STRATEGIC FREQUENCIES

Navigating the State of Canada's Telecom Spectrum Landscape (demo version – Alberta)

ABSTRACT

This report delves into the current status of the radio frequency spectrum allocation in Canada. It highlights the shares of leading national players like Rogers, Bell, and TELUS as well as key regional license holders, and simplifies the complex landscape of spectrum holdings across the nation. Additionally, it breaks down the allocated licenses by frequency band, providing insights into the strategic positioning of various players within Canada's wireless services market.

This is a demo version of the report that only contains the details for the Alberta province. To see the complete version, contact Telcoinsight.

by Telcoinsight for Decision Makers

INTRODUCTION

More than seventy license holders share the radio frequency spectrum in Canada. In any given geographical area, a number of these entities may coexist, owning different frequency ranges or different blocks of a certain frequency range. There are also partnerships and agreements between some entities that allow them to share their spectrum with each other fully, or partially. These allocation factors plus many other technical restraints, including hardware limitations, technology compatibilities, and wireless signals interference considerations, make the frequency spectrum sphere very complicated to understand. Realizing the spectrum allocation nuances provides the market stake holders with invaluable insights and tactical advantage over the competition. In this introductory report, which is the first in a series of spectrum insight reports, we aim to equip the executive decision makers with an overall understanding of the spectrum allocations in Canada.

NATIONAL SPECTRUM OVERVIEW

In the landscape of Canada's telecom spectrum, a few key players hold significant sway. Of the total 300.2 GHz of bandwidth allocated within the country, Rogers claims the largest share. Including its 50% stake in Orion Partnership—shared with Bell—Rogers controls over 30% of the national spectrum. Bell and TELUS are also major holders, with each owning approximately 20%. The chart below illustrates this distribution, noting that the category, 'Other', represents numerous smaller licensees, each with less than 1% of the spectrum:

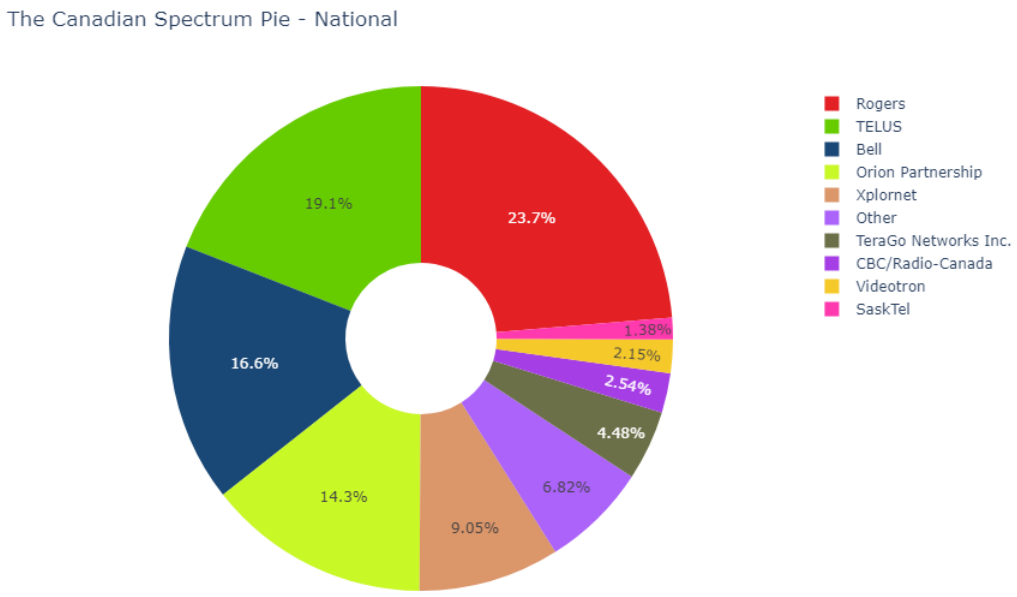


Figure 1 - The Canadian Spectrum Pie - National

SPECTRUM ALLOCATION ACROSS DIFFERENT PROVINCES AND TERRITORIES

The Innovation, Science and Economic Development Canada (ISED) defines Tier 5 Service Areas as the geographical units for frequency spectrum allocation. The following table details the count of these areas across each Canadian province and territory:

Province Name	Population(2021)	Number of Tier-5 Service
Alberta	4,429,419	72
British Columbia	5,205,345	86
Manitoba	1,388,245	36
New Brunswick	858,405	31
Newfoundland and Labrador	520,670	19
Northwest Territories	41,703	6
Nova Scotia	1,041,525	26
Nunavut	37,419	6
Ontario	15,166,395	159
Prince Edward Island	165,257	7
Quebec	8,716,230	148
Saskatchewan	1,165,081	50
Yukon	42354.0	4

Table 1 - Defined Tier-5 Service Areas per Province

DISPERSION OF MAJOR LICENSEE SPECTRUM HOLDINGS

Examining the reach of spectrum ownership among the major licensees, the data reveals a diverse distribution. Notably, no single entity holds spectrum in all thirteen provinces and territories:

Licensee	Number of Provinces/Territories
Bell	12
Xplornet	12
Cbc	12
Orion Partnership	11
Rogers	10
Telus	7
Terago Networks	5
Bragg Communications Inc.	4
Ssi Micro Ltd.	3
Shaw	2
Lemalu Holdings Ltd Mcsnet	2
Videotron	1
Sasktel	1
Abc Allen Business Communications	1
High Speed Crow Inc.	1
Access Communication Co-Operative Limited	1
Ice Wireless Inc.	1
Ncs Managed Services Inc.	1
Ctv Inc.	1
Groupe Maskatel Gp Inc.	1
Cogeco Connexion Inc.	1
Valley Internet Service Provider Ltd.	1

Table 2 - Presence of Different Licensees across Canadian Provinces/Territories

The following summary provides a clear picture of the number of competitive service areas in each region, along with the populations they serve. Additionally, it outlines the number of major telecom competitors in each region, offering a snapshot of the competitive landscape across the country. Note that only those license holders with a share of 1% or more in the allocated regional spectrum are counted :

Province/Territory	Total Bandwidth (MHz)	Total Population	Number of Tier5 Service Areas	Number of Competition
ON	92,943	15,166,395	159	8

QC	59,180	8,716,230	148	10
BC	43,952	5,205,345	86	8
AB	37,235	4,429,419	72	8
MB	12,221	1,388,245	36	9
SK	14,087	1,165,081	50	6
NS	13,830	1,041,525	26	8
NB	15,677	858,405	31	6
NL	5,058	520,670	19	6
PE	3,832	165,257	7	6
YT	601	42,354	4	6
NT	815	41,703	6	6
NU	749	37,419	6	4

Table 3 -Number of competition in each Province/Territory

The following charts depict the major spectrum holders within each province (only Alberta in this demo version). For clarity, licensees holding a share of less than 1% are collectively categorized under 'Other.'

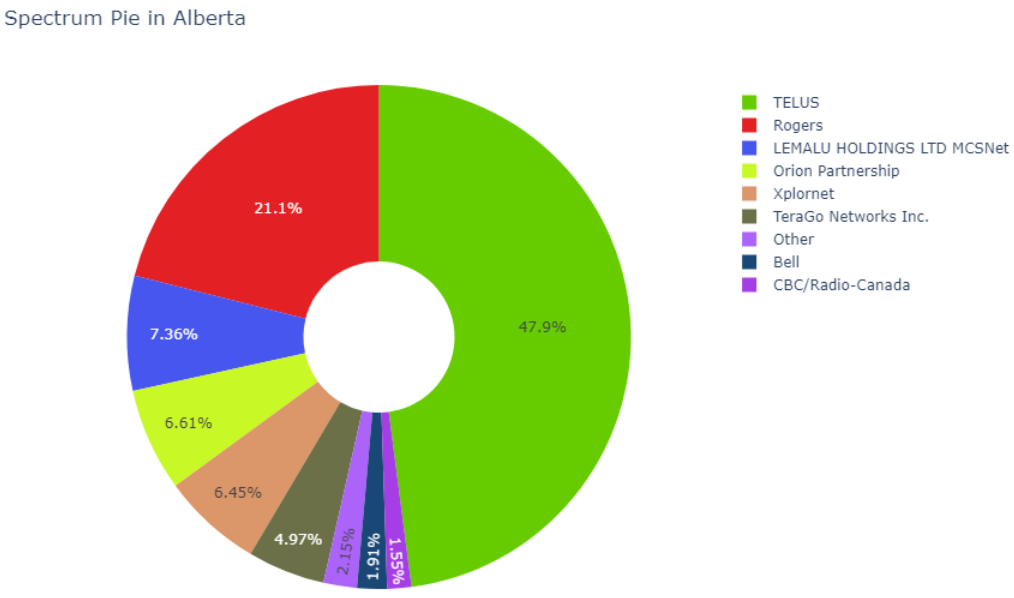
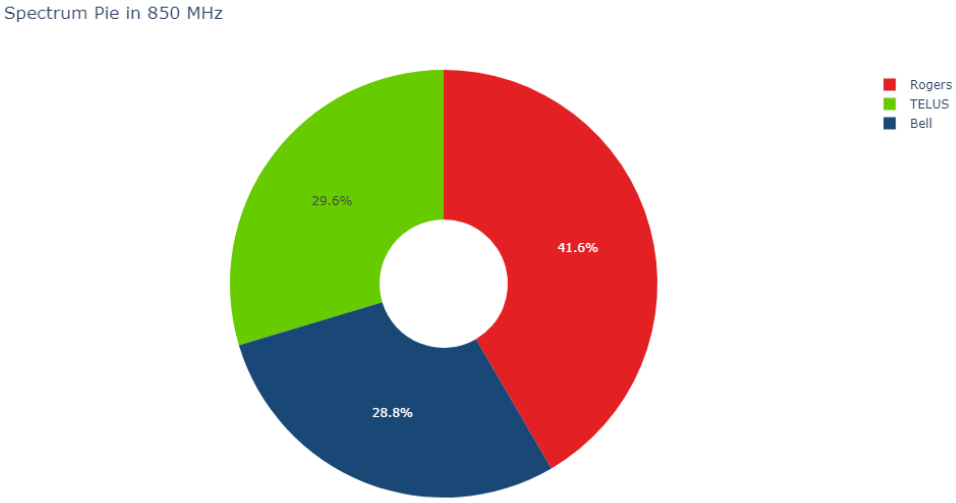


Figure 2 - Spectrum Pie in Alberta

STRATEGIC SIGNIFICANCE OF FREQUENCY BANDS

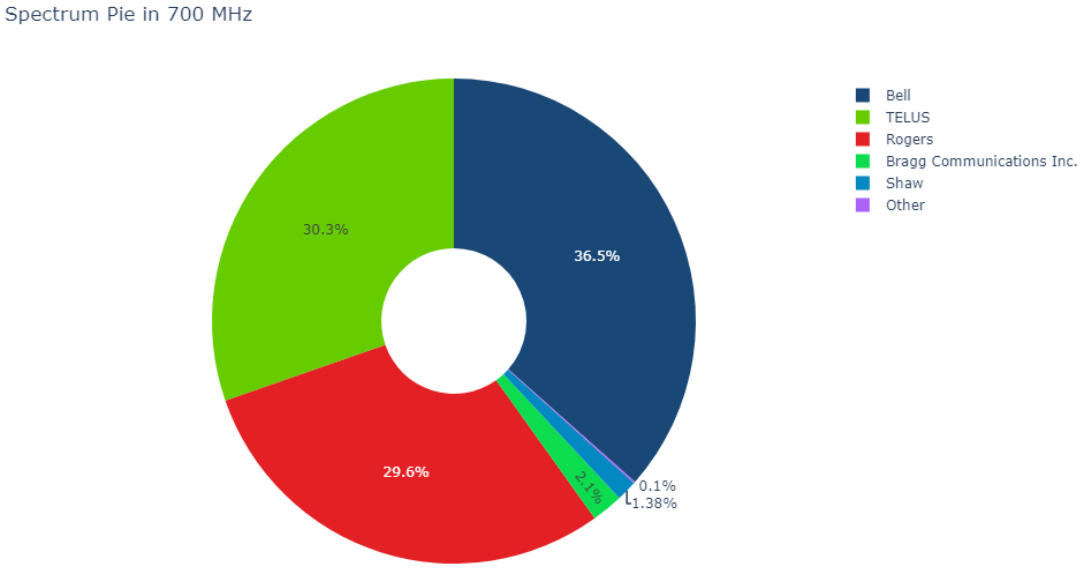
Depending on the service coverage and capacity requirements of a wireless service provider, certain frequency bands can bear strategic significance to gain a competitive edge. The upcoming charts and tables detail the total bandwidth allocated to spectrum licensees in each of these bands across Alberta (for this demo version):



850 MHz Total Allocated Bandwidth per Licensed Range

Province	850 MHz (CELL) : 824 - 849 MHz and 869 - 894 MHz
Alberta	2192.9

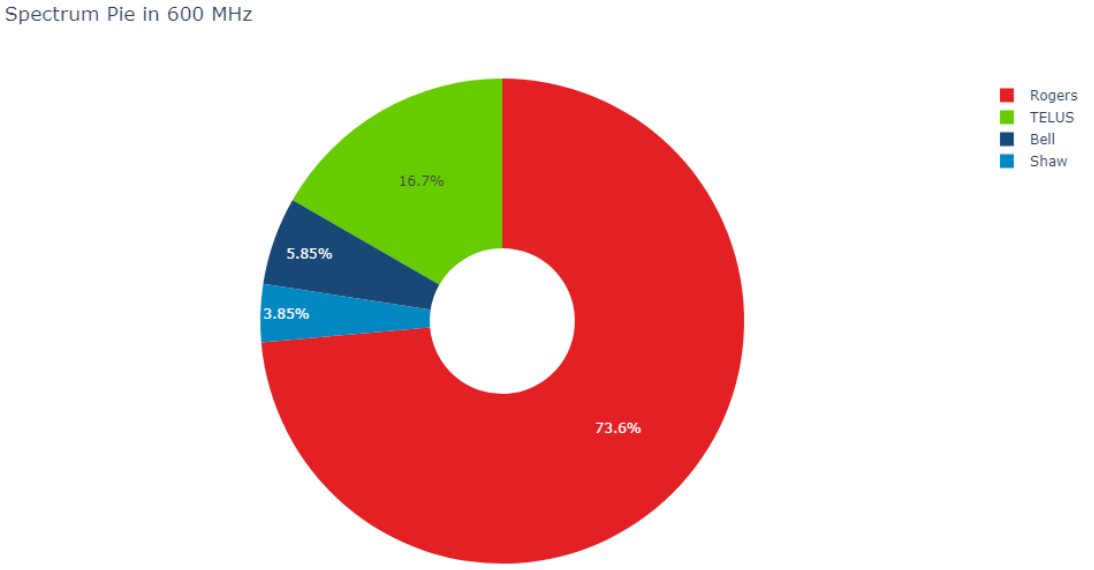
Figure 3 - Licensees' Share and Distribution (850 MHz)



700 MHz Total Allocated Bandwidth per Licensed Range

Province	700 MHz (MBS) : 698 - 787 MHz
Alberta	2740

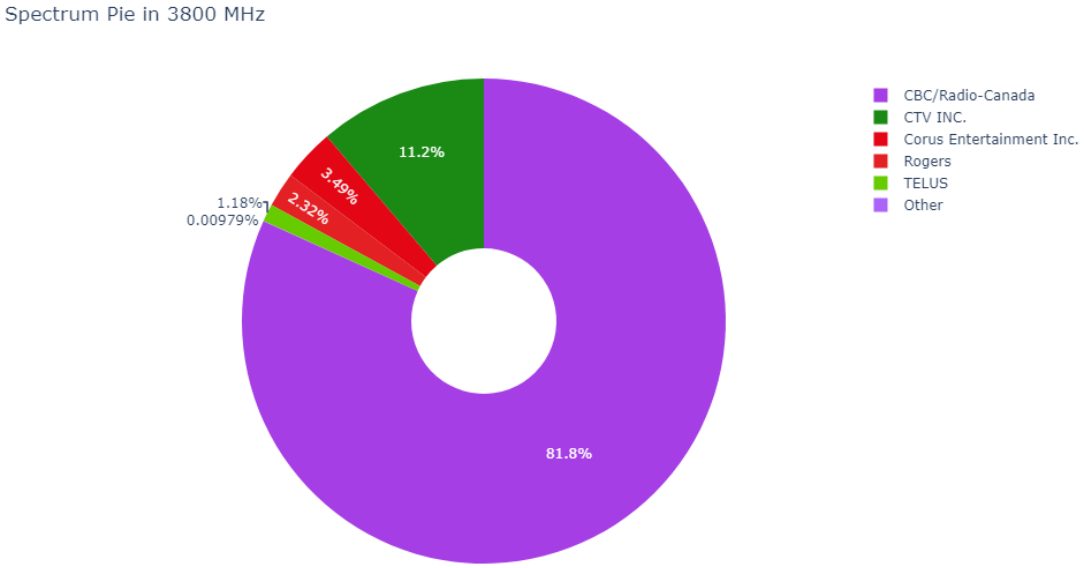
Figure 4 - Licensees' Share and Distribution (700 MHz)



600 MHz Total Allocated Bandwidth per Licensed Range

Province	600 MHz (600B) : 614 - 652 MHz and 663 - 698 MHz
Alberta	1155

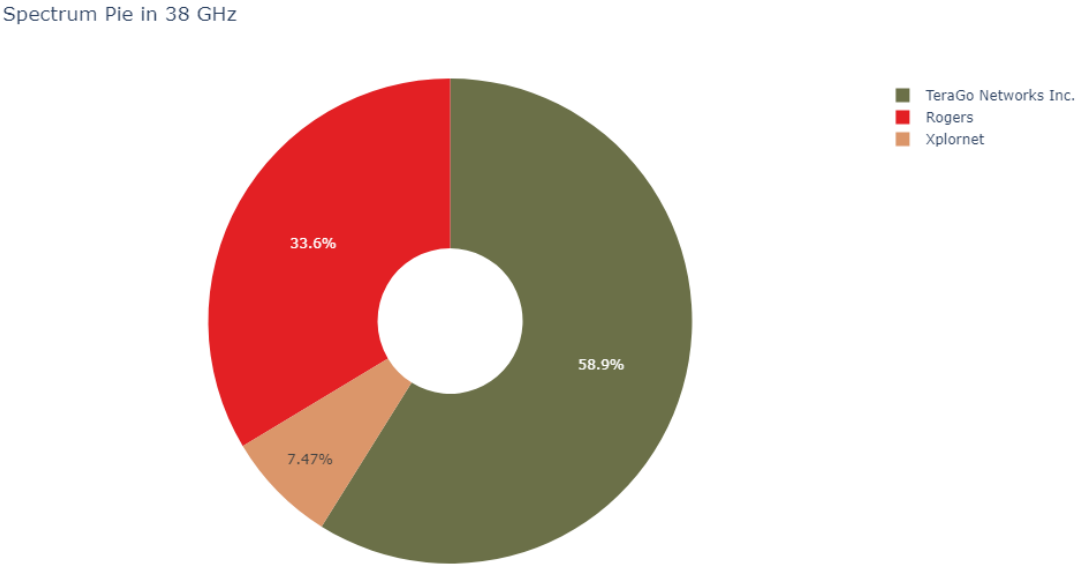
Figure 5 - Licensees' Share and Distribution (600 MHz)



3800 MHzTotal Allocated Bandwidth per Licensed Range

Province	3800 MHz (3800I) : 3650 - 3900 MHz
Alberta	865.69

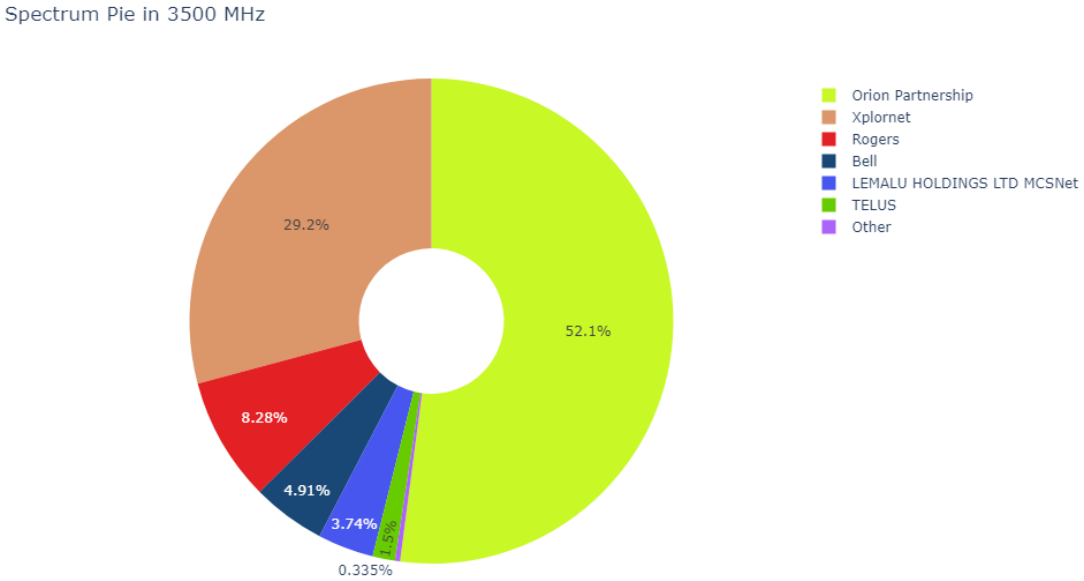
Figure 6 - Licensees' Share and Distribution (3800 MHz)



38 GHzTotal Allocated Bandwidth per Licensed Range

Province	38 GHz (BWA38) : 38700 - 39100 MHz and 39400 - 39800 MHz
Alberta	865

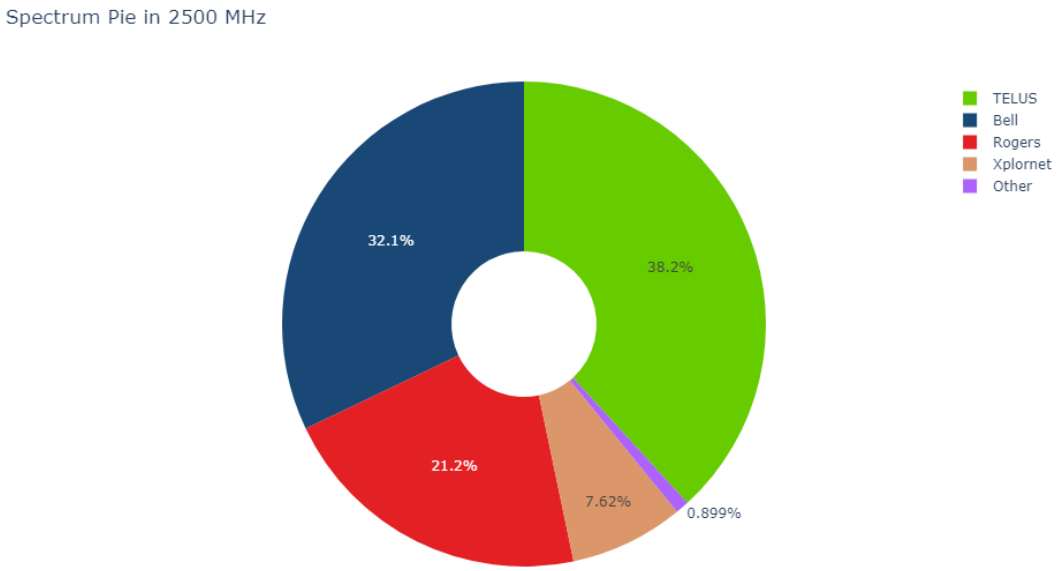
Figure 7 - Licensees' Share and Distribution (38 GHz)



3500 MHzTotal Allocated Bandwidth per Licensed Range

Province	3500 MHz (3500B) : 3450 - 3650 MHz	3500 MHz (FWA) : 3450 - 3650 MHz	3500 MHz (WBS) : 3650-3700 MHz
Alberta	530	2320.08	4758.69

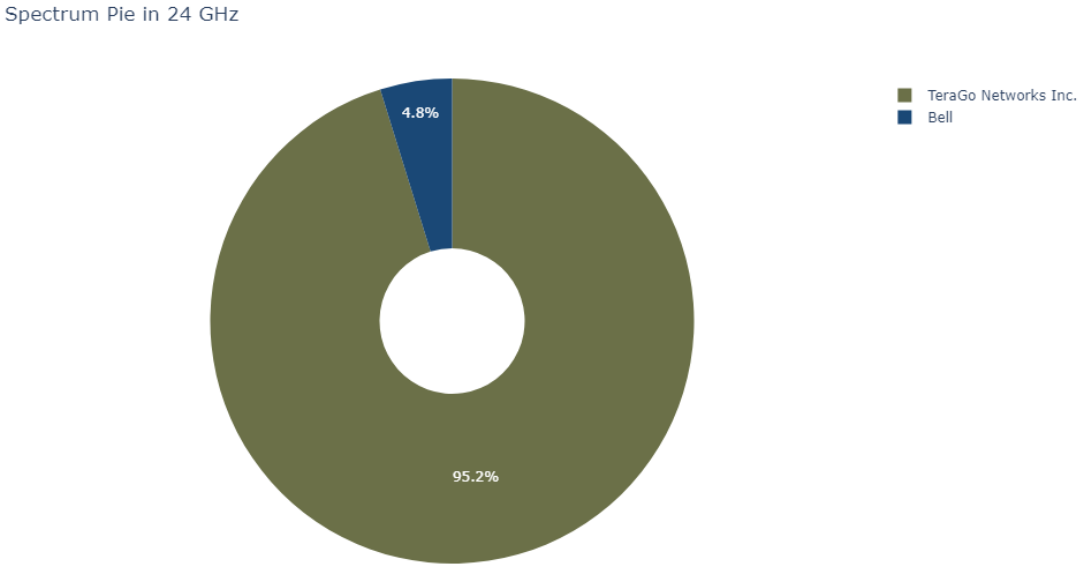
Figure 8 - Licensees' Share and Distribution (3500 MHz)



2500 MHzTotal Allocated Bandwidth per Licensed Range

Province	2500 MHz (BRS) : 2500 - 2690 MHz
Alberta	6860

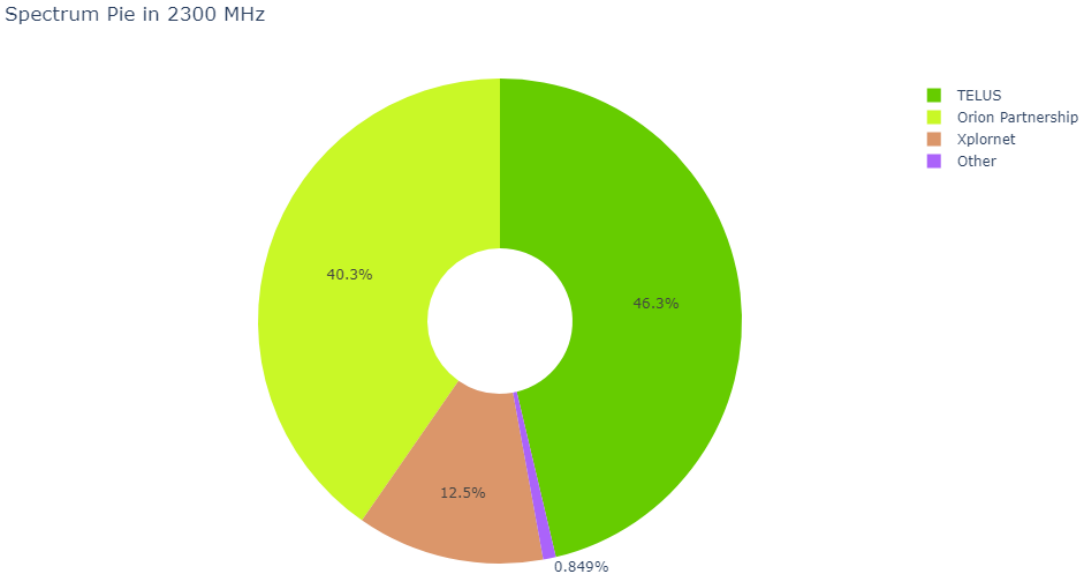
Figure 9 - Licensees' Share and Distribution (2500 MHz)



24 GHzTotal Allocated Bandwidth per Licensed Range

Province	24 GHz (BWA24) : 24250 - 24450 MHz and 25050 - 25250 MHz
Alberta	1500

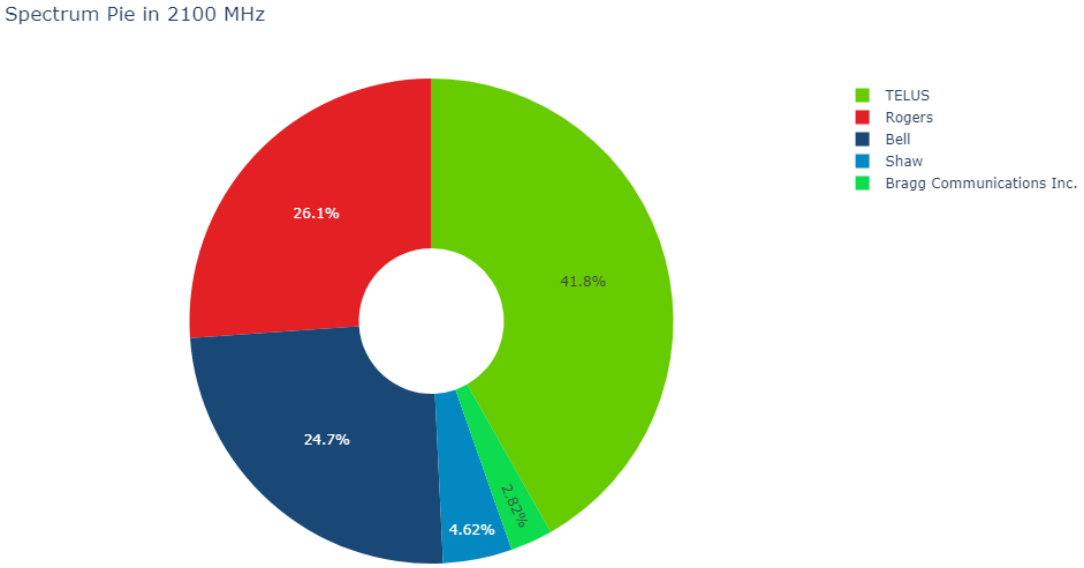
Figure 10 - Licensees' Share and Distribution (24 GHz)



2300 MHzTotal Allocated Bandwidth per Licensed Range

Province	2300 MHz (WCS) : 2305 - 2320 MHz and 2345- 2360 MHz
Alberta	520

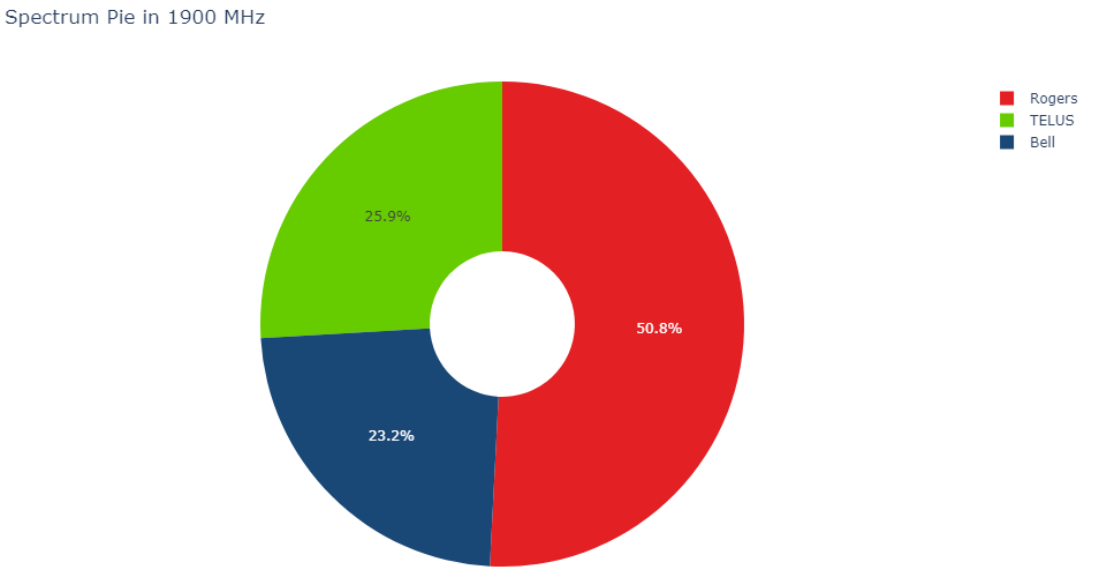
Figure 11 - Licensees' Share and Distribution (2300 MHz)



2100 MHzTotal Allocated Bandwidth per Licensed Range

Province	2100 MHz (AWS) : 1695 - 1780 MHz and 1995 - 2200 MHz	2100 MHz (AWS-3) : 1755 - 1780 MHz and 2155 - 2180 MHz	2100 MHz (AWS-4) : 2000 - 2020 MHz and 2180 - 2200 MHz
Alberta	3615	1550	280

Figure 12 - Licensees' Share and Distribution (2100 MHz)



1900 MHzTotal Allocated Bandwidth per Licensed Range

Province	1900 MHz (PCS) : 1850- 1990 MHz	1900 MHz (PCSG) : 1910 - 1915 MHz and 1990 - 1995 MHz
Alberta	7452.15	20

Figure 13 - Licensees' Share and Distribution (1900 MHz)

CONCLUSION: INSIGHTS BEYOND THE SPECTRUM

This report primarily focuses on mapping the Canadian spectrum allocation landscape. The report also underscores the concentrated nature of spectrum ownership in Canada,

with major implications for the competitive landscape and future industry developments. Understanding this distribution is key for stakeholders in shaping strategies and policies. The demo version of the report only contains the details for Alberta province.

In a different report, we have uncovered other valuable insights through comparative analysis of licensees, particularly in relation to the geographical areas of their licenses. This deeper analysis sheds light on market trends and competitive positioning of the major and strategic players in the market. Reach out to Telcoinsight to know more.