

JABIL

Dynamic Tuning

Optimizing Performance Using Device Feedback During Assembly

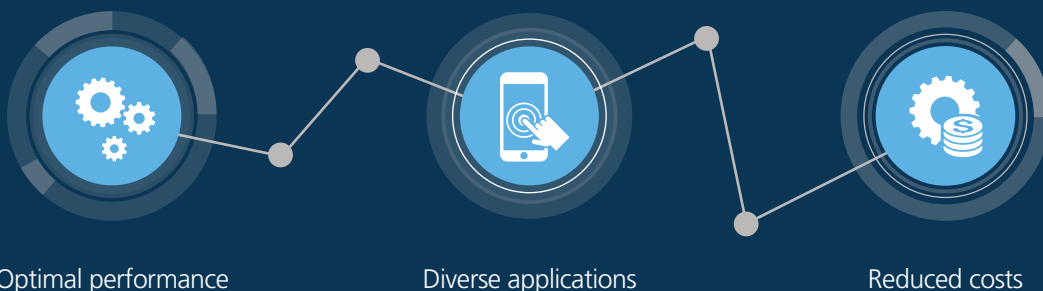
Taking a clear, undistorted photo requires a camera component with a carefully assembled lens and image sensor. Ideally, the lens and sensor align perfectly, so the focus of the optic path centers on the sensor surface. Similarly, a strong smartphone signal, that doesn't drain the battery, requires aligning the antenna with its transmitter's output. These alignments take place during manufacturing and assembly, where production equipment is set up to meet design specifications.

In practice, however, high-volume manufacturing processes aren't perfect, and the occasional result is an out-of-spec component: expensive scrap or, worse, an unhappy customer. To reduce costs and increase customer satisfaction, Jabil applies various dynamic tuning techniques in assembly processes, precisely adjusting optical positioning and signal levels.

Jabil — Aligning Quality and Performance

For dynamically tuning camera optics, Jabil's active alignment process adjusts lens/sensor positioning based on actual camera performance. It measures optical characteristics during the assembly process based on the component's output signal, and aligns the components accordingly. The result is the best possible focus across the entire image with optimal tip-tilt angle and centration. This technique also enables the best positioning of LEDs used for image illumination.

The principle is the same for optimizing antennas and many other components, mechanical and electronic. The manufacturing process makes final adjustments based on a device's actual, real-time performance rather than a theoretical target.



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