulated signal sends data to and is received by the tag. The CW signal is used only to power the passive tag.

- ❑ A tag reading system that uses only an un-modulated CW signal cannot operate under Section 15.247 but may operate under another rule such as Section 15.249 because Section 15.249 does not have a modulation requirement.



New PC Motherboard with Integrated TX Module Policy

- Approval must not allow undefined mixing of motherboards and radios. Authorization is only for the specific transmitter board/components layout and specific CPU motherboard layout within a filing.
- Approve as composite system subject to certification for transmitter portion, and additional certification or DoC for motherboard portion as subassembly under 15.102.
- Emissions testing is to be done both with enclosure open for motherboard portion, and enclosure closed for transmitter portion, therefore allowing alternate enclosures.



New PC Motherboard with Integrated TX Module Policy

- Radiated limits apply to specific device – i.e. motherboard has relaxed limits with enclosure open.
- Filing should clearly account for at least 2.925(d) label visibility, 15.32 CPU requirements, 15.203 antenna connector, 15.204 sold-as-system.
- To ensure RF exposure compliance, this approval procedure is limited for operations in mobile or fixed RF exposure conditions, i.e., desktop computer - not portable laptop, tablet, etc.



New PC Motherboard with Integrated TX Module Policy

- Motherboard/transmitter approvals shall be for use with connected/cabled antennas only, with antennas external to enclosure, not printed-circuit antennas installed or embedded on the motherboard. Due to use of metal enclosures for PC's.
- TCBs may approve specific motherboard/transmitter devices, per conditions described above.



New EMC Co-location Testing Policy

- Policy for EMC evaluation of co-located independent transmitters in a single enclosure (e.g. laptop, handheld). This does not apply to multi-radio systems with coordinated transmitters (e.g. beam forming systems, multi-sector radio systems).
- Simultaneous transmission data (radiated and antenna conducted) is required to be submitted only when the devices can transmit simultaneously and share a common antenna.



New EMC Co-location Testing Policy

- The grantee is still responsible for compliance, even though we no longer require simultaneous transmission data to be submitted, (except for above exception).
- Class II permissive change filing is not required to be submitted when an additional co-located, certified, independent & non-coordinated transmitter is added.



AC line-conducted emissions measurements of Part 15 transmitters that operate < 30 MHz

- ❑ Section 13.1.3.1 of ANSI C63.4-2003 allows testing of Part 15 transmitters for AC line conducted emissions with a dummy load instead of the transmitter's antenna if the antenna is detachable. This section is for exploratory AC power line conducted emission measurements. A dummy load may also be used in Annex H, paragraph H1(b) of C63.4 (the step-by-step procedures) for AC power line conducted emissions from a Part 15 transmitter if the antenna is detachable.



AC line-conducted emissions measurements of Part 15 transmitters that operate < 30 MHz

- Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56 MHz transmitter done with a dummy load under the following conditions:
 - 1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.
 - 2) Second, retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. Only the fundamental TX emission band needs to be retested.



Questions and Answers

Thanks!