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PUBLIC CONSULTATION No. 47

Introduction

As a result of studies carried out by the technical area of Anatel's Certification and Numbering Management (ORCN), the possibility of changing the requirements and testing procedures aimed at certifying cell phone chargers used in a vehicle environment was identified. The update proposal makes references to international technical standards specific to the automotive environment and takes into account that the USB interfaces present in the vehicle environment are already subjected to vehicle validation tests, which aim to preserve the safety of the driver and passengers.

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THE SUPERINTENDENT OF GRANTING AND RESOURCES TO PROVIDE - ANATEL, in the use of the attributions granted to him by Ordinance No. 419, of May 24, 2013, and

CONSIDERING the competence given by Items XIII and XIV of Article 19 of Law No. 9,472/97 – General Telecommunications Law;

WHEREAS the Technical Requirements establish the technical parameters and criteria verified in the Conformity Assessment of one or more types of telecommunications product, pursuant to art. 22 of the Regulation for Conformity Assessment and Approval of Telecommunications Products, approved by Resolution No. 715, of October 23, 2019;

CONSIDERING that contained in the case records No. 53500.027683/2020-20 ;

RESOLVES:

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Art. 1 To revoke Act No. 3481, of May 31, 2019 .

Art. 2 Approve the Technical Requirements and Test Procedures for Assessing the Conformity of Chargers Used in Cell Phones, in the form of the annex to this Act.

Art. 3 This Act enters into force on the date of its publication in Anatel's Electronic Services Bulletin.

ANNEX I

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TECHNICAL REQUIREMENTS AND TEST PROCEDURES FOR ASSESSING CONFORMITY OF CHARGER USED IN CELL PHONE

1. PURPOSE

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1.1. Establish the minimum requirements to be demonstrated in the conformity assessment and approval, with the National Telecommunications Agency, of charger used in cell phones.

2. SCOPE

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2.1. The requirements defined in this document apply to the following cell phone chargers:

a) chargers whose power source is the electric power network with alternating current (AC).

b) special purpose USB interfaces (ports) for powering electronic devices, without data transmission functionality.

c) inductive chargers, regardless of the type of electrical power source.

2.2. USB interfaces that integrate the electrical/electronic design of a device (eg TV, computer, media center, etc.) are not covered by these requirements.

3. REFERENCES

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3.1. In this document the following references are adopted:

3.1.1. Law No. 9,472 of July 16, 1997 - General Telecommunications Law - LGT;

3.1.2. Standard N-02/92 - Basic standard for electromagnetic disturbances produced by industrial, scientific and medical equipment (ISM equipment), approved by Ordinance No. 176, of June 10, 1992.

3.1.3. Anatel's internal regulations, approved by Resolution No. 612 , of April 29, 2013;

3.1.4. Regulation for conformity assessment and approval of telecommunications products, approved by Resolution No. 715 , of October 23, 2019;

3.1.5. Electrical safety technical requirements for conformity assessment of telecommunications products, approved by Act No. 950 , of February 8, 2018;

3.1.6. Technical requirements for electromagnetic compatibility for the conformity assessment of telecommunications products, approved by Act No. 1120, of February 19, 2018 .

3.1.7. ISO 10605/2008: Road vehicles - Test methods for electrical disturbances from electrostatic discharge .

3.1.8. ISO 7637-2 / 2004: Road vehicles - Electrical disturbances from conduction and coupling - Part 2: electrical transient conduction along supply lines the nly .

3.1.9. Code of Federal Regulations – CFR FCC part 18 — Industrial, scientific, and medical equipment .

4. DEFINITIONS

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4.1. Cell Phone Charger: Equipment used to charge cell phone batteries. Cables or other equipment that do not convert/adapt electrical energy are not covered by this definition.

4.2. Inductive charger: system composed of a magnetic field generator coil that, when coupled to the device to be charged, transfers electrical energy through induction or magnetic resonance or by capacitive coupling; also known as WPT (Wireless Power Transmission) charger .

4.3. Charger used in a vehicle environment: it is used in vehicles whose power supply is continuous (DC) for 12 V or 24 V. It can be built-in in the vehicle (Ex.: inductive or USB interface) or portable (removable).

5. GENERAL GUIDELINES

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5.1. Unless otherwise specified, chargers for cell phones must be tested in conjunction with the cell phone during the evaluation of the product's electromagnetic compatibility and electrical safety requirements.

5.1.1. The charger manufacturer must supply a cell phone with its battery initially discharged for testing.

6. TECHNICAL REQUIREMENTS FOR CHARGERS USED IN VEHICLE ENVIRONMENTS

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6.1. Criteria for assessing Electromagnetic Compatibility (EMC) requirements

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6.1.1. Requirement for immunity to electrostatic discharges: the tests must be carried out according to the procedures contained in the ISO 10605/2008 standard: Road Vehicles – Test methods for electrical disturbances from electrostatic d ischarge .

6.1.1.1. Only carry out the direct discharge test (item 8.3 of the ISO 10605/2008 standard).

6.1.1.2. Electrostatic discharges must be applied at the following levels:

a) 6 kV for contact discharges; and

b) 8 kV for air discharges.

6.1.1.3. In order to evaluate the charger, criterion C defined in the technical requirements for electromagnetic compatibility for conformity assessment of telecommunications products published by Anatel must be adopted.

6.1.2.

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6.1.2. Surge and transient immunity requirement: the tests must be performed according to the procedures contained in the ISO 7637-2/2004 standard: Road vehicles – Electrical disturbances from conduction and coupling - part 2: electrical transient conduction along supply lines or nly .

6.1.2.1. Pulses 2a, 2b, 3a and 3b must be adopted, with severity level 3, from Table A.1 of the ISO 7637-2/2004 standard.

6.1.2.2. In order to evaluate the charger, criterion B defined in the technical requirements for electromagnetic compatibility for conformity assessment of telecommunications products published by Anatel must be adopted.

6.2. Criteria for evaluating electrical safety requirements

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6.2.1. Test only applicable to portable vehicle chargers. Not applicable to those built into the vehicle.

6.2.2. Overheating protection requirement: as set out in the electrical safety technical requirements for conformity assessment of telecommunications products. In the test, the charger must not exceed the temperature rise limits prescribed in the current requirements.

6.2.3. To carry out the tests, as an alternative to using a cell phone coupled to the charger, a resistive charge may be used that simulates the conditions of greater current drainage during charging, as specified by the charger manufacturer.

7. TECHNICAL REQUIREMENTS FOR OTHER SHIPERS TO

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7.1. Criteria for assessing Electromagnetic Compatibility (EMC) requirements

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7.1.1. Electromagnetic disturbance emission requirements, as established in the electromagnetic compatibility technical requirements for conformity assessment of telecommunications products published by Anatel.

7.1.1.1. Fully apply, except for inductive type chargers, the radiated emissions test from the equipment.

7.1.1.2. To carry out the tests, as an alternative to using a cell phone coupled to the charger, a resistive charge may be used that simulates the conditions of greater current drainage during charging, as specified by the charger manufacturer.

7.1.2. Electromagnetic disturbance immunity requirements, as established in the electromagnetic compatibility technical requirements for conformity assessment of telecommunications products published by Anatel.

7.1.2.1. Apply requirements in full, with the exception of the immunity test to radiated radio frequency disturbances.

7.1.2.2. During the execution of the electromagnetic disturbance immunity tests, the charger must present its normal operating conditions.

7.1.3. Electromagnetic disturbance resistibility requirements, as established in the electromagnetic compatibility technical requirements for conformity assessment of telecommunications products published by Anatel.

7.1.3.1. Apply only the electromagnetic disturbance test on the external electrical power ports. In this test, the charger must provide electrical isolation so that it is not damaged and does not allow damage to the phone.

7.2. Criteria for evaluating electrical safety requirements

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7.2.1. Fully apply the following tests of the electrical safety technical requirements for conformity assessment of telecommunications products published by Anatel:

7.2.1.1. Overheating protection. In the test, the charger must not exceed the temperature rise limits prescribed in the current requirements;

7.2.1.2. Protection against electric shock under normal conditions;

7.2.1.3. Protection against electric shock in overvoltage condition at the external power port.

7.2.2. In tests for protection against electric shock, the charger must not allow current to pass to the phone in order to avoid damage to the device.

7.2.3. To carry out the tests, as an alternative to using a cell phone coupled to the charger, a resistive charge may be used that simulates the conditions of greater current drainage during charging, as specified by the charger manufacturer.

8. SPECIFIC REQUIREMENTS FOR INDUCTIVE CHARGERS TO

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8.1. In addition to meeting the electromagnetic compatibility and electrical safety requirements for their type of application (vehicle environment or other chargers), inductive chargers must meet the following requirements:

8.1.1. Field strength **requirements:** para 18305 - Field strength limits (equipment any type, operating frequency: any non-ISM frequency), subpart C – technical standards of the document code of federal regulations – CFR FCC part 18 — industrial, scientific, and medical equipment, applying the test methods established in the test procedures for conformity assessment of radiocommunication equipment with restricted radiation established by Anatel.

8.1.2. Equipment fundamental frequency: must not be in one of the prohibited frequencies, according to Table 2 of the Basic Standard for electromagnetic disturbances produced by industrial, scientific and medical equipment (ISM equipment).

9. IDENTIFICATION OF APPROVAL

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9.1. Cell phone chargers distributed in the domestic market must bear the approval security seal, whose specifications are contained in a specific operating procedure for this purpose, published by Anatel.

9.1.1. The Security seal described in the caput is optional for built-in vehicle chargers. However, the equipment must bear the identification of the Anatel approval.

9.2. The Security Seal must be affixed to the charger body.

9.2.1. At Anatel's discretion, shippers with constructive characteristics that do not allow affixing the approval security seal on their body, may have the seal affixed in the equipment manual.

10. FINAL PROVISIONS

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10.1. Chargers incorporating modules classified as restricted radiation radiocommunications equipment must also demonstrate compliance with the requirements applicable to these modules.

10.2. Chargers that have the same circuit board, same interconnection diagram, same printed circuit layout and internal hardware may be covered by the same certification, due to similarity with the model submitted to conformity assessment tests.

10.3. The certificate of conformity must present the maximum voltage and current values applied to the input and output of the charger, specified by the manufacturer and used in its conformity assessment.

10.4. For proof of compliance with the requirements of immunity to surges and immunity to electrostatic discharges, exclusively for vehicular chargers of the USB interface type embedded in the dashboard or in another part of the vehicle, test reports issued by an accredited first or second party laboratory will be accepted or authorized by an OCD to perform tests in accordance with the requirements defined by Anatel. The test report, which must be analyzed by the OCD, must contain specific tests for evaluating the charger and not the vehicle's electrical system as a whole.

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