1. Verifica dei requisiti FCC ai fini del riconoscimento MRA USA/UE

L'uso di questa checklist è richiesto ai laboratori designati per il mutuo riconoscimento secondo specifiche FCC per la compilazione dell’autovalutazione, da effettuare in occasione della prima visita ACCREDIA e successivamente almeno ogni due anni. Il Funzionario Tecnico ACCREDIA fornirà ulteriori istruzioni / promemoria nella fase iniziale di pianificazione della visita.

Questa checklist include tutte le domande e i punti di verifica previsti dal documento FCC OET *853844 D01 Accredited Lab Checklist v02r02* del **2 Marzo 2018**.

Sono state aggiunte da ACCREDIA ulteriori domande / chiarimenti / note per facilitare la valutazione.

Use of this checklist is required for FCC designated laboratories at their first assessment, and subsequently at least every two years. Specific instructions / reminders will be given by the ACCREDIA Technical Officer at the beginning of the audit planning phase.

This checklist includes all the questions and check-points given in the FCC OET document *853844 D01 Accredited Lab Checklist v02r02* **dated March 2, 2018**.

Additional questions / clarifications / notes have been added by ACCREDIA in order to facilitate the assessment.

1. 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 Rules and Regulations contained in Title 47 of the Code of Federal Regulations (47 CFR). This checklist is intended to serve as a guide, and it provides a minimum list of items to be included in the technical evaluation of the test laboratory as part of a complete ISO/IEC 17025[[1]](#footnote-1) 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 in this checklist may be evaluated and documented by the assessor(s). The accreditation body shall attest that all responses in this checklist are complete and accurate. The completed checklist for each laboratory is submitted to the FCC, and is made publicly available.

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 FCC equipment authorization measurements page at: <https://www.fcc.gov/oet/ea/eameasurements.html> or <https://www.fcc.gov/general/equipment-authorization-measurement-procedures>.

Finally, the FCC OET Knowledge Database (<https://www.fcc.gov/kdb>) 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 found competent to perform testing with all applicable parts of each standard for which FCC recognition is being requested. In cases where the FCC doesn’t recognize all portions of a standard or different versions of a standard contain conflicting requirements, any deviations from full compliance with a standard [e.g., site validation for radiated emission measurements above 1 GHz per 5.5.1 (a) of ANSI C63.4-2014 vs. 5.2 of ANSI C63.10-2013] should be noted in this checklist and by the accreditation body.

A testing laboratory is not required to be assessed and recognized for all of the scopes identified in [KDB Publication 974614](https://apps.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?switch=P&id=44684), but the FCC does not recognize partial scopes; for a scope to be recognized by the FCC, an accredited testing laboratory must be capable of performing all tests covered within the scope. The FCC does allow an accredited testing laboratory to meet the full scope requirements using multiple testing locations of the same company at different locations within the same country.

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 versions of the standards shall be used after July 12, 2016 for all part 15 device compliance testing.

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 (see also [KDB Publication 414788](https://apps.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?switch=P&id=20539)):

* After July 12, 2015 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 emission measurements 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. On and after the transition date of 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 in the checklist 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, explanations of any deficiency, exception, or comments shall be recorded in the space provided.

1. Referenced KDB publications

KDB Publication 285076, Equipment authorization requirements for hearing aid compatibility of mobile

handsets.

KDB Publication 414788, Requirements for test sites used to make radiated emission measurements.

KDB Publication 447498, RF exposure requirements and procedures for mobile and portable devices.

KDB Publication 789033, Test procedures for measuring U-NII devices subject to the requirements in Part 15, Subpart E.

KDB Publication 865664, Guidance on SAR measurements for devices operating in the 100 MHz to 6 GHz range, and general RF exposure compliance reporting.

KDB Publication 905462, Test guidance for demonstrating compliance of U-NII devices subject to DFS

requirements.

KDB Publication 935210, Guidance for the evaluation of signal boosters.

KDB Publication 971168, Procedures for compliance measurements on licensed wideband (> 1 MHz) digital transmission systems.

KDB Publication 974614, Guidance for FCC recognition of accredited testing laboratories that perform testing of RF devices subject to Declaration of Conformity (DoC) and Certification approval procedures and guidance for FCC recognition of test firm accrediting bodies.

|  |  |
| --- | --- |
| 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 FCC MP-5.) |  |
| Type of Assessment | *("Recognition" se prima visita, "Renewal" per le successive, sempre su scopo completo, "Extension" per estensione)* |
| Date Checklist Completed |  |

|  |
| --- |
| Parti in magenta: domande integrative / chiarimenti / note aggiunte da ACCREDIA.  Parti in verde: indicazioni per la compilazione da parte del Laboratorio al termine del proprio self-assesment. Si invita il Laboratorio a verificare l’indicazione nella colonna applicabile: Yes, No, NA, quindi personalizzare e dettagliare le risposte in base al proprio contesto operativo.  Parti in blu: indicazioni per la compilazione da parte degli Ispettori. Si invitano gli ispettori a personalizzare e dettagliare le risposte in base al contesto del Laboratorio.  Nota per Ispettore: Prima della consegna ad ACCREDIA si prega di rimuovere il presente riquadro e **impostare a nero il colore del testo di tutte le risposte e lasciare in magenta le domande integrative.**  06-06-2025 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. **SCOPE OF ASSESSMENT**   *The laboratory shall possess or demonstrate access to appropriate FCC Rules, standards, and measurement methods, consistent with their scope of accreditation.*  *Has the testing laboratory been assessed and found to be capable and competent to perform testing to the standards listed below?* | | | | |
|  |  |  | 0. How many test reports has the laboratory issued for **each** of its FCC recognized scopes in the last 2 years? Detail please. | XXX reports have been issued in the last two years, in particular:  - FCC 15-B: xx reports  - FCC 15-C: xx reports  - FCC 18: xx reports |
| Y  X | N | N/A | 1. ANSI C63.4-2014, *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.*  Can the laboratory cover the full frequency range up to 40 GHz?  Is the upper frequency limit indicated in the scope of accreditation (see All. 1 DA-02 - take note of the date and revision of Section 2)? | The laboratory has been assessed for applicable ANSI Standards and FCC regulations.  The frequency limitation (40 GHz) is reported in the scope of accreditation (DA-02 All1 rev. XX date XXXX). |
| Y  X | N | N/A | 2. *ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices.*  What is the upper frequency limit that the laboratory is able to cover?  Is the upper frequency limit indicated in the scope of accreditation (see All. 1 DA-02 - take note of the date and revision of Section 2)? | The laboratory has been assessed for applicable ANSI Standards and FCC regulations.  The frequency limitation (40 GHz) is reported in the scope of accreditation (DA-02 All1 rev. XX date XXXX). |
| Y | N | N/A  X | 3. Is the testing laboratory familiar with KDB Publications 789033 and 905462, and capable of testing devices subject to all Unlicensed National Information Infrastructure requirements? | Relevant standards not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 3.a Can test personnel explain the FCC requirements for testing a product in accordance with Clause II.A.2 of KDB Publication 789033 D02 (Spectrum Analyzer Reference Level/Attenuation/Headroom)? | Relevant standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 3.b Can test personnel explain the FCC requirements for testing a product in accordance with Clause II.B.2 of KDB Publication 789033 D02 (Measurements of duty cycle and transmission duration)? | Relevant standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | *4.* ANSI C63.17-2013, *American National Standard Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices.* | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | *5.* ANSI C63.19-2007, *American National Standard for Methods of Measurement of Compatibility Between Wireless Communication Devices and Hearing Aids.* | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | *6.* ANSI C63.19-2011, *American National Standard for Methods of Measurement of Compatibility Between Wireless Communication Devices and Hearing Aids.* | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 7. Is the testing laboratory familiar with KDB Publication 285076 and capable of testing devices subject to Hearing Aid Compatibility (HAC) requirements for mobile handsets? | Relevant devices not covered by the scope of accreditation |
| Y | N | N/A  X | 8. ANSI/TIA-603-D-2010*, Land Mobile FM or PM Communications Equipment Measurement and Performance Standards* | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 9. ANSI/TIA-603-E-2016, *Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.* | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 10. TIA-102.CAAA-D, Digital C4FM/CQPSK Transceiver Measurement Methods, 2013 | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 11. TIA-102.CAAA-E, Digital C4FM/CQPSK Transceiver Measurement Methods, 2016 | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 12. ANSI C63.26-2015 American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 13. Is the testing laboratory familiar with KDB Publication 971168 and capable of testing wideband devices operating in Commercial Mobile (Radio) Services? | Standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 13.a Can test personnel explain how to determine the effective radiated power (ERP) and equivalent isotropic radiated power (EIRP) of an RF transmitting system?  Can test personnel, for example, explain equation (1) in the KDB Publication 412172 D01 and the different ERP (or EIRP) measurement techniques described in sub-clauses 2.1, 2.2 and 2.3? | Relevant standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 13.b Can test personnel explain the two different peak-to-average-power-ratio (PAPR) measurement techniques described in Clause 5.7 of KDB Publication 971168 D01? | Relevant standard not covered by the Scope of Accreditation. |
| Y | N | N/A  X | 14. RF exposure KDB publications, in conjunction with the fundamental SAR concepts in IEEE Std 1528-2013, IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. KDB publication requirements take precedence over any variations in IEEE Std 1528-2013. | Relevant standard not covered by the Scope of Accreditation. |
| Y  X | N | N/A | 15. 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?  See Accredia explanatory note "FCC RF exposure - 18 April 2018". | The testing laboratory is familiar with the evaluation of exposure requirements and authorization procedures for mobile and portable devices, as well as with the evaluation of SAR measurements and reporting for portable devices. |
| Y  X | N | N/A | 16. FCC MP-5-1986: *Methods of measurement of radio noise emissions from Industrial, Scientific and Medical (ISM) equipment*.  What is the upper frequency limit that the laboratory is able to cover?  Is this limit indicated in the scope of accreditation (see All. 1 DA-02)? | The laboratory has been assessed for the FCC MP-5 Standard .  The standard is available via the appropriate link on the FCC website. A paper copy is also available in addition to an electronic copy in a shared folder.Limitation of frequency (40 GHz) is reported in the scope of accreditation (DA-02 All1 rev. XX date XXXX). |
| Y  X | N | N/A | 17. Does the testing laboratory *possess or can it demonstrate access* to all FCC Rules and Regulations (47 CFR) and standards for the scope of the assessment? | During the audit the laboratory staff has demonstrated to be familiar with the FCC website for finding all on-line Rules and Regulations. |
| Y | N | N/A  X | 18. Are the measurement antennas properly calibrated in accordance with ANSI C63.5-2006? | See below.  ANSI C63.5-2006 has been withdrew in March 2020. |
| Y  X | N | N/A | 19. Are the measurement antennas properly calibrated in accordance with ANSI C63.5-2017?  If ANSI C63.5-2017 is used:  Does each of the antennas used for compliance measurements comply with the criteria in ANSI C63.4-2014, Clause 4.5 and MP-5?  In case of use of a hybrid antenna, are the test site-specific hybrid antenna qualification procedures, limitations and acceptance criteria described in the normative Annex N of ANSI C63.4-2014 are met?  *Note:*  Rod and log-spiral antennas are not permitted for FCC type measurements (47 CFR §15.31(a)(4)). | The antennas are calibrated according to ANSI C63.5:2006 and C63.5:2017, example of evidences:  - Log-Periodic Antenna SCHWARZBECK (30MHz-1GHz) calibrated from Seibersdorf Laboratories dated 24.06.2019  - Horn Antenna SCHWARZBECK (1-18GHz) calibrated from NPL dated xxx  - ecc. |
| Y  X | N | N/A | 20. Is any measurement software used by the testing laboratory documented in the test report?  *Note:*  See ANSI C63.4-2014, Clause 10.2.7 | The software used by the testing laboratory are:  . . . . .  . . . . .  and documented in the test report.  Several test reports have been checked:  Test report n. ……  Test report n. …… |
| Y  X | N | N/A | 21. 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? | Radiated Emissions measurements are performed inside a XX m semi-anechoic shielded chamber with a validated volume (xxx m). |
| Y  X | N | N/A | 22. Are LISN(s), filters, and isolation transformers, if used, properly installed? Is the LISN bonded to the ground reference plane? | For conducted emission measurement the setup, including LISN, filters and cables, is complying with the standard requirements, and the LISN is properly bonded to the GRP. |
| Y  X | N | N/A | 23. 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?  Three cases are possible.  **Case 1**: the testing laboratory performs test site verification internally  **Case 2**: the test site verification is performed by an accredited external service provider or an NMI (National Metrology Institute)  **Case 3**: the test site verification is performed by a non accredited external service  In **Case 1**:   * site verification shall be performed according to clause 5.4.3 (NSA method) or clause 5.4.4 (RMS reference site method) of CISPR 16-1-4:2010+A1:2013. * In case of application of the NSA method the broadband antennas used to make site attenuation measurements shall be traceable to a national standard (see clause 5.4.5.4 of CISPR 16-1-4:2017). * In case of application of the RSM, the prescription of CISPR 16-1-4:2010+A1:2013 shall be observed; * the testing laboratory shall carry out periodic intermediate verifications (see item 54. of this checklist).   In **Case 2**:   * the site verification test report shall bear the accreditation mark or the NMI logo * the testing laboratory still needs to understand how site verification is done and to be able to perform the process for the purpose of checking whether the site has a problem (see item 54. of this checklist).   In **Case 3**:   * if no sound evidence is provided about traceability of measurements and competence of the external service, the assessor may require the external service to be available at the time of the assessment * the testing laboratory still needs to understand how site verification is done and to be able to perform the process for the purpose of checking whether the site has a problem (see item 54. of this checklist) | The radiated emission test site meets the NSA requirement.  Indicare se caso 1, 2 o 3 e riportare I dati dell’ultima taratura, ad esempio:  Measurements are performed by the Laboratory itself.  Internal verification report <numero e data del rapporto>  Antennas used for the verification:  - Antenna <marca modello range di frequenza> <estremi ultimo certif. di taratura>  - Antenna <marca modello range di frequenza> <estremi ultimo certif. di taratura>  . . . . . . . .  OR  Measurement are performed in-situ by an external accredited laboratory:  <Nome del laboratorio><n. di accreditamento ed ente di accreditamento>  <estremi del certificato di taratura del sito> |
| Y  X | N | N/A | 24. 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?  *Note:*  See clause 3 of document 414788 D01 Radiated Test Site v01. After July 13, 2018, a test site used for radiated emission measurements above 1 GHz is required to comply with CISPR 16-1-4:2010-04. | The radiated emission test site meets the validation SVSWR criterion set by CISPR 16-1-4 and ANSI C63.4 up to 18 GHz.  These standards do not provide specific test site validation requirements applicable to the frequency range of 18 GHz to 40 GHz. A test site that satisfies the requirements from 1 GHz to 18 GHz is deemed to be suitable for use over the frequency range of 18 GHz to 40 GHz.  Measurements are performed by the Laboratory itself.  Internal verification report <numero e data del rapporto>  Antennas used for the verification:  - Antenna <marca modello range di frequenza> <estremi ultimo certif. di taratura>  - Antenna <marca modello range di frequenza> <estremi ultimo certif. di taratura>  . . . . . . . .  OR  Measurement are performed in-situ by an external accredited laboratory:  <Nome del laboratorio><n. di accreditamento ed ente di accreditamento>  <estremi del certificato di taratura del sito> |
| Y  X | N | N/A | 25. 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?  Note: report the actual frequency range of site validation. E.g. voltage standing wave ratio (Svswr) in the range 1-18GHz. | As above |
| Y  X | N | N/A | 26. Was the test site validation for performing radiated emissions measurements completed in the last three years? | Inserire le date delle precedenti verifiche di NSA e VSWR |
| Y  X | N | N/A | 27. 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? (Section 15.33) | The EMI receivers and spectrum analyzer cover the required frequency range up to 40 GHz.  Example of used instruments:  - Spectrum analyzer R&S FSP 40  - EMI receiver R&S ESCI 3 |
| Y  X | N | N/A | 27.a Does the average detector meet the requirements in Clause 4.2.4.1 in **ANSI C63.4-2014** (linear voltage average detector)?  *Note 1:*  A logarithmic average detector shall not be used for making measurements in accordance with ANSI C63.4.  *Note 2:*  For spectrum analyzers not equipped with a linear average detector as specified in 4.2.4.1, an alternate method of linear average detection with a spectrum analyzer can be obtained by setting the detector mode to peak and reducing the video bandwidth until no significant variations in the displayed signal are observed from trace to trace; see 4.2.4.2 for a basic measurement procedure (ANSI C63.4-2014, Clause 4.2.3, item (e)). | The receivers used for the test are calibrated and are compliant with the detector requirements. |
| Y  X | N | N/A | 27.b Does the average detector meet the requirements in Clause 4.1.4.1 in **ANSI C63.10-2013** (linear voltage average detector)?  *Note 1:*  A logarithmic average detector shall not be used for making measurements in accordance with ANSI C63.10.  *Note 2:*  For spectrum analyzers not equipped with a linear average detector as specified in 4.1.4.1, an alternate method of linear average detection with a spectrum analyzer can be obtained by setting the detector mode to peak and reducing the video bandwidth until no significant variations in the displayed signal are observed from trace to trace; see 4.1.4.2.3 for a basic measurement procedure (ANSI C63.10-2013, Clause 4.1.3, item (e). | As above |
| Y  X | N | N/A | 28. Does the testing laboratory have an up to date description of measurement facilities as required by Section 2.948?  The description of the measurement facilities shall contain the following information:  (i) Location of the test site.  (ii) Physical description of the test site accompanied by photographs that clearly show the details of the test site.  (iii) A drawing showing the dimensions of the site, physical layout of all supporting structures, and all structures within 5 times the distance between the measuring antenna and the device being measured.  (iv) Description of structures used to support the device being measured and the test instrumentation.  (v) List of measuring equipment used.  (vi) Information concerning the calibration of the measuring equipment, i.e., the date the equipment was last calibrated and how often the equipment is calibrated.  (vii) For a measurement facility that will be used for testing radiated emissions, a plot of site attenuation data taken pursuant to paragraph (d) of section 2.948. | Yes, the description of the measurement facility is reported in the internal document / database XXXX  Example of equipment are listed below:  - Test Site <marca modello range di frequenza> <estremi ultimo certif. di taratura>  - EMI receiver <marca modello range di frequenza> <estremi ultimo certif. di taratura>  - Antenna <marca modello range di frequenza> <estremi ultimo certif. di taratura>  - LISN <marca modello range di frequenza> <estremi ultimo certif. di taratura>  - Field meter <marca modello range di frequenza> <estremi ultimo certif. di taratura> |
| Y | N | N/A  X | 29. Is the testing laboratory familiar with KDB Publication 935210 and capable of testing devices subject to signal booster requirements? | Not covered by the Scope of Accreditation. |
| **II. EMISSION TESTS** | | | | |
| Y  X | N | N/A | 30. Are the AC power-line conducted emission tests performed in accordance with the applicable parts of ANSI C63.4-2014 and Sections 15.31-15.35 and 15.107? | Tests performed / witnessed during this audit and/or during other surveillance audits carried out by ACCREDIA has given evidence of the Laboratory’s capability to perform the tests in accordance with the ANSI C63.4:2014 |
| Y | N | N/A | 31. Are the guidelines in ANSI C63.4 and FCC MP-5 followed for large EUTs, including *in-situ* measurements, if appropriate? | Large EUT or in-situ measurements are not performed.  OR  Specificare come vengono applicate le linee guida |
| Y  X | N | N/A | 32. Is the conducted emission test setup in accordance with ANSI C63.4-2014 with the required separation between the EUT and any conducting surfaces maintained? | The execution of the tests witnessed during this audit and/or during other surveillance audits carried out by ACCREDIA, proved the ability of the Laboratory to perform the tests in compliance with ANSI C63.4:2014 |
| Y  X | N | N/A | 33. 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? | The EUT is typically connected with one LISN without power strip.  Oppure indicare situazioni differenti se rilevate in laboratorio. |
| Y  X | N | N/A | 34. For each type of EUT, are measurements made over the correct frequency ranges and the correct detectors and bandwidth as required by Sections 15.33, 15.35, and 18.309? | The execution of the tests witnessed during this audit and/or during other surveillance audits carried out by ACCREDIA, has proven the ability of the Laboratory to perform the tests in compliance with the applicable standards |
| Y  X | N | N/A | 35. Are the radiated emission tests performed in accordance with the proper standard? | The execution of the tests witnessed during this audit and/or during other surveillance audits carried out by ACCREDIA, has proven the ability of the Laboratory to perform the tests in accordance with the applicable standards |
| Y  X | N | N/A | 35.a Are final radiated emission measurements above 1 GHz carried out in accordance with clause 8.3.2.2 of ANSI C63.4:2014?  *Note:*  According to ANSI C63.4:2014 the measurement antenna shall be height scanned from 1 m to 4 m and kept aimed at the source of emissions at each frequency of significant emissions. An appropriate antenna-tilting device shall be adopted for this purpose. | As above,  indicare marca e modello del sistema di tilt utilizzato dal laboratorio |
| Y  X | N | N/A | 36. Were radiated emission tests observed, and is the radiated emission test setup in accordance with proper standard? | Yes, emission test and relevant setup have been observed during the audit and/or during other surveillance audits carried out by ACCREDIA. |
| Y | N | N/A | 36.a Are the requirements for the arrangement of table-top equipment according to clause 6.6.3.1 of ANSI C63.10:2013 met? | As above |
| Y | N | N/A | 36.b Has the effect of the EUT support table on radiated emission measurements been assessed in accordance with clause 5.1.5 of ANSI C63.4:2014 (clause 6.3.1 of ANSI C63.10:2013)? | As above |
| Y  X | N | N/A | 37. Are unintentional radiators, other than ITE, tested in accordance with the requirements in Section 15.31 and the procedures in the appropriate standard? | The execution of the tests witnessed during this audit and/or during other surveillance audits carried out by ACCREDIA, has proven the ability of the Laboratory to perform the tests in accordance with the applicable standards  Unintentional radiators are tested according to ANSI C63.4-2014 |
| Y  X | N | N/A | 38. Are intentional radiators tested in accordance with the requirements in Section 15.31 and the procedures in the appropriate standard? | Intentional radiators are tested according to ANSI C63.10-2013 |
| Y  X | N | N/A | 38.a Is an appropriate filter installed at the input of the measurement system power amplifier in order to attenuate the fundamental emission of the EUT and allow an accurate measurement of the associated harmonics and spurious emissions?  Is the filter characterized, and any attenuation/loss factors accounted for in the measurement results (see ANSI C63.10-2013, Clause 6.6.4.1)? | Se utilizzato indicare marca modello e certificato di taratura |
| Y  X | N | N/A | 39. Does the radiated emission measurement represent the maximized cable configuration and worst case mode of EUT operation? | Measurements are performed after identifying EUT configuration and cables exposition and arrangement to represent the worst case condition. |
| Y  X | N | N/A | 40. For each type of EUT, are the correct frequency ranges investigated and the correct measurement detectors and bandwidth used per Sections 15.33 and 15.35? | The frequency ranges, bandwidth and detectors are used as specified by the standard. For example, according to ANSI C.63-10:2013, the bandwidth used is:  i) Below 150 kHz: CISPR 200 Hz, with QP detector  ii) 150 kHz to 30 MHz: CISPR 9 kHz, with QP detector  iii) 30 MHz to 1000 MHz: CISPR 120 kHz, with QP detector  iv) Above 1 GHz: 1 MHz, with average detector |
| Y | N | N/A  X | 41. If the laboratory has a TEM waveguide, are the requirements followed in making radiated emission measurements using TEM waveguides? (ANSI C63.4-2014, KDB Publication 414788) | Not covered by the Scope of Accreditation. |
| **III. TEST REPORTS**  *Assessor should request to review several sample test reports for various types of products.* | | | | |
| Y  x | N | N/A | 42. Have several sample test reports for various types of products been reviewed for accuracy? | Some test reports, listed below, have been reviewed for accuracy.  - <inserire numero e data del rapporto di prova, norma FCC-XXX utilizzata>  - <inserire numero e data del rapporto di prova, norma FCC-XXX utilizzata>  - ecc |
| Y  x | N | N/A | 43. Does each of the test reports contain all the required information, and does the laboratory follow the report disposition procedure? | Test reports are completed with the relevant requirements of ANSI, FCC and ISO/IEC 17025, for example: test method, EUT identification and its components, test configuration (including firmware, specific software settings, and input/output signal levels to/from the EUT), set-up details, instruments used, measured values, uncertainty, photos and sketches, table of contents. |
| Y  x | N | N/A | 44. Does the test report reference the standard used and specify any deviations? | Yes – Each report includes a list of all standards used and defines any deviations for each type of tests |
| Y  x | N | N/A | 44.a Does the test report refer to the correct revision of the standard used taking into account the allowed transition period? | yes |
| Y  x | N | N/A | 45. Is the rationale for selecting and arranging the EUT clearly stated, and are the components of the EUT system clearly identified? | The rationale for arranging the EUT is clearly stated in the test reports and EUT’s components are clearly identified. |
| Y  x | N | N/A | 46. Does the test report include photographs or detailed sketches of the EUT configuration? | Test reports audited during the assessment include photos and/or pictures of the configurations of the EUT, and set-up details. |
| Y  x | N | N/A | 47. Does the measurement report include a sample calculation with all conversion and correction factors used?  *Note:*  See Sections 2.1033(b)(6). | When applicable, test report includes the calculation with all conversion and correction factors used. |
| Y  x | N | N/A | 47.b Does measurement results and the calculated measurement uncertainty appear in the test report?  *Note 1*:  See clause 1.3 of ANSI C63.10-2013. Measurement uncertainty shall be calculated according to ETSI TR 100 028-2001.  *Note 2:*  See clause 10.2.8.2 of ANSI C63.4-2014. Measurement uncertainty shall be calculated according to ANSI C63.23 or CISPR 16-4-2:2011-06.  *Note 3:*  The determination of compliance shall be based on the results of the conformity measurement, regardless of the uncertainty of measuring equipment. However, the measurement uncertainty of the measurement instrumentation and its associated connections between the various instruments in the measurement chain shall be calculated, and both the measurement results and the calculated measurement uncertainty shall appear in the test report. | yes |
| Y | N | N/A  X | 48. Does the testing laboratory use external resources/subcontractors to perform testing, and if so do they have procedures in place to ensure that the external resources are properly accredited and FCC recognized? | No use of external resources/subcontractors to perform testing. |
| Y | N | N/A  X | 49. If external resources/subcontractors are used to perform testing, do the test reports clearly identify the work performed by the external resources/subcontractors and the results of the testing? | As above |
| **IV. PERSONNEL COMPETENCY**  *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.* | | | | |
| Y  X | N | N/A | 50. Are laboratory personnel able to obtain recent FCC Rules and appropriate KDB guidance? | The laboratory staff has demonstrated to be able to obtain the FCC Rules and appropriate KDB guidance |
| Y  X | N | N/A | 51. Has each laboratory personnel responsible for testing been able to demonstrate performing a measurement of an applicable device? | Yes, as observed during the audit |
| Y  X | N | N/A | 52. 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? | The test personnel is trained about the correct use of emission measuring instruments.  In particular to avoid non-linearity effects when measuring intentional radiators (e.g. EMI Receiver, Spectrum analyzer, use of HI-LO Band-Pass filters etc...).  <Inserire evidenze formazione effettuata>  Moreover the emission tests are performed in a semi-anechoic chamber with a very low ambient noise.  Se le misure sono fatte fuori camera specificare quali accorgimenti adotta il laboratorio per ridurre/controllare il rumore ambientale. |
| Y  X | N | N/A | 53. Can the test personnel explain the FCC requirements for testing a product in accordance with the requirements in Sections 15.31 to 15.35? Are the test personnel knowledgeable of the FCC testing conditions for different types of products? | Yes. |
| Y  X | N | N/A | 54. Arrange for 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?  *Note: Select frequencies from previous data that have both low and high deviations from the NSA.* | See Annex A of this checklist. |
| Y  X | N | N/A | 55. 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 in KDB Publications?  See Accredia explanatory note "FCC RF exposure - 18 April 2018".  *Note:*  RF exposure evaluation prior to equipment authorization is required for mobile and portable devices pursuant to Chapter I of CFR title 47:  - Parts 20, 22, 24, 25, 27, 30 80, 90, 96  - Part 15, §§15.253(f), 15.255(g), 15.257(g), 15.319(i), and 15.407(f)   * Provided that they operate at frequencies and transmitted power levels defined in §2.1091 and §2.1093. * The relation between the parts of the CFR title 47 listed above and the testing laboratory scopes of accreditation is contained in Appendix A, Table A.1 of the document 974614 D01 Accredited Test Lab Roles and Resp v04. | Yes, the laboratory staff has demonstrated to be familiar with these documents |
| Y | N | N/A  X | 56. For measurements of equipment requiring Hearing Aid Compatibility (HAC) testing, are the test personnel knowledgeable of the test setup and procedures? | Not covered by the Scope of Accreditation |

1. Change Notice

**07/31/2015**: 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.

**02/29/2016**: 853844 D01 Accredited Lab Checklist v02r01 replaces 853844 D01 Accredited Lab Checklist v02. The checklist was updated to reflect changes related to partial scopes of accreditation and the addition of a separate scope for signal boosters.

**03/02/2018**: 853844 DO1 Accredited Lab Checklist v02r02 replaces 853844 D01 Accredited Lab Checklist v02r01. The checklist was updated to reflect changes related to allowed standards including ANSI C63.4-2014, ANSI C63.10-2013, TIA-102.CAAA-E, ANSI/TIA-603-E, ANSI C63.5-2017, ANSI C63.26-2015 and ISO/IEC 17025:2017. A KDB publication reference table was added to the document.

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| --- | --- |
| **ANNEX A – SITE ATTENUATION INFORMATION** | |
| Please complete the Site Attenuation information below during the on-site assessment | |
| NSA measurement  verification facility address: |  |
|  |
|  |
| Italy |
| Site Description (i.e., 3 m, 10 m, OATS, Chamber): | Semi-anechoic chamber – xxm – |
| Reference to the test report of the “old” NSA verification | Report xx dated 2021-10-18 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Transmit antenna height: | | 1 m | | | |
| Test distance: | | 3 m | | | |
| Frequency (MHz) | Old Value (dB)  (Deviation from  Theoretical NSA) | | New Value (dB)  (Deviation from  Theoretical NSA) | Polarization | Position |
|  |  | |  |  |  |
|  |  | |  |  |  |
|  |  | |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Transmit antenna height: | | 1m | | | |
| Test distance: | | 3m | | | |
| Frequency (MHz) | Old Value (dB)  (Deviation from  Theoretical NSA) | | New Value (dB)  (Deviation from  Theoretical NSA) | Polarization | Position |
|  |  | |  |  |  |
|  |  | |  |  |  |
|  |  | |  |  |  |

**Note:** Acceptance value is ±4 dB from the theoretical value (ANSI C63.4:2014, Clause 5.4.4.2 Site acceptability criterion).

1. It is noted that a new edition of the ISO/IEC conformity assessment standards has been issued. The Commission will accept either ISO/IEC 17025:2005 or ISO/IEC 17025:2017 at this time and is reviewing options to update the applicable FCC rules to specify the 2017 edition. [↑](#footnote-ref-1)