

Terms of Use for Non-Public Networks (NPNs)

On 1 January 2024, Switzerland opened up the frequency range 3,400–3,500 MHz to mobile non-public networks (private networks or campus area networks). The Terms of Use were first published on 5 March 2024 and have been revised to better reflect market requirements. Below is a summary of the Terms of Use for NPNs applicable as of April 1, 2026.

Radiocommunications licence, period of validity and fees

- A radiocommunications licence is required to operate an NPN. OFCOM considers applications for NPNs and sets out the specific terms of use in each individual licence.
- The radiocommunications licence is initially valid for five years. Thereafter it is automatically renewed for one calendar year at a time, provided that telecommunications legislation and the regulations governing the use of the radio frequency spectrum (in particular the national frequency allocation plan and Radio Frequency Spectrum Ordinance) do not preclude renewal (Art. 20 para. 2 RFSO).
- The licensee may surrender the radio licence at any time from the end of the calendar month by notifying OFCOM in writing in advance.
- It is also possible to apply for a radio licence for temporary use (e.g. for an event). The period of validity is determined on a case-by-case basis.
- The fees for processing an application and issuing a radiocommunications licence are charged at an hourly rate of CHF 210.00. The annual administration fees are CHF 72.00 per licence, and the annual radiocommunications licence fees are CHF 48.00 per allocated bandwidth of 1MHz or part thereof.

Bandwidths

The 3,400–3,500MHz frequency spectrum is available for NPNs. OFCOM generally allocates the bandwidths requested in the application. In order to ensure efficient use of the available spectrum, applicants are requested to apply only for as much of the spectrum as they actually require. The available bandwidth of 100MHz is allocated in channel bandwidths of 10MHz.

Outside buildings, as a rule no more than 50MHz can be permanently allocated (see 'Field strength limits' section below).

Spatial extent

The NPN access is restricted to a geographically limited and clearly defined area (usually in the form of a polygon), such as a company premises or a hospital or university campus. An NPN cannot be created over larger geographical areas such as cities, conurbations, rural areas and transport routes. Frequency usage within an NPN is limited to terrestrial applications (see 'Drones' section below).

Technical interface requirements

The technical interface regulation [RIR0501-33](#) applies to frequency use.

Transmitted power

For transmitted power $\geq 6W$ ERP, the same construction and environmental requirements apply to NPNs as to public mobile networks. Furthermore, the provisions of the Ordinance on Protection against Non-Ionising Radiation (NIRO) apply, namely:

- Ordinary approval procedure in the canton/commune.
- Obligation to report authorisation data and operating data (in accordance with NIRO and radiocommunications licence) to the antenna database.
- Parts of the operating and licensing data are made publicly available on OFCOM's geoportal.

The defined maximum limits for field strength must also be observed for transmitted power above 6W ERP. (See 'Field strength limits' section below).

Field strength limits

A basic distinction is made between:

- NPNs that are operated exclusively within buildings (indoor NPNs)
- NPNs that are operated partially or entirely outside buildings (outdoor NPNs)
- and NPNs that are operated both inside and outside buildings (outdoor-indoor NPNs).

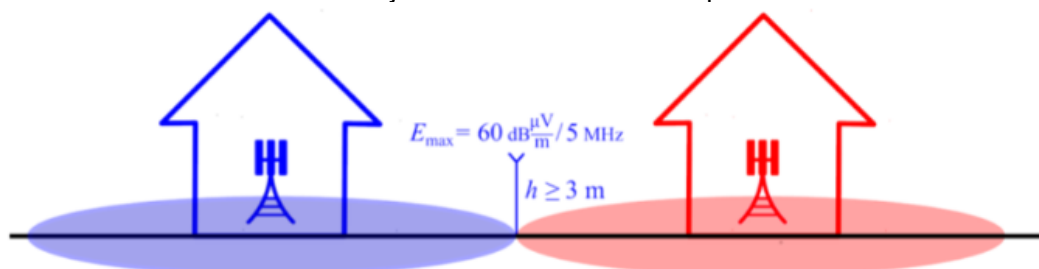
The NPN infrastructure must be configured in such a way that the defined limit values are adhered to. Appropriate options for mitigating interference must be considered, for example establishing suitable antenna parameters (location, mast height, directional characteristics, antenna pitch and tilt, and adjustments to transmitted power).

OFCOM may permit exceptions to the required distances if the interference ranges in the specific case allow.

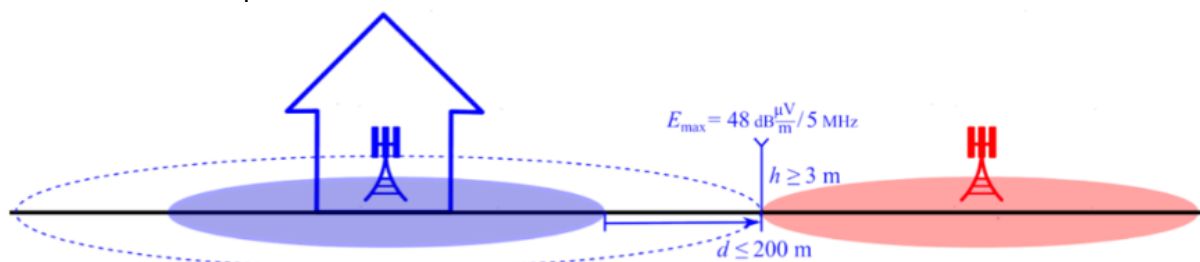
Indoor NPNs:

The following two field strength limits apply to indoor NPNs:

- $60\text{dB}\mu\text{V}/\text{m}/5\text{MHz}$, to be maintained at the allocated NPN boundary, measured outdoors at a height of $\geq 3\text{m}$. This ensures that adjacent indoor NPNs can operate.



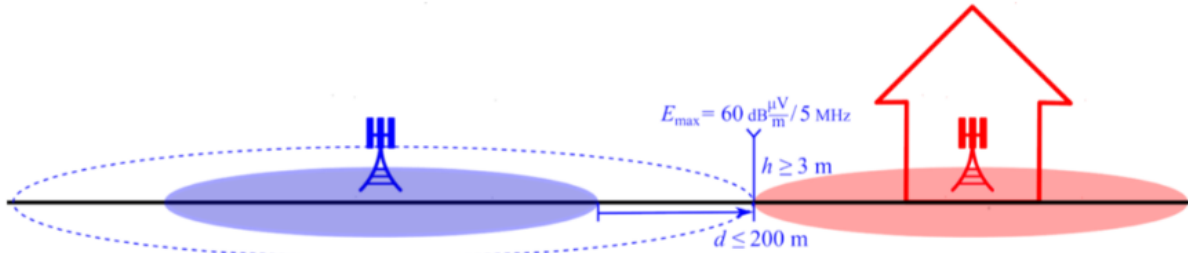
- $48\text{dB}\mu\text{V}/\text{m}/5\text{MHz}$, at a distance of max. 200m from the campus boundary, measured outdoors at a height of $\geq 3\text{m}$. This ensures that neighbouring outdoor NPNs outside a protective belt of 200m can operate.



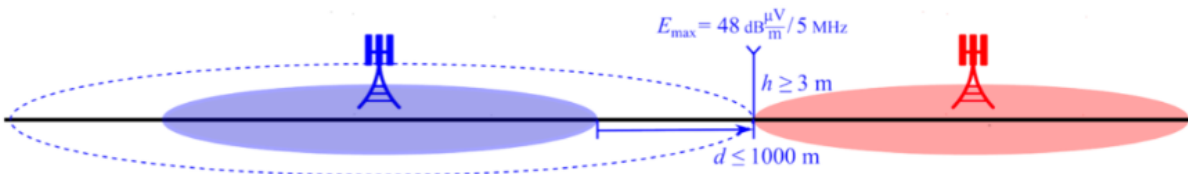
Outdoor NPNs:

The following two field strength limits apply to outdoor NPNs:

- 60dB μ V/m/5MHz, at a distance of max. 200m from the campus boundary, measured outdoors at a height of ≥ 3 m. This ensures that neighbouring indoor NPNs outside a protective belt of 200m can operate.



- 48dB μ V/m/5MHz, at a distance of max. 1m from the campus boundary, measured outdoors at a height of ≥ 3 m.



The following bandwidth limitation applies to adjacent outdoor NPNs:

- The maximum assignable frequency bandwidth for outdoor NPNs is usually 50MHz. Additional bandwidth may be allocated in exceptional cases. This may be revoked at any time in favour of an NPN located within the defined protection zones for which a new licence application has been submitted. This ensures that any adjacent outdoor NPN can operate.
- In such cases, no compensation is paid under Article 24e of the Telecommunications Act (TCA).

Adjacent outdoor NPNs can be operated as long as common-channel interference can be avoided by sharing the bandwidth between the outdoor NPNs or by allocating non-overlapping frequency ranges. If overlapping cannot be avoided (e.g. if there are more than two adjacent NPNs or if the required bandwidth exceeds the available bandwidth), only frequency ranges beyond a protective distance of 1km between the outdoor NPNs concerned can be allocated.

Outdoor-Indoor NPNs:

The terms of use for outdoor NPNs apply to NPNs used both inside and outside buildings (outdoor-indoor NPNs) (limit values and bandwidth limited to 50MHz; see section on outdoor NPNs above). If additional bandwidth is required for use within buildings only, this can be allocated under the terms of use for indoor NPNs.

TDD synchronisation

- NPNs must be fully synchronised with public mobile networks to avoid interference.
- The TDD framework of public MNOs in Switzerland must be adopted.
- Along the French border, downlink symbol blanking (DSB) must be activated or field strengths must be limited to a maximum of 0 dBµV/m/(5MHz) in order to protect applications in France.

Die drei Betreiber einigen sich auf folgende Parameter zur TDD-Synchronisation:

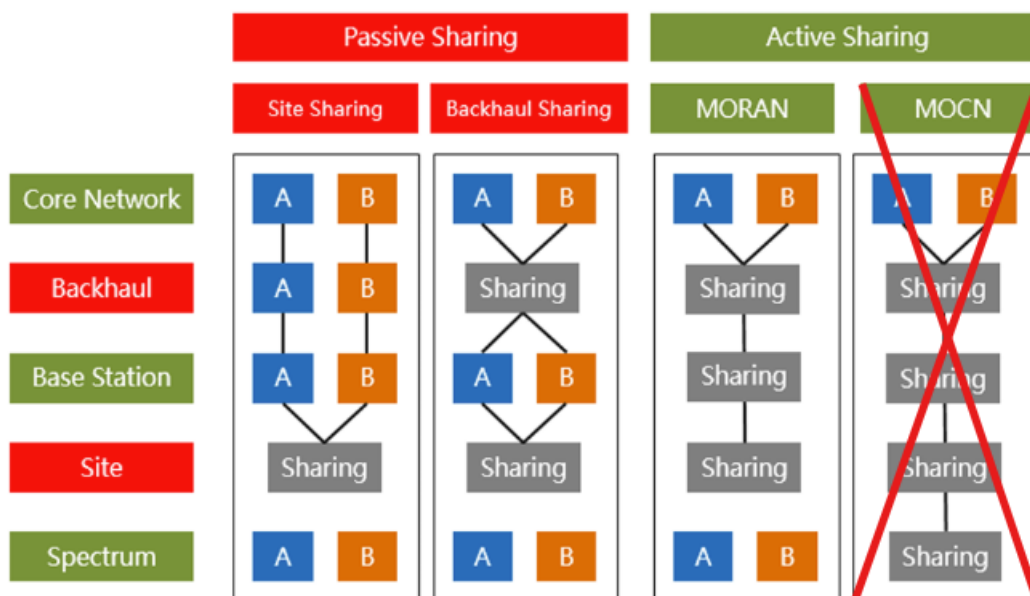
- TDD Pattern: 4:1
- Subframe Structure von DDDSU
- Slot Format 0 für „D“, Format 1 für „U“ und Format 32 für „S“ (ETSI TS 138213 v15, Table 11.1.1-1)

PTP Phasen Synchronisation:

- GNSS
- Switching Periode of 2.5 ms
- Time Reference = UTC (without offset)
- Jeder 100ste Radioframe startet mit einer vollen Sekunde
- +/- 1.5 µs time accuracy

Shared use of NPN infrastructure (network sharing)

- Sharing based on the Multi Operator RadioAccess Network (MORAN) concept is permitted: infrastructure can be used to transmit NPN and MNO signals simultaneously. If the infrastructure is used for MORAN, OFCOM must be notified of all subscribers and licensees.
- Sharing based on the Multi Operator Core Network (MOCN) concept is not permitted.
- In the 3,400–3,500MHz frequency range, only radio signals with the Mobile Country Code (MCC) 999 are permitted (see 'Addressing resources/PLMN' section below).



Network Resource Sharing Models (Source: GSMA)

Telecommunications services

- In accordance with Article 2 letters a and b of the Ordinance on Telecommunication Services (OTS, SR 784.101.1), any person transmitting data within a building or on a property, on two adjacent properties or on two properties opposite each other that are separated by a road, path, railway line or watercourse is not deemed to provide a telecommunications service. If an NPN is operated under these conditions, or if information is transmitted in an NPN in this sense, no telecommunications service is provided.
- Any existing telecommunications rights of a telecommunications service provider (TSP) cannot be asserted by that provider in connection with the operation of an NPN. This applies both to TSPs registered with OFCOM and to non-registered TSPs.
- NPNs may only be used in the form of a closed user group (CUG).¹
- Public telephone services (landline or mobile) must be accessed from the NPN via a registered TSP. Among other things, this ensures access to the emergency services.
- Besides internal communication services, NPNs usually also require access to the internet (e.g. for the synchronisation of cloud-based systems, cash register systems, ticketing, etc.). The frequencies may be used for such purposes provided that the network is intended exclusively for local CUGs. Access to the internet is restricted to these company-defined devices. As in the case of public telephone services, internet access must be provided by a registered TSP.
- It is not permitted to provide services to third parties via an NPN (e.g. internet access for visitors at airports or concert venues, etc.).
- Frequencies may be used by local third parties (natural and legal persons conducting business within the campus boundaries, e.g. baggage handling at airports or security services at concert events) under the existing radiocommunications licence, provided that radio equipment is operated via the licence holder's network (without their own base stations) and that operation is controlled centrally via the licence holder's network. The exception under Article 8 letter g RFSO applies to the terminal equipment used: a separate radiocommunications licence for use of frequencies is not required for radio equipment that transmits under the control of a network on that network's licensed frequencies.
- The subscribers to an NPN are not listed in the radiocommunications licence. However, the licence holder must be able to provide OFCOM with a list of all subscribers at any time upon request.

Addressing resources/PLMN

OFCOM does not assign specific addressing resources (e.g. E164 numbering plan, MNC etc.).

In accordance with Appendix III of Recommendation ITU-T E.212,² NPNs exclusively use the Shared Mobile Country Code (MCC) 999 for internal use within a private network.

A two- or three-digit MNC may be freely selected for the NPN.

¹ A closed user group is a group of users with exclusive access to a given non-public network (NPN). Only registered or authorised devices and users (e.g. with dedicated SIM cards) may connect to this private network.

² https://www.itu.int/rec/dologin_pub.asp?lang=e&id=T-REC-E.212-202406-I!!PDF-E&type=items

Drones

Drones³ may not be operated in the 3,400MHz band for outdoor applications.

BEM (block edge mask) and out-of-band transmissions below 3,400MHz

- The technical requirements for BEMs specified in [ECC/DEC/\(11\)06](#) Annex 2 must be complied with.
- Below a bandwidth limit of 3,400MHz, out-of-band transmissions from base stations must not exceed the value specified in ECC Decision (11)06 / Annex 2 / Table 5. The actual value is stated in the radio licence. For non-AAS BS, the upper limit is -50dBm/MHz EIRP.

Contact

Technical enquiries relating to NPNs should be sent to the following address:

freqmobil@bakom.admin.ch

³ [Drones and model aircraft](#)