

## Precision Mechanical Interfaces for Boosting Millimeter-Wave Device Performance

Recent advances in technology have demonstrated the capability of sub-micron level machining of individual parts, but the assembly of multiple parts into complete devices, while maintaining the tolerances required, continues to present a significant challenge in the manufacturing process. The use of precision alignment techniques, such as kinematic couplings, quasi-kinematic couplings, and elastic averaging has the potential to transform the mm-wave device fabrication process by providing increased device performance while reducing fabrication costs. Technology application examples will be presented, ranging from X-band to W-band and beyond.