



# fractus

Optimised Antennas  
for Wireless Devices

DATA SHEET · SHORT-RANGE WIRELESS

## Small SMD chip antenna for USB and MIMO Cardbuses a/b/g/n devices

Fractus specialises in enabling effective mobile communications. Using fractal technology, we design and manufacture optimised antennas to make your wireless devices more competitive. Our mission is to help our clients develop innovative products and accelerate their time to market through our expertise in antenna design, testing and manufacturing.

### Fractus® Compact Dual-band Reach Xtend™ Chip Antenna

P/N: FR05-S1-NO-1-004

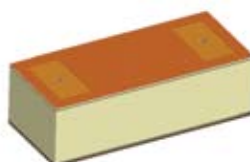
The **Fractus Compact Dual-band Reach Xtend Chip Antenna** for 802.11 a/b/g/n WLAN systems is a tiny rectangular 3D-shaped antenna specifically designed for high performance USB devices and other small PCB devices operating at both 2.4 GHz and 5 GHz bands, where high performance and low-cost are mandatory. Its small dimensions allows various configurations within the USB devices and may help Cardbus devices in the enhancement of their throughput by using MIMO algorithms with more than 2 antennas.

Taking advantage of the space-filling properties of fractals, this **small monopole** antenna is ideal for use within indoor (highly scattered) environments. The **Fractus Compact Dual-band Reach Xtend Chip Antenna** speeds your time to market by allowing you to easily integrate it within your industrial design (SMD mounting).

**7 x 3 x 2 mm** (image larger than actual size)



Front



Back



Patent Pending: WO0154225, US11/154,843

### Product Benefits

#### ■ Small form factor

Allows integration into small USB devices easily and efficiently with minimum clearance area.

#### ■ High efficiency

Increases your device range, signal quality battery life.

#### ■ Multiband behaviour

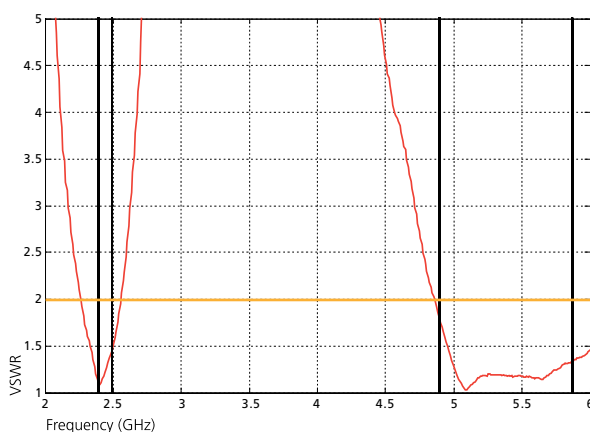
Provides superior performance for both 2.4 and 5 GHz ISM bands in the same structure areas easily and efficiently.

#### ■ Omnidirectional pattern

Optimises device usage due to a uniform radiation pattern.

#### ■ Worldwide functionality

Enables devices to work globally in WLAN systems: Europe/US/Asia.



#### Frequency Range

#### Efficiency

#### Peak Gain

#### VSWR

#### Weight

#### Temperature

#### Impedance

#### Dimensions

#### 802,11 b/g/n

2.4 - 2.5 GHz

> 50 %

> 0 dBi

< 2:1

0.2 g

-40 to +85°C

50  $\Omega$  unbalanced

7 x 3 x 2 mm

#### 802,11 a/n

4.9 - 5.875 GHz

> 60 %

> 3 dBi

< 2:1

0.2 g

-40 to +85°C

50  $\Omega$  unbalanced

7 x 3 x 2 mm

Measured results from a standard USB PCB of 55.4 x 20 x 0.8 mm

Please contact your sales representative at Richardson Electronics to obtain additional information on recommended configurations for different UWB devices. Richardson Electronics: [www.rell.com](http://www.rell.com) Fractus: [wireless@fractus.com](mailto:wireless@fractus.com) Reference: **DS\_FR05-S1-N-0-004\_v01**

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