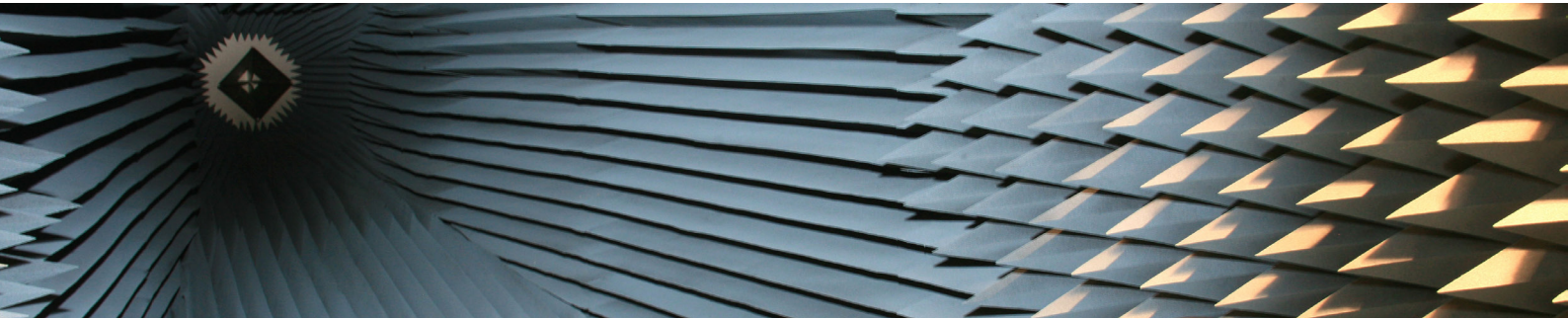


# ISA.40

## Multi-Antenna Isolation Measurement



Service name:

### ISA.40 Multi-Antenna Isolation Measurement

#### Deliverables:

Antenna Isolation Report

#### Duration:

3 Days

#### Items:

- A Antenna installed on a customer device prototype board, with extra antenna prototypes.
- B Multi-Antenna isolation performance matrix.

#### What is the problem or concern we are addressing?

Post-integration Isolation measurements can be critical for systems co-locating multiple radio systems. Receivers can be sensitive to nearby transmitters, even when they operate in different frequency bands.

The transmitted power can over-drive or otherwise interfere with the receiver, causing signal degradation, loss of communications, or even component failure. These issues are compounded by market requirements for smaller, more integrated systems: maintaining isolation between antennas becomes more difficult as the antennas are brought closer together.

Measurement of antenna isolation requires knowledge and specialized RF equipment. It is important to address issues such as maintaining a proper connection methodology and minimizing cable shield currents to minimize testing error. Additionally, the testing requires at least a two-port Vector Network Analyzer (VNA).

Taoglas has the knowledge and equipment to successfully perform these measurements for you.

### The Processes

#### Part 1

- Taoglas will modify your prototype device to allow for direct access to the antenna feed points at the beginning of your feed transmission line.
- Taoglas will connect the VNA to each antenna and perform the isolation measurements for every combination of antennas applicable.
- Taoglas will construct a matrix with all isolation measurement results.
- Taoglas will complete report detailing test set up, results and conclusion.

#### What does Taoglas need?

##### In all cases Taoglas will require the following:

- 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.

## 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 isolation performance is not acceptable, Taoglas sales and engineering can make recommendations to improve the isolation performance.
- If the isolation performance is acceptable the next step would be radiated receive sensitivity measurements. 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:

- Setup photographs and details.
- Isolation performance matrix.

