
Band introduction

32 GHz frequency band

Prepared by:

National Media and Infocommunications Authority

14 August 2025

Table of Contents

Summary	4
1. Introduction	5
2. Regulation of the 32 GHz frequency band.....	7
2.1. International regulation.....	7
2.1.1. ITU	7
2.1.2. CEPT	7
2.1.3. European Union.....	9
2.2. National regulation	9
2.2.1. Use of the 32 GHz frequency band.....	9
2.2.2. Radio spectrum management requirements	10
2.2.3. Conditions for obtaining the right to use radio spectrum and for using the band	10
2.2.4. Rules for the coexistence of user blocks.....	11
3. Current use of the 32 GHz frequency band	12
4. Interference issues related to adjacent frequency bands.....	14
4.1. The 31.5–31.8 GHz frequency range.....	14
4.2. The 33.4–35.2 GHz frequency range.....	14
5. Cross-border use of radio spectrum and international coordination	15
6. Radio spectrum fees	16

Summary

The availability of the 31.8–33.4 GHz frequency band (hereinafter referred to as the '32 GHz frequency band') for fixed service systems has been made necessary by the EU obligations to utilise the 26 GHz frequency band for MFCN¹ purposes.

In order to make the 26 GHz frequency band available for MFCN purposes, the National Media and Infocommunications Authority (hereinafter referred to as the 'NMHH') opened the 32 GHz frequency band (31.8–33.4 GHz) to ensure that sufficient spectrum will remain available for the operation of backhaul systems in the context of block management after the expiry of the 26 GHz fixed service rights. As a result of the competitive procedure conducted in the first half of 2023, three operators acquired radio spectrum usage rights for a total of 18 lots (2×504 MHz) out of the 24 duplex lots (2×28 MHz spectrum) offered by the NMHH. After the procedure, six 28 MHz duplex base blocks (2×168 MHz spectrum in total) were left in the band.

In this hearing, we will reassess the needs regarding the use of the sub-band in the 32 GHz frequency band not yet awarded.

¹ MFCN: Mobile/Fixed Communication Network

1. Introduction

The WRC-19 examined the potential for global use of the 26 GHz (24.25–27.5 GHz) and 32 GHz (31.8–33.4 GHz) frequency bands for 5G systems. On the basis of the technical studies carried out, the WRC-19 identified the entire 26 GHz frequency band (24.25–27.5 GHz) for global allocation to the mobile service and for mobile applications (IMT²), while the 32 GHz band was not globally allocated or identified for such purposes.

According to NMHH Decree 7/2015 (XI.13.) on the national frequency allocation and on the rules of using frequency bands (hereinafter referred to as the 'NFFF'), fixed point-to-point and point-to-multipoint systems can currently operate in the 24.5–26.5 GHz frequency band. Network operators have acquired the right to use radio spectrum through auction procedures and mainly implement backhaul (typically point-to-point) links in the frequency band. Radio spectrum usage rights expire in 2027.

At the European level, it was already decided before the 2019 World Radiocommunication Conference (WRC³-19) that the 32 GHz frequency band is not recommended for 5G deployment due to compatibility issues with other services. In the meantime, EU decisions have been taken to lay the foundations for harmonised use of the 26 GHz frequency band for 5G. The NMHH has already stated that the introduction of 5G in the 26 GHz frequency band is only possible, even if market demand exists, if a different frequency band is opened for existing fixed service use. This was the purpose of the 2023 auction procedure for the 32 GHz frequency band.

In this way, operators who have the right to use radio spectrum will be able to deploy systems – which may even be suitable for making connection between backbone network and new generation base stations – at the national level according to their specific needs. With the increasingly advanced technologies used in microwave systems, new systems can be served in a flexible way as a complement to the optical network.

In order to prepare the tender procedure, the NMHH held a public consultation on 22 November 2022 on the draft documents of the auction procedure for the 32 GHz frequency band, where market participants were invited to express their views on the draft⁴. Following

² IMT: International Mobile Telecommunication

³ WRC: World Radiocommunication Conference

⁴https://nmhh.hu/cikk/233209/Felhivas_a_32_GHzes_frekvenciasav_radiospektrumhasznalati_jogosultsagai_targyaban_kiirt_arveresi_eljaras_dokumentaciojanak_tervezeterol_tartando_konzultaciora_HIRDETMEY

the consultation, and taking into account the comments⁵⁶, the tender documents⁷ were finalised and, in the first half of 2023, the NMHH conducted the auction procedure for the 32 GHz frequency band.

The NMHH Office closed the auction procedure for the 32 GHz frequency band usage rights on 23 May, as a result of which three operators obtained the right to use radio spectrum for a total of 18 lots (2×504 MHz spectrum) out of the 24 duplex lots (2x28 MHz spectrum) auctioned⁸.

⁵https://nmhh.hu/cikk/233999/Osszefoglalo_a_32_GHzes_frekvenciasav_radiospektrumhasznalati_jogosultsaga_targyaban_kiirni_tervezett_arveresi_eljaras_dokumentaciojanak_tervezete_kapcsan_2022_november_22en_megtartott_konzultacirol

⁶https://nmhh.hu/cikk/233997/Kerdesek_es_valaszok_A_32_GHzes_frekvenciasav_frekvenciahasznalati_jogosultsagai_targyaban_tervezett_arveresi_eljaras_dokumentaciotervezeterol_megtartott_konzultacio

⁷https://nmhh.hu/cikk/236637/A_32_GHzes_frekvenciasav_radiospektrumhasznalati_jogosultsaga_targyaban_kiirt_arveresi_eljaras_MODOSITOTT_DOKUMENTACIOJA

⁸ https://nmhh.hu/cikk/239155/Sikeress_volt_az_NMHH_32_GHzes_frekvenciaertekesitese

2. Regulation of the 32 GHz frequency band

2.1. International regulation

2.1.1. ITU

The table below shows the allocation according to the RR⁹ for the 31.8–33.4 GHz frequency band based on Annex 1 of the NFFF.

	A	B	C	D
1	ALLOCATION TABLE FOR RR FREQUENCY BANDS			ALLOCATION VALID FOR HUNGARY
2	REGION 1	REGION 2	REGION 3	ACCORDING TO RR
519	31.8–32 GHz	FIXED 5.547A RADIO NAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547B 5.548		31.8–32 GHz FIXED 5.547A RADIO NAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548
520	32–32.3 GHz	FIXED 5.547A RADIO NAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547C 5.548		32–32.3 GHz FIXED 5.547A RADIO NAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.548
521	32.3–33 GHz	FIXED 5.547A INTRA-SATELLITE RADIO NAVIGATION 5.547 5.547D 5.548		32.3–33 GHz FIXED 5.547A INTRA-SATELLITE RADIO NAVIGATION 5.547 5.548
522	33–33.4 GHz	FIXED 5.547A RADIO NAVIGATION 5.547 5.547E		33–33.4 GHz FIXED 5.547A RADIO NAVIGATION 5.547

1 – International allocation of the 32 GHz frequency band (RR)

[Source: NFFF Annex 1]

2.1.2. CEPT¹⁰

At CEPT level, Recommendation ERC/REC/(01)02¹¹ provides band and channel arrangement options for the use of fixed service systems (Figure 1). As shown in the figure, the channel bandwidths used must be multiples of 3.5 MHz. The layout remains the same for channels between 3.5 MHz and 28 MHz, but is modified for channels with a bandwidth of 56 MHz and above. The Recommendation was last amended in May 2019 to allow the use of 224 MHz bandwidth channels, which can be formed by combining two adjacent 112 MHz bandwidth channels. Hungarian regulations allow for the use of a maximum channel bandwidth of 112 MHz.

⁹ RR: Radio Regulation

¹⁰ CEPT: European Conference of Postal and Telecommunications Administration

¹¹ ERC/REC/(01)02: Preferred channel arrangements for fixed service systems operating in the frequency band 31.8–33.4 GHz

2.1.3. European Union

There are no harmonised EU rules for the frequency band. No harmonisation process has been started.

Even though there was an EU mandate¹² that identified the 32 GHz frequency band as one of the bands above 6 GHz that could be used for 5G and were selected for examination with regard to 5G deployment, it was not included among the so-called 5G pioneer bands. Based on the studies carried out in preparation for the WRC-19, CEPT did not support the introduction of 5G in the 32 GHz frequency band. As a result of the WRC-19 decisions, the 32 GHz frequency band was been identified for IMT, and therefore 5G deployment and EU harmonisation efforts are not expected in this band in the near future.

2.2. National regulation

2.2.1. Use of the 32 GHz frequency band

The applications that can be used in the 31.8–33.4 GHz frequency band are set out in Annex 2 of the NFFF, as shown in the following table:

	A	B	C	D	E	F	G	H
1	National allocation			Rules for the use of frequency bands				
2				Application		Document	Additional rule	
3308	31.8–33 GHz							
3309	FIXED	5.547 5.547A	P	1	K	32 GHz band fixed digital point-to-point systems	ITU-R F.1191-3 ERC/REC/(01)02 MSZ EN 302 217-2	Annex 3 Section 2.5 Annex 3 Section 2.13 Annex 3 Section 3.13 Annex 4
3310				1	K	32 GHz band digital point-to-multipoint systems	ERC/REC/(01)02, ECC/REC/(11)01 ETSI EN 302 326-2, MSZ EN 302 326-2 MSZ EN 302 326-3	Annex 3 Section 2.13 Annex 3 Section 3.13 Annex 4 The user station is exempted from individual licensing obligations.
3311				1	K	FWA		
3312				RADIO NAVIGATION	5.548	E	1	K
3313	SPACE EXPLORATION (far space) (space-to-Earth) (31.8–32.3 GHz)	5.548	P	1	T	Space research systems		
3314	33–33.4 GHz							
3315	FIXED	5.547 5.547A	P	1	K	32 GHz band fixed digital point-to-point systems	ITU-R F.1191-3 ERC/REC/(01)02 MSZ EN 302 217-2	Annex 3 Section 2.5 Annex 3 Section 2.13 Annex 3 Section 3.13 Annex 4
3316				1	K	32 GHz band digital point-to-multipoint systems	ERC/REC/(01)02, ECC/REC/(11)01 ETSI EN 302 326-2, MSZ EN 302 326-2 MSZ EN 302 326-3	Annex 3 Section 2.13 Annex 3 Section 3.13 Annex 4 The user station is exempted from individual licensing obligations.
3317				1	K	FWA		
3318				RADIO NAVIGATION		E	1	K

2 – National allocation and usage rules for the 32 GHz frequency band
[Source: NFFF Annex 2]

¹² <https://digital-strategy.ec.europa.eu/en/library/radio-spectrum-cept-mandates>

The 31.8–33.4 GHz frequency band is designated for common¹³ use on a primary basis by surface movement radars operating in the radio navigation service, but currently there is no actual use.

The 31.8–33.4 GHz frequency band is also designated for civil fixed digital point-to-multipoint and fixed-site digital point-to-point systems on a primary basis. Detailed technical rules and band usage conditions for fixed service applications are set out in Annex 3 of the NFFF. The regulation is based on the ERC/REC/(01)02 Recommendation on band arrangement and channel spacing and on specific rules for the 26 GHz frequency band. In defining band arrangement and base blocks, the NMHH used cases (a) and (b) of the band- and channel arrangement schemes indicated in Recommendation ERC/REC/(01)02 (Figure 1), taking into account the high probability of using higher bandwidth channels.

In addition, the 31.8–32.3 GHz sub-band is planned for use by civil space research systems (deep space, space-to-Earth) on a primary basis.

2.2.2. Radio spectrum management requirements

The technical and radio spectrum management requirements for the use of the 32 GHz frequency band are set out in Annex 3, Sections 2.5 and 2.13, of the current NFFF.

Point-to-point and point-to-multipoint systems with FDD access may be deployed in the 32 GHz frequency band in line with the NFFF, but, in the tender documents for the 2023 call for tenders, the NMHH limited the scope of applications to point-to-point connections. The duplex spacing is 812 MHz. The division of the frequency band into sub-bands is shown in Table 3 :

	A	B
1	Sub-band [MHz]	Designation of sub-band
2	31 800–31 871	lower guard band
3	31 871–32 543	lower block band
4	32 543–32 683	middle guard band
5	32 683–33 355	upper block band
6	33 355–33 400	upper guard band

3 – Division of the 32 GHz frequency band into sub-bands

[Source: NFFF Annex 3]

Guard bands shall not be assigned. The lower and upper block bands are divided into 24x28 MHz base blocks. A user block can consist of an integer number of base blocks.

2.2.3. Conditions for obtaining the right to use radio spectrum and for using the band

The conditions for the use of the 32 GHz frequency band for fixed service applications are set out in Annex 3, Section 2.13.4 of the NFFF.

¹³ In the case of common use allocations, the band can be used for both civil and non-civil purposes; however, the civil and non-civil spectrum management aspects must be coordinated.

	A	B
1	Subject of condition	Specification
2	Purpose of use	provision of electronic communications services, electronic communications operations
3	Method of authorisation	competitive procedure
4	Maximum value of frequency range quantity	a radio spectrum right holder may hold radio spectrum rights for up to six base blocks within the territorial extent of the radio spectrum right of use, unless otherwise specified in the tender documents; radio spectrum holders belonging to the same group of undertakings may jointly hold radio spectrum rights for up to six base blocks within the territorial extent of the radio spectrum right of use, unless otherwise specified in the tender document
5		if, after the end of a competitive procedure, a radio spectrum right holder or a group of radio spectrum right holders exceeds the maximum value of frequency range quantity, they are required to reduce the amount of frequency range available to them within 1 year of the date of the exceedance, at least to the maximum value of frequency range quantity
6	Minimum value of frequency range quantity	a radio spectrum holder must have the right to use the radio spectrum of at least two base blocks
7		if a radio spectrum right holder does not have the right to use at least two base blocks of radio spectrum, it must attain at least the minimum value of frequency range quantity within 1 year of the date of failing to reach the minimum value of frequency range quantity
8	Territorial extent of the radio spectrum right of use	if the right to use radio spectrum is acquired through a competitive procedure, a nationwide geographical area is allowed, and if it is acquired through a transfer, a smaller geographical area is allowed
9	Method of management	block allocation
10	Band reconfiguration	allowed
11	Secondary trading	radio spectrum right of use may be transferred or leased in whole or in part; partial transfer or lease of frequency may be per base block

* In deviation from the NFFF, in the tender documentation for the 2023 competitive tender procedure, the maximum amount of spectrum that can be acquired in the frequency band by a radio spectrum right holder was limited to 10 base blocks.

4 – Conditions for obtaining the right to use radio spectrum and for using the band in the 32 GHz frequency band
[Source: NFFF Annex 3]

2.2.4. Rules for the coexistence of user blocks

The rules on the separation bands between user blocks (in particular their necessity, size, possibility of shared use) and on the avoidance and management of interference between the nearest user blocks in the frequency range are set out in the tender documents. For the efficient use of the band, no separation bands between user blocks have been established between the user blocks acquired under the 2023 competitive procedure, taking into account the limitation of the fixed service applications that can be used in the band to point-to-point connections.

3. Current use of the 32 GHz frequency band

In the 31.8–33.4 GHz frequency band, point-to-point fixed service systems are currently operating on the basis of the radio spectrum usage rights acquired in the competitive procedure in 2023. Rights holders may use the acquired spectrum in the context of block allocation.

The radio spectrum rights acquired in the procedure are set out in Table 5 .

Base block serial number	Base block frequency range [GHz]		Entitled party	Spectrum quantity	Start of entitlement	End of entitlement
	Lower block band	Upper block band				
-1	31.815–31.843	32.627–32.655	guard band			
0	31.843–31.871	32.655–32.683				
1	31.871–31.899	32.683–32.711	V-Hálózat	2 × 280 MHz	23.05.2023	23.05.2038*
2	31.899–31.927	32.711–32.739				
3	31.927–31.955	32.739–32.767				
4	31.955–31.983	32.767–32.795				
5	31.983–32.011	32.795–32.823				
6	32.011–32.039	32.823–32.851				
7	32.039–32.067	32.851–32.879				
8	32.067–32.095	32.879–32.907				
9	32.095–32.123	32.907–32.935				
10	32.123–32.151	32.935–32.963				
11	32.151–32.179	32.963–32.991	CETIN	2 × 56 MHz	23.05.2023	23.05.2038*
12	32.179–32.207	32.991–33.019				
13	32.207–32.235	33.019–33.047	Not assigned	2 × 168 MHz	–	–
14	32.235–32.263	33.047–33.075				
15	32.263–32.291	33.075–33.103				
16	32.291–32.319	33.103–33.131				
17	32.319–32.347	33.131–33.159				
18	32.347–32.375	33.159–33.187				
19	32.375–32.403	33.187–33.215	MAGYAR TELEKOM	2 × 168 MHz	23.05.2023	23.05.2038*
20	32.403–32.431	33.215–33.243				
21	32.431–32.459	33.243–33.271				
22	32.459–32.487	33.271–33.299				
23	32.487–32.515	33.299–33.327				
24	32.515–32.543	33.327–33.355				
25	32.543–32.571	33.355–33.383	guard band			

*may be extended once for a period of 5 (five) years without a competitive procedure

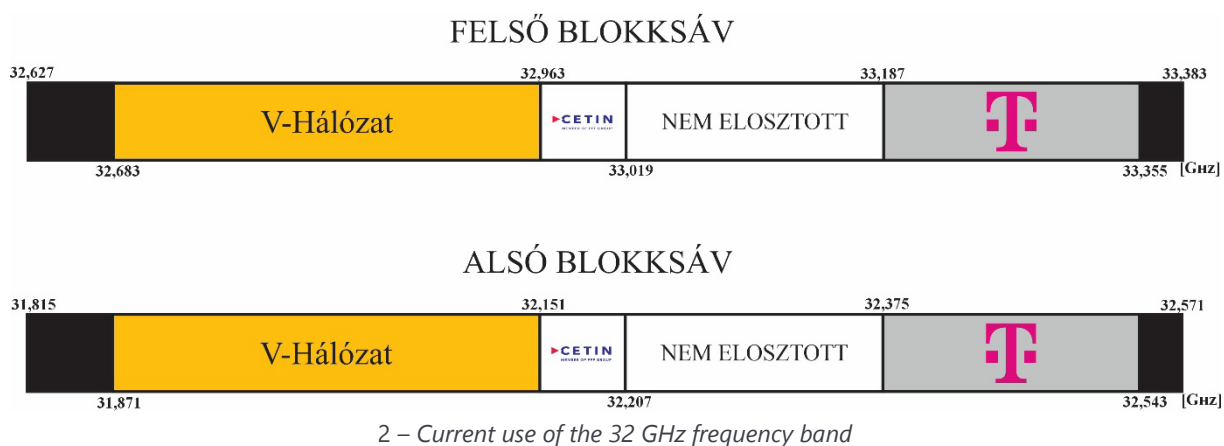
5 – Radio spectrum usage rights acquired in the 32 GHz frequency band

During the procedure, operators were able to bid for 24 duplex lots (2x28 MHz of spectrum) offered by the NMHH, of which 18 lots were awarded as follows:

- Vodafone Magyarország Zrt. – 10 lots (560 MHz)¹⁴;
- Magyar Telekom Nyrt. – 6 lots (336 MHz);
- and CETIN Hungary Zrt. – 2 lots (112 MHz).

Entitlements are valid for fifteen years, until 23 May 2038, and may be extended once for an additional five years.

The current use of the 32 GHz frequency band is illustrated in Figure 2 .



FELSŐ BLOKKSÁV	UPPER BLOCK BAND
V-Hálózat	V-Hálózat
NEM ELOSZTOTT	NOT ALLOCATED
ALSÓ BLOKKSÁV	LOWER BLOCK BAND

There is still 2×168 MHz of spectrum available in the band (6 basic 28 MHz duplex blocks), which can be offered in a new competitive procedure.

¹⁴ The name of the entitled party was changed to V-Network Telecommunications Ltd. as of 1 January 2025.

4. Interference issues related to adjacent frequency bands

4.1. The 31.5–31.8 GHz frequency range

The 31.5–31.8 GHz frequency range below the 32 GHz frequency band is designated, in addition to fixed service systems, for passive services applications (Earth exploration satellite, space research) and radio astronomy stations on a primary basis. Taking into account the domestic use of radio spectrum, this frequency band is currently not used in any way; however, it may be used for the purposes of radio astronomy stations in the near future. If plans arise for using this frequency range for the purposes of a radio astronomy station, special attention should be paid to the out-of-band emission requirements for 32 GHz fixed service systems in the vicinity of the site.

In addition, the 31.5–31.8 GHz (31 GHz) frequency band is also designated for fixed point-to-point systems on a primary basis, but there has been no use in this frequency band so far. No interference problems are expected when the 31 GHz frequency band is used by fixed service systems (there is sufficient guard band available in the lower part of the 32 GHz band to prevent interference by out-of-band emissions).

4.2. The 33.4–35.2 GHz frequency range

The 33.4–35.2 GHz frequency range above the 32 GHz frequency band is planned for space research and designated for non-civil meteorological, speed measurement, military and other radars operating in the radiolocation service on a primary basis. The band is a NATO-harmonised military band; however, there is no actual domestic use and there are no plans for such use in the frequency band in the near future. Therefore, no interference problems are expected in the near future for this adjacent frequency range.

5. Cross-border use of radio spectrum and international coordination

For the 32 GHz frequency band, there is currently no bilateral or multilateral agreement based on the use of preferred frequency blocks, which allows for the operation of stations in the immediate vicinity of the border without prior coordination.

The HCM Agreement defines the coordination distances to the border for the general case of fixed service systems. Under the agreement, a fixed station should be coordinated by default with countries whose border distance from the station under consideration is less than or equal to the coordination distance. In the 30–39.5 GHz frequency range, the coordination distance is 30 km.

The ITU register does not include notifications for the surrounding countries. Based on the HCM Agreement coordination database, coordination requests were received from Slovakia (948 fixed service links) and Ukraine (35 fixed service links), and accepted.

No coordination requests were received from the other neighbouring countries; however, in response to a request from the NMHH regarding the use of the band, Austria replied that the frequency band is a designated band in their country, and is used by Austrian mobile operators for the purpose of establishing backhaul connections. In Austria, the band is used for point-to-point links, and cross-border coordination is only carried out at the request of the operator.

According to information provided in 2022 by the Croatian, Slovenian and Romanian administrations, none of these countries currently use the frequency band. Croatia declared that they may use the 32 GHz frequency band in the future to relieve congested frequency bands. In Slovenia, the frequency band was designated for point-to-point and point-to-multipoint use in line with the ECC/REC/(11)01 and ERC/REC/(01)02 recommendations, but is not yet in use. Romania declared that the 32 GHz frequency band is currently not used, but that there are plans to open the 32 GHz frequency band on a first-come, first-served basis in the future.

Generally speaking, in those neighbouring countries where the frequency band is used, there are few stations that may cause interference due to their proximity to the border, and the probability of co-channel interference is also very low due to the wave propagation characteristics of the frequency band and the nature of the application (point-to-point links). In this respect, distance from the border, terrain conditions, the antenna gain, the azimuth angle and site conditions are decisive. For this reason, in case of border zone use, case-by-case specific coordination may be sufficient to ensure the protection of particular stations close to the border.

6. Radio spectrum fees

The calculation method of the regular radio spectrum fee is defined in NMHH Decree 1/2011 (III. 31.) on the fees for frequency access and use (hereinafter referred to as the 'Fee Decree'). Based on the NFFF, in the case of radio spectrum usage rights covered by block management according to the NFFF, acquired as a result of a service procurement and competitive procedure, as a result of the extension of radio spectrum usage rights or as a result of the renewal of radio spectrum usage rights, and in the case of radio spectrum resold after acquisition, the holder of the radio spectrum usage rights shall pay a monthly band fee during the term of the radio spectrum usage rights, from the earliest date of the validity of the radio licence as specified in Section 22(3) of NMHH Decree 4/2011 (X. 6.) on the rules of auction or tender for obtaining radio spectrum usage rights.

The rules governing the calculation of frequency band fees to be paid are set out in Section 20 under the heading 'Fees for bands subject to block management' and in Annex 9 of the Fee Decree.