

# U.S. Retail Private CBRS Network Forecast, 2021 – 2026





---

# **U.S. Retail Private CBRS Network Forecast, 2021 – 2026: *CBRS Network Build, Integration and App Spending in Retail Buildings***

---

## **A Market Study**

Published Second Quarter, 2022  
Version 1.0  
Report Number: 02Q2022-06

iGR  
12400 W. Hwy 71  
Suite 350 PMB 341  
Austin TX 78738

# Table of Contents

<b>Abstract .....</b>	<b>1</b>
<b>Executive Summary.....</b>	<b>3</b>
<b>Total Spending for Private CBRS Networks, Retail Buildings .....</b>	<b>4</b>
Table A: Total Spending for Private CBRS Networks in Retail Non-mall and Mall Buildings, 2021-2026 (\$M) .....	4
Figure A: Total Spending for Private CBRS Networks in Retail Non-mall and Mall Buildings, 2021-2026 (\$M) .....	5
<b>What this means .....</b>	<b>5</b>
<b>Methodology.....</b>	<b>6</b>
<b>Sources .....</b>	<b>6</b>
<b>Definitions .....</b>	<b>7</b>
<b>Retail Buildings and Outdoor Shopping Areas.....</b>	<b>8</b>
<b>Key trends in Retail.....</b>	<b>8</b>
Figure 1: Total Retail sector employment, 2018-2022.....	9
Figure 2: Total employer compensation costs, all Retail sector employees, 2018-2022.....	10
<b>What is Required for a Connected Retail Building or Outdoor Shopping Area? .....</b>	<b>11</b>
<b>Private CBRS Networks in Retail Buildings and Outdoor Shopping Areas.....</b>	<b>12</b>
<b>Outlook for Private CBRS Networks in Retail .....</b>	<b>13</b>
<b>Technologies and spectrum behind connected Retail Buildings and Outdoor Shopping Areas .....</b>	<b>14</b>
<b>5G.....</b>	<b>14</b>
<b>CBRS .....</b>	<b>15</b>
<b>Forecast Methodology and Assumptions .....</b>	<b>17</b>
<b>Basic Assumption .....</b>	<b>17</b>
<b>Buildings Methodology.....</b>	<b>17</b>
Methodology – Commercial Buildings .....	17
Table 1: Commercial Buildings in the U.S. ....	18
<b>Network Build &amp; Operate Spending Methodology .....</b>	<b>19</b>
Network Build Spending .....	19
Operational Spending .....	20
<b>Network/Systems Integration: Assumptions and Methodology .....</b>	<b>20</b>
<b>Application Spending: Assumptions and Methodology .....</b>	<b>21</b>
<b>Private CBRS Network Spending Forecast – Retail Non-Mall and Mall Buildings.....</b>	<b>22</b>
<b>Private CBRS Networks Build and Operation.....</b>	<b>22</b>
Retail Non-mall Network Build .....	22
Table 2: Private CBRS Network Build Spending in Retail Non-mall Buildings, 2021-2026 (\$M) .....	22
Figure 3: Private CBRS Network Build Spending in Retail Non-mall Buildings, 2021-2026 (\$M) .....	22
Retail Non-mall Operational .....	23
Table 3: Private CBRS Network Operational Spending in Retail Non-mall Buildings, 2021-2026 (\$M) .....	23
Figure 4: Private CBRS Network Operational Spending in Retail Non-mall Buildings, 2021-2026 (\$M) .....	23
Retail Non-mall Total Private CBRS Network Spending .....	23

Table 4: Total CBRS Private Network Spending for Retail Non-mall Buildings, 2021-2026	24
Figure 5: Total CBRS Private Network Spending for Retail Non-mall Buildings, 2021-2026	24
Retail Mall Network Build	24
Table 5: Private CBRS Network Build Spending in Retail Mall Buildings, 2021-2026 (\$M)	24
Figure 6: Private CBRS Network Build Spending in Retail Mall Buildings, 2021-2026 (\$M)	25
Retail Mall Operational	25
Table 6: Private CBRS Network Operational Spending in Retail Mall Buildings, 2021-2026 (\$M)	25
Figure 7: Private CBRS Network Operational Spending in Retail Mall Buildings, 2021-2026 (\$M)	26
Retail Mall Total Private CBRS Network Spending	26
Table 7: Total CBRS Private Network Spending for Retail Mall Buildings, 2021-2026	26
Figure 8: Total CBRS Private Network Spending for Retail Mall Buildings, 2021-2026	27
Total Retail Non-mall and Mall Private CBRS Network Spending	27
Table 8: Total CBRS Private Network Spending for Retail Non-mall and Mall Buildings, 2021-2026	27
Figure 9: Total CBRS Private Network Spending for Retail Non-mall and Mall Buildings, 2021-2026	28
<b>Private CBRS Networks Integration</b>	<b>28</b>
Systems/Network Integration	28
Table 9: Private CBRS Systems/Network Integration Spending in Retail Non-mall and Mall Buildings, 2021-2026, (\$M)	28
Figure 10: Private CBRS Systems/Network Integration Spending in Retail Non-mall and Mall Buildings, 2021-2026	29
<b>Private CBRS Networks Application</b>	<b>29</b>
Application spending	29
Table 10: Private CBRS Network Application Spending in Retail Non-mall and Mall Buildings, 2021-2026	29
Figure 11: Private CBRS Network Application Spending in Retail Non-mall and Mall Buildings, 2021-2026	30
<b>Total spend</b>	<b>30</b>
Table 11: Total Spending for Private CBRS Networks in Retail Non-mall and Mall Buildings, 2021-2026 (\$M)	30
Figure 12: Total Spending for Private CBRS Networks in Retail Non-mall and Mall Buildings, 2021-2026 (\$M)	31
<b>Definitions</b>	<b>32</b>
Definitions Table	32
<b>About iGR</b>	<b>49</b>
<b>Disclaimer</b>	<b>49</b>

# Abstract

There are many thousands of retail/mercantile buildings in the U.S., including both malls and standalone (non-mall) buildings. Private CBRS networks systems can be deployed in retail buildings to provide secure connectivity that can serve multiple needs. However, the underlying structural changes in the retail sector preclude a clear upside to deployments of private CBRS networks in these buildings.

For this report, iGR defines an in-building private cellular system as one that uses the U.S. CBRS band for 4G/5G-based services and is funded by a third party distinct from a mobile network operator (MNO). Note that iGR includes 'campus-wide' cellular networks, such as those that would cover an outdoor / open-air shopping area, within the "in-building" umbrella.

This market study provides a five-year forecast for spending for three types of spending on in-building private cellular systems using CBRS in U.S. retail buildings. The three types of spending include:

- Network build and operational spending: the costs associated with installing and operating the private CBRS network
- Network/systems integration spending: the costs associated with designing, sourcing equipment, integrating the network and applications, etc.
- Applications: the costs associated with purchasing and licensing the applications that run on the private CBRS network.

Key questions addressed in this market study include:

- What is a private cellular network?
- How can a private cellular network be used to create a connected retail building/shopping area?
- What is the primary purpose of a connected retail building or shopping area?
- What technologies are required for a connected retail building or shopping area?
- What use cases are enabled in a connected retail building or shopping area?
- How much will be spent to build and operate a private CBRS network in U.S. retail buildings from 2021 to 2026?
- What is the forecasted network/systems integration spending associated with the private CBRS network opportunity in U.S. retail buildings from 2021 to 2026?
- What is the forecasted applications spending for private CBRS networks in U.S. retail buildings from 2021 to 2026?

Who should read this report?

- Systems integrators and wireless network integrators
- CBRS solutions vendors
- Mobile operators
- Infrastructure OEMs
- Financial analysts and investors.