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TRAI/FY23-24/60  
Dated: 03.01.2024

To,  
**Shri Akhilesh Kumar Trivedi,**  
**Advisor (Network, Spectrum and Licensing)**  
**Telecom Regulatory Authority of India,**  
Mahanagar Door Sanchar Bhawan,  
JawaharLal Nehru Marg,  
New Delhi – 110 002.

**Subject: Bharti Airtel's counter comment on Consultation Paper on "Assignment of Spectrum in E&V Bands, and Spectrum for Microwave Access (MWA) & Microwave Backbone (MWB)"**

Dear Sir,

This is in reference to TRAI's Consultation Paper on "Assignment of Spectrum in E&V Bands, and Spectrum for Microwave Access (MWA) & Microwave Backbone (MWB)" dated 27.09.2023 (22/2023)

In this regard, please find enclosed our counter comments for your kind consideration.

Thanking You,

Yours' Sincerely,  
For **Bharti Airtel Limited**

A handwritten signature in blue ink, appearing to read 'Rahul Vatts', is written over the typed name.

Rahul Vatts  
Chief Regulatory Officer

Encl: a.a

## **Counter Comments to TRAI CP on Assignment of Spectrum in E&V Bands, and Spectrum for Microwave Access (MWA) & Microwave Backbone (MWB)**

At the outset, Airtel reiterates its submissions made in the main response dated 13 December 2023. We submit that the Recommendations of the TRAI on this Consultation Paper (CP) should be consistent with the provisions of the new Telecommunications Act 2023<sup>1</sup>.

The Airtel counter comments made herein are in response to comments provided by certain stakeholders in reference to the auctioning of backhaul spectrum, spectrum caps, scope of assignment of MWA/MWB and E/V band spectrum, scope of use of E/V bands and de-licensing of V-band.

Airtel would like to reiterate that a robust backhaul is essential for complementing the new age access technologies and, indeed, it is only because of the availability of adequate backhaul spectrum, especially E-band, that India has even been able to achieve one of the fastest 5G rollouts globally. Hence, the current consultation exercise should take into consideration the following:

- The backhaul spectrum is different from the access spectrum.
- The backhaul equipment is tightly coupled with backhaul frequencies: Any disruption will be highly detrimental to legacy networks and hundreds of millions of subscribers.
- Auctioning backhaul spectrum will lead to risk of winner's curse the destruction of (multiplier effect of) the public good element of spectrum.
- The auction of backhaul spectrum is neither relevant to the 2G Judgment, nor in line with international practices, and, is against TRAI's own precedent on the same issue.
- The current charges of MWA/MWB carriers and E, V band require significant rationalisation.

### **In the following sections, Airtel provides its specific counter comments:**

#### **I. [Assignment methodology for MWA/MWB and E/V band spectrum:](#)**

*Some of the stakeholders have argued for the auctioning of MWA/MWB and E/V band spectrum.*

#### **Airtel Counter Response:**

Airtel reiterates that MWA/MWB and E/V band spectrum should continue to be assigned on an administrative basis only. The counter reasons against the auctions are provided below:

#### **Near consensus of industry on administrative assignment:**

It is worthwhile to note that **an overwhelming majority of the stakeholders involved support administrative assignment**. There is only one stakeholder who has argued for auctioning of all backhaul spectrum and only one stakeholder who has favoured auctions for E/V band spectrum but administrative assignment for traditional MWA/MWB carriers. It is obvious that **the Authority must look at what is best for the interests of the industry as a whole rather than the disruptive agenda of an operator** whose sole aim is to disturb the networks of competitors and derail future rollouts.

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<sup>1</sup> Notified in Gazette on 24th December 2023

## **Counter Comments to TRAI CP on Assignment of Spectrum in E&V Bands, and Spectrum for Microwave Access (MWA) & Microwave Backbone (MWB)**

Further, the other stakeholder who has suggested different assignment methodologies for MWA/MWB carriers and E/V band spectrum has failed to provide any justification. While the reasons for administrative assignment of MWA/MWB spectrum have been explained in detail, and Airtel agrees with the same, there is no mention of why an auction is suited for the E/V band spectrum. Rather, the reasons provided for administrative assignment of MWA/MWB spectrum – viz. this spectrum being essential for rollout and its use being only for backhaul and not for any revenue generating or competitive services – are equally applicable to the E/V band spectrum. Thus, there is no rationale for a different approach. **Airtel firmly submits that all backhaul spectrum – MWA/MWB carriers and E/V band spectrum – should only be assigned administratively.**

### **Administrative assignment necessary to prevent disruption of legacy networks:**

The importance of ensuring the continuity of existing assignments has been elaborately stressed upon in Airtel's main response. Even the sole stakeholder who has argued for auction of MWA/MWB carriers has recognised the importance of the same and submitted that *"the existing spectrum holder should have right of first refusal in assignment of the band in which they hold their existing spectrum."*

However, the same stakeholder has simultaneously argued that *"Frequency spot assignment within a band should be determined by the final bidder ranking in the auction process while protecting the existing assignments."* It is abundantly clear from these submissions that this stakeholder is acutely conscious of the inability of legacy operators to give up their existing spots.

This gives credence to the submission made in Airtel's main response about auctions resulting in a winner's curse situation for legacy operators. If legacy operators are to prevent disruption to their existing networks and services to their customers, they will have no option but to somehow secure their currently assigned carriers. This vulnerability is highly likely to be exploited by competitors with destructive bidding and attempts at spectrum hoarding.

Thus, even the granting of right of first refusal to legacy operators will not mitigate this risk of the winner's curse as the operators in question would still have to outbid the other bidders in order to retain their existing holdings. As a result, auctions are bound to result in a significant unwarranted financial burden on legacy operators. In order to prevent such an outcome, it is imperative that the existing methodology of administrative assignment is continued with for this spectrum.

### **2G Judgement – not a complete bar to administrative assignment:**

One of the stakeholders has stated that auction is *"the only legally tenable means of assigning spectrum"*. While this aspect has already been addressed in Airtel's main response, it is important to reiterate that the Hon'ble Supreme Court Order in the matter of 2G was made in the context of arbitrary granting of access spectrum. It neither extends to allocation of all natural resources in general nor prohibits administrative allocation of natural resources.

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The Hon'ble Supreme Court had specifically observed that the submission that the mandate of Article 14 requires that disposal of a natural resource for commercial use must be for revenue maximisation and thus by auction is based neither on law nor logic. Even the mandate of 39(b) imposes no restrictions on the means adopted to subserve the public good and uses the broad term 'distribution', suggesting that the methodology of distribution is not fixed.

The economic logic of alienation/allocation of natural resources to the highest bidder may not necessarily be the only way to subserve the common good and, at times, may even run counter to the public good. Hence, it needs little emphasis that the disposal of all natural resources through auctions is clearly not a constitutional mandate. There is no directive under the 2G Judgement that natural resources can be allocated only through auctions.

Moreover, and importantly, as already highlighted previously, backhaul spectrum is there to complement access spectrum, not to replace it/compete with it in the access market. Therefore, the logic of auctions does not hold in the case of backhaul spectrum. It is also pertinent to note here that the 2G Judgement came much before the TRAI 2014 Recommendations, and it did not act as a bar for TRAI recommending administrative assignment of backhaul spectrum then. Therefore, Airtel contends that the same approach should continue to be followed even now.

If for argument's sake, it is assumed that the 2G Judgement does bar the assignment of spectrum through any methodology other than auction, then even delicensing of spectrum would fall foul of it. However, even after the 2G Judgement, TRAI has recommended and DoT has actually delicensed various spectrum bands for use cases like short-range devices, tracking and telemetry, etc. Hence, it follows that the 2G Judgement does not mandate auction as the only methodology for the assignment of spectrum.

### **The New Telecommunications Act 2023 endorses administrative assignment:**

One of the stakeholders has stated that *"it is evident from the DoT reference that the decision has already been taken for assigning the spectrum in E-band and V-band through auction and therefore there is no need to examine any other mode of assignment of this spectrum."* However, nothing could be farther from the truth.

The Authority must take note of the new Telecommunications Act 2023 as passed by both the Houses of Parliament and notified in Gazette on 24<sup>th</sup> December 2023. Under the Act, the Government has visualized scenarios /cases in which the spectrum shall be assigned by administrative approach i.e. in order to serve public interest or to perform government function or in cases where auction of spectrum is not the preferred mode of assignment due to technical or economic reasons. Apropos, the '*Radio backhaul for telecommunication services*' has been included in the Act under "The First Schedule" that covers instances of "Assignment of Spectrum Through Administrative Process".

Airtel too, in its main response to this CP highlighted such techno-economic reasons and limitations that necessitate assignment of backhaul spectrum through administrative method.

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In-fact, the new Telecom Act is an outcome of extensive consultations with all stakeholders – from within and outside the Government– and it recognises administrative methodology as the only assignment methodology for spectrum for “radio backhaul for telecommunication services.” Thus, the industry-wide demand for administrative assignment of backhaul spectrum, including MWA/MWB carriers as well as E/V band spectrum, has been clearly endorsed by the Government and the Parliament as well.

Given these developments, the DoT reference, which was initiated even before the publication of the draft Bill for public comments, cannot be cited as the latest stand of the Government in the matter, and the policy to assign backhaul spectrum ought to be consistent with the Act.

### **International best practices support of administrative assignment:**

Airtel had already highlighted in its main response that the TRAI CP has not provided any precedents for backhaul spectrum being auctioned in any jurisdiction around the world. Even the two stakeholders arguing for auctions have failed to provide any international examples for the same.

Airtel firmly submits that there is no rationale for India to deviate from international best practices in a matter as critical as that of the assigning of backhaul spectrum. Auctioning would prove to be a huge setback for Digital India as well as world leadership in the new-generation telecom technologies (5G, 6G and beyond) that the Hon’ble Prime Minister has set out to achieve.

### **TRAI in favour of administrative assignment with repeated recommendations:**

TRAI’s 2014 Recommendations advocating for administrative assignment of MWA/MWB carriers as well as E/V band spectrum have already been sufficiently highlighted in Airtel’s main response. In addition, the Authority has again, in the Recommendations dated 31.08.2021 on ‘Roadmap to Promote Broadband Connectivity and Enhanced Broadband Speed,’ recommended that “*In order to overcome the capacity constraints in the backhaul connectivity of cellular networks, radio spectrum used for backhauling purpose should be assigned to service providers **on demand** and in time bound manner.*”

### **II. Spectrum cap:**

*One of the stakeholders has suggested an overall cap of 40% of total spectrum available for MWA & MWB, as well as an overall cap of 40% of total carriers available for E & V bands. Another stakeholder has proposed an additional ceiling of 35% for each of the spectrum bands, i.e., separate for 6/7 GHz, 13 GHz, 15 GHz, 18 GHz as well as 21 GHz, besides the existing overall ceiling.*

### **Airtel Counter Response:**

While this aspect has already been addressed in Airtel’s main response, it is appropriate to counter the above here as well. Below are Airtel’s detailed submissions in this regard:

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**MWA/MWB carriers:**

Airtel reiterates that the **ceilings as per the extant guidelines (8 MWA carriers in each of the metros and Category A LSAs, and 6 carriers in each of the Category B and C LSAs, per TSP with Access Service Authorisation) are sufficient to meet the industry demand, both at present and in the near future. Further, MWB carriers should also be assigned on an exclusive basis for the entire LSA and a ceiling of 2 MWB carriers per LSA, in all categories of LSAs, should be deemed sufficient.**

In any case, the ceilings have been revised as recently as 2022. There is no need to review the same again after such a short duration. Even the percentage-based (40%) ceiling suggested by one of the stakeholders seems to be irrelevant in the context. It is important to note that an overall ceiling of 40% for MWA carriers would mean that any TSP would be able to acquire at least 38 carriers from the total available 95 carriers in the combined MWA spectrum band. This would eventually mean that a single TSP could try to hoard the complete bandwidth in 13 GHz and 15 GHz band (which has a total of 23 carriers) and disrupt the network for existing TSPs. The same TSP has also written that spectrum assignment should be as per the ranking process basis (the ranking here means the TSP paying the highest amount during spectrum auctions) along with the safeguarding of existing network operations (which would eventually mean that the existing TSPs would never be able to make MWA/MWB spectrum contiguous and it would be at the disposal of other TSPs).

Moreover, this stakeholder has not demonstrated any need for such quantum (40%) of spectrum – neither in the present, nor for the future. Thus, such a high ceiling would not only lead to hoarding of spectrum, but also leave the smaller players at the whims of large players for spectrum leasing (as per the proposal of the stakeholder).

No need for individual band-wise ceiling: The existing networks have evolved over the last two decades within the extant framework where there is no distinct band-wise limitation. Furthermore, TSPs have been assigned frequencies in specific bands over time based on the availability of backhaul spectrum in a particular band at a particular point in time.

For instance, a TSP was assigned 2 carriers in the 13 GHz band in a metro in 2016, followed by an additional 2 carriers in the same 13 GHz band in 2018. Now, if an individual band-wise 35% ceiling is introduced as suggested by one of the stakeholders, the maximum number of 13 GHz carriers per TSP would be restricted to 3; and the TSP in question would be required to surrender one of its carriers and instead acquire carriers in other bands. However, since legacy networks are incompatible with frequency changes, the introduction of individual band-wise ceiling would effectively entail a complete disruption of services.

Further, in the event of individual band-wise ceiling of 35%, knowing that existing holding of an individual TSP currently exceeds this number, i.e., ~3 carriers in 13GHz, ~5 carriers in 15GHz, etc. This would eventually lead to network disruption and lakhs of MW Radios becoming defunct or becoming unusable.

The existing overall ceiling has proven effective in preventing any hoarding for the last two decades. Therefore, it would be apposite to continue with the same policy.

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### **E/V band spectrum:**

Airtel reiterates that the ceiling on E-band carriers should be increased from the existing 2 carriers to 4 carriers per LSA, to meet the constantly growing requirements. For V-band, a ceiling of 40 carriers per LSA would be reasonable for meeting industry requirements at this stage.

Airtel strongly opposes a combined ceiling of 40% on total carriers available for E & V bands. At present, E and V bands are at vastly different levels in terms of the development of equipment and the surrounding ecosystem in India. While E-band is already in use and the ecosystem for it is highly developed, studies are still underway for the use cases of V-band. Therefore, they cannot be treated at par for the purposes of calculating spectrum cap.

Given the bandwidth of E-band (71-76 GHz, 81-86 GHz) and V-band (57-64 GHz) under consideration in the instant consultation process, a combined ceiling of 40% would effectively mean 69.5% of E-band. There is no logic for combining and calculating the spectrum cap limit of E & V band, i.e., 7GHz in V band and 4.75GHz in E-band. In terms of the hoarding of spectrum, it is clearly evident that such a limit would allow a single TSP to hold 3300 MHz of spectrum in the E band out of 4750 MHz, resulting in disproportionate spectrum holdings in the hands of one single operator at the cost of the whole industry.

### **III. Scope of assignment of MWA/MWB and E/V band spectrum:**

*One of the stakeholders has argued for P2P link-based assignment of MWA/MWB carriers to all TSPs while another stakeholder has argued for P2P link-based assignment of E/V band spectrum.*

### **Airtel Counter Response:**

While this aspect has already been addressed in Airtel's main response, it is appropriate to counter the above here as well. Below is Airtel's detailed submission in this regard:

### **TSPs with Access Service Authorisation:**

The Government is well aware of the infeasibility of the P2P link-based assignment in the long run. MWA carriers used to be assigned on a P2P link basis earlier. However, with the increasing number of links required to meet growing traffic requirements, the process of interference management became highly challenging for the WPC, and the Government was compelled to start assigning MWA carriers on an exclusive basis for the entire LSA – a practice that continues till this day.

In fact, as per the original 2015 guidelines for allotment of MWA/MWB carriers, a TSP with Access Service Authorisation was allowed to hold a maximum of 4 MWA carriers in each of the metros and Category A LSAs, and 3 carriers in each of the Category B and C LSAs. However, in view of the increased requirements of backhaul on account of 5G, these limits were doubled – to 8 and 6 carriers, respectively – in 2022. Moving back to P2P link-based assignment in this context will be a regressive and counter-intuitive step.

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Airtel has already elaborately delineated the advantages of exclusive assignment on an LSA basis and the disadvantages of a P2P link-based assignment. Exclusive assignment enables faster rollout, easier network planning and cost-effective operations. P2P link-based assignments, conversely, present huge logistical challenges in the form of cumbersome interference management processes, and they are also not in line with the spectrum charging mechanism which is done on a percentage-of-AGR basis for the entire LSA.

Accordingly, Airtel argues that **MWA carriers should continue to be assigned to TSPs with Access Service Authorisation on an exclusive basis for the entire LSA. Further, the same approach should be adopted in the case of MWB carriers as well. In the same vein, the E/V band spectrum should also be assigned on an exclusive basis for the entire LSA to TSPs with Access Service Authorisation.**

### **TSPs with other than Access Service Authorisation:**

TSPs holding other than Access Service Authorisation may also require MWA/MWB carriers. However, these entities do not have wide densified networks and, hence, P2P link-based assignment (as is the current practice) may be adequate to meet their requirements. Thus, **the existing P2P link-based assignment policy should continue in the case of MWA/MWB carriers for TSPs with other than Access Service Authorisation.**

However, there may not be any requirement to assign E/V band spectrum to TSPs with other than Access Service Authorisation. Even the extant policy for assignment of E-band spectrum is limited to TSPs with Access Service Authorisation. As highlighted in Airtel's main response, there is no mention of any use case of E/V band spectrum for these entities, in either the DoT reference or the TRAI CP. Their requirements may be adequately met with the existing policy of P2P link-based assignment of MWA/MWB carriers. Therefore, **there is no need to assign E/V band spectrum to TSPs with other than Access Service Authorisation. It should be assigned only to TSPs with Access Service Authorisation.**

### **IV. Scope of use of E/V bands:**

*One of the stakeholders has advocated for the use of E/V band spectrum for Integrated Access and Backhaul (IAB).*

### **Airtel Counter Response:**

While this aspect has already been addressed in Airtel's main response, specifically under Q38, it is important to reiterate that the scope of services/usages for E/V band spectrum should be restricted to backhaul only.

### **E-band played a critical role in 5G rollout:**

India has witnessed one of the fastest 5G rollouts in the world mainly because of its seminal Cabinet reforms, path-breaking TRAI recommendations and, most critically, the decision of the DoT to assign E-band spectrum for backhaul. It is a known fact that the rollout of 5G services is intrinsically linked to the

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availability of robust backhaul through fiber and, in its absence, E-band is essential. In other words, it was by making E-band available to operators that DoT ensured the rapid rollout of 5G services.

### **Competitive issues are likely to arise if scope of E/V bands usage is expanded beyond backhaul:**

The level of fiberisation in the country is extremely limited currently and the situation is not about to change materially in the near future. Most TSPs are largely dependent on backhaul spectrum as they expand their fiber networks. In such a scenario, any proposal to expand the usage of E/V bands and to use them for IMT access services would disrupt the telecom ecosystem and establish a near monopoly in the 5G space of the only TSP with a vast fiber footprint. Had the Government subscribed to such a viewpoint earlier, India would not have witnessed one of the fastest rollouts of 5G services in the world.

### **Growing backhaul requirement cannot be met by traditional microwave backhaul alone:**

Over the last decade, the overall mobile data consumption and, consequently, the backhaul requirement per site, has grown manifold. Conventional microwave spectrum can barely keep up with the current bandwidth requirements for 4G, let alone 5G. Simply put, the amount of traffic surge that the access network is expected to witness will necessitate a multifold capacity augmentation at the backhaul level.

Therefore, although all TSPs are making every effort to fiberise their networks as rapidly as possible, using E/V bands for backhaul remains the only practical choice for TSPs given the fast pace of network rollout.

Having said that, it is also true that the clubbing of E/V bands for backhaul with access will deny backhaul rollout, creating a monopoly in 5G – the very reason that E-band was given. Even internationally, as many as 86 countries have identified E-band for providing only backhaul services to cater to the increase in data demands for 5G.

### **International developments support backhaul only usage:**

The use of E/V bands for access services along with backhaul is not supported even internationally:

- E-band has been defined by 3GPP as appropriate neither for access services nor for integrated access and backhaul (IAB). Consequently, the ecosystem for E-band-compatible radios/handsets/FWA, based on 3GPP technologies, does not even exist currently. In such a scenario, access connectivity to customers through E-band is completely out of the question.
- The ultra-high frequency bands are unsuitable for access use cases due to multipath propagation's high losses. Due to Line-of-Sight propagation requirements, these frequency channels are more suitable for backhaul. Consequently, 3GPP has not specified a band plan for E-band. Allowing access to these bands will result in the waste of scarce resources that are crucially required for constructing the high capacity backhaul for 5G and mitigating the challenges associated with fiber deployment.

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- Also, in the previous WRC-19 cycle, spectrum access requirements from 2020 to 2027 were analysed, as were subranges spanning 24 GHz to 95 GHz. E/V bands were excluded from identification for IMT. Even in the National Frequency Allocation Plan (NFAP) 2022, E/V bands have not been defined for IMT in line with WRC resolutions.
- Further, there is no item related to identification of E/V bands for IMT, under the preliminary agenda of the WRC-27 cycle.

#### **Adequate mmWave spectrum is already available:**

There is sufficient spectrum already available in the mmWave spectrum bands, which have been auctioned for IMT thus far. Out of the 62,700 MHz of spectrum that was put to auction, about 17,350 MHz remains unsold. Also, DoT has identified additional mmWave bands in 37-43 GHz, i.e., about 4,000 MHz of spectrum per circle.

Currently, there is hardly any usage of mmWave bands, and TSPs have only deployed a handful of sites to comply with MRO requirements. In this context, there is no compelling reason to expand the scope of E/V bands beyond backhaul. Other mmWave bands, which are already assigned, can very well be used for providing the same service.

In summary, there is currently no case for the use of E/V bands for purposes other than backhaul, and there is not likely to be any need for such usage in the near future as well. Therefore, Airtel recommends that **E/V bands should be used only for backhaul purposes. Deploying these critical bands for any other usage will destabilise the existing networks of TSPs, in addition to impacting the new rollouts.**

#### **V. De-licensing of V-band:**

*Some of the stakeholders have argued for allowing unlicensed use of V-band spectrum in 57-64 GHz frequency range as well as 64-71 GHz frequency range.*

#### **Airtel Counter Response:**

At the outset, Airtel would like to state that it strongly discourages the arguments related to the 64-71 GHz range. Both the DoT reference and the TRAI CP are restricted to the 57-64 GHz range, and the discussion must be confined to the same.

As far as the 57-64 GHz range is concerned, the same has already been addressed in Airtel's main response, specifically in responses to Q 45-46. Airtel reiterates that V-band has various unique features. It offers high data throughput, millimeter-wave technology, small form factor, low interference and line-of-sight communication capabilities and plays a pivotal role in 5G networks and smart city infrastructure. It is an efficient and effective solution for delivering high-capacity, low-latency wireless connectivity in urban environments while maintaining the aesthetic and functional requirements of street furniture. **The**



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V-band, being crucial for new-age telecom networks, must not be delicensed or reserved for any users other than TSPs.

In fact, V-band has already been defined under 3GPP's band plan n263 for IMT deployment with NR bandwidth along with usage for backhaul/fixed services. Efforts are already underway for the development of a compatible ecosystem. Delicensing at this juncture may disrupt these efforts and work contrary to international standards.

Further, there are various challenges associated with delicensing, as it is an almost irreversible process. Once a spectrum band is delicensed and the ecosystem around it is established, reversing the process can be highly challenging, disruptive and, often, impractical. **If V-band is delicensed now, it would be very difficult to leverage it for future use cases in the licensed space.** Further, introducing delicensing at this stage could deprive the government of realising the true economic value of the spectrum, leading to **enormous potential losses to the exchequer in the future.**

Therefore, **Airtel adamantly opposes any proposal to allow the unlicensed use of V-band spectrum — both in the 57-64 GHz frequency range as well as the 64-71 GHz frequency range.**