

Use of the 5470-5725 MHz Band (WAS/RLAN), and the 5150 - 5250 MHz and 5250 - 5350 MHz Bands with General Licences OD-201a, OD-85b, and OD-86b

The Croatian Regulatory Authority for Network Industries (HAKOM) is responsible for the rational and efficient management of the RF spectrum, including the 5 GHz radio frequency band, which includes frequencies in the ranges of 5150 to 5250 MHz, 5250 to 5350 MHz, and 5470 to 5725 MHz.

According to [the RF Spectrum Allocation Table](#), which is aligned with relevant European regulations, these frequency bands are used simultaneously to operate different radio services and applications, including WAS (Wireless Access Systems)/RLAN (Radio Local Area Network) systems.

Special attention should be given to the 5470 – 5725 MHz frequency band, which, is also used for meteorological and maritime radars in addition to WAS/RLAN systems, which may lead to mutual interference.

General licences typically impose certain limitations on the parameters of radio systems to minimise mutual interference and their impact on other systems.

HAKOM has granted the following general licences for WAS/RLAN systems in the 5 GHz frequency bands:

[OD-85b \(5150-5250 MHz\)](#)

[OD-86b \(5250-5350 MHz\)](#)

[OD-201a \(5470 – 5725 MHz\)](#)

The general licence for WAS/RLAN radio devices sets limitations designed to allow the operation of as many of these devices as possible simultaneously, while reducing the possibility of interference with other systems sharing the frequency band, such as radars. The parameters specified in the general licence are carefully determined and are the result of detailed compatibility analyses conducted at the European level. Their application should also maximise the number of WAS/RLAN radio devices that can operate without interference at the same time. WAS/RLAN systems in the 5 GHz bands must be used exclusively within the parameters and conditions prescribed by the aforementioned general licences.

General Licence [OD-201a \(5470 – 5725 MHz\)](#) Prescribes the Following Restrictions for WAS/RLAN Systems:

- Mandatory use of Dynamic Frequency Selection (DFS), with mandatory detection of the presence of other system signals (radars).
- Maximum allowed calculated power (Effective Isotropic Radiated Power – EIRP) of 1W, or 0.5W if Transmit Power Control (TPC) is not used. It is important to note that the maximum calculated power refers not to the device power, but to the calculated

power at the antenna output (the antenna gain, which increases with more directional antennas, is added to the output power of the device).

As part of the modernization project for radar meteorological measurements in Croatia, the Croatian State Hydrometeorological Institute has commissioned six new radar stations across the entire Republic of Croatia that operate in the 5470 – 5725 MHz frequency band. Additionally, meteorological radars are used in neighbouring countries, and their uninterrupted operation must be ensured.

To ensure the uninterrupted operation of these radars and to improve market monitoring, it was necessary to amend the conditions for using the 5470 – 5725 MHz frequency band, and for this purpose, a new general licence, [OD-201a](#), was granted. The issuance of licence [OD-201a](#) invalidated the previous general licence OD-87.

Granting a General Licence [OD-201a](#) Introduced the Following Obligations:

Obligation to report the installation of radio stations to HAKOM via the [e-Prijava RP](#) application for radio station owners who use radio stations under the general licence [OD-201a](#) in outdoor environments. More information on the registration process can be found on our website. The registration process is very simple and does not create any financial obligations for the radio station owner.

HAKOM will assign a number to each registered radio station, which will be sent to the user of the radio station. This number must be placed at the beginning of the SSID (Service Set Identifier), while the remaining free spaces in the SSID can be used arbitrarily. When submitting the registration, the radio station owner can also provide the MAC (Medium Access Control) address for each individual radio station. In this case, there is no need to use the assigned HAKOM numbers within the SSID, as the registered MAC address will be used to identify each individual radio station.

Radio station owners who already use the radio station following the general licence OD-87, granted on 20 March 2014, are required to bring their spectrum usage into compliance with the provisions of general licence [OD-201a](#) by 31 December 2018. (Previously, the obligation to register applied only to radio stations used by service providers).

Regarding the obligation to identify the radio station via the SSID, HAKOM will notify owners of registered radio stations about the assigned number.

Failure to comply with the conditions of the general licence, pursuant to Article 170, paragraph 1, point 60 of the Electronic Communications Act (Official Gazette no. 76/22 and 14/24, hereinafter: ZEK), constitutes a serious violation of the ZEK.

Meteorological radars play a crucial role in providing warnings about immediate severe weather conditions that could endanger the population and damage economic infrastructure. They are an important element in protecting lives and property during storm floods, severe storms, and other natural disasters, such as those recently affecting Europe and Croatia. Therefore, meteorological radars should not be exposed to interference risks. For these reasons, the authorities responsible for market supervision and spectrum usage control are conducting a joint international compliance monitoring campaign for 5 GHz WAS/RLAN devices.

Considering the above, and in order to ensure the uninterrupted operation of systems using this RF spectrum, particularly meteorological radars, HAKOM will conduct enhanced monitoring and control of radio stations operating under general licence [OD-201a](#) throughout the Republic of Croatia, with particular emphasis on enforcing the previously mentioned restrictions in the general licence.