



Annex 5.4 to the Ordinance of 26 May 2016 of the Federal Office for Communications (OFCOM) on Telecommunications Equipment (CC 784.101.21/5.4)

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## Technical and administrative regulations

regarding

**radio equipment that is intended in order to safeguard public security to be operated by the authorities: tracking and monitoring systems and data and voice radio communications equipment**

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English is not an official language of the Swiss Confederation. This translation is provided for information purposes only and has no legal force.

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## 1 General

These technical and administrative regulations (TAV) constitute the contents of Annex 5.4 of the VFAV [3] (cf. Art. 4 and 5 VFAV). They are based on Article 32a TCA [1] and Article 26 paragraph 5 and Article 27 paragraph 1 FAV [2].

The purpose of these regulations is to define the type approval requirements for tracking and monitoring systems and for data and voice radio communications systems that fall within the scope of Article 6, paragraph 2 FAV [2] in such a way that communications traffic and broadcasting within and outside of the operating frequency bands are not affected. The operating conditions, in particular the operating frequencies and transmitting powers are defined in the operating authorisation in accordance with Articles 53 to 56 VNF [4].

These regulations are applied only if no equipment is available on the market which meets the regulations of the FAV and which performs the same purpose (Art. 6 para. 2 FAV [2]). If this is the case, the type approval of tracking and monitoring systems as well as data and voice radio communications equipment is one of the conditions for the making available on the market (Art. 26 para. 1 FAV [2]).

### 1.1 Scope

These technical and administrative requirements apply to tracking and monitoring systems and to data and voice radio communications equipment that fall within the scope of Article 6, paragraph 2 FAV [2]. They do not apply to jamming transmitters (see VFAV [3], Annex 5, TAV 5.2 and TAV 5.3).

### 1.2 References

- [1] CC 784.10  
Telecommunications Act of 30 April 1997 (TCA)
- [2] CC 784.101.2  
Ordinance of 25 November 2015 on Telecommunications Installations (FAV)
- [3] CC 784.101.21  
OFCOM Ordinance of 26 May 2016 on Telecommunications Installations (VFAV)
- [4] CC 784.102.1  
Ordinance of 18 November 2020 on Use of the Radio Frequency Spectrum (VNF)

All legislative texts with CC references are published in the systematic compilation of federal legislation and can be consulted on the <https://www.fedlex.admin.ch/> website. They can also be obtained from the Federal Office for Buildings and Logistics (FOBL), CH-3003 Bern.

The technical and administrative regulations can be obtained from the Federal Office of Communications, Zukunftstrasse 44, P.O. Box, 2501 Biel/Bienne, Switzerland, or from [www.bakom.admin.ch](http://www.bakom.admin.ch) > OFCOM > Legal framework > Practical implementation > Appliances and installations > Other regulations.

### 1.3 Abbreviations and definitions

EIRP	Effective isotropically radiated power
EMC	Electromagnetic compatibility
ERP	Effective radiated power
HF	High frequency
IMSI	Internationally Mobile Subscriber Identity
OFCOM	Federal Office of Communications
RIR	<a href="#">Technical Interface Regulations</a>
tracking and monitoring systems and data and voice radio communications equipment	Depending on the context, other words with the same meaning are used in this document: radio equipment or equipment

## 2 General requirements

The following requirements must be fulfilled for the type approval of tracking and monitoring systems and data and voice radio communications equipment:

- Tracking and monitoring systems and data and voice radio communications equipment must correspond to the current state of the art and ensure efficient use of the spectrum.
- The equipment must be measured in all operating modes. Alternatively, the equipment may be measured against the worst case; in this case, the worst case must be declared and justified as such.

## 3 Type approval

### 3.1 General

Anyone wishing to offer on the market tracking and monitoring systems or data and voice radio communications equipment described under section 1.1 must initiate an approval process by submitting an application to OFCOM using the form provided on the OFCOM website. Type approval documents must also be submitted. Once all the necessary documents have been submitted, OFCOM will examine whether the conditions for approval have been met and, if so, grant approval for the equipment in question.

### 3.2 Type approval documents

The following information and documents must be submitted:

- the intended use(s);
- a declaration by the manufacturer that the equipment has undergone a conformity assessment procedure and meets the essential requirements for electrical safety and health (Art. 26 para. 2 FAV [2]).
- the following parts of the technical documentation according to Article 14 FAV [2] concerning EMC requirements and frequency spectrum use requirements (Art. 26, para. 3, FAV [2]):
  1. A general description of the radio equipment comprising:
    - 1.1. photographs or illustrations showing external features, markings and internal layout,
    - 1.2. versions of software or firmware affecting compliance with essential requirements concerning EMC and frequency spectrum use;
    - 1.3. user instructions referred to in Article 19, paragraph 1 FAV [2];
    - 1.4. installation instructions.
  2. A list of the technical standards in accordance with Article 31 paragraph 2, letter a TCA, applied in full or in part, and, where those standards have not been applied, descriptions of the solutions adopted to meet the essential EMC and frequency spectrum use requirements as set out in the FAV [2], including a list of other relevant technical specifications applied; in the event of partly applied standards in accordance with Article 31, paragraph 2, letter a TCA, the technical documentation shall specify the parts which have been applied;
  3. Test reports on EMC requirements and frequency spectrum use.

OFCOM may request the following documents if they are necessary for the approval of the equipment:

4. Conceptual design and manufacturing drawings and schemes of components, sub-assemblies, circuits and other relevant similar elements;
5. Descriptions and explanations necessary for the understanding of those drawings and schemes and the operation of the radio equipment.

The correspondence address is as follows:

Federal Office of Communications  
Radio Monitoring und Equipment  
RA/MK  
Zukunftstrasse 44  
CH-2501 Biel/Bienne

### **3.3 Granting of type approval**

After an examination of the documents, OFCOM grants the applicant type approval if the following conditions are met:

- there is no compliant equipment on the market which serves the same purpose.
- all parameters which are defined in the applicable harmonised technical standards have been measured in accordance with the measuring methods described therein (section 4.3.1).
- if the limit values of the applicable harmonised technical standards and/or interface requirements (RIR) are not complied with, this is to be justified in writing. This non-compliance must be justified by the fulfilment of the purpose of the equipment (section 4.3.1).

### **3.4 Type approval number**

The type approval number is communicated to the applicant by OFCOM and must be attached to every item of equipment which is identical in terms of hardware and software.

### **3.5 Modifications to approved equipment**

Any modification of approved equipment that could change radio parameters must be announced in advance and approved by OFCOM. If necessary, a new approval procedure must be carried out.

## **4 Content of test reports**

### **4.1 Identification of the equipment**

The test reports must precisely identify the measured equipment by means of the following information:

- identification information referred to in Article 18, paragraph 4 FAV [2]: type, batch, serial number or any other element allowing its identification;
- make and type of all components involved in the system (RF cable, antennas, filters, amplifiers, controllers, detectors, circulators, combiners, isolators, etc.);
- hardware version numbers/software version numbers;
- photos.

### **4.2 Technical data**

The test reports must contain the following technical data of the equipment declared by the manufacturer:

- frequency ranges;
- radiated transmitting powers (ERP, EIRP);
- description of the function of the equipment;
- occupied bandwidth, duty cycle, channel spacing, beam angle, adjacent channel transmission, modulation, undesirable spurious emissions, etc.

## **4.3 Use of the frequency spectrum and EMC**

### **4.3.1 General**

Use of the frequency spectrum and EMC must be recorded in the form of a test report. The parameters to be measured and the measurement methods to be applied are defined in the applicable harmonised technical standards.

The test reports must contain a decision (PASS/FAIL) as to whether the measured values comply (PASS) or do not comply (FAIL) with the respective applicable limits in the applicable harmonised technical standards.

In the event of failure to comply with one or more limit values, the measurements must be accompanied by an explanation which states the reasons for failure to comply (e.g. because the physical dimensions do not permit the incorporation of a frequency filter of sufficient quality). The measurements must also be accompanied by an explanation if the parameters of the technical interface regulations (RIR) are not complied with.

### **4.3.2 IMSI catchers**

The same technical standards and technical interface regulations (RIR) apply to IMSI catchers in the sense of section 4.3.1 as to mobile radio base stations. These can be found at the following link: [www.bakom.admin.ch](http://www.bakom.admin.ch) > OFCOM > Legal framework > Practical implementation > Appliances and installations > Technical interface regulations (RIR) > RIR0501.

## **5 Requirements for the test laboratory**

The type approval measurements must be carried out by a recognised test laboratory in accordance with Article 17 FAV [2] (VFAV [3], Annex 4, section 1.2). The test laboratory that carries out the type approval measurements must have the necessary qualifications and have measuring capabilities in accordance with the harmonised European standards that apply to the radio equipment requiring type approval. This relates to the aspects of efficient use of the frequency spectrum and to the EMC.

Biel, 11 November 2021

Federal Office of Communications OFCOM

Bernard Maissen  
Director