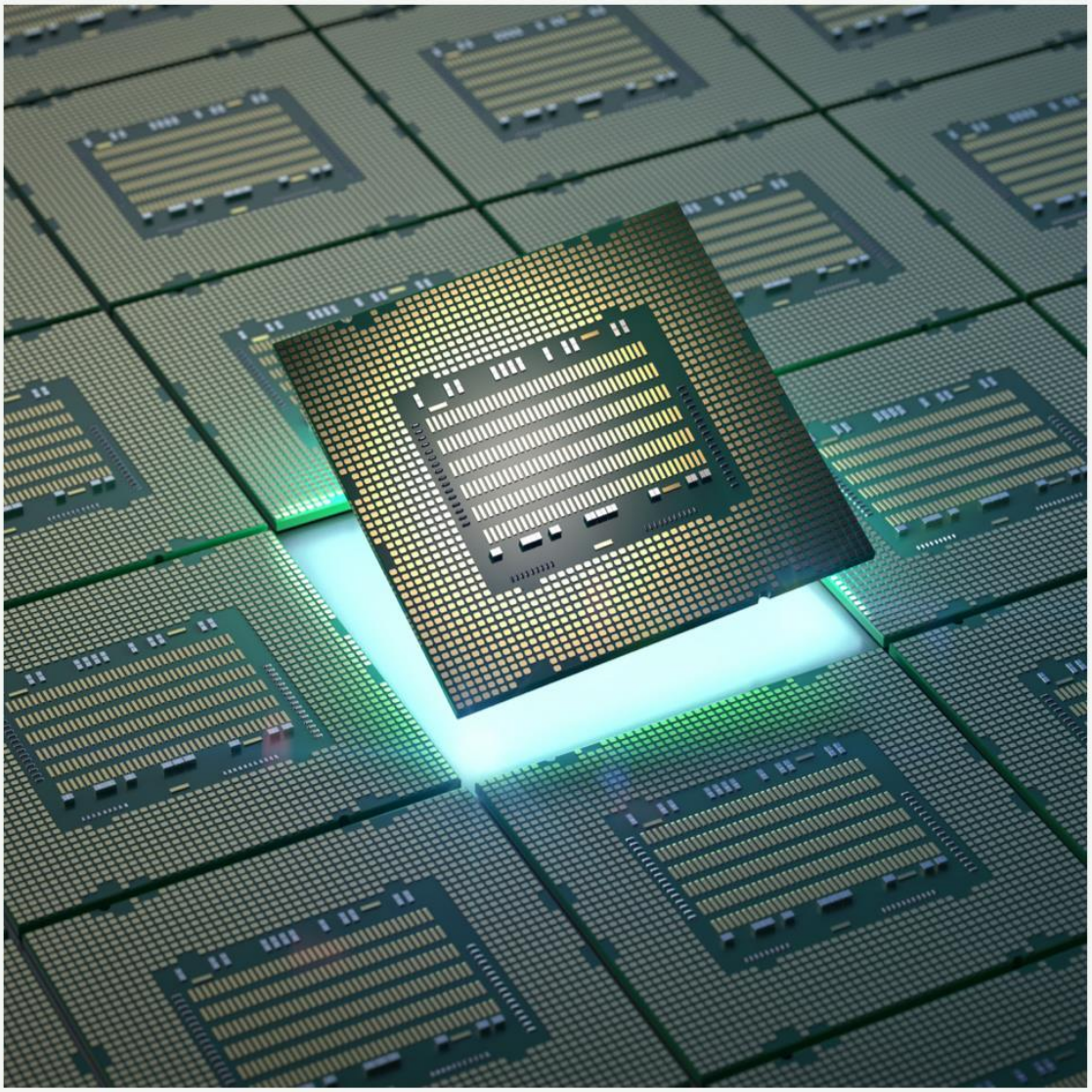
Semiconductors for BBU/DU/CU 2024



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MOBILE EXPERTS

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FIGURES

CHARTS

METHODOLOGY

To create estimates and forecasts for base station equipment shipments, Mobile Experts relies on direct input from more than 40 industry sources, including multiple top OEM vendors, mobile operators, and component suppliers.

Mobile Experts also used financial disclosures from publicly traded companies to assemble a quantitative view of the equipment market, and to establish estimates of the expected trends in the near future.

In particular, Mobile Experts uses a "top down and bottom up" approach to the base station transceiver forecast, in which inputs from the operators and OEMs are balanced against shipment data provided by key component suppliers. Several component suppliers participate in the Mobile Experts Data Sharing Program, in which they provide quarterly or annual shipment data on key components, which can help Mobile Experts to track shipments by frequency band.

This forecast begins with our forecast for shipments of radio hardware in the market (based on RF component numbers as noted above), and translates the number of radios to a number of semiconductor modules based on input from all semiconductor suppliers participating in the industry. Multiple interviews were conducted with each supplier to verify market share positions, pricing, and quantities for various scenarios.

Virtualization input was collected from more than 20 participants in the software market, including major OEMs, Open RAN layers, chip vendors, and many operators.

Capacity calculations include capacity for small cells, mm-wave deployments, and other secondary contributors to the RAN market… but the semiconductor estimates are based on the macro and massive MIMO market, excluding small cells and mm-wave.

Our segmentation into "DU" and "CU" categories is a rough division and is not as clean as we would hope… because each of the major OEMs has a different partitioning of which functions reside in the RU, DU, and CU. We use the physical box as our definition of "RU", "DU", and "CU", and do not adhere strictly to any specific fronthaul or other interface specification here.

Note that the Mobile Experts forecast model extends through 2032 to comprehend the changes coming with 5.5G and 6G spectrum. We show a five-year forecast in our charts here because architectural questions such as DU/CU partitioning and RISC-V adoption are difficult to see beyond five years.