

DIGI WDS / ANTENNA DESIGN

PART NUMBER:

WDS-ANT108-1, WDS-ANT108-2, WDS-ANT108-3

CUSTOM 3D ANTENNA DESIGN

Maximise your product's wireless performance with custom antenna design solutions

The antenna is the most common point of failure in a wireless design. When designed correctly, the antenna creates a high performance wireless product this is certification ready.

Antenna design is a very complex process that requires simulation tools and experienced RF antenna designers. Digi's Wireless Design Services has a state of the art RF testing lab along with experienced engineers that design hundreds of certification ready products each year.

Custom 3D antenna design involves integrating a custom stamped metal or flexible printed circuit antenna into the customer's PCB. This is a required solution for the customer since an off-the-shelf (OTS) solution will not fit within mechanical constraints. We will assist the customer with the integration of the antenna into their CAD model and provide a recommended matching network to include in the design. Antenna drawings and mechanical files are provided to the customer for manufacturing. The customer is responsible for antenna manufacturing after the prototyping stage. The customer must use a CM to manufacture the antenna. Digi WDS will only provide design files. Digi WDS can assist the customer with finding a CM to manufacturer the antennas.

Once the boards are manufactured, the customer should send two devices to Digi WDS so we can perform tuning and/or matching to ensure the antenna resonance is spot on. The antenna can easily be detuned when placed close to nearby conductors or dielectric materials, so this step is mandatory. This product provides a very low cost antenna solution while achieving good wireless performance. It also reduces risk since simulations give confidence on performance expectations.

Schedule time to complete is 4-6 weeks.

The customer should provide the following items:

1. Mechanical files
2. Schematics/PCB files
3. Bill of Materials
4. Device use cases
5. Datasheets for material properties
6. Cellular carrier(s) if applicable
7. Two devices

The deliverables are as follows:

1. Antenna Development Report
 - a. Requirements
 - b. Simulations (Multiple designs; Design tradeoffs; Results comparison to requirements)
 - c. Antenna Prototypes (Antenna tuning matching measurements; Far-field measurements; Result comparison to requirements; Antenna mechanicals; Antenna material properties)
 - d. Antenna Integration (Help integrate antenna into CAD; Tune antenna on multiple boards; Far-field measurements; Result comparison to requirements; Recommendations for next steps)

For more information on how Digi WDS/Antenna Design can bring powerful, reliable connectivity to your assets, visit www.digi.com/wds.

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