



Miscellaneous Compliance Measurement Issues

TCB Workshop
April 13, 2016



Peak vs. Average Power Questions w.r.t. EBS/BRS

- FCC has received several inquiries regarding whether peak or average power is to be presumed in demonstrating compliance to the limits specified in the §27.50(h) rules for EBS/BRS.
 - In consultation with WTB, we have agreed that since the limits and anticipated operations are similar to those under the §27.50(d) rules for AWS, we will extend the same measurement options to EBS/BRS operations under 27.50(h).
 - Therefore, compliance measurements can be performed for EBS/BRS devices operating under 27.50(h) using either peak or average techniques; however, if average is used, then a PAPR of less than or equal to 13 dB must also be demonstrated.
- §27.50(i) applies only when peak power measurements are performed, either by §27.50 rule specification, or by choice when available as an option.



Update to Published KDB 558074: DTS Measurement Guidance

- We have received several inquiries with regard to this KDB.
- In particular, when it was updated in 2014 to remove the option for performing integrated peak power measurements, an errant sentence was left in place that seemed to imply that such power integration techniques were still permitted.
- The KDB has now been revised to remove this sentence, and thus the confusion, as well as to incorporate other relatively minor edits.



Test Reduction Opportunities

- It is recognized that dynamic variability among multiple RF-related parameters of contemporary radios (licensed and unlicensed) has significantly increased the testing and reporting efforts associated with performing compliance tests.
 - This has resulted in “test report overload” where EMC compliance test reports that provide complete data for all possible operational modes can easily exceed 1000 pages.
 - Often the practical differences observed between the operational modes are extremely subtle as related to the FCC-required compliance requirements.



Test Reduction Opportunities (continued)

- FCC currently initiating a review to develop reasonable and practical means for reducing the reporting requirements in such cases.
- Initial considerations are based on the overarching requirement that the applicant has to demonstrate compliance under the “worst-case” operational modes.
 - This would suggest that only the data associated with the “worst case” operational modes needs to be reported, **if** the responsible party can provide **substantive** technical justification and certify that the data is indeed representative of the “worst-case” operational mode as it relates to the specific rule requirement.



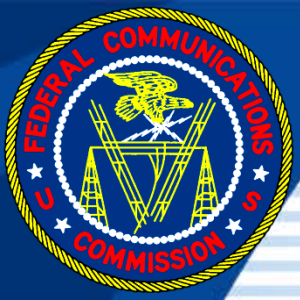
Test Reduction Opportunities (continued)

- In this context, “worst-case” represents the operational mode or modes that demonstrate the least margin relative to the specified limit or requirement.
- Note that multiple “worst case” modes may exist relative to different applicable limits and/or requirements.
- Note also that such “worst-case” modes may also be product-specific in that they may be unique to specific design and implementation parameters.



Test Reduction Opportunities (continued)

- When such test reduction opportunities are exercised, the technical justification for doing so must be fully explained in the test report and supporting data (*i.e.*, pre-scan data) must be made available upon request.
 - The exercise of “good engineering judgement” must be supported with substantive technical justification based on measured data.
- We propose to publish these slides as part of a draft KDB publication to solicit input.
- We encourage TCB’s and other interested parties to provide either rule-, technology-, or device-specific proposals for consideration.
 - Please provide technical data and/or analysis to substantiate proposals submitted for consideration.



Questions?