

## Technical Specification

### 1- Health and Safety

Type of Health and safety standard	Applicable standard	Description
Electrical	EN 60950 or IEC 60950	Electrical Safety of information technology equipment
Radio and SAR	EN 50360	Product standard to demonstrate the compliance of mobile phones with the basic restrictions related to human exposure to electromagnetic fields (300 MHz – 3 GHz)
	EN 50364	Limitation of human exposure to electromagnetic fields from devices operating in the frequency range 0 Hz to 10 GHz, used in Electronic Article Surveillance (EAS), Radio Frequency Identification (RFID) and similar applications
	EN 50371	Generic standard to demonstrate the compliance of low power electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (10 MHz – 300 GHz) – General public
	EN 50385	Generic standard to demonstrate the compliance of low power electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (10 MHz – 300 GHz) – General public Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless
	EN 60215	Safety requirements for radio transmitting equipment
	EN 50392	Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz – 300 GHz)
Optical and Laser	EN 60825-1 or IEC 60825-1	Safety of laser products - Part 1: Equipment classification, requirements and user's guide

	EN 60825-2 or IEC 60825-2	Safety of laser products - Part 2: Safety of optical fiber communication systems
--	---------------------------	--

## 2- EMC

Type EMC standard	Applicable standard	Description
Information technology equipment	EN 55022 or CISPR 22	<ul style="list-style-type: none"> <li>• Radio disturbance characteristics</li> <li>• Limits and methods of measurement</li> </ul>
	EN 55024 or CISPR 24	<ul style="list-style-type: none"> <li>• Immunity characteristics</li> <li>• Limits and methods of measurement</li> </ul>
Limits	EN 61000-3-2 or IEC 61000-3-2	<ul style="list-style-type: none"> <li>• Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)</li> </ul>
	EN 61000-3-3 or IEC 61000-3-3	<ul style="list-style-type: none"> <li>• Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems</li> <li>• Equipment with rated current <math>\leq 75</math> A and subject to conditional connection</li> </ul>
	EN 61000-3-11 or IEC 61000-3-11	<ul style="list-style-type: none"> <li>• Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems.</li> <li>• Equipment with rated current <math>\leq 75</math> A and subject to conditional connection</li> </ul>
Generic standards	ETSI EN 301 489	<ul style="list-style-type: none"> <li>• Electromagnetic compatibility and Radio spectrum Matters (ERM)</li> <li>• Electromagnetic Compatibility (EMC) standard for radio equipment and services</li> <li>• Various parts as applicable to terminal type</li> </ul>
	EN 61000-6-1 or IEC 61000-6-1	<ul style="list-style-type: none"> <li>• Immunity for residential, commercial and light-industrial environments</li> </ul>
	EN 61000-6-2 or IEC 61000-6-2	<ul style="list-style-type: none"> <li>• Immunity for industrial environments</li> </ul>
	EN 61000-6-3 or IEC 61000-6-3	<ul style="list-style-type: none"> <li>• Emission standard for residential, commercial and light industrial environments</li> </ul>
	EN 61000-6-4 or IEC 61000-6-4	<ul style="list-style-type: none"> <li>• Emission standard for industrial environments</li> </ul>

### 3- Radio

Radio Standards	Description
ETSI EN 303 035-1	Terrestrial Trunked Radio (TETRA); Harmonised EN for TETRA equipment covering essential requirements under article 3.2 of the R&TTE Directive; Part 1: Voice plus Data (V+D)
ETSI EN 303 035-2	Terrestrial Trunked Radio (TETRA); Harmonised EN for TETRA equipment covering essential requirements under article 3.2 of the R&TTE Directive; Part 2: Direct Mode Operation (DMO)
EN 60215	Radio transmitters, Radio equipment, Transmitters, Communication equipment, Safety measures, Electronic equipment and components, Protected electrical equipment, Electrical safety, Fire safety, Explosions, Radiation hazards, Occupational safety, Environment (working), Design, Marking, Earthing, Leakage paths, Clearance distances, Symbols, Graphic symbols, Equipment safety
EN 301 166-2	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Radio Equipment for Analogue and /or Digital Communication (Speech and/or Data) and Operating on Narrow Band Channels and Having an Antenna Connector; Part 2: Harmonized EN Covering Essential Requirements under Article 3.2 of the R&TTE Directive
ETSI EN 300 086-2	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Radio Equipment with an Internal or External RF Connector Intended Primarily for Analogue Speech; Part 2: Harmonized EN Covering Essential Requirements under Article 3.2 of the R&TTE Directive
ETSI EN 300 113-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

ETSI ETS 300 296-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment using integral antennas intended primarily for analogue speech; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
ETSI EN 300 390-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio Equipment intended for the transmission of data (and speech) and using an integral antenna. Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
ETSI EN 300 471-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Access protocol, occupation rules and corresponding technical characteristics of radio equipment for the transmission of data on shared channels. Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
EN 50385	Product Standard to Demonstrate the Compliances of Radio Base Stations and Fixed Terminal Stations for Wireless Telecommunication Systems with the Basic Restrictions or the Reference Levels Related to Human Exposure to Radio Frequency Electromagnetic Fields (110 MHz - 40 GHz) - General Public
ETSI EN 301 502	Harmonized EN for Global System for Mobile Communications (GSM); Base Station and Repeater Equipment Covering Essential Requirements under Article 3.2 of the R&TTE Directive
ETSI EN 301 511	Global System for Mobile Communications (GSM); Harmonized EN for Mobile Stations in the GSM 900 and GSM 1800 Bands Covering Essential Requirements Under Article 3.2 of the R&TTE Directive (1999/5/EC)
ETSI EN 301 893	Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
ETSI EN 301 753	Fixed Radio Systems; Multipoint equipment and antennas; Generic harmonized standard for multipoint digital fixed radio systems and antennas covering the essential requirements under article 3.2 of the Directive 1999/5/EC
ETSI EN 301 426	Satellite Earth Stations and Systems (SES); Harmonized EN for Low Data Rate Land Mobile Satellite Earth Stations (LMES) and Maritime Mobile Satellite Earth Stations (MMES) Not Intended for Distress and Safety Communications Operating in the 1,5/1,6 GHz Frequency Bands Covering Essential Requirements under Article 3.2 of the R&TTE Directive

ETSI EN 301 441	Satellite Earth stations and Systems (SES); Harmonised EN for Mobile Earth Stations (MES), including handheld earth stations, for Satellite Personal Communications Networks (S-PCN) in the 1.6/2.4 GHz bands under the Mobile Satellite Service (MSS) covering essential requirements under article 3.2 of the R&TTE directive
ETSI EN 301 442	Harmonised EN for Mobile Earth Stations (MES), including handheld earth stations, for Satellite Personal Communications Networks (S-PCN) in the 2.0 GHz bands under the Mobile Satellite Service (MSS) covering essential requirements under article 3.2 of the R&TTE directive
ETSI EN 301 444	Satellite Earth stations and Systems (SES); Harmonised EN for Land Mobile Earth Stations (LMES) operating in the 1.5 GHz and 1.6 GHz bands providing voice and /or data communications covering essential requirements under article 3.2 of the R&TTE directive
ETSI EN 301 681	Satellite Earth stations and Systems (SES); Harmonised EN for Mobile Earth Stations (MES) of geostationary mobile satellite systems, including handheld earth stations, for satellite personal communications networks (S-PCN) in the 1.5/1.6 GHz bands under the Mobile Satellite Service (MSS) covering essential requirements under article 3(2) of the R&TTE directive
ETSI EN 301 721	Satellite Earth Stations and Systems (SES); Harmonized EN for Mobile Earth Stations (MES) Providing Low Bit Rate Data Communications (LBRDC) Using Low Earth Orbiting (LEO) Satellites Operating Below 1 GHz Covering Essential Requirements under Article 3.2 of the R&TTE Directive
EN 55022	Radio disturbances, Noise (spurious signals), Computer terminals, Data processing equipment, Computers, Computer peripheral equipment, Office machines, Data processing, Communication equipment, Communication networks, Radiofrequencies, Interference suppression, Grades (quality), Emission, Electromagnetic fields, Electromagnetic radiation, Electrical wave measurement, Electrical measurement, Conformity, Approval testing, Test equipment, Circuits, Testing conditions, Electromagnetic compatibility
ETSI EN 301 443	Satellite Earth stations and Systems (SES); Harmonised EN for Very Small Aperture Terminal (VSAT); Transmit-only, transmit-and-receive, receive-only satellite earth stations operating in the 4GHz and 6GHz frequency bands covering essential requirements under article 3.2 of the R&TTE directive
ETSI EN 301 428	Satellite Earth stations and Systems (SES); Harmonised EN for Very Small Aperture Terminal (VSAT); Transmit-only, transmit/receive or receive-only satellite earth stations operating in the 11/12/14 GHz frequency bands

	covering essential requirements under article 3(2) of the R&TTE directive
ETSI EN 301 459	Satellite Earth stations and Systems (SES); Harmonised EN for Satellite Interactive Terminal (SIT) and Satellite User Terminals (SUT) transmitting towards satellites in geostationary orbit in the 29.5 – 30.0 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE directive
ETSI EN 301 360	Satellite Earth stations and Systems (SES); Harmonised EN for Satellite Interactive Terminal (SIT) and Satellite User Terminals (SUT) transmitting towards satellites in geostationary orbit in the 27.5 – 29.5 GHz frequency bands covering essential requirements under article 3.2 of the R&TTE directive
ETSI EN 301 406	Digital Enhanced Cordless Telecommunications (DECT); Harmonised EN for Digital Enhanced Cordless Telecommunications (DECT) covering essential requirements under Article 3(2) of the R&TTE directive
ETSI EN 300 440-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
ETSI EN 300 328	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
ETSI EN 301 893	Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
ETSI EN 301 908-1	Electromagnetic compatibility and Radio spectrum Matters (ERM);Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks;Part 1: Harmonized EN for IMT-2000, introduction and common requirements, covering essential requirements of article 3.2 of the R&TTE Directive
ETSI EN 301 908-2	Electromagnetic compatibility and Radio spectrum Matters (ERM);Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation cellular networks;Part 2: Harmonized EN for IMT-2000, CDMA Direct Spread (UTRA FDD) (UE) covering essential requirements of article 3.2 of the R&TTE Directive
ETSI EN 301 908-6	Electromagnetic compatibility and Radio spectrum Matters (ERM);Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation cellular networks;Part 6: Harmonized EN for IMT-2000, CDMA

	TDD (UTRA TDD) (UE) covering essential requirements of article 3.2 of the R&TTE Directive
ETSI EN 301 908-3	Electromagnetic compatibility and Radio spectrum Matters (ERM);Base Stations (BS) and User Equipment (UE) for IMT-2000 Third-Generation cellular networks;Part 3: Harmonized EN for IMT-2000, CDMA Direct Spread (UTRA FDD) (BS) covering essential requirements of article 3.2 of the R&TTE Directive
ETSI EN 301 908-7	Electromagnetic compatibility and Radio spectrum Matters (ERM);Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation cellular networks;Part 7: Harmonized EN for IMT-2000, CDMA TDD (UTRA TDD) (BS) covering essential requirements of article 3.2 of the R&TTE Directive
ETSI EN 301 908-11	Electromagnetic compatibility and Radio spectrum Matters (ERM);Base Stations (BS), Repeaters and User Equipment (UE) for IMT-2000 Third-Generation cellular networks;Part 11: Harmonized EN for IMT-2000, CDMA Direct Spread (UTRA FDD) (Repeaters) covering essential requirements of article 3.2 of the R&TTE Directive
ETSI EN 301 753	Broadband Radio Access Network (BRAN) 5,8GHz fixed Broadband Radio Transmutation system; Harmonized EN covering the essential requirements of article 3.2
ETSI EN 301 783-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Commercially available amateur radio equipment; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
ETSI EN 300 220-3	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500mW; Part 3: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.
ETSI EN 300 422-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 2: Harmonized EN covering essential requirements under the R&TTE directive
ETSI EN 301 357-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Cordless audio devices in the range 25 MHz to 2 000 MHz; Consumer radio microphones and in-ear monitoring systems operating in the CEPT harmonised band 863 MHz to 865 MHz; Part 2: Harmonized EN covering essential requirements under the R&TTE directive

ETSI EN 301 840-2	Electromagnetic compatibility and Radio spectrum Matters (ERM); Digital radio microphones operating in the CEPT harmonised band 1 785 MHz to 1 800 MHz; Part 2: Harmonised EN covering essential requirements under the R&TTE directive
ETSI EN 302 217-2-2	Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 2 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive for digital systems operating in frequency bands where frequency co-ordination is applied
ETSI EN 302 217-3	Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 3: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive for equipment operating in frequency bands where frequency co-ordination is applied
ETSI EN 302 217-4-2	Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 4-2: Harmonized EN covering essential requirements of Article 3.2 of R&TTE Directive for antennas

