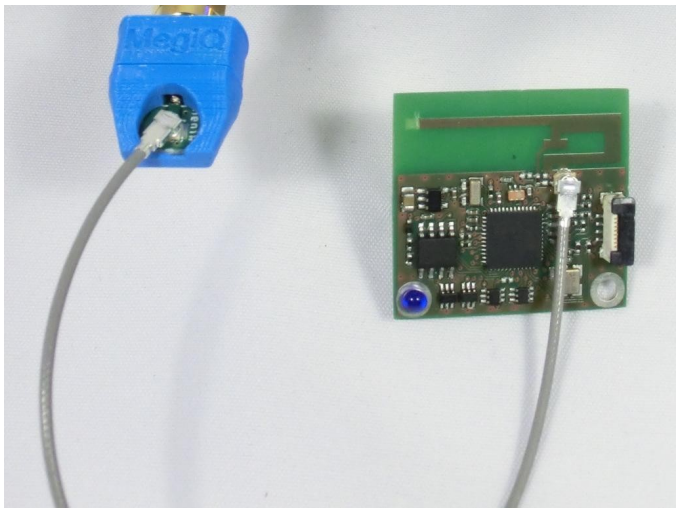
Using UFL as Test Connectors

Real Life Connectivity

Many RF test set-ups make use of high quality connectors, like N-type or SMA. And even then you should use the better quality connectors if you want to get the advantages. Because there are a lot of N-type and SMA's out there that do not meet expectations.

Component quality

Often focus is on quality in a test set-up is on the components, like cables and connectors. But, this often leads to bulky parts that inhibit the use of the test-instrument in Real Life applications. Like measuring a 2450MHz printed antenna on a micro sized PCB. Although a good quality SMA-connector would probably be your first choice, for really measuring the antenna, without disturbing the circuit too much, MegiQ suggests a far smaller connector to be used. Even if these do not have the same high level specifications.



UFL-connector on a small PCB

Integral quality

MegiQ proposes the use of UFL (small) or WFL (ultra-small) connectors so that you can design in the footprint for the measurement points without getting a bulky PCB. This way you get measurements that by far exceed in accuracy over measurements done in the old style. Credo is: "Do not try to shoot a mosquito wit a canon."

Of course, using these connectors should be done with care, and good calibration tools are needed.

Now you do not sub-optimize on component level, but integrate quality over the scope of the whole set-up, meaning: *taking the Device Under Test into account*!

No overkill

Overkill can lead to bad measurements, even though you would think the other way.
A comparison: Many people think a Ferrari is a better car then a DAF Truck, but if you want to move 20 tons, you better choose for the truck!

MegiQ engineers are designers of RF-circuits too. We've learned our lessons in Real Life. And we found out that being inventive and thinking out-of-the-box pay back!

Using UFL has a lot of advantages:

- UFL *will* do! Most applications do not need an insertion loss over 30dB. Do not loose your time in over-optimization!
- It is low cost, after 100 times mating you just take a new cable /connector. Wearing out is often a problem with the "better" high end connectors. They loose reliability without you knowing it.

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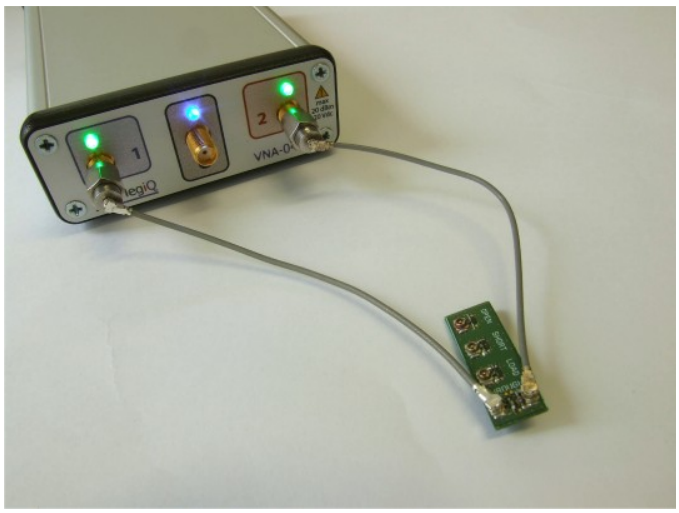
- It is small, you can design-in the test-connector on your PCB for optimal and *repetitive* accuracy.
- You will perform measurements that you would not do with bulkier connectors, just because of the simplicity in using the small UFL's. This increases overall design quality!

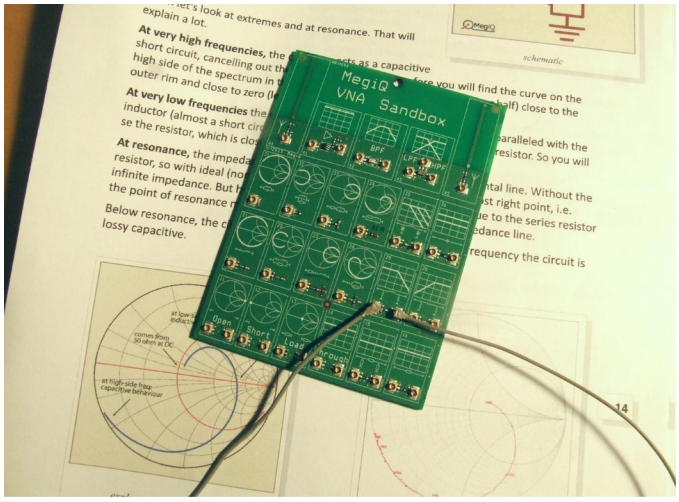


Calibrating the instrument using UFL-connectors

MegiQ Sand Box

A good example using UFL for testing purposes is the *MegiQ Sandbox*, an evaluation board with 26 instructive circuits, including two antennae and an OSLT calibration kit.

For connecting the circuits under test to the VNA this PCB holds 37 UFL connectors on a 105x75 mm (4.1x3.0") surface! And there is still enough space left to build a complete phone on the PCB!



VNA-Sandbox

MegiQ

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