

Commission Directive 2004/104/EC of 14 October 2004 adapting to technical progress Council Directive 72/245/EEC relating to the radio interference (electromagnetic compatibility) of vehicles and amending Directive 70/156/EEC on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers (Text with EEA relevance)

- Article 1 The Annexes to Directive 72/245/EEC are replaced by the Annexes...
- Article 2 (1) With effect from 1 January 2006, for vehicles, components...
- Article 3 Directive 70/156/EEC is amended as follows: Annex I is amended...
- Article 4 Transposition
- Article 5 This Directive shall enter into force on the 20th day...
- Article 6 This Directive is addressed to the Member States.

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## ANNEX

### ANNEX I

#### REQUIREMENTS TO BE MET BY VEHICLES AND ELECTRICAL/ ELECTRONIC SUBASSEMBLIES FITTED TO A VEHICLE

1. SCOPE
2. DEFINITIONS
  - 2.1. For the purposes of this Directive:
3. APPLICATION FOR EC TYPE-APPROVAL
  - 3.1. Approval of a vehicle type
    - 3.1.1. The application for approval of a vehicle type, with regard...
    - 3.1.2. A model for the information document is given in Annex...
    - 3.1.3. The vehicle manufacturer shall draw up a schedule describing all...
    - 3.1.4. A representative vehicle shall be selected from this schedule for...
    - 3.1.5. The choice of the vehicle(s) in conformity with paragraph 3.1.4...
    - 3.1.6. The manufacturer may supplement the application with a report from...
    - 3.1.7. If the technical service responsible for the type-approval test carries...
    - 3.1.8. The vehicle manufacturer must provide a statement of frequency bands,...
  - 3.2. Approval of a type of electrical/electronic subassembly (ESA)
    - 3.2.1. Applicability of this Directive to ESA:
    - 3.2.2. The application for approval of a type of ESA with...
    - 3.2.3. A model for the information document is given in Annex...
    - 3.2.4. The manufacturer may supplement the application with a report from...
    - 3.2.5. If the technical service responsible for the type-approval test carries...
    - 3.2.6. The sample(s) must be clearly and indelibly marked with the...

- 3.2.7. Where applicable, any restrictions on use should be identified. Any...
  - 3.2.8. ESAs which are brought to the market as spare parts...
  - 3.2.9. Components sold as aftermarket equipment and intended for the installation...
4. TYPE-APPROVAL
- 4.1. Routes to type-approval
    - 4.1.1. Type-approval of a vehicle
      - 4.1.1.1. Approval of a vehicle installation
      - 4.1.1.2. Approval of vehicle type by testing of individual ESAs
      - 4.1.1.3. A manufacturer, if he/she wishes, may obtain approval according to...
    - 4.1.2. Type-approval of an ESA
    - 4.1.3. ESAs, which are intentional RF transmitters, which have not received...
  - 4.2. Granting of type-approval
    - 4.2.1. Vehicle
      - 4.2.1.1. If the representative vehicle fulfils the requirements of this Directive,...
      - 4.2.1.2. A model for the EC type-approval certificate is given in...
    - 4.2.2. ESA
      - 4.2.2.1. If the representative ESA system(s) fulfil(s) the requirements of this...
      - 4.2.2.2. A model for the EC type-approval certificates is given in...
    - 4.2.3. In order to draw up the certificates referred to in...
  - 4.3. Amendments to approvals
    - 4.3.1. In the case of amendments to approvals granted pursuant to...
    - 4.3.2. Amendment of a vehicle type-approval by ESA addition or substitution...
      - 4.3.2.1. Where a vehicle manufacturer has obtained approval for a vehicle...
      - 4.3.2.2. Where the additional or substitutional part(s) has (have) not received...
    - 4.3.3. The addition of used ESAs, which are not type-approved according...
5. MARKING
- 5.1. Every ESA conforming to a type approved under this Directive...
  - 5.2. The EC type-approval mark shall consist of
  - 5.3. The EC type-approval mark must be affixed to the main...
  - 5.4. An example of the EC type-approval mark is shown in...
  - 5.5. No marking is required for electrical/electronic systems included in vehicle...
  - 5.6. Markings on ESAs in compliance with paragraph 5.3 need not...
6. SPECIFICATIONS
- 6.1. General specification
    - 6.1.1. A vehicle and its electrical/electronic system(s) or ESA(s) shall be...
      - 6.1.1.1. A vehicle shall be tested for radiated emissions and for...
      - 6.1.1.2. ESA(s) shall be tested for radiated and conducted emissions, for...
    - 6.1.2. Before testing, the technical service has to prepare a test...
  - 6.2. Specifications concerning broadband electromagnetic radiation from vehicles
    - 6.2.1. Method of measurement
    - 6.2.2. Vehicle broadband type-approval limits

- 6.2.2.1. If measurements are made using the method described in Annex...
    - 6.2.2.2. If measurements are made using the method described in Annex...
    - 6.2.2.3. On the vehicle representative of its type, the measured values,...
  - 6.3. Specifications concerning narrowband electromagnetic radiation from vehicles.
    - 6.3.1. Method of measurement
    - 6.3.2. Vehicle narrowband type-approval limits
      - 6.3.2.1. If measurements are made using the method described in Annex...
      - 6.3.2.2. If measurements are made using the method described in Annex...
      - 6.3.2.3. On the vehicle representative of its type, the measured values,...
      - 6.3.2.4. Notwithstanding the limits defined in paragraphs 6.3.2.1, 6.3.2.2 and 6.3.2.3...
  - 6.4. Specifications concerning immunity of vehicles to electromagnetic radiation.
    - 6.4.1. Method of testing
    - 6.4.2. Vehicle immunity type-approval limits.
      - 6.4.2.1. If tests are made using the method described in Annex...
      - 6.4.2.2. The vehicle representative of its type shall be considered as...
  - 6.5. Specification concerning broadband electromagnetic interference generated by ESAs
    - 6.5.1. Method of measurement
    - 6.5.2. ESA broadband type-approval limits
      - 6.5.2.1. If measurements are made using the method described in Annex...
      - 6.5.2.2. On the ESA representative of its type, the measured values,...
  - 6.6. Specifications concerning narrowband electromagnetic interference generated by ESAs.
    - 6.6.1. Method of measurement
    - 6.6.2. ESA narrowband type-approval limits
      - 6.6.2.1. If measurements are made using the method described in Annex...
      - 6.6.2.2. On the ESA representative of its type, the measured value,...
  - 6.7. Specifications concerning immunity of ESAs to electromagnetic radiation.
    - 6.7.1. Method(s) of testing
    - 6.7.2. ESA immunity type-approval limits
      - 6.7.2.1. If tests are made using the methods described in Annex...
      - 6.7.2.2. The ESA representative of its type shall be considered as...
  - 6.8. Specifications concerning the immunity to transient disturbances conducted along supply...
    - 6.8.1. Method of testing
  - 6.9. Specifications concerning the emission of conducted disturbances
    - 6.9.1. Method of testing
- 7. CONFORMITY OF PRODUCTION
  - 7.1. Measures to ensure the conformity of production shall be taken...
  - 7.2. Conformity of production with regard to the electromagnetic compatibility of...
  - 7.3. If the authority is not satisfied with the auditing procedure...
    - 7.3.1. If the conformity of a vehicle, component or STU taken...

- 7.3.2. If the conformity of a vehicle, component or STU taken...
- 7.3.3. If the conformity of a component or STU taken from...

## 8. EXCEPTIONS

- 8.1. Where a vehicle or electrical/electronic system or ESA does not...
- 8.2. Vehicles which do not have electrical/electronic systems with ‘immunity-related functions’...
- 8.3. ESAs with no immunity-related functions need not be tested for...
- 8.4. Electrostatic discharge
- 8.5. Conducted emission
- 8.6. The loss of function of receivers during the immunity test,...
- 8.7. RF transmitters shall be tested in the transmit mode. Wanted...
  - 8.7.1 ‘Necessary bandwidth’: for a given class of emission, the width...
  - 8.7.2 ‘Out-of-band emissions’: emission on a frequency or frequencies immediately outside...
  - 8.7.3 ‘Spurious emission’: in every modulation process additional undesired signals exist....

- (1) [OJ L 42, 23.2.1970, p. 1](#). Directive as last amended by Commission Directive 2004/78/EC ([OJ L 153, 30.4.2004, p. 103](#)).
- (2) [OJ L 152, 6.7.1972, p. 15](#). Directive as last amended by Directive 95/54/EC of the European Parliament and of the Council ([OJ L 266, 8.11.1995, p. 1](#)).
- (3) [OJ L 139, 23.5.1989, p. 19](#). Directive as last amended by Directive 93/68/EEC ([OJ L 220, 30.8.1993, p. 1](#)).
- (4) [OJ L 91, 7.4.1999, p. 10](#).