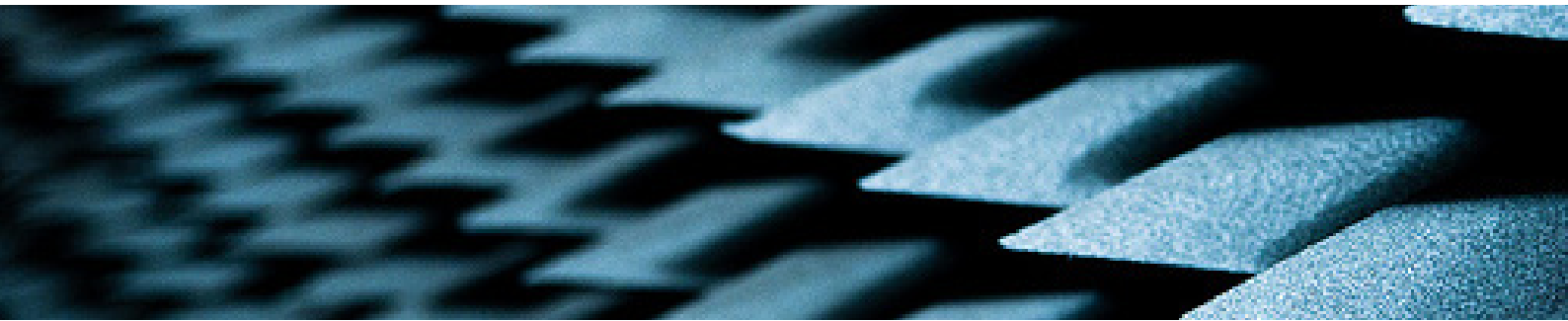


CSA.51

Custom Cellular Antenna Design (excluding North America)



Service name:

CSA.51 Custom Cellular Antenna Design
(excluding North America)

Deliverables

Report and Prototypes

Duration:

6-8 Weeks

Items

- A. Test and/or simulate different antenna technologies, topologies, and material
- B. Antennas will be tested in different locations/positions. Selection of the best solution will be based on overall performance and project targets
- C. Antenna optimization in 3D anechoic RF test chamber
- D. 5 custom antenna prototypes
- E. Mechanical drawing
- F. Final antenna position and integration method
- G. Return loss, VSWR, Average gain, Efficiency, peak gain, and radiation pattern



What is the problem or concern we are addressing?

Taoglas strives to provide the highest-performing off-the-shelf internal and external antennas in the industry. Our internal antennas meet the needs of many customers, enabling compact, reliable, high-performance devices. But what if one of our off-the-shelf antennas doesn't fit into your device, or your application is pushing the boundaries of technology or size? For these applications, Taoglas offers its customers custom antenna development.

Taoglas' custom antenna solutions offer a method for you to utilize our antenna, certification, and manufacturing expertise. Taoglas engineers work directly with your engineers to develop the optimal solution. Regardless of the stage of your development, Taoglas can engage with you to find the best solution.

The Processes

Part 1

- Taoglas engineers help you develop required performance metrics based on industry certification requirements and our expertise.
- Our engineers test and/or simulate different antenna technologies, topologies, materials, and locations to identify the optimal performance solution.
- Our engineers work with your engineers to integrate the chosen antenna into your device.
- Taoglas develops the mechanical drawing.
- Custom antenna samples are provided to you.
- A report is created detailing the performance and integration into your device.
- A part number is provided to you for ordering.

What does Taoglas need?

In all cases Taoglas will require the following:

- Taoglas needs to know your target cellular carriers and markets. This allows us to work with you to develop appropriate performance requirements.
- If prototypes are available, we will need 2 copies of your device including all the bits and pieces. The units do not need to be fully functional (i.e. firmware/software need not be complete), but they need to be built up representative mechanical samples.
- We will need things like any battery, LCD display, peripherals, cables, etc. all mounted in some sort of enclosure that's at least close to what the final enclosure will be like. SLA or FDM proto enclosures are sufficient but the final plastic material can yield slight differences in performance.
- In all cases, we need mechanical design files, such as 3D PDF or eDrawing file. We really do need the ability to hide parts, do cross sections, and make measurements, so an eDrawing with these features turned on is highly recommended.

Part 2

Taoglas engineering, in consultation with the customer on the final report, will determine if the measured performance is sufficient for the product to meet its performance requirements. If the antenna performance is acceptable the next step would be active radiated power (TRP) and radiated receive sensitivity measurements (TIS). Taoglas offers a number of follow-on test services; your Taoglas sales contact can cover all the various options.

Deliverables

Taoglas will compile a report on the antenna development, including:

- Final antenna position and integration method.
- Return loss / VSWR.
- Average gain.
- Efficiency.
- Peak Gain.
- Radiation Patterns.

