

Module Publication Update

Presenter: Jim Szeliga
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Host Frequency range of radiated measurements

- Publication 996369 was re-posted as a draft to clarify confusion on the frequency under investigation.
- The confusion is based Sections 15.33(a) and 15.33 (b) and the frequency of radiated measurements under investigation which specified the highest frequency generated or used for individual devices:
 - Intentional radiators -15.33 (a) (1)-(4). ~ 10X
 - Unintentional radiators - 15.33 (b) (1)-(3). ~ 5X
- Since modules are tested independent of the host testing, there was concern that additional spurious emissions may be present when installed in a host.



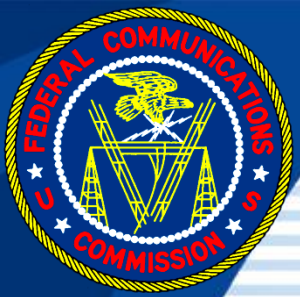
Host Frequency Under Investigation

- Originally, the publication recommended a conservative frequency of investigation based on 15.33 (a) (5) (~10X) as a composite intentional radiator. For example a host with WI-FI dual band would need to be investigate up to ~ 50 GHz or to 40 GHz whichever is lower.
- Based on the TCB Module Committee's observation and comments, no emissions above the third harmonic were observed (e.g., 16 GHz in Dual Band WIFI example) and for multiple transmitters, the expected frequencies of possible intermodulation products would primarily be the third order product.
- Therefore, to avoid additional cost and testing complexity, specifically aimed at only verifying the compliance of the composite product (transmit module + host), and given that each individual device has been individually tested, we will reconsider the guidance for the composite investigation.



Host Frequency Under Investigation

- We will update the publication with a frequency of investigation as a composite to 15.33 (b) instead of 15.33 (a) (5), with caution.
- Host manufacturer are cautioned that they are responsible not to cause interference and use good engineering judgment regardless of the guidance.
- OET may also re-evaluate this if it becomes apparent that higher frequency products are causing interference.
- Because the host needs an equipment authorization as an unintentional radiator in accordance with 15.33 (b), the additional recommended composite investigation testing can be done as part of this event with all the transmitter(s) active.
- The frequency spectrum to be investigated for this composite investigation is based on 15.33 (b) and the highest frequency generated or used include the frequencies of the transmitters.



Host Frequency Under Investigation

- For example:
 - A host product with a clock frequency of 30 MHz and dual band Wi-Fi would require an investigation up to 5 times the 5.8 GHz operating frequency or around 29 GHz, as permitted by Section 15.33(b)(1). In this case the Wi-Fi fundamental frequency of the modular transmitter is the highest frequency used.
 - A host product with a 13.56 MHz transmitter and a clock at 28 MHz would require an investigation range per the table in Section 15.33(b)(1): 1.705-108 MHz to 1 GHz. In this case, the digital clock rate of the host product is the highest frequency used.



**Questions?
Thank You!**