Schweizerische Eidgenossenschaft
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Frequency Management

Technical interface regulation 784.101.21 / RIR 0000

Basis document

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1 Scope

Technical interface regulations (RIR) define the requirements for the frequency use by radiocommunication equipment in the frequency range up to 3000 GHz. RIR include the technical parameters, the frequency bands as well as the licensing regime (in Switzerland) respectively the obligation for individual frequency assignment (in Liechtenstein).
RIR indicate the technical standards which, when they are fulfilled, pose a presumption of conformity to the essential requirements. The fulfilling of the essential requirements constitutes one of the conditions for offering and placing on the market of radiocommunication equipment in Switzerland and in the Principality of Liechtenstein.

2 Legal basis (Switzerland)

The technical interface regulations are based on art. 25 and 31 of the telecommunications law [FMG; SR 784.10], on art. 3 of the decree on frequency management and radiocommunications licenses [FKV; SR 784.102.1], the decree of OFCOM on frequency management and radiocommunications licenses [VFKV; SR 784.102.11] as well as on art. 3 of the decree on telecommunication equipment [FAV; SR 784.101.2]. The technical interface regulations are published in annex 2 of the decree of OFCOM on telecommunication equipment [VFAV; SR 784.101.21].

3 Legal basis (Principality of Liechtenstein)

The technical interface regulations (RIR) are based on Arts. 31 to 33 of the Communication Law of 17 March 2006 (Liechtenstein Legal Gazette 2006, No. 91, in its currently applicable version) in combination with Arts. 82 et seq. and 99 et seq. of the Ordinance concerning Means of Identification and Frequencies in the Field of Electronic Communication of 8 May 2007 (Liechtenstein Legal Gazette 2007, No. 118, in its currently applicable version) and Arts. 28 and 29 of the Ordinance concerning the Responsibilities and Powers of the Regulatory Authority in the Field of Electronic Communication of 3 April 2007 (Liechtenstein Legal Gazette 2007 No. 68, in its currently applicable version).
They also rely upon Art. 3 of the Swiss decree concerning telecommunication equipment (FAV; SR 784.101.2, as amended) which is applicable law in the Principality of Liechtenstein on the basis of the currently applicable notice pursuant to the Customs Treaty regarding the direct applicability of Swiss regulations (LR 170.551.631).

4 Structure of the technical interface regulations (RIR)

The structure of the technical Interfaces regulations follows the guidance document of the European Commission:

"Radio and Telecommunications Terminal Equipment (R&TTE), Radio interfaces - List of information elements in Radio Interfaces".

The designation of radio services and applications are in conformance with the document:

"ECC/DEC/(01)03 / ECC Decision of 15 November 2001 on ERO Frequency Information System (EFIS)".

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5 Information fields in the technical interface regulations (RIR)

Normative part

Nr	Parameter	Description	Comments
1	**Radiocommunication Service**	Radiocommunication Service according to ECC/DEC/(01)03, Annex 1.	
2	**Application**	Application according to ECC/DEC/(01)03, Annex 2. Description of allowed application(s) within the frequency band.	Application details. In particular cases, specific provisions may be given to define the application (kind of use and assigned frequencies within the band etc.) or which user groups may get frequencies.
3	**Frequency band**	Lower and upper limits of the frequency band where particular technical interface regulations are valid. The transmitting frequency band limits are given as channel edges rather than centre frequencies of lowest and highest channels within the band. Several transmitting frequency bands, using the same Radio Interface parameters, may be specified.	The transmit centre frequency may be specified or additional information regarding the receive frequencies may be given.
4	**Channelling**	Description of channelling or channel spacing.	In addition to the channel spacing, the centre or reference frequencies (e.g. min. / max. frequencies) to be used for the referred emissions may be defined for different channel spacing in some RIR. The method of multiplexing may be covered in relevant cases.
5	**Modulation / Occupied bandwidth**	Designation of emission in accordance with Article 2.7 (Appendix 1) of the ITU Radio Regulations (RR) or description of modulation using other terms.	
6	**Direction / Separation**	Duplex direction and separation if applicable.	

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Nr	Parameter	Description	Comments
7	**Transmit power / Power density**	The maximum transmit power (upper power limit), is normally specified in radiated power or power density (ERP, EIRP, etc.) and direction (angle, polarization). Alternatively electromagnetic field strength can be given as a function of distance or area. Where justified, the maximum conducted output power / power density of the transmitter may be specified as an alternative. For certain applications the minimum transmit power / power density (lower power limit) may be specified.	For applications authorised on an individual basis, the maximum radiated power, the radiated power flux density or the maximum conducted output power, and in some cases, also the lower power limit may be specified in the licence provisions (Switzerland) or under obligation for individual assignment (Liechtenstein).
8	**Channel access and occupation rules**	Channel access and occupation rules specify the obligations to protect other applications in the same band or to facilitate sharing between the applications using the same band and when justified in adjacent bands. This is done by: • requiring the level of protection and/or mitigation which results from the use of validated mitigation and spectrum access techniques in the Harmonised Standard. Pending the adoption of Harmonised Standards the RIR can specify or refer to spectrum access and mitigation techniques which is/are considered adequate. • defining the electromagnetic field strength value not to be exceeded at the location of the other (protected) user(s) or at the boundary of a certain geographical area (e.g. radio astronomy sites).	Channel occupation rules are imposed mostly on the equipment exempted from individual authorisation and in some cases on the equipment used on an individual authorisation basis, using shared channels. Equipment shall implement appropriate spectrum access and mitigation techniques on condition it achieves at least an equivalent level of protection and/or mitigation (taking in account the different potentially interfered applications) as achieved by compliance with the harmonised standard.
9	**Authorisation regime**	This field may be used by national regulatory authorities to indicate if an individual authorisation or a “general authorisation” is foreseen. Used terms: Switzerland • License required • License exempt Principality of Liechtenstein • Individual assignment required • General authorisation	This field should be used to define specific geographical area or time restrictions for the use of radio stations within a country (indoor use, radio astronomy sites, airports, etc.) The comments in this field, may also give additional information such as temporary authorisation or user registration requirements. Some authorisations may be issued entirely on NIB / NPB (non-interference basis / non-protected basis) or exclusive/non-exclusive basis. It can be foreseen that, in the future, also the authorisation method (first come first served, beauty contest etc.) and licence fees or spectrum pricing may need to be described.

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Nr	Parameter	Description	Comments
10	**Additional essential requirements**	This field is used to indicate special requirements stipulated by Swiss law or in case there is a European Commission Decision invoking Art. 3.3 of the Directive 1999/5/EC. (Refer to „Anhang 1, Verordnung des Bundesamtes für Kommunikation über Fernmeldeanlagen“, SR 784.101.21)	Additional information if appropriate. Typically regulations of Switzerland and of the Principality of Liechtenstein, generally based on Commission Decisions, impose specific quality levels to be achieved for safety of life and other applications.
11	**Frequency planning assumptions**	The frequency planning assumptions may cover additional issues such as receiver parameters, assumed antenna characteristics and radio environment. These assumptions are taken into account for network planning purposes and in the case of harmful interference to the radio services.	The main reason of stating the frequency planning assumptions is that the relevant Harmonised Standard may not contain in all cases all the parameters used; in interference calculations for new frequency assignments, or; in international co-ordination processes, or; in compatibility analysis.

Informative Part

Nr	Parameter	Description	Comments
12	**Planned changes**	Any planned changes or indication of evolution	
13	**Reference**	EC Decisions Harmonised Standards CEPT / ECC Decisions or Recommendations National Frequency Allocation Table	Only the version(s) mentioned in the most recent publication of the list of Harmonised Standards give(s) presumption of conformity. It is common to foresee a transition period for the earlier versions. Mentioned are Harmonised Standards covering the essential requirements for health and safety, electro-magnetic compatibility and efficient use of the spectrum.
14	**Notification number**	Identification number of RIR notification to EU, EFTA and/or WTO.	
15	**Remarks**	Additional information may be given in this field.	

6 Terminology, Acronyms and abbreviations

The term **RIR** (Radio Interface Regulation) is used in Switzerland and in the Principality of Liechtenstein for the regulated radio interfaces according to the European model “Radio Interface Specification”.

The explanation of acronyms and abbreviations, which are used in the technical documents (RIR), may be found at the OFCOM web site:

http://www.bakom.admin.ch/themen/frequenzen/00652/00653/02090/index.html?lang=en

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7 Repealed documents

RIR0000 / Leitfaden zu den technischen Schnittstellen-Anforderungen	Edition 1.0	(not published)
784.101.21 / RIR 0000 / Basis document	Edition 2.0	(August 2006)
784.101.21 / RIR 0000 / Basis document	Edition 2.1	(Jan 2007)
784.101.21 / RIR 0000 / Basis document	Edition 3.0	(May 2008)
784.101.21 / RIR 0000 / Basis document	Edition 4.0	(December 2008)

Biel-Bienne, 16.12.2010

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