

Licensed Services Equipment KDB Pub. Updates and Review Items

Office of Engineering and
Technology
Laboratory Division
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NOTE: Corrections made following the presentation



Overview

- Summarize recent KDB Publication updates[†]
 - KDB Pub. 971168 D01 and D02
 - KDB Pub. 935210 D02 to D05
- AWS-4 + H-Block equipment considerations

[†] Other details on most of the 971168 and 935210 updates were also provided in May 2017 FCC-TCB conference notes: (https://www.fcc.gov/oet/ea/presentations/files/may17/45-Licensed-Services-Devices-Misc-Updates-TH-Final_r1.pdf); (<https://www.fcc.gov/oet/ea/presentations/files/may17/46-Signal-Boosters-Misc-Updates-TH-Final.pdf>).



KDB Pub. 971168 Updates (1)

- Version v03 of 971168-D01 replaces the preceding v02r02 (10/17/2014) and review-draft v03-DR03-42830 (expired 5/19/2017)
 - Document title: *Measurement Guidance for Certification of Licensed Digital Transmitters*
- Change highlights:
 - Further to IBR of ANSI C63.26-2015 by FCC 17-93*, text in numerous subclauses is replaced by cross-references to corresponding text in the standard
 - Various generic and rules-specific text is retained, for continuity and readability purposes
 - Clause added to reiterate policies on number-of-test-frequencies to be used for compliance test data in application filings licensed-service devices (similar as in KDB Pub. 634817)

* docket no. 15-170



KDB Pub. 971168 Updates (2)

- Version v02r01 of 971168-D02 replaces the preceding v01 (10/17/2014)
 - Document title: *Miscellaneous and Basic Review and Approval Items for Transmitting Equipment Used in Licensed Radio Services*
- Change highlights—guidance added for:
 - Emission measurements, maximum bandwidth, and detector function for 4940-4990 MHz band devices
 - Application filings for Part 90 Public Safety 700 MHz band devices
 - Power measurement methods for Part 22 Subpart H devices further to recent FCC 17-27*
 - EMC/radio-parameter testing where emission signals span across two rule parts in terms of LTE band 26 example
 - Miscellaneous editorial updates and corrections

* docket no. 12-40; 32 FCC Rcd 2518; 82 FR 17570; [Apr. 12, 2017](#)



KDB Pub. 935210 Updates (1)

- Version v04 of 935210-D02 with basic guidance for consumer and industrial signal boosters replaces the preceding v03r02 (4/8/2016)
 - General cross-reference to ANSI C63.26-2015 added, further to IBR by FCC 17-93
 - Alternative label versions added
 - Various rule references and frequency bands guidance updated for Part 90 devices
- Version v01r02 of 935210-D05 on measurement methods for industrial signal boosters replaces the preceding v01r01 (2/12/2016)
 - General cross-reference to ANSI C63.26-2015 added
 - Miscellaneous editorial updates and corrections



KDB Pub. 935210 Updates (2)

- Version v04r01 of 935210-D03 on wideband consumer boosters replaces the preceding v04 (2/12/2016)
 - General cross-reference to ANSI C63.26-2015 added
 - Minor procedures clarifications in 7.4, 7.7, 7.8
- Version v02r01 of 935210-D04 on provider-specific consumer boosters replaces the preceding v02 (2/12/2016)
 - General cross-reference to ANSI C63.26-2015 added
 - Clarifications on test-mode EUT and timing spec in 7.11, 7.12
- See also May 2017 TCB conference notes on main differences between ANSI C63.26-2015 and 935210 *

* May 2017 Presentation "Part 20 and Part 90 Signal Boosters – Miscellaneous Updates," page 11—see [NOTES at end of this file](#)



1995-2020 MHz Part 27 Downlink (1)

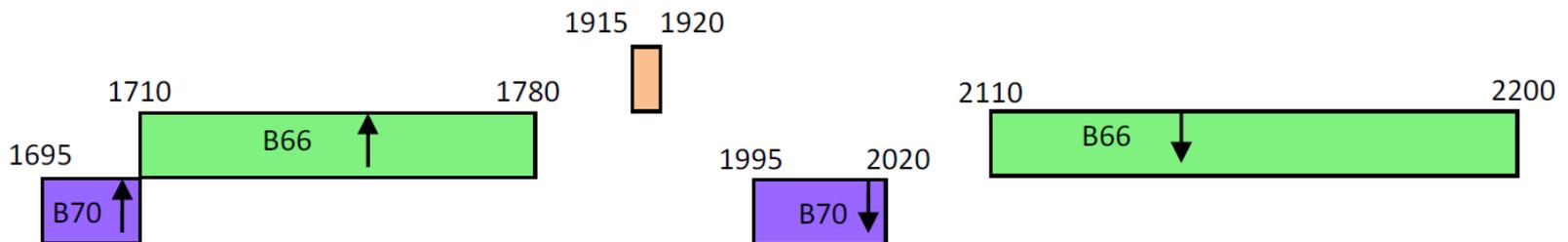
- 2000-2020 MHz downlink transmitters (e.g., base station, industrial booster/DAS coverage unit)
 - Where DA-13-2409* qualifies:
 - 27.50(d)(1) (low density) or 27.50(d)(2) power limits are applicable, rather than 27.50(d)(7) (max. 5 mW EIRP in 2000-2005 MHz; 2 W EIRP in 2005-2020 MHz)
 - 27.53(h)(1) emission limit is applicable $[43 + 10\log(P)]$, rather than 27.53(h)(2)(ii) $\{[70 + 10\log(P)]$ for f below 2000 MHz}
- 1995-2000 MHz downlink transmitters
 - Further to 27.53(h)(4)(ii), and where DA 13-2409 provisions (see above) also apply for a given transmitter, 27.53(h)(1) emission limit is applicable, rather than 27.53(h)(2)(iv) $\{[70 + 10\log(P)]$ in 2005-2020 MHz}
- Associated grant condition needed (confirm via KDB inquiry)

* docket no. 13-225; 28 FCC Rcd 16787-16811; 79 FR 10149-10150



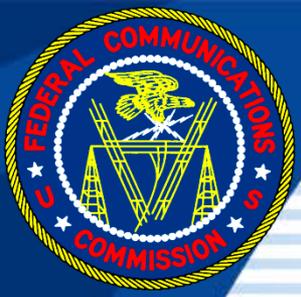
1995-2020 MHz Part 27 Downlink (2)

- Example implementation: 3GPP E-UTRA Band 70
 - 1695-1710 MHz UL
 - 1995-2020 MHz DL (10 MHz supplemental DL)



3GPP E-UTRA Band 66 and Band 70, and § 27.5(k) low band (lower H Block; upper is 1995-2000 MHz)
[Modified from Fig 8.2.2-1 of 3GPP TR 36.869 V13.1.0 (2016-06)]

Bandplan graph for informative illustration purposes only



QUESTIONS?

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



NOTES

- For reference and convenience the following concerning the main differences between ANSI C63.26-2015 and KDB Pub. 935210 is repeated from the May 2017 TCB conference notes
 - For industrial boosters 935210 D02 has general provisions about testing for MIMO-capable devices (not mentioned in 7.2 of ANSI C63.26-2015)
 - 7.2 of ANSI C63.26-2015 uses 26 dB EBW, but 935210 D05 allows 99% OBW
 - 7.2.2.3, 7.2.3.3, and 7.2.3.4 of ANSI C63.26-2015 are missing steps relative to 935210 D05
 - Fig. 18 and Fig. 19 in 7.3.9.1, and Figs. 29 to 31 in 7.4.9.1 of ANSI C63.26-2015 are specific to 50 Ω load; however some devices need testing with for example 75 Ω load
 - Numerous NOTEs (informative) in ANSI C63.26-2015 should be body text (normative)