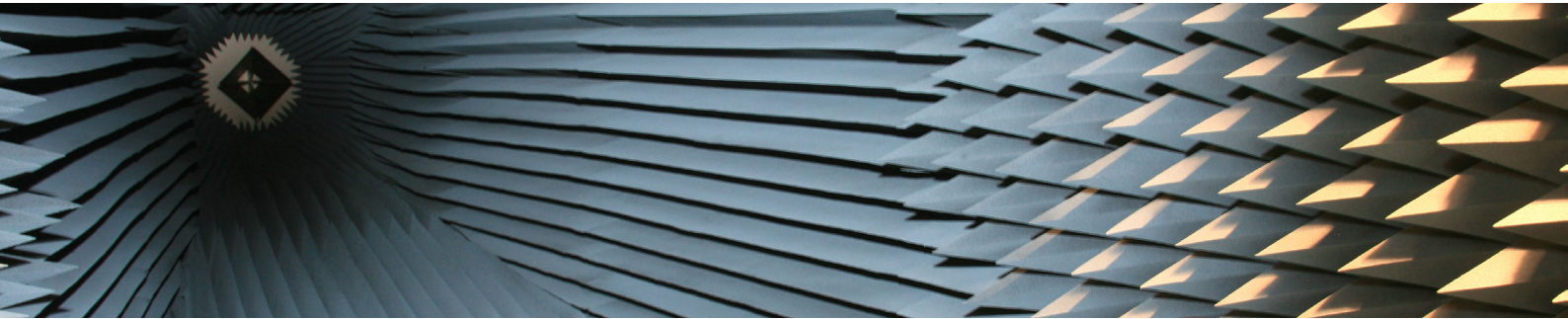


ISA.51

Passive Mode Terminal and External Antenna Testing



Service name:

ISA.51 Passive Mode Terminal and External Antenna Testing

Deliverables:

Antenna Performance Report

Duration:

5 Days

Items:

- A Antenna installed in a customer device prototype board, with extra antenna prototypes.
- B Real-world antenna performance: antenna mounted in a vehicle
- C Final antenna position and integration method.
- D Efficiency, Peak Gain, Radiation Patterns for four (4) frequencies.
- E Documented performance measurements.



Service Product Definition

What is the problem or concern we are addressing?

All antennas are sensitive to their surrounding environment. Once an antenna is integrated into a product or vehicle it is very common for the exact radiation pattern of the antenna to differ from the design target or data sheet.

Vehicle interiors present a particularly complex environment for the antenna. Often the antenna is mounted under a dash, with a complex assortment of metal support and fastening structures in the dash—not to mention wiring harnesses, HVAC systems, etc. Thus, testing the antenna in the real-world installation environment is an important design verification step.

We've partnered with test labs which specialize in automotive testing to address the particular testing challenges of testing using real vehicles.

The Processes

Part 1

- If necessary, Taoglas will modify your prototype device to allow for direct access to the antenna feed point at the beginning of your feed transmission line.
- Measure radiation pattern and efficiency installed in the vehicle and in as much as the real use case as possible.
- Complete report detailing test set up, results and conclusion.

What does Taoglas need?

In all cases Taoglas will require the following:

Details of how the antenna is to be installed into the vehicle. Include any instructions necessary to inform a technician how the antenna and device need to be installed. This includes mounting but the device does not need to be wired to the vehicle. The device does not need to be active or functional.

For testing embedded antennas:

- 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.
- 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.
- 3D PDF or eDrawing files for your mechanical assembly. 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.
- Details of any populated matching components or techniques present in the supplied devices.

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 and certification requirements.
- If the antenna performance is not acceptable, Taoglas sales and engineering can make recommendations to improve the antenna performance.
- If the antenna performance is acceptable the next step would be active device performance measurements such as TRP, EIRP, TIS or radiated receive sensitivity and RSE testing. 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 measurements including:

- Radiation pattern plots for each band.
- Efficiency plots vs. frequency for each band.

