

Pivotal's mmWave-optimized ecosystem of products delivers on the promise of 5G by leveraging mmWave's capacity and directivity. Network operators can match costs with revenues by deploying 5G mmWave precisely with subscriber demand instead of broad geographies while greatly reducing TCO and time-to-revenue for their mmWave networks.

## Pivotal 5G mmWave Ecosystem

WAVESCAPE™	PIVOT 5G™	PIVOTAL ECHO 5G™	IBMS
<b>NETWORK MODELING</b> <ul style="list-style-type: none"> <li>Identifies optimal network node placement for repeaters and gNBs using ultra high resolution geodata imagery, and optimizes for specific business cases, e.g., mobility and FWA</li> <li>Confidently qualifies service to buildings, even windows</li> </ul>	<b>NETWORK REPEATER</b> <ul style="list-style-type: none"> <li>Extends gNB coverage by 50%; one Pivot doubles service reach of a gNB at an order of magnitude less cost than adding gNBs alone</li> <li>Requires no fiber connection, consumes 28W of power, weighs eight pounds, site approves easily and deploys three times faster than gNBs</li> <li>Installs easily, self-aligns and commissions remotely</li> </ul>	<b>SUBSCRIBER REPEATER</b> <ul style="list-style-type: none"> <li>Low-profile, glass-attached repeater installed by subscriber for in-building mmWave penetration</li> <li>Ubiquitous Gbps coverage indoors at 95+% of area</li> <li>Ideal for FWA, mobility indoors, enterprise solutions</li> </ul>	<b>INTELLIGENT BEAM MANAGEMENTSERVICE</b> <ul style="list-style-type: none"> <li>Real-time Configuration, Performance and Fault Management</li> <li>Supports self-healing and network load balancing</li> <li>Integrated with WaveScape for real-time coverage view</li> </ul>

## Crack the code for mmWave Total Cost of Ownership (TCO)

WaveScape shows that a 29-gNB mobility network requires 61 more gNBs at an incremental cost per subscriber of \$1,356 to achieve 70% FWA coverage for the 2,924 subscribers not already served. By contrast, deploying 2,744 Echoes and 56 Pivots instead of 61 more gNBs generates an incremental FWA cost per subscriber of \$376. Fewer gNBs translates into 2.4M fewer tons of CO<sub>2</sub>/year, equivalent to eliminating emissions from approximately 500,000 vehicles for one year.\*

### Four Square Kilometers: 70% FWA Coverage

**gNB ONLY FWA + MOBILITY**  
TO REACH 70% FWA COVERAGE +61 gNBs  
+\$1,356/SUBSCRIBER INCREMENTAL COST

**PIVOTAL FWA + MOBILITY**  
MOBILITY SUNK COST 29 gNBs

**+\$376/SUBSCRIBER INCREMENTAL COST**  
Echo 5G (+\$280/sub)  
Pivot 5G (+\$96/sub)

\* Based on energy savings associated with the analysis above replicated across the average area of the 300 most populated cities in the U.S.

Pivotal Commware, established in 2016 and headquartered in Kirkland, WA, is a global leader in 5G mmWave infrastructure products. Pivotal's smart repeaters leverage its patented Holographic Beam Forming® technology for lowest cost, size, weight, and power consumption (C-SWaP).