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**Analysis of electromagnetic compatibility
aspects and definition of requirements for 5G
systems**

ITU-T K-series Recommendations – Supplement 10

Supplement 10 to ITU-T K-series Recommendations

Analysis of electromagnetic compatibility aspects and definition of requirements for 5G systems

Summary

Supplement 10 to ITU-T K-series Recommendations provides guidance on the electromagnetic compatibility (EMC) compliance assessment considerations for 5G systems. Given the 5G radio access network (RAN) technical standards are still being finalised, the first version of this Supplement focuses on possible emission and immunity requirements for 5G systems. This Supplement will be revised, if needed, to address the more specific EMC requirements when technical standards of 5G systems are published.

History

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Supplement 10 to ITU-T K-series Recommendations

Analysis of electromagnetic compatibility aspects and definition of requirements for 5G systems

1 Scope

This Supplement provides an analysis of the electromagnetic compatibility (EMC) requirements for 5G systems to ensure operation of these systems and avoid interference with other devices/systems.

This Supplement covers:

- Analysis of the present available EMC ITU-T Recommendations and standards and works in IEC/CISPR and ETSI EMC technical committees;
- Definition of the requirements for EMC management in the scenario of 5G systems

This Supplement does not address the co-existence of 5G systems with other radio systems because this subject is being addressed by ITU-R.

The EMC specifications proposed in this Supplement will be revised when the 5G transmitter and receiver specifications are published and with consideration of the ongoing work done in other standardization organizations such as IEC/CISPR and ETSI.

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3 Definitions

3.1 Terms defined elsewhere

This Supplement uses the following terms defined elsewhere:

- 3.1.1 AC mains power port** [CISPR 32]: Port used to connect to the mains supply.
- 3.1.2 analogue/digital data port** [CISPR 32]: Signal/control port, antenna port, wired network port, broadcast, receiver tuner port, or optical fibre port with metallic shielding and/or metallic strain relief member(s)
- 3.1.3 antenna port** [CISPR 32]: Port, other than a broadcast receiver tuner port (3.1.8), for connection of an antenna used for intentional transmission and/or reception of radiated RF energy
- 3.1.4 auxiliary equipment (AE)** [IEC 61000-4-4]: Equipment necessary to provide the equipment under test with the signals required for normal operation and equipment to verify the performance of the EUT.
- 3.1.5 broadcast receiver tuner port** [CISPR 32]: Port intended for the reception of a modulated RF signal carrying terrestrial, satellite and/or cable transmissions of audio and/or video broadcast and similar services
- 3.1.6 DC network port** [CISPR 32]: Port, not powered by a dedicated AC/DC power converter and not supporting communication, that connects to a DC supply network
- 3.1.7 electromagnetic compatibility (EMC)** [b-IEC 60050-161]: Ability of equipment to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.
- 3.1.8 enclosure port** [CISPR 32]: Physical boundary of the EUT through which electromagnetic fields may radiate.
- 3.1.9 immunity (to a disturbance)** [b-IEC 60050-161]: The ability of a device, equipment or system to perform without degradation in the presence of an electromagnetic disturbance.
- 3.1.10 immunity test level** [b-IEC 60050-161]: The level of a test signal used to simulate an electromagnetic disturbance when performing an immunity test.
- 3.1.11 information technology equipment (ITE)** [CISPR 32]: Equipment having a primary function of either (or a combination of) entry, storage, display, retrieval, transmission, processing, switching, or control of data and/or telecommunication messages and which may be equipped with one or more ports typically for information transfer.
- 3.1.12 multimedia equipment** [CISPR 32]: Equipment that is information technology equipment, audio equipment, video equipment, broadcast receiver equipment, entertainment lighting control equipment or combinations of these.
- 3.1.13 optical fibre port** [CISPR 32]: Port at which an optical fibre is connected to an equipment