



Dated: 14 -06-2025
IAFI/2025-26/L-23

To,

**The Joint Secretary (Telecom),
Department of Telecommunications,
Ministry of Communications,
Government of India,
Sanchar Bhawan, 20, Ashoka Road,
New Delhi- 110001**

Subject: IAFI comments on the DoT Notification No. G.S.R.316 (E) - Lower 6GHz Wi-Fi

Dear Sir,

We sincerely appreciate the Department of Telecommunications (DoT) for its crucial decision to de-license the lower 6 GHz band. This move is vital given the escalating demand for unlicensed spectrum, as existing allocations in the 2.4 GHz and 5 GHz bands are reaching their capacity. The growing adoption of bandwidth-intensive, low-latency applications, particularly AR/VR across various sectors, underscores the urgent need for expanded unlicensed spectrum resources.

We fully support the draft notification and request that the final notification may kindly be issued immediately. While we do have the following specific suggestions (which may require further discussions), but we would not like these issues to further delay the issuance of the final notification:

- i. Increase the Power Spectral density (PSD) for both LP and VLP devices by +6dB This will be important for more robust performance both for indoor operation as well as for Wearable devices. While the proposed PSD levels are consistent with FCC regulations, increasing the same by +6dB will align the regulations with most countries and not just FCC**
- ii. Require use of Contention Based Protocol (CBP) as it will ensure scalable use of the band across technologies and is consistent with FCC**

and EU regulations.

About IAFI

The ITU-APT Foundation of India (IAFI) is a registered non-profit and non-political foundation operating under the Cooperative Societies Act of India. Recognized by the International Telecommunication Union (ITU) as an international/regional telecommunications organization, IAFI holds sector memberships with the ITU Radiocommunication Bureau (ITU-R), ITU Development Bureau (ITU-D), and ITU Telecommunication Standardization Bureau (ITU-T). Additionally, IAFI is an affiliate member of the APT. For the past 21 years, IAFI has actively encouraged the involvement of professionals, corporate entities, public/private sector industries, R&D organizations, academic institutions, and other agencies in the activities of both the ITU and APT.

Impact of Draft Notification No. GSR-316 (E)

Draft Notification No. GSR-316 (E) represents a significant stride towards recognizing the vital role of unlicensed spectrum in fostering India's digital ecosystem and achieving the nation's vision for ubiquitous, high-quality broadband connectivity. This initiative will facilitate the adoption of newer generations of RLAN technologies, such as Wi-Fi 7, and enable emerging use cases like Augmented Reality (AR), Virtual Reality (VR), and Extended Reality (XR). Furthermore, this far-reaching decision is poised to complement and enhance 5G, Fixed Wireless Access (FWA), and satellite deployments across India. Crucially, it will also stimulate the growth of startups and local industries, enabling the creation of innovative use cases and scenarios, which in turn will contribute significantly to India's long-term GDP growth.

Global Studies on Spectrum Utilization

It is important to note that the APT Wireless Group (AWG) is actively collaborating with the Wi-Fi industry to conduct studies focused on maximizing spectrum utilization. This collaborative effort explores avenues for enabling higher performance in both indoor and outdoor deployments through the implementation of Automated Frequency Coordination (AFC). AFC is a dynamic spectrum access method that employs a database approach to coordinate spectrum access, ensuring efficient and interference-free operation.

IAFI's other Suggestions

The ITU-APT Foundation of India (IAFI) has thoroughly reviewed draft GSR-316 (E) and submitted its suggestions on relevant sections. Our proposed minor improvements, presented in track-change mode with red-coloured markings in

the attached document, aim to enhance the impact of the government's decision to de-license the 5925-6425 MHz band. These suggestions specifically address out-of-band emissions (OOBE) and propose the addition of key definitions to improve the clarity of the gazette notification.

Our detailed comments and suggestions for future consideration are attached as Annexure-I.

We are confident that incorporating these minor enhancements will further strengthen the draft notification, ensuring it effectively serves India's rapidly evolving digital landscape and reinforces the country's position as a leader in telecommunications innovation. **However, we again emphasize that we do not wish these proposals to any way delay the publication of final rules.** We remain committed to supporting DoT's efforts in building a robust and inclusive digital future for all.

Warm Regards,

Bharat B Bhatia,
President, ITU-APT Foundation of India
Vice Chairman - Asia Pacific, World Wireless Research Forum
(WWRF)
Chairman, ITU-R WP5D Working Group General Aspects
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Copy to: AS(T)/ WA/JWA(ISR)

MINISTRY OF COMMUNICATIONS

NOTIFICATION

New Delhi, the 16th May 2025

G.S.R. 316 (E).— The following draft rules, which the Central Government proposes to make in exercise of the powers conferred by sections 3(3) and 4(6) read with clauses (b) and (h) of sub-section (2) of section 56 of the Telecommunications Act, 2023 (44 of 2023), are hereby published for the information of all persons likely to be affected thereby and notice is hereby given that the said draft rules shall be taken into consideration after the expiry of a period of thirty days on which copies of this notification as published in the Official Gazette, are made available to the public;

Objections or suggestions, if any, may be addressed to the Joint Secretary (Telecom), Department of Telecommunications, Ministry of Communications, Government of India, Sanchar Bhawan, 20, Ashoka Road, New Delhi- 110001;

The objections or suggestions which may be received from any person with respect to the said draft rules before the expiry of the aforesaid period shall be taken into consideration by the Central Government.

1. Short title and commencement. — (1) These rules may be called the Use of Low Power and Very Low Power Wireless Access System including Radio Local Area Network in Lower 6 GHz band (Exemption from Licensing Requirement) Rules, 2025.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Application. — These rules shall be applicable in the 5925 – 6425 MHz band.

3. Definitions. — (1) In these rules, unless the context otherwise requires, -

(a) “Act” means the Telecommunications Act, 2023 (44 of 2023);

(b) “Authority” means the authority notified by the Central Government.

(c) “access point” means a transceiver that operates either as a bridge in a peer-to-peer connection or as a connector between the wired and wireless segments of the network;

(d) “equivalent isotropic radiated power” or “e.i.r.p” means the total power that would have to be radiated by a hypothetical isotropic antenna to give the same signal strength as the actual source in the direction of the antennas strongest beam;

(e) “emission bandwidth” means the 26 dB bandwidth of the modulated signal measured relative to the maximum level of the modulated carrier;

(f) “maximum power spectral density” means the maximum power within the specified measurement bandwidth, within the device operating band; measurements in the 5925-6425 MHz band are made over a bandwidth of 1 MHz;

(g) “power spectral density” means the power spectral density is the total energy output per unit bandwidth from a pulse or sequence of pulses for which the transmit power is at its maximum level, divided by the total duration of the pulses and the total time does not include the time between pulses during which the transmit power is off or below its maximum level;

(h) “device” means the radiators operating in the frequency bands 5925-6425 MHz that use wideband digital modulation techniques and provide a wide array of high data rate in mobile and fixed communications for individuals, businesses, and institutions;

(i) “indoor operation” means that the transmitter is located inside premises which are wholly enclosed by walls that are non-transparent to radio waves, except for any doors, windows or passageways; and the premises have ceiling or roof, non-transparent to radio waves.

(j) “transmit power control” means a feature that enables a device to dynamically switch between multiple transmission power levels during data transmission process;

(k) “contention-based protocol” means a protocol that allows multiple users to share the same spectrum by defining the events that must occur when two or more transmitters attempt to simultaneously access the same channel and establishing rules by which a transmitter provides reasonable opportunities for other transmitters to operate.

(2) The words and expressions used in these rules and not defined herein but defined in the Act shall have the same meanings respectively as assigned to them in those Acts.

Exemption. — No Authorization or Frequency Assignment shall be required to establish, maintain, work, possess or deal in any wireless equipment for the purpose of Lower Power Indoor and Very Low Power outdoor wireless access systems, including radio local area networks operating in the frequency band 5925- 6425 MHz on noninterference, non-protection and shared (nonexclusive) basis, and complying with the following technical parameters; namely:

Table
Low power indoor and Very Low Power Outdoor WAS/RLAN Access Points and devices

Device Type	Max. PSD e.i.r.p for in-band emissions	Max. e.i.r.p for in-band emissions	Max. Emission Bandwidth	Out of band emissions (Max e.i.r.p density)
Low Power Indoor	+11dBm/MHz	30 dBm	320 MHz	-27 dBm/MHz
Very Low Power Outdoor	+1 dBm/MHz	14 dBm	320 MHz	- 27 dBm/MHz

Note 1: Both LP and VLP Aps and devices should require use of Contention Based Protocol (CBP)

3.1 Operational restrictions:

- (i) All kinds of use are prohibited on Oil platforms
- (ii) use is prohibited on Land vehicles (e.g., cars, trains) and aircrafts except when flying above 3000 feet.
- (iii) Communication with and control of Drones and Unmanned Aerial Systems is prohibited.

4. Out of band emission Limits. —

For transmitters operating within the 5925-6425 MHz band: Any emissions outside of the 5.925-6.425 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz

For transmitters operating within the 5.925-6.425 GHz bands:

(1) Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

(2) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A

lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(3) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

5. Interference.— (1) The effect of unwanted energy due to one or a combination of emissions, radiations or induction upon reception in a radio communication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy, where any person operating as per the Telecommunications Act, 2023 (44 of 2023) or license under the Indian Telegraph Act, 1885 (13 of 1885) which is valid pursuant to sub-section (6) of section 3 of the Act informs the Authority that his licensed system is getting harmful interference from any other radio communication system exempted under these rules, then such Authority shall call upon the user of such unlicensed wireless equipment to take necessary steps to avoid interference by relocating the equipment, reducing the power and using special type of antennae, failing which such Authority shall recommend discontinuation of such wireless use.

(2) The Authority shall give a reasonable opportunity to the user of wireless equipment before making recommendation of discontinuation of wireless use under sub-rule (1) above.

6. Equipment. — (1) The wireless equipment will have in-built and integrated antenna and shall be type approved and designed and constructed in such a manner that the bandwidth of emission and other parameters shall conform to the limits specified in rule 4 and 5. The application for obtaining equipment type approval shall be made to the Central Government in the format given in Annexure.

(2) The safety related requirements shall be as per the International or National standards such as ITU/ETSI/ANSI/BIS/ICNIRP for the respective devices and frequency bands.

[F.No. 24-04/2025-UBB]

DEVENDRA KUMAR RAI, Jt. Secy.

ANNEXURE

APPLICATION FOR EQUIPMENT TYPE APPROVAL

(Refer sub-rule (1) of rule 7)

Section-A- Applicant

1. Name of manufacturing agency applying :
for equipment type approval

[Full legal name of the manufacturer]

2. Postal Address of manufacturing Agency :
[Complete postal address, city, state/province, postal code, and country]

3. Name and address of Indian agency :
applying for the type approval (if applicable).

4. Name of product and the product :
Identification (Commercial name of the product model
number etc.,)

Section- B- Details of Transmitter

5. Frequency range :
Specify the minimum and maximum operating frequencies (e.g., 5925 MHz - 6425 MHz)

6. No. of preset switchable channels :

7. No. of voice /Data/ TV Channels :
(specify the number for each type In case of multi-channel equipment)
8. Tx-Rx channel separation :
(In case of Duplex/multi-channel equipment)
9. Adjacent channel separation :
(In case of multi-channel equipment)
10. Frequency stability (
Specify the stability in ppm (parts per million) or Hz over a defined temperature range] :
11. Spurious/ Harmonic radiations :
 - i. Carrier suppression (suppression level in dBc) :
(In case of carrier suppressed systems)
 - ii. Unwanted side band suppression (suppression level in dBc) :
(In case of SSB systems)
 - iii. 2nd Harmonic radiations (power level in dBm or dBc) :
 - iv. 3rd Harmonic radiations (power level in dBm or dBc) :
12. Max. Frequency Deviation (specify in kHz (for FM/PM systems) :
13. Mode of emission :
14. Bandwidth of emission
(specify in kHz or MHz (e.g., 26 dB bandwidth, 99% occupied bandwidth)] :
15. Test Tone deviation :
16. Base band frequency (specify freq range of baseband signal) :
(In case of multi-channel equipment)
17. Type of modulation to be required (QPSK, OFDM, QAM)
18. Pre-emphasis :
19. Power output (specify in Watt or dBm) :
(At the input of antenna)
20. Any other information :

Section-C- Details of Receivers

21. Frequency range (specify minimum and maximum operating frequency) :
22. Mode of reception (simplex, duplex, half-duplex) :
23. Spurious response of receiver :
24. Sensitivity (specify in dBm) :
25. Frequency stability (specify stability in ppm) :
26. (a) Effective noise temperature (in kelvin) :
(b) Threshold input level (in dBm) :
27. Intermediate frequency (IF value in MHz) :
28. De-emphasis :
29. Selectivity (in dB for adjacent channel rejection) :
30. Any other particulars :

Declaration

I/We hereby declare that the information provided in this application is true and correct to the best of my/our knowledge and belief. I/We understand that any false information may lead to the rejection of this application or revocation of any approval granted.

Signature of the applicant

Place :

Date :

(Note : Separate application should be submitted for each type of equipment.)



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