

Newsletter

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Digital & Product Solutions
Business Line **EMC & RF**

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Europe (EU-27 and UK)

Radio Equipment Directive Harmonised Standard List updated on October 3 and November 27, 2023

Harmonised Standard List has been updated recently. Tables below highlight the main updates, see full list in URL below for further details.

Test Standards Versions Updated:

Test Standard	Title	Comments
EN 301 908-1 V15.2.1	IMT cellular networks Part 1: Introduction and common requirements	Supersedes V15.1.1. Transition period up to 2025-04-04. Removes the recommendation to use the same measurement method if it is necessary to re-measure a Base Station or a Repeater to show compliance.
EN 302 077 V2.3.1	Transmitting equipment for the Digital Audio Broadcasting (DAB) service	Supersedes EN 302 077-2 V1.1.1. Transition period up to 2025-04-04. Introduces MCOFDM systems. Removes cabinet radiation testing (transferred to EMC Test Specification).
EN 302 245 V2.2.1	Transmitting equipment for the Digital Radio Mondiale (DRM) service	Supersedes EN 302 245-2 V1.1.1. Transition period up to 2025-04-04. Adds provisions for transmitters operating between 30 MHz and 300 MHz. Revises parts of Measurement Methods to provide greater clarity of procedures.
EN 303 132 V2.1.1	Maritime VHF survivor locating devices employing Digital Selective Calling (DSC Class M)	Supersedes V1.1.1. Transition period up to 2025-04-04. Includes testing of AIS transmitter aligned with ETSI EN 300 025 V2.2.1. Increases the scope to cover Article 3.3(g) Essential Requirement (Access to Emergency Services).
EN 303 980 V1.3.1	Satellite Earth Stations and Systems (SES) Fixed and in-motion Earth Stations communicating with non-geostationary satellite systems (NEST) in the 11 GHz to 14 GHz frequency bands	Supersedes V1.2.1. Transition period up to 2025-04-04. Amendment addressing observations by the European Commission on requirements to be cited in the Official Journal without observations.
EN 303 981 V1.3.1	Satellite Earth Stations and Systems (SES) Fixed and in-motion Wide Band Earth Stations communicating with non- geostationary satellite systems (WBES) in the 11 GHz to 14 GHz frequency bands	Supersedes V1.2.1. Transition period up to 2025-04-04. Amendment addressing observations by the European Commission on requirements to be cited in the Official Journal without observations.



Test Standard	Title	Comments
EN 50360:2017 EN 50360:2017/ A1:2023	Product standard to demonstrate the compliance of wireless communication devices, with the basic restrictions and exposure limit values related to human exposure to electromagnetic fields in the frequency range from 300 MHz to 6 GHz: devices used next to the ear	Supersedes EN 50360:2017. Transition period up to 2025-06-01. Adds Amendment A1 (2023).
EN 50566:2017 EN 50566:2017/ A1:2023	Product standard to demonstrate the compliance of wireless communication devices with the basic restrictions and exposure limit values related to human exposure to electromagnetic fields in the frequency range from 30 MHz to 6 GHz: hand-held and body mounted devices in close proximity to the human body	Supersedes EN 50366:2017. Transition period up to 2025-06-01. Adds Amendment A1 (2023).

Additional Information:

- Amendment to Implementing Decision on Oct 3: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202302392
- Amendment to Implementing Decision on Nov 27: https://eur-lex.europa.eu/eli/dec_impl/2023/2669/oj
- Consolidated Harmonised Standard List (PDF): <https://ec.europa.eu/docsroom/documents/57117>
- Consolidated Harmonised Standard List (XLS): <https://ec.europa.eu/docsroom/documents/57118>

Standards withdrew from EMC Directive Harmonised Standard List on October 13 and December 12, 2023

European Commission updated the Harmonized standards list on April 7 and June 9, 2022 adding new versions for several harmonised standards. Transition period for former versions expired on October 13 and December 10, 2023 respectively. The following standards have been removed from Harmonised Standards List and no longer provide presumption of conformity:

Withdrawn Standard	Superseded by	Test Standard Title
EN 61009-1:2012	EN 61009-1:2012, EN 61009-1:2012/ A13:2021	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) Part 1: General rules
EN 62053-21:2003	EN IEC 62053-21:2021 EN IEC 62053-21:2021/ A11:2021	Electricity metering equipment (a.c.) - Particular requirements Part 21: Static meters for active energy (classes 1 and 2)
EN 62053-22:2003	EN IEC 62053-22:2021 EN IEC 62053-22:2021/ A11:2021	Electricity metering equipment (a.c.) - Particular requirements Part 22: Static meters for active energy (classes 0,2 S and 0,5 S)
EN 62053-23:2003	EN IEC 62053-23:2021 EN IEC 62053-23:2021/ A11:2021	Electricity metering equipment (a.c.) - Particular requirements Part 23: Static meters for reactive energy (classes 2 and 3)



Withdrawn Standard	Superseded by	Test Standard Title
EN 60947-3:2009 EN 60947-3:2009/A1:2012	EN IEC 60947-3:2021	Low-voltage switchgear and controlgear Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units
EN 301 489-34 V1.4.1	EN 61204-3:2000	Electromagnetic Compatibility (EMC) standard for radio equipment and services Part 34: Specific conditions for External Power Supply (EPS) for mobile phones

ETSI RED Workprogramme New Standard Versions Updates

ETSI is continuously evolving the EMC/RF Test Standards, table below summarizes the latest updates for most common Test Standards during Q4/2023:

Test Standard	Title	Comments
Draft EN 300 220-2 V3.3.1_0.0.21	Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz with power levels ranging up to 500 mW e.r.p. Part 2: Harmonised Standard for access to radio spectrum for non specific radio equipment	Final Draft. First European Commission assessment completed and comments addressed. Waiting to initiate the Public Enquiry. New version includes the following updates with regard to v3.2.1: - Separation of OBW requirement from frequency stability (drift) clauses. - Clarifications in Spectrum mask at permitted frequency band edges. - Addition of receiver parameters according to ETSI guide EG 203336 v1.2.1. - Addition of tests for timing compliance of equipment using polite spectrum access.
Draft EN 300 440-3 V1.1.1_0.0.3	Short Range Devices (SRD) Harmonised Standard for access to radio spectrum for Intrusion radiodetermination equipment operating in the frequency range 1 GHz to 40 GHz	Early Draft. Test Standard development work is just starting.
Draft EN 300 422-4 V2.1.2_0.0.5	Wireless Microphones Audio PMSE up to 3 GHz Part 4: Assistive Listening Devices including personal sound amplifiers and inductive systems up to 3 GHz	Stable Draft. Test Standard development work is progressing.
Draft EN 301 893 V2.1.52	5 GHz WAS/RLAN	Final Draft. First European Commission assessment completed and comments addressed. Under Approval Process (Public Enquiry).



Test Standard	Title	Comments
Draft EN 301 908-13 V17.1.1_V0.0.9	IMT cellular networks Part 13: Evolved Universal Terrestrial Radio Access (E-UTRA) User Equipment (UE)	Stable Draft. Under European Commission first assessment.
Draft EN 301 908-14 V17.1.1_0.0.5	IMT cellular networks Part 14: Evolved Universal Terrestrial Radio Access (E-UTRA) Base Stations (BS)	Draft sent to ETSI to initiate the Approval Process. No European Commission assessment requested.
Draft EN 301 908-18 V17.1.1_15.0.4	IMT cellular networks Part 18: NR, E-UTRA, UTRA and GSM/EDGE Multi-Standard Radio (MSR) Base Station (BS)	Draft sent to ETSI to initiate the Approval Process. No European Commission assessment requested.
Draft EN 301 908-25 V0.0.21	IMT cellular networks; Part 25: New Radio (NR) User Equipment (UE)	Stable Draft. First European Commission (EC) assessment completed successfully. Approved by Working Group. Second EC assessment requested.
Draft EN 301 091-3 V1.1.1_0.0.2	Short Range Devices Transport and Traffic Telematics (TTT); Radar equipment operating in the 76 GHz to 77 GHz range Part 3: Equipment for railway applications operating within 76 GHz to 77 GHz	Early Draft. Test Standard development work is just starting.
Draft EN 302 686 V0.0.11	Intelligent Transport Systems (ITS) Radiocommunications equipment operating in the 63,72 GHz - 65,88 GHz frequency band	Stable Draft. First European Commission assessment received. Comments (if any) must be addressed.
Draft EN 302 065-3-3 V1.1.1_0.0.4	Short Range Devices (SRD) using Ultra Wide Band technology (UWB) Part 3: UWB devices installed in road and rail vehicles Sub-part 3: Requirements for UWB radiodetermination applications operating within 6,0 GHz to 8,5 GHz	Early Draft. Test Standard development work is just starting.
Draft EN 302 729-1 V3.1.1_0.0.9	Short Range Devices (SRD) using Ultra Wide Band technology (UWB) Part 1: Level Probing Radar (LPR) equipment operating in the frequency ranges 6 GHz to 8,5 GHz, 24,05 GHz to 26,5 GHz, 57 GHz to 64 GHz, 75 GHz to 85 GHz for strictly vertical downward installation	Early Draft. Test Standard development is still on-going.
Draft EN 305 550-6 V1.1.1_0.0.7	Short Range Devices (SRD) using Ultra Wide Band technology (UWB) operating in the frequency range 40 GHz to 260 GHz Part 6: Specific radiodetermination applications - Tank Level Probing Radar (TLPR) and Level Probing Radar (LPR) equipment operating in the frequency ranges 116 GHz to 148,5 GHz; 167 GHz to 182 GHz and 231,5 GHz to 250 GHz	Early Draft. Test Standard development work is just starting.



Test Standard	Title	Comments
Draft EN 303 661 V1.1.0	Short Range Devices (SRD) Ground Based Synthetic Aperture Radar (GBSAR) in the frequency range 17,1 GHz to 17,3 GHz and High Definition Ground Based Synthetic Aperture Radar (HD-GBSAR) in the frequency range 76 GHz to 77 GHz	Draft sent to ETSI to initiate the Approval Process. Once it is completed, the final assessment form European Commission is required.
Draft EN 303 851 V0.0.7	Radio Frequency Identification Equipment operating in the band 2 446 MHz to 2 454 MHz with power levels up to a maximum of 500 mW e.i.r.p. and up to a maximum of 4 W e.i.r.p.	Final Draft. First European Commission assessment completed. When comments are addressed (if any), the Approval Process (Public Enquiry) must start.
Draft ETSI EN 304 220-2 V1.1.0	Wideband data transmission SRD operating in the frequency range 25 MHz to 1 000 MHz Part 2: Wideband data transmission devices: terminal node operating in designated bands	Draft sent to ETSI to initiate the Approval Process. Once it is completed, the final assessment form European Commission is required.
Draft EN 303 659 V0.0.14	Short Range Devices (SRD) in Data Networks Radio equipment to be used in the frequency ranges 865 MHz to 868 MHz and 915 MHz to 919,4 MHz with power levels ranging up to 500 mW e.r.p.	Stable Draft. To be sent in short to European Commission for first assessment.
Draft EN 303 753 V1.0.0	Wideband Data Transmission Systems (WDTS) for Mobile and Fixed Radio Equipment operating in the 57 - 71 GHz band	Draft sent to ETSI to initiate the Approval Process. Once it is completed, the final assessment form European Commission is required.
Draft EN 301 783 V0.0.4	Commercially available amateur radio equipment	Early Draft. Test Standard development work is just starting.
Draft EN 302 480 V0.0.7	Mobile Communication On Board Aircraft (MCOBA) systems	Stable Draft. First European Commission assessment completed successfully. Currently, under Working Group approval.
Draft EN 302 326-2 V2.1.2	Fixed Radio Systems Multipoint Equipment and Antennas Part 2: Harmonised Standard for access to radio spectrum	Stable Draft. To be sent in short to European Commission for first assessment.
Draft EN 303 867 V0.0.3	Rail telecommunications (RT) Urban rail radiocommunications equipment operating in the 5 875 MHz to 5 935 MHz frequency band	Early Draft. Test Standard development work is just starting.



Test Standard	Title	Comments
EN 301 489-3 V2.3.2	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services Part 3: Specific conditions for Short Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz	Already published by ETSI and delivered to European Commission for final assessment. Waiting for its publication as Harmonised Standard in OJEU. New version includes the following updates with regard to v2.1.1: <ul style="list-style-type: none">- Definition of categories of SRD in the scope of the Test Specification according to Decision (EU) 2019/1345.- Level of wanted signal more is closely specified.- Performance Criteria is aligned with EN 301 489-1 V2.2.3.- Transients and surges in the vehicular environment must apply performance criteria for continuous phenomena for pulses 3a and 3b.- Radiated immunity is required up to 6 GHz.- ESD and RF Common Mode are required for Vehicular Use Environment.
Draft EN 301 489-17 V3.2.6_0.0.8	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services Part 17: Specific conditions for Broadband and Wideband Data Transmission Systems	Final Draft. Public Enquiry completed and comments addressed. Requested another European Commission assessment before National Weight Vote (NWV). New version includes the following updates with regard to v3.2.4: <ul style="list-style-type: none">- Scope has been increased to cover also Wideband Data Transmission Systems (WDTS) for Fixed Network Radio Equipment operating in the 57 GHz to 71 GHz band included in EN 303 722.- Removal of harmonic current emissions and voltage fluctuations and flicker requirements because they are already covered by EN 61000-3-2 and EN 61000-3-3 for equipment with AC Mains Power Supply.- Scope of radiated emissions requirements expanded to cover enclosure port of radio equipment.
Draft EN 301 489-5 V2.2.4	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services Part 5: Specific conditions for Private land Mobile Radio (PMR) and ancillary equipment (speech and non-speech) and Terrestrial Trunked Radio (TETRA) and TETRAPOL	Stable Draft. To be sent in short to European Commission for first assessment.



Test Standard	Title	Comments
Draft EN 301 489-50 V2.4.1_0.0.7	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services Part 50: Specific conditions for Cellular Communication Base Station (BS), repeater and ancillary equipment	Stable Draft. To be sent in short to European Commission for first assessment.
Draft EN 301 489-52 V1.3.1_0.0.3	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services Part 52: Specific conditions for Cellular Communication User Equipment (UE) radio and ancillary equipment	Stable Draft. To be sent in short to European Commission for first assessment. Includes in the scope 5G FR2.

European Commission extends the transition period to become in force Articles 3.3(d), 3.3(e) and 3.3(f) (Cybersecurity) until August 1, 2025

In order to allow CEN-CENELEC more time to develop the Harmonised Standards to cover the Essential Requirements laid down in Articles 3.3(d), 3.3(e) and 3.3(f) (Cybersecurity), the European Commission published on October 27, 2023, an amendment to Delegated Regulation (EU) 2022/30 that delays the application of those Articles until August 1, 2025.

Additional Information:

- Amendment to Delegated Regulation (EU) 2022/30: https://eur-lex.europa.eu/eli/reg_del/2023/2444/oj

UKCA Designated Standards

UK Radio Equipment Designated Standards have been updated on December 5, 2023 and it becomes aligned with EU-27 RED Harmonised Standards list released on October 2, 2023. Note that EU-27 RED Harmonised Standards update on Nov 27, 2023 (RF-Exposure standards) has not been adopted by UK Designated Standards yet.

UK EMC Equipment Designated Standards is currently aligned with latest EU-27 EMC Harmonised Standards lists released on June 9, 2022.

Additional Information:

- UK EMC Designated Standards: <https://www.gov.uk/government/publications/designated-standards-emc>
- UK Radio Equipment Designated Standards: <https://www.gov.uk/government/publications/designated-standards-radio-equipment>

North America (USA and Canada)

FCC KDBs Updates

Main KDBs published/updated during Q4/2023:

KDB	Status	Question	Comments
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484596	Major Update	What is the FCC's policy permitting the referencing of test data from another equipment authorization application?	<p>KDB defines the procedure to follow for Variant Devices approval when they reference test data from a Parent Device and performs a partial testing.</p> <p>Data referencing for EMC/RF test data and RF Exposure requires case-by-case FCC acceptance obtained via ECR KDB Inquiry submitted by the applicant/agent. Manufacturers must check with FCC if they agree with the testing leverage from Parent Device and the spot-check testing for Variant Device and include FCC response in TCB application.</p> <p>Spot-check measurements for Variant Device, while being always compliant with the applicable rule part(s) for the test under consideration, may show a deviation from the Parent Device measurements no larger than ± 3 dB.</p>
996369	Update	What is the FCC guidance for equipment authorization of transmitter module devices, and equipment that incorporates transmitter modules?	<p>Clarifications included in Q&A related with RF-Exposure evaluation when Module is integrated in a Host device.</p> <p>Modules approved for Mobile RF-Exposure (> 20 cm) integrated in Host Devices to be used under Portable RF-Exposure (<20 cm) require a C2PC even if they fulfill the SAR exemption limits.</p>
680106	Update	What is the equipment authorization guidance for Wireless Power Transfer Devices under Part 15 or Part 18?	<p>Includes guidance for test compliance and provisions for WPT at a distance (i.e. with an air gap between the WPT transmitter and the WPT client).</p>
388624	Update	What devices require FCC guidance prior to a TCB issuing a grant of equipment authorization, and what are the procedures to obtain this guidance?	<p>Introduces the procedures for New Application Guidance (NAG). NAG KDB Inquiries are intended to provide a preliminary overview of how specific PAG items are going to be addressed to show compliance.</p> <p>Removes WPTAPP (RFX simulations for WPT) from PAG List.</p>
285076	Update	What are the equipment authorization requirements for hearing aid compatibility of mobile handsets?	<p>Clarification has been added to reference DA 23-914 interim waiver of HAC Volume Control Rules.</p>
784748	Update	What guidance is available for labeling and user information for RF devices?	<p>Includes URL link for obtaining Artwork for the FCC Logo.</p>
364244	Draft	What Guidance is provided for certifying radar devices under the provisions of §15.255 of the FCC rules?	<p>Draft version for comments until Jan 12, 2024.</p> <p>Provides guidance regarding information to be provided in PAG inquiries to the FCC and recommended measurement procedures to demonstrate compliance with the applicable technical requirements for certification.</p>

FCC opens U-NII-5 (5.925 - 6.425 MHz) and U-NII-7 (6.525 - 6.875 MHz) bands to Very Low Power (VLP) Devices

On November 1st, 2023 FCC released Notice of Proposed Rulemaking (NPRM) that established rules that permit devices to operate at very low power (VLP) across short distances and provide



very high connection speeds in bands U-NII-5 and U-NII-7. Operations at power levels significantly lower than other unlicensed 6 GHz devices could occur anywhere, indoors or outdoors.

The maximum power spectral density must not exceed -5 dBm e.i.r.p. in any 1-megahertz band and the maximum e.i.r.p. must not exceed 14 dBm. These devices do not need to operate under the control of an access point (i.e. no need of AFC).

Additional Information:

- FCC Announcement: <https://docs.fcc.gov/public/attachments/DOC-397829A1.pdf>
- FCC NPRM: <https://www.fcc.gov/ecfs/search/search-filings/filing/11011273610222>

FCC ET Docket No. 19-138 (C-V2X) update

On October 31, 2023 the FCC granted a waiver to companies listed below following the same requirements as for “C-V2X Joint Waiver Parties”:

- North Carolina Department of Transportation
- New York City Department of Transportation
- City of Chattanooga, Tennessee
- Sonamore, Inc. (doing business as P3Mobility)
- DENSO International America, Inc
- Rolling Wireless S.à.r.l.
- Spoke Safety, LLC
- Yunex Traffic

On the other hand, the following entities have filled recently a waiver request to use C-V2X technology in 5.905-5.925 GHz Band and proposed similar technical requirements as proposed in “C-V2X Joint Waiver Parties”:

- Illinois State Toll Highway Authority
- Battelle Memorial Institute
- Pennsylvania Department of Transportation
- Ettifos Co.

Additional Information:

- ET Docket No. 19-138: [https://www.fcc.gov/ecfs/search/search-filings/results?q=\(proceedings.name:\(%2219-138%22\)\)](https://www.fcc.gov/ecfs/search/search-filings/results?q=(proceedings.name:(%2219-138%22)))

FCC proposes a +1.2M USD fine to a manufacturer for selling unauthorized wireless devices

FCC proposes a penalty of 1.202.454 USD against Sound Around, Inc for marketing of noncompliant radio frequency devices and for failing to comply with Commission orders.



FCC found that Sound Around marketed 33 radio frequency device models before the models had been authorized in accordance with the FCC’s rules. Company had earlier been cited and investigated for violations of the FCC equipment authorization and marketing requirements multiple times, with an earlier investigation resulting in a Forfeiture Order in 2022 because company provided incomplete responses. Instead of complying with the FCC’s rules, Sound Around continued to market noncompliant radio frequency devices.

Additional Information:

- FCC Announcement: <https://docs.fcc.gov/public/attachments/DOC-399140A1.pdf>
- FCC Notice: <https://docs.fcc.gov/public/attachments/FCC-23-113A1.pdf>

ISED Updates

ISED Radio Standards updated in Q4/2023:

Test Standard	Status	Title	Comments
RSS-252 Issue 2	Major Update	Intelligent Transportation Systems’ (ITS) On-Board Units (OBUs) in the 5895-5925 MHz Band	New standard version swapping from DSRC technology to C-V2X technology and updating the frequency band to 5895-5925 MHz.
RSS-102 Issue 6 RSS-102.SAR.MEAS Issue 1 RSS-102.NS.SIM Issue 1 RSS-102.NS.MEAS Issue 1 RSS-102.IPD.SIM Issue 1 RSS-102.IPD.MEAS Issue 1	Update	Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)	<p>New architecture that reformats RSS-102 as a series of standards. RSS-102 remains the main standard to which RF-Exposure compliance is evaluated. Existing Supplementary Procedures (SPR) documents are rescinded, and their contents incorporated into specific parts of RSS-102 (RSS-102.XXX.YYY) measurements or simulations companion standard.</p> <p>Main updates:</p> <ul style="list-style-type: none"> - New exemption limits for nerve stimulation (NS). - New exemption limits for absorbed power density (APD). - Revised exemption limits for specific absorption rate (SAR). - New requirements to assess compliance of hand SAR and APD during voice calls. - Revised maximum separation distance for SAR. - New requirements for sensor validation. - Integration of the RSS-216 RF-Exposure requirements to assess WPT devices.
RSS-287 Issue 3	Draft	Emergency Position Indicating Radio Beacons (EPIRB), Emergency Locator Transmitters (ELT), Personal Locator Beacons (PLB), and Maritime Survivor Locator Devices (MSLD)	<p>Main updates are:</p> <ul style="list-style-type: none"> - Include Automatic Identification System (AIS) and Digital Selective Calling (DSC). - Segregate the requirements by device type. - Include Transport Canada Requirement.





Standards Development Organizations (SDO)

International Electrotechnical Commission (IEC)

Main IEC Publications related with EMC/RF released in Q4/2023:

Publication	Scope
IEC 60437:2023 CMV	Radio interference test on high-voltage insulators
IEC 60601-2-19:2020+AMD1:2023 CSV	Medical electrical equipment - Part 2-19: Particular requirements for the basic safety and essential performance of infant incubators
IEC 60601-2-20:2020+AMD1:2023 CSV	Medical electrical equipment - Part 2-20: Particular requirements for the basic safety and essential performance of infant transport incubators
IEC 60601-2-21:2020+AMD1:2023 CSV	Medical electrical equipment - Part 2-21: Particular requirements for the basic safety and essential performance of infant radiant warmers
IEC 60601-2-35:2020+AMD1:2023 CSV	Medical electrical equipment - Part 2-35: Particular requirements for the basic safety and essential performance of heating devices using blankets, pads or mattresses and intended for heating in medical use
IEC 60601-2-50:2020+AMD1:2023 CSV	Medical electrical equipment - Part 2-50: Particular requirements for the basic safety and essential performance of infant phototherapy equipment
IEC 60947-4-1:2023	Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters
IEC 60947-5-7:2023 PRV	Low-voltage switchgear and controlgear - Part 5-7: Control circuit devices and switching elements - Requirements for proximity devices with analogue output
IEC TS 61000-3-16:2023	Electromagnetic compatibility (EMC) - Part 3-16: Limits - Limits for harmonic currents produced by the inverter of inverter-type electrical energy-supplying equipment, with a reference current less than or equal to 75 A per phase, connected to public low-voltage systems
IEC 61095:2023 RLV	Electromechanical contactors for household and similar purposes
IEC TS 61340-6-2:2023	Electrostatics - Part 6-2: Electrostatic control in healthcare, commercial and public facilities - Public spaces and office areas
IEC 61439-4:2023 EXV	Low-voltage switchgear and controlgear assemblies - Part 4: Particular requirements for assemblies for construction sites (ACS)
IEC 80601-2-77:2019+AMD1:2023 CSV	Medical electrical equipment - Part 2-77: Particular requirements for the basic safety and essential performance of robotically assisted surgical equipment

Additional Information:

- Full List: <https://webstore.iec.ch/advsearchform?From=2023-10-01&To=2023-12-31>

CEN-CENELEC

Main CEN-CENELEC Publications related with EMC/RF released in Q4/2023:



Publication	Scope
EN IEC 60601-2-19:2021/A1:2023	Medical electrical equipment - Part 2-19: Particular requirements for the basic safety and essential performance of infant incubators
EN IEC 60601-2-20:2020/A1:2023	Medical electrical equipment - Part 2-20: Particular requirements for the basic safety and essential performance of infant transport incubators
EN IEC 60601-2-21:2021/A1:2023	Medical electrical equipment - Part 2-21: Particular requirements for the basic safety and essential performance of infant radiant warmers
EN IEC 60601-2-21:2021/A1:2023	Medical electrical equipment - Part 2-21: Particular requirements for the basic safety and essential performance of infant radiant warmers
EN IEC 60601-2-50:2021/A1:2023	Medical electrical equipment - Part 2-50: Particular requirements for the basic safety and essential performance of infant phototherapy equipment
EN IEC 60601-2-76:2019/A1:2023	Medical electrical equipment - Part 2-76: Particular requirements for the basic safety and essential performance of low energy ionized gas haemostasis equipment
EN IEC 80601-2-77:2021/A1:2023	Medical electrical equipment - Part 2-77: Particular requirements for the basic safety and essential performance of robotically assisted surgical equipment
EN IEC 61800-3:2023	Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods for PDS and machine tools
EN IEC 60947-4-2:2023	Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor-starters - Semiconductor motor controllers, starters and soft-starters
EN IEC 60947-6-1:2023	Low-voltage switchgear and controlgear - Part 6-1: Multiple function equipment - Transfer switching equipment
EN IEC 60947-8:2023	Low-voltage switchgear and controlgear - Part 8: Control units for built-in thermal protection (PTC) for rotating electrical machines
EN 60730-2-5:2015/AC:2023-12	Automatic electrical controls - Part 2-5: Particular requirements for automatic electrical burner control systems

Additional Information:

- CEN-CENELEC Standards Search: <https://standards.cencenelec.eu/dyn/www/f?p=CEN:105::RESET::::>



International Organization for Standardization (ISO)

Main ISO Publications related with EMC/RF released in Q4/2023:

Publication	Scope
ISO 80601-2-12:2023	Medical electrical equipment — Part 2-12: Particular requirements for basic safety and essential performance of critical care ventilators
ISO 80601-2-55:2018/ Amd 1:2023	Medical electrical equipment — Part 2-55: Particular requirements for the basic safety and essential performance of respiratory gas monitors — Amendment 1
ISO 80601-2-84:2023	Medical electrical equipment — Part 2-84: Particular requirements for the basic safety and essential performance of ventilators for the emergency medical services environment
ISO 19711-2:2023	Building construction machinery and equipment — Truck mixers — Part 2: Safety requirements

Additional Information:

- ISO Standards Search: <https://www.iso.org/advanced-search/x/>

CTIA – The Wireless Association

Main CTIA Publications related with Over-the-Air (OTA) Performance released in Q4/2023:

Publication	Scope
CTIA 01.01	Test Scope, Requirements, and Applicabilityv4.0.4 (November 2023)
CTIA 01.02	Operator Priority List v4.0.2 (December 2023)
CTIA 01.51	Wireless Technology, Location Based Technologies v4.0.3 (November 2023)
CTIA 01.70	Measurement Uncertaintyv4.0.1 (November 2023)
CTIA 01.73	Supporting Proceduresv4.0.4 (November 2023)
CTIA 01.01	Test Scope, Requirements, and Applicability v6.0.2 (December 2023)
CTIA 01.20	Test Methodology, SISO, Anechoic Chamber v6.0.1 (December 2023)
CTIA 01.50	Wireless Technology, 3GPP Radio Access Technologiesv6.0.2 (December 2023)
CTIA 01.51	Wireless Technology, Location Based Technologies v6.0.2 (December 2023)
CTIA 01.70	Measurement Uncertainty v6.0.2 (December 2023)
CTIA 01.73	Supporting Proceduresv6.0.2 (December 2023)

Additional Information:

- CTIA Test Plans: <https://ctiacertification.org/test-plans/>



Did you know that...?

Mercedes-Benz has updated MBN 10284-2 to MBN 50284-2 and now it requires emissions and immunity testing up to 7,125 GHz

Due to Daimler Group separation into Mercedes-Benz Group AG (Passenger Cars & Vans) and Daimler Truck AG (Trucks & Buses), Mercedes has developed a new standard numbering assignment. MBN 10284-2 (EMC Requirements - Component Tests) and MBN 10284-3 (Electromagnetic Compliance - Additional High-voltage and Charging Requirements) have been replaced by MBN 50284-2 and MBN 50284-3 respectively. Apart from standard numbering change, the new versions include other technical updates. The most important one has been the extension of frequency range for emissions and immunity tests.

Former standard MBN 10284-2 required to perform emissions and immunity tests up to 6 GHz and it included emissions and immunity test specification up to 40 GHz as an informative annex.

New standard MBN 50284-2 requires to perform emissions and immunity tests up to 7,125 GHz. It also includes emissions and immunity test specification up to 71 GHz as an informative annex. When informative requirements become mandatory it might be a challenge for Labs. Required frequency range for emission tests can be reachable by using LNAs + External Mixers. Immunity tests up to 71 GHz in reverberation chamber can be even a larger challenge.

Japan MIC has updated 6 GHz Band Requirements

On December 26, 2023 Japan MIC published a new Technical Regulation for Article 2-1-79 (Low power data communications system in the 6GHz band - VLP: Very Low Power), Article 2-1-80 (Low power data communications system in the 6GHz band - LPI: Low Power Indoor) and Article 2-1-81 (Low power data communications system in the 6GHz band - LPI: Low Power Indoor [Inter-terminal communication]) which allows the use of 320 MHz channel bandwidth.



Market Landscape

DEKRA Achievements

DEKRA Entity	Location	Achievement
DEKRA Certification B.V.	Arnhem, Netherlands	New 3 m Semi-Anechoic Chamber (SAC) for EMC and RF Testing. FCC recognition for RF Testing for Part 25. Latest scope for FCC testing covers Part 15C/15E (Short Range Devices) and Parts 22/24/25/27 (Cellular Devices). ISED recognition is in process.
DEKRA Testing and Certification S.r.l	Thiene, Italy	New 1 m Semi-Anechoic Chamber (SAC) for CISPR 25 and Automotive OEM EMC Testing.
DEKRA Testing and Certification GmbH	Stuttgart, Germany	New 4x4 m Shielded Room for Wi-Fi Testing.
DEKRA Testing and Certification Co., Ltd.	Huaya, Taiwan	New 3 m Full Anechoic Chamber (FAC) for Wi-Fi Data Throughput Testing. New Test Bench (Anritsu MT8862A) for Wi-Fi 7 Regulatory Testing. New SPEAG DASY 5 SAR Measurement System.
DEKRA Testing and Certification Co., Ltd.	Hsinchu, Taiwan	General Motors (GM) recognition update for GMW3097:2022 Automotive EMC Standard.

Competitors Merge and Acquisitions

Competitor	Acquisition	Location	Details
Kiwa	GHMT AG	Germany	Cable and connection components testing laboratory. On-Site EMC testing services and spectrum survey.
TUV Rheinland	Burotec	Spain	Engineering company.

Competitors Organic Growth and Headlines

Competitor	Location	Details
TUV SUD	Bengaluru, India	Open new EMC, Safety, Environmental and Chemical Lab. 6.500 m ² and 15M EUR investment. EMC Lab includes a 10 m Semi-Anechoic Chamber (SAC) with 6 m turntable and maximum payload of 6.000 kg. Testing capability for Consumer, Telecom, Industrial, Luminaires, Medical, Machinery...
Element	Guildford, UK	Open new EMC/RF Lab. 2.300 m ² and 10M USD investment. EMC/RF Lab includes 2 x 3m Semi-Anechoic Chamber and 1 x SPEAG DASY 8 SAR Test System. Testing capability for Consumer, Telecom and Industrial. Expected to be expanded in a second phase for Safety and Medical Testing.



Competitor	Location	Details
Element	Rockford (IL), USA	New 10 m Semi-Anechoic Chamber (SAC) with 6 m turn-table and maximum payload of 13.500 kg. Two new Reverb Chambers with High-Intensity Radiated Fields (HIRF) above 20.000 v/m.
Applus+	Amaro, Italy	New 7.2 x 5.7 x 3.3 m EMC chamber for high-voltage automotive components. It allows test setups up to 5 x 1 m or 3 x 2 m.
Verkotan Oy	Oulu, Finland	New Anechoic Chamber for Radiated Emissions Tests (9 kHz - 40 GHz).
Intertek	France	Sign a partnership agreement with Emitech Group in France for EMC and Safety Testing.
Bureau Veritas	Hanoi, Vietnam	Achieved ISO 17025 accreditation for EMC and RF Testing for CE and FCC. Recognized by Ministry of Information and Communications (MIC) of Vietnam for Vietnamese 5G regulatory standards (QCVN 127, QCVN 129, and QCVN 18) Testing.
Bureau Veritas	Taiwan	Acquired a new Automotive EMC Test System from R&S.
SGS	San Diego (CA), USA	First CTIA Authorized Test Lab for OTA Performance for 5G FR2 (mmWave).