

ITUEvents

1st ITU Inter-regional information session (IRIS) on WRC-27 Preparations

**3 - 5 December 2025
Geneva, Switzerland**

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#ITUWRC**

**WRC-27 agenda item 1.10
(protect the fixed and
mobile services in the
frequency bands 71-76 GHz
and 81-86 GHz)**

HUANG, Xi
Chair, ITU-R WP 5C SWG AI 1.10



Background

Agenda item 1.10 of WRC-27:

1.10 *to consider developing power flux-density and equivalent isotropically radiated power limits for inclusion in Article 21 of the Radio Regulations for the fixed-satellite, mobile-satellite and broadcasting-satellite services to protect the fixed and mobile services in the frequency bands 71-76 GHz and 81-86 GHz, in accordance with [Resolution 775](#) (Rev.WRC-23);*

Responsible group: WP 5C*

* Studies should be carried out in close collaboration between the indicated WPs (i.e. WP 5C, WP 4A, WP 4C and WP 5A).

Next WP 5C meeting: May 2026, Geneva

Why agenda item 1.10?

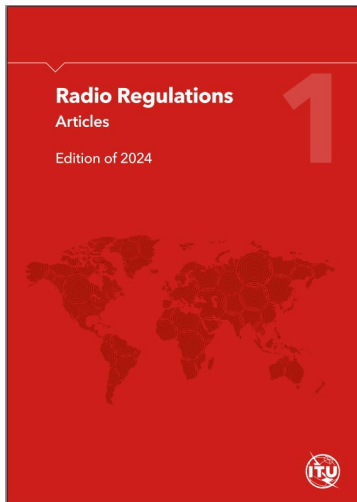
Article 21 of the *Radio Regulations*: “Terrestrial and space services sharing frequency bands above 1 GHz”, but the frequency upper limits are only up to around 50 GHz.

TABLE 21-4 (end) (Rev.WRC-23)

Frequency band	Service*	Limit in dB(W/m ²) for angles of arrival (δ) above the horizontal plane			Reference bandwidth
		0°-5°	5°-25°	25°-90°	
40.5-42 GHz	Fixed-satellite (geostationary-satellite orbit) Broadcasting-satellite (geostationary-satellite orbit)	-120 ²¹	5°-15°	15°-25°	1 MHz
			-120 + (δ - 5) ²¹	-110 + 0.5 (δ - 15) ²¹	
42-42.5 GHz	Fixed-satellite (non-geostationary-satellite orbit) Broadcasting-satellite (non-geostationary-satellite orbit)	-120 ^{11, 21}	5°-25°		1 MHz
			-120 + 0.75(δ - 5) ^{11, 21}	-105 ^{11, 21}	
42-42.5 GHz	Fixed-satellite (geostationary-satellite orbit) Broadcasting-satellite (geostationary-satellite orbit)	-127 ²¹	5°-20°	20°-25°	1 MHz
			-127 + (4/3) (δ - 5) ²¹	-107 + 0.4 (δ - 20) ²¹	
In Region 1: 47.5-47.9 GHz 48.2-48.54 GHz 49.44-50.2 GHz	Fixed-satellite (geostationary-satellite orbit)	-115	5°-25°	-105	1 MHz
			-115 + 0.5(δ - 5)		

TABLE 21-3 (Rev.WRC-19)

Frequency band	Services
14.3-14.4 GHz ⁶ 14.4-14.8 GHz 17.7-18.1 GHz 22.55-23.15 GHz 27.0-27.5 GHz ⁶ 27.5-29.5 GHz 31.0-31.3 GHz 34.2-35.2 GHz 51.4-52.4 GHz	(for Regions 1 and 3) (for Regions 2 and 3) (for the countries listed in No. 5.545) (for the countries listed in No. 5.550 with respect to the countries listed in No. 5.549) Fixed-satellite Earth exploration-satellite Mobile-satellite Space research Fixed-satellite



Current Status of AI 1.10 in WP5C

- AI 1.10 has been discussed in WP5C since May 2024 meeting. Until Nov 2025 meeting, the following aspects have been discussed and agreed:
 - Protection criteria of Fixed Service
 - Fixed Service parameters (including antenna RPE, elevation angle, etc.)
 - Assumptions on satellite: consideration of atmospheric attenuation, number of NGSO satellite into consideration, considerations on NGSO and GSO interference and respective pfd limit
 - Consideration on coordination between FSS earth stations and terrestrial stations, including issue on Appendix 7

- Working document on sharing studies can be found in [5C/TEMP/140](#) and working document towards draft CPM text can be found in [5C/TEMP/138](#), to be attached to the chair's report.

Hot Discussion Issues

- How to consider atmospheric attenuation?
- How to accurately model the characteristics of a NGSO system?
- The connection to Appendix 7?

Future Work

- Sharing studies are encouraged to be conducted based on the conditions and assumptions agreed.
- Contributions are encouraged to be submitted to next WP 5C meeting in May 2026, and pfd / e.i.r.p. limit will be discussed.
- Complete text for CPM report.

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Thank you

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