Schweizerische Eidgenossenschaft
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Federal Department of Environment,
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Frequency Management

Technical interface regulation 784.101.21 / RIR 0000

Basis document

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Geographical scope:

Schweiz, Suisse, Svizzera, Switzerland

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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 rules on the use of the radio frequency spectrum (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 the offering, making available on the market, putting into service, installation and operation of radiocommunication equipment in Switzerland and in the Principality of Liechtenstein.

2 Legal basis (Switzerland)

The technical interface regulations are based on art. 25, 31 and 62 of the Swiss Telecommunications Act (FMG; SR 784.10), on art. 3, 8 and 9 of the Ordinance on the Use of the Radio Frequency Spectrum (VNF; SR 784.102.1), the Ordinance of OFCOM on the Use of the Radio Frequency Spectrum (VVNF; SR 784.102.11) as well as on art. 3 of the Ordinance on Telecommunication Equipment (FAV; SR 784.101.2). The technical interface regulations are published in annex 2 of the Ordinance of OFCOM on Telecommunication Equipment (VFAV; SR 784.101.21). They can be obtained from the OFCOM, Zukunftstrasse 44, P.O. Box, 2501 Biel-Bienne, or consulted at the internet address: www.ofcom.ch > OFCOM > Legal Framework > Practical implementation > Appliances and installations > Technical interface regulations (RIR).

3 Legal basis (Principality of Liechtenstein)

The present technical interface requirements (RIR) are based on art. 31 et seq. of the Communications Act of 17 March 2006 (LR 784.10, in its current version) in combination with art. 82 et seq. of the Ordinance concerning Means of Identification and Frequencies in the Field of Electronic Communication of 8 May 2007 (LR 784.101.8, in its current version) and art. 28, 29 of the Ordinance concerning tasks and authorization of the administration in area of electronic communication of 3 April 2007 (LR 784.101.4, in its current version) and art. 4 para. 1 part ‘b’ and protocol II of agreement between the government of Principality of Liechtenstein and Parliament of Switzerland on matters regarding telecommunication area (LR 0.784.189.101.1, in its current version).
They also rely upon art. 3 of the Swiss Ordinance on Telecommunications Installations of 14 June 2002 (SR 784.101.2) in virtue of the Customs Treaty regarding the direct applicability of certain Swiss regulations of 26 March 2013 (LR 170.551.631, in its current version).

4 Structure of the technical interface regulations (RIR)

The structure of the technical interface regulations follows the guidance document of the European Commission:
"Notification of radio interface specifications and radio equipment classes, Notification template and guidance, December 2017. Endorsed by TCAM and RSC".
The designation of radio services and applications are in conformance with the document:
"ECO Frequency Information System (EFIS)".

5 Information fields in the technical interface regulations (RIR)

Normative part

No.	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.	

No.	Parameter	Description	Comments
7	**Transmit power / Power density**	The maximum transmit power (upper power limit), is normally specified in radiated power or power density (e.r.p., e.i.r.p., 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.

No.	Parameter	Description	Comments
9	**Authorisation regime** (rules on the use of the radio frequency spectrum)	This field reflects the rules on the use of the radio frequency spectrum. The radio frequency spectrum may be used freely or in compliance with certain rules. Switzerland: • **License required**: Radio licence issued by OFCOM or ComCom is compulsory. • **Notification**: Prior notification to OFCOM is required. • **Radio operator certificate**: Certificate of competence is required. • **License exempt**: Free use of frequencies in compliance with technical regulations. Principality of Liechtenstein • **Individual assignment**: Individual assignment is required. • **General authorisation**: General authorisation is available.	Here you can find further information, such as time or geographical restrictions on the use of a radio installation. (e.g. use within buildings, radio astronomy locations, airfield, use in aircraft above a certain flight altitude, etc.) Explanations regarding a required registration (e.g. as a telecommunications service provider) can also be listed here. Certain uses of the radio frequency spectrum can be granted exclusively on a NIB / NPB (non-interference basis / non-protected basis) or on an exclusive/non-exclusive basis.
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 2014/53/EC. (Refer to „Anhang 1, Verordnung des BAKOM 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. National technical Standards for radio equipment are also specified here. These are available on the internet at the following address: www.bakom.amin.ch > OFCOM > Organisation> Legal framework > Practical implementation > Appliances and installations > Standards	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

No.	Parameter	Description	Comments
12	**Planned changes**	Any planned changes or indication of evolution	
13	**Reference**	Standards on the efficient use of the frequency spectrum. CEPT / ECC Decisions or Recommendations.	Only the version(s) of the Standard(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. Also mentioned are Non-Harmonised Standards covering the efficient use of the spectrum. (In accordance with the guidance from WG-FM #89 for the ECA table and ERC Report 25.) Technical Standards for radio equipment (see no. 11) have the same significance for Switzerland and Liechtenstein as a Harmonised Standard and are also specified here.
14	**Notification number**	Identification number of RIR notification to EU, EFTA and/or WTO.	
15	**Remarks**	EMC Standards, other standards and references (ITU, ECC Reports, etc.) in relation to use of the spectrum. Additional information	

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:
https://www.bakom.admin.ch/bakom/en/home/frequenzen-antennen/national-frequency-allocation-plan/explanatory-notes-and-abbreviations.html

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)
784.101.21 / RIR 0000 / Basis document	Edition 5.0	(January 2011)
784.101.21 / RIR 0000 / Basis document	Edition 6.0	(January 2013)
784.101.21 / RIR 0000 / Basis document	Edition 7.0	(May 2013)
784.101.21 / RIR 0000 / Basis document	Edition 8.0	(June 2016)
784.101.21 / RIR 0000 / Basis document	Edition 8.1	(January 2017)
784.101.21 / RIR 0000 / Basis document	Edition 9.0	(August 2018)

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