



# ANTENNA BAND SWITCHING SOLUTION ON SMALL EVB (LTE ANTENNA + SWITCH)

1004795-EC646-01



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## BASIC OVERVIEW

IoT devices tend to have small size, and therefore the performance (bandwidth/efficiency) of embedded antennas can be strongly degraded. By using an active antenna solution such as band switching (also known as aperture tuning), it is possible to cover a wider frequency range by actively switching bands. For the same number frequency bands to be covered, the active antenna will have a smaller footprint compared to the passive antenna. At equal size, the active antenna will cover more frequency bands than the passive antenna.

This technique can be implemented using the KYOCERA AVX EC646 RF switch with Ether Switch & Tune™ technology, together with the standard antenna 1004795 or a custom design. KYOCERA AVX evaluation board 1004795-EC646-01 uses standard products, allowing faster time-to-market. The components include the LTE antenna 1004795 and the RF switch EC646. The evaluation board has a small size of 45.5 x 60 mm, which allows engineers to test the antenna performance on typical size IoT devices, reducing the number of iterations and improving the accuracy during the design phase.

## GENERAL CHARACTERISTICS

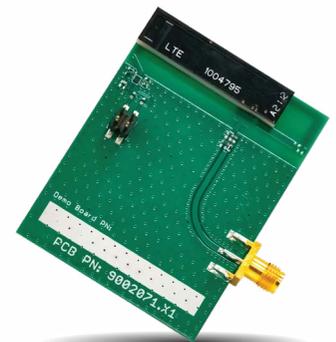
- > Covering wide frequency bands: 700 MHz- 2.17GHz
- > Small form factor EVB: 45.5 x 60 mm
- > Using standard products: LTE antenna 1004795 and RF Switch EC646:
  - ▶ [https://datasheets.kyocera-avx.com/ethertronics/AVX-E\\_1004795-1004796.pdf](https://datasheets.kyocera-avx.com/ethertronics/AVX-E_1004795-1004796.pdf)
  - ▶ [https://datasheets.kyocera-avx.com/ethertronics/AVX-E\\_EC646.pdf](https://datasheets.kyocera-avx.com/ethertronics/AVX-E_EC646.pdf)
- > RoHs Compliant

## TOP SELLING POINTS

- > First Evaluation board on the market for testing Antenna Band Switching
- > With battery holder to power the switch and be able to test actively the performance
- > Small for factor, similar to typical size of IoT devices

## APPLICATIONS

- > IoT
- > M2M Industrial Devices
- > Trackers
- > Home Automation



### FAQ'S

**Q: What if the device is larger or smaller than the EVB?**

A: The EVB can be cut or copper tape can be added to adjust the size and test the performance on the desired form factor.

**Q: How does the EVB work?**

A: Check the instructions on the datasheet

**Q: Can the solution be used with the antenna 1004796?**

A: Yes, same solution but the PCB layout must be mirrored

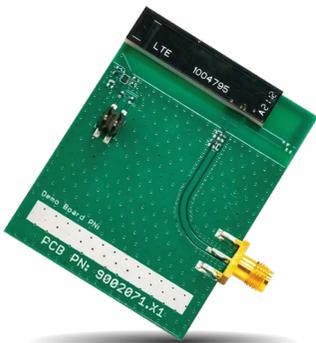
**Q: What if a custom antenna is required?**

A: It is possible. KYOCERA AVX can support on the custom antenna design to be used together with the switch EC646.



### KYOCERA AVX ADVANTAGE VS. COMPETITOR PRODUCT

- > First Evaluation board on the market for testing Antenna Band Switching
- > Small for factor, similar to typical size of IoT devices



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#### NORTH AMERICA

Mohammed Abu-Naim  
Product Manager  
TEL: +1-423-596-1928  
[Mohammed.Abu-Naim@kyocera-avx.com](mailto:Mohammed.Abu-Naim@kyocera-avx.com)

#### EUROPE

Houda Rais  
RF Product Manager  
TEL: +33 (0) 6 38-37-87-59  
[Houda.Rais@kyocera-avx.com](mailto:Houda.Rais@kyocera-avx.com)

#### ASIA

Nick Lee  
Product Manager  
TEL: +886 81786280  
[Nick.Lee@kyocera-avx.com](mailto:Nick.Lee@kyocera-avx.com)

#### JAPAN

Mitch Koga  
Sales Director - Antennas  
[Mitch.Koga@kyocera-avx.com](mailto:Mitch.Koga@kyocera-avx.com)