

# mCOMET Tunable Co-Located Metal Ring Antenna



- Co-located LTE MIMO antenna with metal ring

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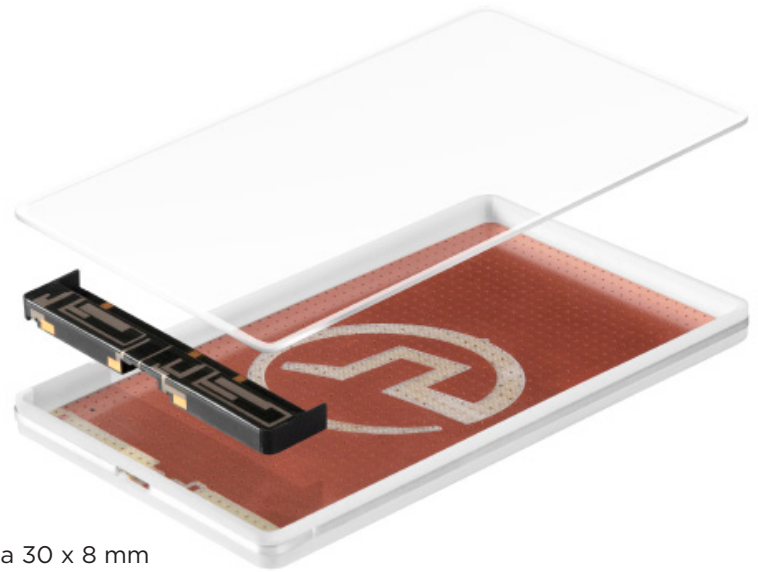
## Applications

- Mobile devices operating on GSM, W-CDMA and LTE bands

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## Features

- Size 10 x 74 x 5mm<sup>3</sup>
- Ground cleared under antenna, GC area for one antenna 30 x 8 mm
- Operating bands 698 - 960, 1710 - 2170 and 2500 - 2690MHz
- All operating bands combined to single feed point for multi-band RF-engines
- Uses surrounding metal as part of the antenna
- Antenna requires SMT contact clips' mounting on device PWB
- $\mu$ USB connector placed between the antennas
- ROHS compliant product

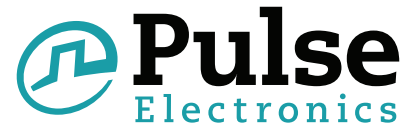


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## Benefits

- Low profile
- Ultra small volume
- Space saving
  - Increased number of operating bands at the same end of the device
  - No need to reserve space for the antennas elsewhere in the chassis
  - $\mu$ USB or some other metallic component can be placed in between of primary and secondary antennas
- Wide-band coverage
- High performing
- Low band ECC below 0.5
- Design freedom and mechanical strength by using metal ring
- Minimized hand-effect (if other antenna is covered by a hand, the other one operates)
- Equal transmission line length from engine to antenna i.e. equal losses from the line
- Modularity, numerous integration possibilities (for example speaker)
- Industrialized concept
- Applicable to several antenna manufacturing technologies

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## Electrical specifications @ +25 °C

Note: Actual antenna free space performance depends on the device dimensions and materials surrounding the device and Ground Clearance area size.

## Simulated typical performance

Simulated test device size: 124 x 74 x 7mm, PWB ground clearance area for one antenna 30 x 8mm

| Operating band | Frequency Range [MHz] | Total efficiency in free space for primary antenna (in simulation setup) [dB] | Total efficiency in free space for secondary antenna (in simulation setup) [dB] | Return loss min [dB] | Impedance [ $\Omega$ ] | Max input PWR [dBm] | Operating Temperature [°C] |
|----------------|-----------------------|---|---|----------------------|------------------------|---------------------|----------------------------|
| LTE-12         | 698...746             | -5.2...-4.5   | -6.2...-5.4   | -3                   | 50                     | 35                  | -30...+95                  |
| LTE-13         | 746...787             | -4.5...-4.1   | -6.2...-4.7   | -4                   | 50                     | 35                  | -30...+95                  |
| LTE-20         | 791...862             | -4.0...-3.1   | -5.4...-4.8   | -4                   | 50                     | 35                  | -30...+95                  |
| GSM-850        | 824...894             | -3.6...-3.1   | -4.9...-4.0   | -5.5                 | 50                     | 35                  | -30...+95                  |
| E-GSM-900      | 880...960             | -3.2...-2.4   | -4.1...-3.7   | -5.5                 | 50                     | 35                  | -30...+95                  |
| DCS-1800       | 1710...1880           | -4.4...-3.0   | -3.4...-1.8   | -4                   | 50                     | 35                  | -30...+95                  |
| PCS-1900       | 1850...1990           | -4.4...-3.9   | -3.5...-2.9   | -4                   | 50                     | 35                  | -30...+95                  |
| WCDMA-I        | 1920...2170           | -4.4...-3.0   | -3.5...-2.9   | -4                   | 50                     | 35                  | -30...+95                  |
| LTE-7          | 2500...2690           | -3.2...-1.7   | -5.1...-2.9   | -3                   | 50                     | 35                  | -30...+95                  |

## For More Information

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