

**Federal Communications Commission
Office of Engineering and Technology
Laboratory Division Public Draft Review**

June 23, 2015

Draft Laboratory Division Publications Report

Title: Accredited Testing Laboratory Checklist

Short Title: Accredited Lab Checklist

Reason: Updated to incorporate changes required by FCC 14-208

Publication: 853844

Keyword/Subject: Accredited Testing Laboratory Checklist

First Category: Test Sites

Second Category: Accreditation

Question:

What guidelines does the FCC provide to an accrediting body performing a technical assessment of a testing laboratory to determine the capability and competence of that laboratory to perform EMC and Radio tests to show compliance with the FCC regulatory requirements, under the FCC Regulations?

Answer:

The attachment [853844 D01 Accredited Lab Checklist v02](#) below is intended to serve as a guide and provide a minimum list of items to be included in the technical evaluation of the test laboratory, as part of the complete ISO/IEC 17025 assessment for an accredited testing laboratory. This checklist is not intended to replace the good engineering judgment of a technical assessor(s), or a thorough evaluation of the facility.

Attachment List:

[853844 D01 Accredited Lab Checklist v02](#)

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**ACCREDITED TESTING LABORATORY
FCC TECHNICAL ASSESSMENT CHECKLIST**

The following checklist identifies specific items to be evaluated during the technical assessment of a testing laboratory to determine the capability and competence of that laboratory to perform testing to show compliance with FCC equipment authorization requirements under the FCC Regulations contained in Title 47 of the Code of Federal Regulations (47 CFR). This checklist is intended to serve as a guide, and provide a minimum list of items to be included in the technical evaluation of the test laboratory as part of the complete ISO/IEC 17025 assessment. This checklist is not intended to replace good engineering judgment of the technical assessor(s) or a thorough evaluation of the facility. As such, other related items not shown on the checklist may be evaluated by the assessor(s). The accreditation body shall attest that all responses on this checklist are complete and accurate. The completed checklist for each laboratory is provided to the FCC and is publicly available.

Other basic requirements for measurement procedures for unintentional and intentional radiators are listed in Section 15.31. A list of measurement procedures is also found on the equipment authorization measurement page at: <https://www.fcc.gov/oet/ea/eameasurements.html>. Finally, the [FCC Knowledge Database](#) provides additional guidance on testing devices subject to the FCC's rules.

A testing laboratory is not required to be assessed to all of the standards identified in this checklist, but for the testing laboratory to be recognized by the FCC they must be assessed and compliant with all applicable parts of each standard for which FCC recognition is requested. Deviations from full compliance with a standard (*e.g.*, ANSI C63.4-2014, clause 5.5.1 a) vs. ANSI C63.10-2013, clause 5.2 – site validation for radiated emissions measurements above 1 GHz) should be noted in this checklist and by the accreditation body.

The Equipment Authorization Report and Order (FCC 14-208) has updated the incorporation-by-reference of the measurement procedures for unintentional radiators (ANSI C63.4-2014) and intentional radiators (ANSI C63.10-2013). These new standards may be used effective immediately. A one-year transition period is provided in the rules, which requires that these standards must be used by July 13, 2016. During the transition period, the new editions as well as the older editions of ANSI C63.4 and ANSI C63.10 (as noted in FCC Public Notice DA 09-2478) may be used.

When the procedures in ANSI C63.4-2014 or ANSI C63.10-2013 are used for radiated emission measurements, the test site used shall meet the following site validation requirements:

- As of the effective date of the rules, test facilities used to make radiated emission measurements from 30 MHz to 1 GHz are required to meet the site validation requirements in ANSI C63.4-2014.

- For radiated emissions in 1 GHz to 40 GHz, a test facility can use either of the two site validation options in 5.5 of ANSI C63.4-2014. After the transition date, July 13, 2018, each test facility is required to comply with the site validation requirements in CISPR 16-1-4:2010-04.

Validation of the test site acceptability criterion shall be confirmed no less than once every three years.

The version of each measurement procedure covered during the assessment shall be recorded under the scope of accreditation on the checklist.

The assessor(s) shall mark all items observed and verified at the laboratory. Mark the letter "Y", representing "yes" to show conformance with the criteria. **Mark the letter "N", representing "No", to show a deficiency.** If the item is "Not Applicable", mark "N/A". As necessary, record an explanation of any deficiency or comment in the space provided.

Change Notice

06/23/2015: 853844 D01 Accredited Lab Checklist v02 replaces 853844 D01 Accredited Lab Checklist v01. The checklist was updated to reflect changes related to FCC 14-208.

**Accredited Testing Laboratory
FCC Technical Assessment Checklist**

Laboratory Name	
Laboratory Contact	
Accreditation Body	
Date of Assessment	
Completed by (Assessor name(s))	
Scope of Accreditation (Indicate standards covered by assessment: e.g., ANSI C63.4-2014, ANSI C63.10-2013, and MP-5.)	
Type of Assessment	
Date Checklist Completed	

I. SCOPE OF ASSESSMENT <i>(The laboratory shall have appropriate FCC Rules, standards, and measurement methods, consistent with their scope of accreditation. Has the test laboratory been assessed and found to be capable and competent to perform testing to the standards listed below?)</i>				
Y	N	N/A	1. ANSI C63.4-2003: <i>American National Standard for Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.</i>	
Y	N	N/A	2. ANSI C63.4-2009: <i>American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.</i>	
Y	N	N/A	3. ANSI C63.4-2014, <i>American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.</i>	
Y	N	N/A	4. ANSI C63.10-2009, <i>American National Standard for Testing Unlicensed Wireless Devices.</i>	
Y	N	N/A	5. ANSI C63.10-2013, <i>American National Standard for Testing Unlicensed Wireless Devices.</i>	
Y	N	N/A	6. Is the testing laboratory familiar with KDB Publications 789033 and 905462, and capable of testing devices subject to all Unlicensed National Information Infrastructure requirements?	

Y	N	N/A	7. ANSI C63.17-2013, <i>American National Standard Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices.</i>	
Y	N	N/A	8. ANSI C63.19-2007, <i>American National Standard for Methods of Measurement of Compatibility Between Wireless Communication Devices and Hearing Aids.</i>	
Y	N	N/A	9. ANSI C63.19-2011, <i>American National Standard for Methods of Measurement of Compatibility Between Wireless Communication Devices and Hearing Aids.</i>	
Y	N	N/A	10. Is the testing laboratory familiar with KDB Publication 285076 and capable of testing devices subject to Hearing Aid Compatibility (HAC) requirements for mobile handsets?	
Y	N	N/A	11. ANSI/TIA-603-D-2010, <i>Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.</i>	
Y	N	N/A	12. Is the testing laboratory familiar with KDB Publication 971168 and capable of testing wideband devices operating in Commercial Mobile Services?	
Y	N	N/A	13. IEEE Std 1528™-2013, <i>IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.</i>	
Y	N	N/A	14. Is the testing laboratory familiar with KDB Publications 447498 and 865664 and capable of testing devices subject to general RF exposure guidance and SAR measurement guidance, respectively?	
Y	N	N/A	15. FCC MP-5-1986: Methods of measurement of radio noise emissions from Industrial, Scientific and Medical (ISM) equipment.	
Y	N	N/A	16. Does the testing laboratory have access to all FCC Rules and Regulations (47 CFR) and standards for the scope of the assessment?	
Y	N	N/A	17. Are the measurement antennas properly calibrated in accordance with ANSI C63.5?	
Y	N	N/A	18. Is any measurement software used by the testing laboratory documented in the test report?	
Y	N	N/A	19. For each type and size of EUT to be measured, does each radiated emission test facility comply with the conditions and requirements of the appropriate test procedure?	
Y	N	N/A	20. Are LISN(s), filters, and isolation transformers, if used, properly installed? Is the LISN bonded to the ground reference plane?	

Y	N	N/A	21. Does the radiated emission test site(s) meet the site validation requirements of 5.4 of ANSI C63.4-2014 for the frequency range of 30 MHz to 1 GHz?	
Y	N	N/A	22. Does the radiated emission test site(s) meet the site validation requirements of 5.5 of ANSI C63.4-2014 for the frequency range of 1 GHz 40 GHz?	
Y	N	N/A	23. Does the radiated emission test site(s) meet the site validation requirements of CISPR 16-1-4:2010-04 for the frequency range of 1 GHz 40 GHz?	
Y	N	N/A	24. Was the test site validation for performing radiated emissions measurements completed in the last three years?	
Y	N	N/A	25. Does the EMI receiver or spectrum analyzer cover the required frequency range per the scope of accreditation for the measurements to be performed by the testing laboratory? (47 CFR §15.33)	
Y	N	N/A	26. Does the test laboratory have an up to date description of measurement facilities as required by 47 CFR §2.948?	
II. EMISSION TESTS				
Y	N	N/A	27. Are the AC power-line conducted emission tests performed in accordance with the applicable parts of C63.4-2014 and 47 CFR §§15.31-15.35 and 15.107?	
Y	N	N/A	28. Are the guidelines in ANSI C63.4 and MP-5 followed for large EUTs, including <i>in-situ</i> measurements, if appropriate?	
Y	N	N/A	29. Is the conducted emission test setup in accordance with ANSI C63.4 with the required separation between the EUT and any conducting surfaces maintained?	
Y	N	N/A	30. Is the EUT connected to one LISN and all the peripherals connected to one or more LISNs or a power strip to one LISN; i.e., per ANSI C63.4-2014?	
Y	N	N/A	31. For each type of EUT, are measurements made over the correct frequency ranges and the correct detectors and bandwidth as required by 47 CFR §§15.33, 15.35 and 18.309?	
Y	N	N/A	32. Are the radiated emission tests performed in accordance with the proper standard?	
Y	N	N/A	33. Were radiated emission tests observed and is the radiated emission test setup in accordance with proper standard?	

Y	N	N/A	34. Are unintentional radiators, other than ITE, tested in accordance with the requirements in 47 CFR §15.31 and the procedures in the appropriate standard?	
Y	N	N/A	35. Are intentional radiators tested in accordance with the requirements in 47 CFR §15.31 and the procedures in the appropriate standard?	
Y	N	N/A	36. Does the radiated emission measurement represent the maximized cable configuration and worst case mode of EUT operation?	
Y	N	N/A	37. For each type of EUT, are the correct frequency ranges investigated and the correct measurement detectors and bandwidth used per 47 CFR §§15.33 and 15.35?	
Y	N	N/A	38. If the laboratory has a TEM waveguide, are the requirements followed in making radiated emission measurements using TEM waveguides?	
III. TEST REPORTS (<i>Assessor should request to review several sample test reports for various types of products.</i>)				
Y	N	N/A	39. Have several sample test reports for various types of products been reviewed for accuracy?	
Y	N	N/A	40. Does each of the test reports contain all the required information and does the laboratory follow the report disposition procedure?	
Y	N	N/A	41. Does the test report reference the standard used and define any deviations?	
Y	N	N/A	42. Is the rationale for selecting and arranging the EUT clearly stated and are the components of the EUT system clearly identified?	
Y	N	N/A	43. Does the test report include photographs or detailed sketches of the EUT configuration?	
Y	N	N/A	44. Does the measurement report include a sample calculation with all conversion and correction factors used?	
Y	N	N/A	45. Does the testing laboratory use external resources to perform testing and if so do they have procedures in place to ensure that the external resources are properly accredited and FCC recognized?	
IV. PERSONNEL COMPETENCY (<i>The following is a list of general or lead-in questions, which are intended to be used as a guide to assess competency of laboratory personnel. Additional specific questions should be used to determine the technical competency of the personnel performing the measurement.</i>)				
Y	N	N/A	46. Are laboratory personnel able to obtain recent FCC Rules and appropriate KDB guidance?	

Y	N	N/A	47. Has each laboratory personnel responsible for testing been able to demonstrate performing a measurement of an applicable device?	
Y	N	N/A	48. Do the test personnel know how to determine if an emission is from the EUT or is an ambient signal? Do the test personnel know how to handle an emission that is close to, or coincident with, an ambient signal?	
Y	N	N/A	49. Can the test personnel explain the FCC requirements for testing a product in accordance with the requirements in 47 CFR §§15.31-15.35? Are the test personnel knowledgeable of the FCC testing conditions for different types of products?	
Y	N	N/A	50. Have one of the laboratory personnel, at each type of site, replicate at least three frequency points on the horizontal site attenuation and at least three frequency points on the vertical site attenuation. Is the test performed correctly and is the site attenuation data at these frequencies consistent with the previously recorded data? <i>Note: Select frequencies from previous data that have both low and high deviations from the NSA.</i>	
Y	N	N/A	51. For equipment requiring RF exposure evaluation (SAR and MPE), are the test personnel knowledgeable of the test reduction, test exclusion and measurement or, if applicable, numerical simulation procedures and requirements?	
Y	N	N/A	52. For measurements of equipment requiring Hearing Aid Compatibility (HAC) testing, are the test personnel knowledgeable of the test setup and procedures?	