

In-Building Wireless 2023



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MOBILE EXPERTS

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Companies that buy this research will learn:

- The trends between multiple IBW architectures, including DAS, Small Cells, and Boosters;
- Technical Details of MORAN and MOCN solutions for multi-operator sharing;
- The five-year forecast for shipments and revenue in IBW;
- Regional trends in IBW preferences and investments;
- The Total Cost of Ownership comparisons of various IBW solutions; and
- Profiles of 40 companies.

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METHODOLOGY

To create estimates and forecasts for DAS and repeater equipment shipments and revenue, Mobile Experts relied on direct input from more than 20 industry sources, including input from multiple mobile operators contributing to the overall analysis to give a detailed global view of the market. Mobile Experts built a “top-down” forecast based on direct input from mobile operators and vertical markets, as well as overall trends in end-user demand for mobile services. Then, Mobile Experts built a “bottom-up” forecast through discussions with the supply chain, including integrators, neutral hosts, top-tier OEMs, DAS OEMs, and component suppliers. Mobile Experts also used financial disclosures from publicly traded companies to assemble a quantitative view of the equipment market.

Mobile Experts has defined market segments in a new way to achieve more clarity than other analysts in this area. This year, we have collected meaningful data on DAS Revenue, with the ability to break out electronic equipment, cabling, and construction-related revenue.

For the indoor small cell market forecast, Mobile Experts relied on our primary research on Small Cells from our most recent Small Cells forecast update from Oct 2023. For the share of in-building wireless infrastructure sales from the private wireless application, we relied on our primary research on the Enterprise Private Cellular and Industrial Private Cellular market studies released in March 2023 and July 2023, respectively.

Definitions	Description
DAS	A Distributed Antenna System is a network of radio nodes for mobile communications, using a simulcast of identical RF waveforms from a hub. Depending on the power level of a remote amplifier, the number of antennas attached to the remote radio can be higher or lower. In this report, a "DAS node" is defined as antenna location.
Multi-operator DAS	DAS systems configured to allow multiple mobile service providers to use the same distribution and radio nodes.
DRS	Distributed Radio System (a "deeper" C-RAN architecture where remote hub units distribute IF signal to multiple radio units, e.g., Ericsson's Radio Dot or Huawei's LampSite). DRS is typically attributed to tier-1 vendor "distributed" small cell solutions (e.g., Huawei LampSite, Ericsson Radio Dot, Nokia ASiR, ZTE Qcell).
ORAN Node	Radio Unit (RU) nodes based on Open RAN standard
Small Cell	Network nodes which transmit less than 30W of composite power per sector, which include baseband processing for complete eNodeB/nodeB/BTS functionality.
Remote Antenna Unit (RAU)	An RAU is a single DAS transmission/reception point. In the case of Active DAS this includes amplifiers, some signal processing, and the antenna
Active DAS	Active DAS systems use amplifiers at the remote antenna unit location
Passive DAS	Passive DAS systems use coaxial cable and no active components located at the antenna transmission point.
Signal booster/ repeater	Signal boosters in this report refer to commercial-grade boosters that provides signal gain and repeats outdoor macro signals indoor
Millimeter wave (mmW) repeater:	A radio system that receives and re-transmits the 5G signal without demodulating, to add range
5G mmW RU:	A Radio Unit using 5G NR waveform above 20 GHz
5G mmW venue small cell	High-power "outdoor" 5G millimeter wave small cells are considered indoor units in this report. These are typically +53-55 dBm EIRP units.
5G mmW enterprise small cell	Low-power enterprise 5G millimeter wave small cells based on SoC are typically +43-45 dBm EIRP units.
North America:	USA and Canada
Latin America:	Mexico through South America, including Caribbean
Europe:	Western and Eastern Europe, including Russia
China:	China, including Tibet and Hong Kong
Asia Pacific:	India through Australia/Micronesia, excluding China
Middle East/Africa:	Pakistan and Turkey through Africa

Source: Mobile Experts

Figure 1. Definitions