

Comparative Report: Telstra's Use of the 2.3–2.4 GHz Band vs. the US, UK, Europe, and Canada

- 1) The 2.3–2.4 GHz frequency band is recognised for its balance of propagation characteristics and capacity delivery. This has seen it used for both WA WBB, FWA and private 4G/5G networks, with licensing and regulatory approaches facilitating these varied use cases. There is also evidence of shared use approaches.
- 2) In Australia, the 2302–2400 MHz band has been allocated across Australia using spectrum licensing arrangements. There are 3 licensees, each broadly holding the available 98 MHz bandwidth in different areas. Licenses are used differently. NBN Co maintains large regional fixed wireless access deployments; Optus has deployed the spectrum in metropolitan areas for its WA WBB network; and Telstra, having recently acquired the spectrum, has a small number of private LTE and 5G deployments in the remote areas covered by its licence.¹
- 3) The USA uses the band for both public and rural/industrial wireless broadband.
- 4) Canada uses the band for a mix of services, with significant for regional and rural Internet Service Providers to deliver FA WBB.
- 5) In the UK, the band is used for both national mobile broadband and local shared use cases.
- 6) Across Europe, there is use of band for public WBB and 5G services, although legacy use remains widespread.

United States

- 7) **Usage:** The Federal Communications Commission (FCC) designated 55 MHz (2305–2360 MHz) as Wireless Communications Service (WCS), subdivided for fixed and mobile broadband, known as Band 30. The principal licensees include large carriers such as AT&T (for supplemental LTE and 5G downlink) and Wireless ISPs providing rural fixed

¹ See our [Stage 3 Preliminary views paper 2](#) for summary and analysis of how the band is used in Australia.

wireless services. Adjacent spectrum is reserved for satellite radio, with technical limits imposed on WCS to prevent interference.² Licensees are required to meet specific performance and deployment requirements; if these are not met, the license will automatically terminate.³

- 8) **Regulatory Approach:** WCS licenses permit flexible use, subject to strict technical rules to protect adjacent satellite radio services. Additional rural broadband licensing options are available. Nationwide 5G network deployments in the United States have predominantly utilised the 2.5 GHz and 4 GHz and higher spectrum bands, which now serve as the main mid-band allocations for 5G services, while WCS plays a more limited role.⁴

Canada

- 9) **Usage:** In Canada, the band is allocated for a mix of fixed, mobile, and satellite services. Major blocks have been licensed for flexible use, allowing both FWA and WBB. But the band is primarily used by regional wireless ISPs for FWB, especially in rural and underserved areas, with some use for regional WBB. Nationwide WBB is mainly supported by other spectrum bands, notably C-band (3.5 GHz) for advanced mobile services.
- 10) **Regulatory Approach:** Innovation, Science and Economic Development Canada (ISED) administers flexible-use licensing in the 2.3 GHz band, with specific requirements for rural build-out and coverage.

United Kingdom

- 11) **Usage:** In 2017–18, the Ofcom auctioned 40 MHz (2350–2390 MHz) of the 2.3 GHz band for public WBB (4G/5G, designated Band 40), awarded to Telefónica UK (O2) and intended for immediate deployment in urban areas, supported by a wide range of consumer devices. Local and shared licenses in smaller sub-bands are also available for temporary or private network use, including events and industrial applications. In July 2025, Ofcom proposed a new short-duration licence for rapid indoor and outdoor

² <https://www.fcc.gov/wireless/bureau-divisions/mobility-division/wireless-communications-service-wcs>

³ <https://docs.fcc.gov/public/attachments/FCC-24-16A1.pdf>

⁴ <https://docs.fcc.gov/public/attachments/DA-13-1141A1.pdf>

access to the 2320–2340 MHz range, enabling multiple users to share spectrum for ad hoc services, subject to technical and coordination requirements.

- 12) **Regulatory Approach:** Ofcom offers a combination of exclusive national licences for mobile WBB and shared access licensing, providing both large-scale and local spectrum access options. The shared framework supports low-barrier licensing for a variety of uses, including industrial, IoT, private, and temporary deployments, across several spectrum bands such as 2.3 GHz, 3.8–4.2 GHz, and others. Ofcom’s licensing terms require the spectrum to be actively used, with conditions permitting the reassignment or return of unused allocations, to encourage efficient use and access by new users.⁵

Summary Comparison Table: USA – UK – Australia (Telstra, Optus and NBN)

Category	Australia (Telstra, Optus & NBN Co)	United Kingdom	United States
Main Users	Telstra (private/industrial), NBN Co (public rural fixed wireless) Optus (Metropolitan 4G5G)	O2 (public LTE/5G), local private & event/industrial networks	AT&T (LTE/5G), WISPs, legacy satellite radio
Public Connectivity	NBN Co: public rural fixed wireless; Telstra: public/remote deployments; Optus metropolitan deployment	Urban LTE/5G coverage (O2); local networks (shared access/specialist)	Urban LTE densification, some rural wireless via WISPs
Private/Industrial Use	Telstra: private/industrial (e.g., mining, remote); NBN Co: not applicable; Optus not applicable.	Available via shared/local licensing for private networks	WCS Band 30: available for private/rural ISP, limited deployment
Efficiency (2025)	NBN Co: extensive deployment, reported high utilization; Telstra: ongoing deployment focus; Optus extensive deployment	Public/shared use: deployed in urban/shared bands; legacy spectrum in transition	Mobile: deployment subject to technical and adjacent band constraints
Regulatory Approach	Technology-neutral licensing; review for renewal linked to usage	Combination of exclusive national and shared/local licenses; harmonized with CEPT Band 40	Flexible licensing (TDD); strict adjacent-band protection (SDARS)

⁵ <https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-1-10-weeks/consultation-supporting-increased-use-of-shared-spectrum/associated-documents/consultation-supporting-increased-use-of-shared-spectrum?v=330469>; <https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-2-6-weeks/255958-evolving-shared-access-licence-framework/associated-documents/call-for-inputs-evolution-of-shared-access.pdf?v=329417>; <https://omdia.tech.informa.com/om137906/pending-ofcom-approval-some-uk-spectrum-allocations-are-set-to-be-reassigned-which-will-improve-network-performance-for-customers-and-mvnos>

4. Europe (excl. UK)

- 13) Usage: In most European countries (excluding the UK), the 2.3 GHz band is used for various applications, including military communications, broadcasting, PMSE (program making and special events), industrial, and telemetry services. Deployment of LTE/5G mobile and fixed wireless in the 2.3 GHz band is established in a limited number of European markets (notably the Nordics, Ireland, and the UK). In most EU countries, the band continues to be mainly used for legacy applications such as military, broadcast, PMSE, and telemetry, with comparatively limited new mobile broadband deployment. Localised licensing and private network applications have been implemented in Finland, Slovenia and Spain.
- 14) **Regulatory Approach:** CEPT established harmonized time-division duplexing (TDD) technical conditions in the 2.3–2.4 GHz band, based on 20 blocks of 5 MHz each. Final implementation is determined at the national level. Some national regulators are piloting or extending shared access frameworks to enable industrial, IoT, and private networks, or are planning auctions for mobile broadband use.
- 15) **Applications/Deployment:**

Comparative Insights

Region/Operator	Primary Usage	Regulatory Approach	Tech/Market Focus	Deployment
Australia (Telstra)	Industrial/private networks (e.g., mining); public rural (NBN Co)	Flexible licensing, with regulatory review of use	Industrial, mining, remote, public fixed wireless	Extensive for NBN Co; ongoing/limited for Telstra
Australia (Optus)	4G and 5G WA WBB services in metropolitan areas.		Metropolitan areas	Deployed utilising radiocommunications transmitters at approximately 3,900 4G sites and 2,500 5G sites in metropolitan areas.
USA	Urban LTE/5G, rural wireless/fixed services	Flexible licensing, technical rules for adjacent bands	Urban densification, rural fixed wireless	Widespread in urban, moderate rural; lower in WCS than C-band
UK	National LTE/5G (O2), local/shared private/event networks	National-exclusive and shared/local licensing	Urban public, private/industrial/event	High in licensed segments
Europe	Mixed: legacy (military, PMSE, etc.), regional fixed/private in some states	National implementation of CEPT TDD plan; LSA pilots in selected markets	Legacy uses, 4G/5G, private/industrial	Active in a few states, limited elsewhere

Canada	Rural/remote fixed wireless, some regional mobile	Flexible-use licensing with rural coverage obligations	Regional ISPs, rural broadband, fixed & mobile	Supports rural policy goals; more limited for mobile
--------	---	--	--	--