

# Private LTE/Wi-Fi Convergence

**The Apogee™ Converge is the world's first software-defined phased array antenna platform that merges Private LTE (CBRS) and Wi-Fi 5 & 6 into one powerful array.**

The Apogee™ Converge is the world's first software-defined phased array antenna platform that combines Private LTE (CBRS) and Wi-Fi 5 & 6 into a single, high-performance array. Each Apogee panel integrates antenna elements for both 5GHz and CBRS (Band 48), delivering seamless coverage across expansive areas while optimizing connectivity for a wide range of applications.

By supporting simultaneous use of both 5GHz Wi-Fi and CBRS, Apogee enables enterprises to leverage the strengths of each band. High-bandwidth applications like surveillance and AR/VR can benefit from the broad capacity of 5GHz, while CBRS is ideal for secure, low-data use cases like IoT and Private LTE. This innovative design reduces infrastructure complexity and minimizes capital investment, empowering enterprises to deploy robust, scalable wireless networks.

## Apogee Manager

Traditional antennas need manual adjustments, increasing labor costs. Apogee Manager enables real-time software configuration from any device, optimizing antenna settings instantly and reducing costs while boosting efficiency.



## Asymmetric Gain™

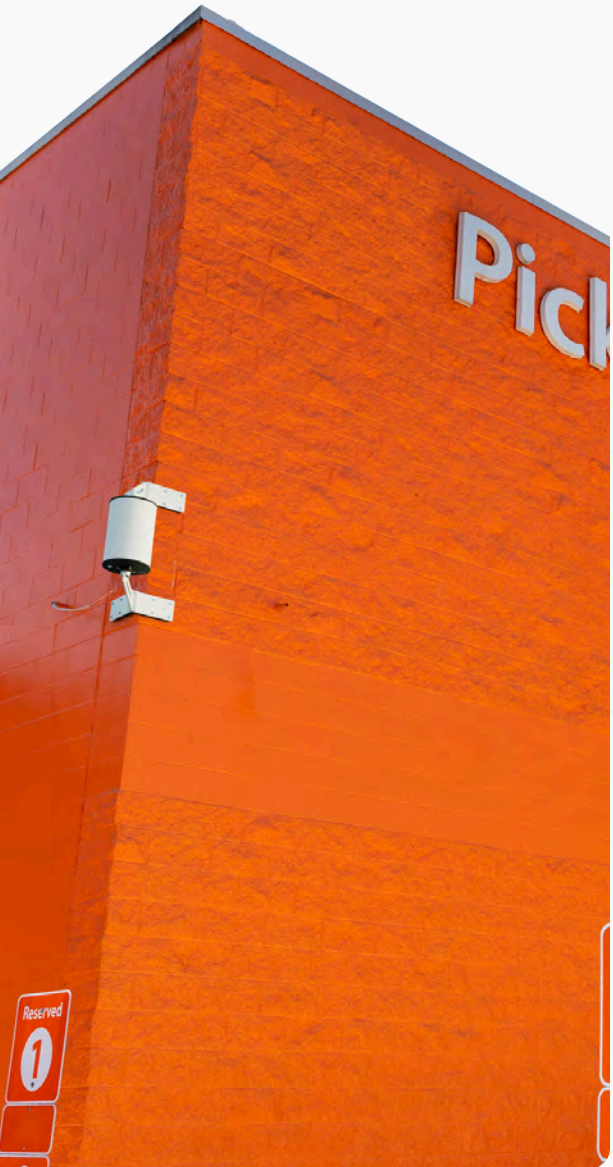
Apogee's Asymmetric Gain provides wireless devices with up to 24dbi of additional receive gain while keeping transmit gain FCC compliant. This enables very low power devices like smart phones, tablets and even IoT sensors to reliably connect over large distances.

## Full Beamwidth Gain™

Unlike traditional antennas each Apogee panel generates 9dbi of passive peak transmit gain over its entire 90° beamwidth in both the 5GHz and 2.4GHz bands. Operating together, Apogee 180's 2 panels generate a full 180° of 9dbi passive gain.

## Steep, Powered Filters

Apogee 180 features steep, powered filtering for both the 5GHz and 2.4GHz bands. Combined with Apogee's Asymmetric gain, the resulting receive signal is both powerful and quiet.



# inside apogee converge

## MORE THAN COVERAGE

### 4-Panel Phased Array Antenna

Each of the 4 panels independently features a 90° beam width and supports frequencies from 3550 MHz to 3700 MHz (Band 48) and 5250 MHz to 5900 MHz (for Wi-Fi 5 and Wi-Fi 6). The antenna offers Asymmetric gain, with 9 dBi on transmit and 26 dBi on receive, providing a balance between transmission power and reception sensitivity. Additionally, the panels are equipped with steep active filters that effectively separate Band 48 and Wi-Fi signals to reduce interference and optimize performance.

### MIMO & Apogee™

Each Apogee panel is designed to enhance the MIMO (Multiple Input Multiple Output) performance of a Base Station or Wi-Fi Access Point by maximizing the number of data streams it can handle. For MIMO to be activated on a panel, at least two antenna ports operating in the same frequency band need to be assigned. Depending on the configuration, a panel can support both 2x2 and 4x4 MIMO, allowing for multiple data streams to be transmitted and received simultaneously, whether it's for Band 48 or the Wi-Fi 5 GHz spectrum.

Apogee panels also offer flexibility in polarity configuration, which can be set to vertical, horizontal, or hybrid modes. Hybrid polarity is particularly effective in environments with significant multi-path interference, like areas with dense foliage or indoor industrial spaces. By allowing at least two ports to be assigned to a panel, hybrid polarity helps boost the reliability of the transmission link, making it more robust in complex RF environments. This flexibility ensures that the Apogee platform can deliver optimal performance across various challenging deployment scenarios.

### Massive Coverage, Minimal Infrastructure

The Apogee platform includes 8 dedicated ports—4 for the 3550 MHz to 3700 MHz (Band 48) spectrum and 4 for the 5250 MHz to 5900 MHz (Wi-Fi 5 and Wi-Fi 6). It supports FCC-compliant Wi-Fi access points and Band 48 base stations, and its low insertion loss splitter can double the capacity of a single base station or Wi-Fi port.

Once connected, the Apogee Manager cloud interface allows users to assign bands to antenna panels and configure polarity, tilt, and single or dual-band operation. This flexibility enables highly customizable deployments, from precise coverage adjustments to optimizing performance across multiple bands.

## APOGEE CONVERGE PRODUCT SPECS

Operating Frequencies	3.5 Ghz - 3.7 Ghz (CBRS) 5.2 Ghz - 5.9 Ghz (Wi-Fi 5, Wi-Fi 6)
External RF Ports	4 dedicated CBRS ports 4 dedicated Wi-fi 5 & 6 ports
Array Sectorization	Up to [4] 90° panels
Transmit Gain	9dbi
Receive Gain	24-26dbi
RF Power Input	Up to 1 watts
Polarization	Vertical, Horizontal, hybrid
Connectors	4 SMA Male External RF Ports, RJ45 Ethernet
Environmental Resilience	-40°C to +85°C, IP65 Certification
MIMO Support	2x2 MIMO per panel
Power	PoE 803.af/at compatible, 48V DC nominal
Height, OD, Weight	22", 12", 22lbs



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