

KYOCERA AVX Launches Industry's First Evaluation Board for Testing Antenna Band Switching Performance

IoT devices tend to be rather small, and compact, densely populated PCBs can significantly degrade the bandwidth and efficiency performance of the passive monopole and Planar Inverted-F antennas (PIFAs) that are widely employed in mobile phones and other modern RF electronics but are susceptible to position-based performance changes and interacting with their surroundings, which can further complicate high-density PCB layouts. Active antennas capable of band switching, also known as aperture tuning, cover a wider frequency range than passive antennas by actively switching between frequency bands. In addition, active antennas capable of covering the same frequencies as passive antennas have



smaller form factors better suited to compact, high-density devices and, at equal size, will cover more frequency bands than passive antennas. Further, KYOCERA AVX active antennas, like the embedded, universal broadband, FR4 LTE antenna employed in the new Antenna Band Switching Evaluation Board, are equipped with patented Isolated Magnetic Dipole (IMD) technology, which delivers unique size and performance advantages including reduced ground plane and keep-out area size requirements for greater design flexibility, superior RF field containment for reduced interaction with surrounding components, and higher efficiency, gain, isolation, and directivity characteristics than competing solutions for higher-reliability connectivity with better return loss and minimal interference.

The new KYOCERA AVX Antenna Band Switching Evaluation Board is RoHS compliant, measures 45.5mm x 60.0mm, weighs 10.5 grams, and is rated for operating temperatures spanning -40°C to +85°C. It exhibits less than -2.5dB return loss, 50Ω unbalanced feed-point impedance, linear polarization, and 2.0W continuous wave (CW) power handling. At low-band frequencies, the Antenna Band Switching Evaluation Board exhibits peak gain ranging from -3.67dBi to -1.75dBi and average efficiency ranging from 18–30%, specifically: -3.67dBi and 18% from 890–960MHz (RF1), -2.77dBi and 22% from 700–800MHz (RF2), -2.76dBi and 20% from 700–750MHz (RF3), and -1.75dBi and 30% from 790–890MHz (RF4). At high-band frequencies spanning 1.71–2.17GHz, it exhibits peak 1.95dBi and 60% at RF3.

Features & Benefits

- Covering wide frequency bands:
 - 700 MHz 2.17GHz
- Small form factor EVB
 - 45.5 x 60 mm
- Using standard products:
 - LTE Antenna 1004795
 - RF Switch EC646
- RoHs Compliant

Applications

- IoT
- M2M Industrial Devices
- Trackers
- Home Automation



Datasheet



Website



Fast Facts Sheet

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