

**Recommendation T/R 22-03 (Athens 1990)**

**PROVISIONAL RECOMMENDED USE OF THE FREQUENCY RANGE 54.25-66 GHz  
BY TERRESTRIAL FIXED AND MOBILE SYSTEMS**

Recommendation proposed by the "Frequency Management" Working Group T/WG 18 (FM)

*Text of the Recommendation adopted by the "European Radiocommunications Committee" (ERC):*

"The European Conference of Postal and Telecommunications Administrations,

*considering that*

- a) CEPT has a long-term objective to harmonise the use of frequencies throughout Europe,
- b) the development of the use of the band 54-66 GHz requires urgent action on a provisional basis,
- c) a number of European research programmes require harmonised frequency allocations in the range 54-66 GHz,
- d) the propagation characteristics of the 54-66 GHz band are ideally suited to short-range, high-capacity fixed and mobile links and radiolocation systems,
- e) the anticipated developments in large-scale mobile networks will require large numbers of short-range links in the supporting infrastructure,
- f) the high-frequency re-use achievable in the oxygen-absorption band reduces the requirement for sophisticated frequency planning techniques and offers the possibility of a pan-European deregulated telecommunications environment for various low-power, low-cost, short-range applications,
- g) a number of new or existing systems could operate successfully in the range 54-66 GHz, thus relieving congestion and reducing the demand for spectrum in the lower frequency bands,
- h) CEPT should give guidance on the available frequency bands to organisations developing standards for radio systems in the millimetric bands,
- i) there is an urgent need to identify and harmonise civil requirements in the frequency range 54-66 GHz,

*noting that*

1. as the bands allocated to terrestrial fixed and mobile services in the range 54.25-66 GHz are shared with the inter-satellite service and the passive earth exploration-satellite and space research services, sharing criteria between space and terrestrial systems might be required,
2. despite the large bandwidth currently allocated for terrestrial fixed and mobile services, additional spectrum may be required in the future but:
  - footnote RR 907 prohibits all emissions in the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz, and
  - footnote RR 906 urges Administrations to take all practicable steps to protect radio astronomy observations from harmful interference in the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz,

*recommends that*

1. Administrations should follow the provisional Recommendation for use of the frequency range 54.25-66 GHz by terrestrial fixed and mobile systems as given in Annex 1, Table 2,
2. CEPT develops necessary sharing criteria between the services authorised by the Radio Regulations."

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**Annex 1**

Table 1. Allocations to Services according to Article 8 of the Radio Regulations (1982 Edition amended 1986 and 1988)

Earth exploration-satellite (passive) Space research (passive)			Fixed Inter-satellite Mobile 909 Radiolocation 910	Earth exploration-satellite (passive) Space research (passive)		
906 907	Inter-satellite Mobile 909 Fixed 908	906 907		906 907	Fixed Mobile	
51.4 GHz	54.25 GHz	58.2 GHz	59 GHz	64 GHz	65 GHz	66 GHz

Table 2. Provisional Recommendation for use of the frequency range 54.25-66 GHz by terrestrial fixed and mobile systems

Fixed links for local connections Supporting infrastructure for large-scale mobile networks (micro/pico cell interconnection and connection to the public switched network)	Low-power, short-range fixed and mobile sys- tems (fre- quency plan- ning not required)	Radiolocation			Fixed Broad-band mobile systems – connections to the IBCM			
		Fixed Cordless Local Area Networks  ISM	Broadband mobile sys- tems – connections to the IBCM	Road Transport Informatics (vehicle to road and vehicle to vehicle)				
54.25 GHz	57.2 GHz	58.2 GHz	59 GHz	62 GHz	63 GHz	64 GHz	65 GHz	66 GHz

*Footnotes:*

- 906 In the bands 51.4-54.25 GHz, 58.2-59 GHz, 64-65 GHz and 72.77-72.91 GHz, radio astronomy observations may be carried out under national arrangements. Administrations are urged to take all practicable steps to protect radio astronomy observations in these bands from harmful interference.
- 907 In the bands 51.4-54.25 GHz, 58.2-59 GHz, 64-65 GHz, 86-92 GHz, 105-116 GHz and 217-231 GHz all emissions are prohibited.
- 908 Additional allocations: in the Federal Republic of Germany, Japan and the United Kingdom, the band 54.25-58.2 GHz is also allocated to the radiolocation service on a primary basis.
- 909 In the bands 54.25-58.2 GHz, 59-64 GHz, 116-134 GHz, 170-182 GHz and 185-190 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 435).
- 910 In the bands 59-64 GHz and 126-134 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. 435).
- 911 The band 61-61.5 GHz (centre frequency 61.25 GHz) is designated for industrial, scientific and medical (ISM) applications. The use of this frequency band for ISM applications shall be subject to special authorisation by the Administration concerned in agreement with other Administrations whose radiocommunications services might be affected. In applying this provision, Administrations shall have due regard to the latest relevant CCIR Recommendations.