Qualcomm

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Radio Spectrum Management (RSM)
Radio Spectrum Management Policy and Planning
Ministry of Business, Innovation and Employment
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New Zealand

Submitted via email Radio.Spectrum@mbie.govt.nz

1 Introduction

Qualcomm is pleased to respond to the Radio Spectrum Management (RSM) consultation referenced above which seeks comment to better understand the current and future uses and preferred allocation approaches for the 26 GHz (24.25–27.5 GHz) and Lower 28 GHz (27.5–28.35 GHz) bands, among others. Qualcomm commends RSM for initiating this consultation, an important step towards enabling efficient use of millimeter wave (mmWave) spectrum in New Zealand. With deployments occurring worldwide and a mature equipment ecosystem poised to support New Zealand, we encourage RSM to license the 26 GHz and Lower 28 GHz bands as soon as practicable.

5G mmWave technology enables high-capacity, low-latency connectivity that supports mobile broadband, Fixed Wireless Access (FWA), Integrated Access and Backhaul (IAB), and private networks (PNs) deployments. Qualcomm supports the timely allocation of these bands for mobile services to extend ultra-high-speed connectivity to consumers, enterprises, and public-sector users. Looking ahead, 6G will not only improve on 5G use cases, but will introduce immersive experiences that interconnect the physical and digital world in innovative and unexpected ways by leveraging spectrum across ranges including mmWave. Qualcomm supports RSM's proposal to open the 26 GHz band for mobile operations (mobile, FWA, IAB, PNs) and to enable mobile use within the Lower 28 GHz band (27.5–28.35 GHz) while maintaining protection for fixed-satellite gateways at existing locations. In particular, Qualcomm recommends that RSM pursue geography-based sharing in the Lower 28 GHz band.

2 General Comments

Qualcomm pioneered the development and commercialization of 5G mmWave technologies and has first-hand experience supporting the deployment of commercial networks in multiple markets. Global studies project that 5G will generate NZD 22.7 trillion (USD 13.1 trillion) in economic value and support 22.8

million jobs by 2035.[1] 5G is also key to addressing consistent growth in consumer data demands in the near and medium term, with projections indicating that mobile network traffic growth will more than double in the next five years.[2]

Rising data consumption requires efficient use of all spectrum bands — low, mid, and high-band mmWave — to sustain network capacity and performance. 5G uses all available spectrum bands, i.e., low-, mid-, and high-band mmWave, and can be leveraged to drive economic growth and improve the day-to-day lives of New Zealanders. Ultra-high speed 5G connectivity using mmWave spectrum, in particular, serves important wireless delivery needs in urban cores, transit hubs, stadiums, and other densely populated areas, and is also a key component of FWA delivery in urban, suburban, and rural areas in need of low-cost, highly reliable, multi-gigabit speed connections.

Additionally, the equipment market supporting 3GPP bands n258 (24.25-27.5 GHz) and n261 (27.5-28.35 GHz) currently exists and is mature; therefore, New Zealand should be able to reuse product availability from the U.S. and elsewhere. For instance, there are mmWave-equipped base stations and smart repeaters, and approximately 50 vendors have developed over 165 mmWave consumer devices and modules collectively, including smartphones, customer premises equipment, and laptops. This existing mature equipment ecosystem utilizing the 26 and Lower 28 GHz bands will allow for immediate deployments in New Zealand once RSM grants licenses for mobile use in these bands.

As data demand continues growing, the deployment of mmWave spectrum will be a critical piece of the solution to provide much-needed capacity, lower latency, and multi-gigabit speeds. These capabilities will ensure New Zealand can reap the full economic and social benefits of 5G technology, with near-term use cases such as:

- Providing ultra-high-speed connectivity in dense environments like concert venues, stadiums, malls, and transportation hubs. mmWave complements existing Wi-Fi deployments, bringing increased speeds and massive capacity for enhanced experiences.
- Helping to bridge the digital divide by supporting multi-gigabit connectivity via FWA broadband to homes, businesses, and community anchor institutions, while enabling mobile connectivity. For instance, Qualcomm FWA platforms include an integrated 5G FWA solution with sub-6 GHz, mmWave, and Wi-Fi 7 connectivity to support enhanced speeds, extended range, and increased accessibility.[3]
- Providing massive bandwidth to support connectivity between edge/cloud computing and local devices for AI applications requiring large language models.

Longer-term use cases that will leverage 5G mmWave include:

- Enhancing consumer experiences such as 4K multi-view streaming and sharing indoors and outdoors, as well as console-quality multi-player gaming.
- Enabling connected enterprises to support capabilities like virtual conferencing and improved services with digital twins.

[1] *See* The 5G Economy in a Post-COVID-19 Era: The role of 5G in a post-pandemic world economy, IHS Markit (Nov. 2022) (Prepared for Qualcomm Technologies, Inc. in partnership with Omdia).
[2] *See* Ericsson Mobility Report at 2 (June 2025), https://www.ericsson.com/49e9b6/assets/local/reports-papers/mobility-report/documents/2025/ericsson-mobility-report-june-2025.pdf.
[3] Qualcomm, FWA Series, https://www.qualcomm.com/products/internet-of-things/networking/wireless-fiber-fwa.

- Enhancing industrial manufacturing with capabilities like precision positioning, dynamic factory reconfiguration, and 4K video surveillance.

These use cases are just the tip of the iceberg. The ultra-high-speed, low latency capabilities of 5G mmWave technology will promote innovation by supporting new technologies and business models. Qualcomm provided additional information on 5G mmWave use cases in response to the *24-30 GHz Use in New Zealand* consultation in June 2021.

Additionally, 6G will enhance and expand the role of mmWave to deliver significantly enhanced capacity in high-demand environments such as hotspots, event venues, and densely populated urban areas. Beyond mobile connectivity, 6G will enable advanced fixed wireless access solutions with improved data rates and expanded coverage to meet the diverse needs of users in urban, suburban, and rural areas. 6G also will support integrated positioning, sensing and communication for services using large mmWave bandwidths. These uses cases will be supported through 6G mmWave enhancements in coverage, beam management, energy savings, and network topology enhancements.

Regional precedent demonstrates successful integration of mmWave into wireless service offerings. In Australia, operators including Optus, Pentanet, Telstra, and Vodafone Hutchinson TPG have commercially deployed 26 GHz mmWave services since 2021 under the Australian Communications and Media Authority's (ACMA) framework.[4] Pentanet's network, launched in 2022 using 26 GHz spectrum, demonstrated pre-launch trial speeds reaching near-gigabit speeds across dense suburban Perth.[5] These operators' commercial experience confirms the feasibility of mmWave FWA and urban capacity solutions. In Japan, NTT DoCoMo, Rakuten, and Softbank have each launched 5G services leveraging mmWave spectrum. Similarly, in Singapore, SingTel has leveraged the 28 GHz band as part of its 5G network deployment strategy and in Hong Kong, multiple operators have obtained spectrum in the available 26 GHz/28 GHz bands for the provision of 5G services and NTT Docomo Business offers a private 5G service enabled by mmWave spectrum.[6]

In the United States, operators have deployed mmWave in dense urban environments and across more than 70 high-traffic venues, including stadiums and airports. These deployments have showcased mmWave's tremendous data capacity and ultra-fast speeds. For instance, mmWave networks supported 11.2 terabytes of data during Super Bowl LVIII in 2024 and carried most of the 19.5 terabytes of data consumed during Super Bowl LIX in 2025. As operators continue to deploy mmWave 5G networks, a growing number of users are able to take advantage of expanded capacity and broadband speed.

In February 2025, FWA and 5G mmWave trials by NBN Co. and Ericsson in Australia achieved above 1 Gbps download and 100 Mbps upload rates in regional deployments, demonstrating mmWave's role in

[4] Australian Communications and Media Authority (ACMA), Register of Radiocommunications Licences, Australian Communications and Media Authority (ACMA), https://web.acma.gov.au/rrl/register_search.main_page, accessed 31 October 2025.
[5] Pentanet, Pentanet Launches neXus, Perth's Next-Generation Wireless Network (22 June 2022), https://investorhub.pentanet.com.au/announcements/4165537. Claimed trial speeds were as high 970/857 Mbps down/up in trials; 606/513 Mbps average customer speeds.
[6] Office of the Communications Authority, Communications Authority Announces Results of Second Round Spectrum Assignment for 26 GHz and 28 GHz Bands for Provision of 5G Services (11 June 2024), https://www.ofca.gov.hk/en/news_info/press_releases/index_id_2350.html.

broadband delivery to rural and peri-urban areas.[7] The Australian experience shows that opening mmWave bands for mobile and FWA can drive broad-based coverage and infrastructure efficiency while supporting satellite coexistence through site-specific coordination.

3 Questions

Qualcomm's responses to certain Consultation questions are provided below.

Response to Question 1 regarding 1.1: Proposed new spectrum uses for 26 GHz (24.25–27.5 GHz)

Qualcomm supports RSM's proposal to designate the 26 GHz band primarily for the Mobile Service, with co-primary allocations to EESS (space-to-Earth) and SRS (space-to-Earth), consistent with the Table of Radio Spectrum Usage in New Zealand (PIB 21) and ITU-R Region 3 identification for IMT under ITU-RR No. 5.532AB. This approach aligns New Zealand's framework with international practice and enables rapid commercial introduction of 5G mmWave networks.

The Australian 26 GHz model demonstrates practical coexistence of mobile and satellite services through geographic coordination and site-specific licensing. ACMA's licensing database indicates over 6,300 mmWave base station assignments across operators as of October 2025, underscoring active commercial use of the band without material interference issues to space services.[8] RSM can adopt a similar framework using technical parameters and coordination procedures to protect receive-only Earth stations while enabling broad mobile deployment.

Qualcomm further supports maintaining existing provisions for Short-Range Devices and Ultra-Wideband Devices in adjacent bands, recognizing their low interference potential and the need to preserve regulatory continuity for innovation.

Response to Question 19 regarding 2.1 and Question 26 regarding 2.4.2: Proposed new spectrum uses for Lower 28 GHz (27.5–28.35 GHz)

Qualcomm supports the New Zealand Cabinet decision to allocate the 27.5–28.35 GHz band to the Fixed-Satellite Service (FSS, Earth-to-space) and Mobile Service on a co-primary basis, consistent with ITU Region 3 allocations. Qualcomm further supports enabling mobile systems, such as FWA and private networks, to operate in dedicated or specific areas of the country – particularly urban areas – under defined sharing arrangements and associated technical conditions as proposed in Option 1 in section 2.4.2 of the Technical discussion document.

This co-primary framework promotes efficient national spectrum use while ensuring that FSS gateway operations remain protected through appropriate coordination measures. International experience, including deployments in comparable markets, demonstrates that geographically limited sharing between mobile and satellite services can be achieved successfully where emission limits, site coordination, and technical compatibility criteria are clearly established.

Qualcomm recommends that RSM establish and maintain technical conditions that enable deployment of mobile systems, including FWA and private networks, in designated areas while ensuring interference

[7] NBN Co., NBN Co and Ericsson Achieve Gigabit Speeds in Long-Range Fixed Wireless Trials (26 Feb. 2025), https://www.nbnco.com.au/corporate-information/media-centre/media-statements/nbn-ericsson-achieve-gigabit-speeds-in-long-range-fixed-wireless-trials.

[8] ACMA, Register of Radiocommunications Licences, accessed 31 October 2025.

protection for licensed FSS gateways through site-specific coordination mechanisms rather than broad exclusion zones. As proposed in Option 1, this approach allows for the deployment of mobile services in major, large, medium, small urban areas, and high urban accessibility areas while promoting efficient spectrum use, facilitating coexistence between FSS and mobile operations, and ensuring continuity for existing satellite services.

4 Conclusion

Qualcomm supports RSM's efforts to enable efficient and coordinated use of the 26 GHz and Lower 28 GHz bands for mobile and satellite services. Evidence from commercial and trial deployments in the United States and Asia-Pacific region demonstrates that mmWave can deliver high-speed connectivity in both urban and rural contexts while maintaining coexistence with FSS operations.

Accordingly:

- Qualcomm supports opening the 26 GHz band for mobile services including mobile, FWA, IAB, and PN deployments, as proposed in the Technical discussion document.
- Qualcomm also supports permitting the deployment of mobile systems such as FWA and private networks in the lower 28 GHz band in urban areas under defined sharing arrangements and technical coordination conditions that protect FSS gateway operations.

This approach aligns New Zealand with regional best practice, maximizes spectrum efficiency, and positions the country to benefit from global 5G – and 6G – mmWave innovation.

Sincerely,

Nies Purwati
Senior Director, Government Affairs
Qualcomm International Inc.
Privacy of natural persons