Test Data

All Eravant parts have datasheets which list out the electrical and mechanical specifications of the item. Datasheets may also include graphs that show the typical performance of the unit. Please open the following for an example datasheet: https://sftp.eravant.com/content/datasheets/SCT-KM2M-UB.pdf

Most specs written out are only given typical values. As a result, the associated graph may also only show a typical result.

The most common data points that we test for are Insertion Loss and Return Loss. In the above example, there is a certain threshold where the data is not considered passing.

By default, insertion loss and return loss are assumed to be negative values, since the word "loss" implies a deficit of something. We usually do not include the negative symbol when specifying insertion or return loss. When we collect the data and plot them on a graph, however, the real values for insertion and return loss should be negative.

For the most part, it is desirable for a product to have as low an insertion loss as possible and as high a return loss as possible. Put another way, it is better for the real value of the insertion loss to be as close to zero as possible and the real value of the return loss to be as far from zero as possible.

For example, a product that specifies 0.3 dB insertion loss is better than one that specifies 0.5 dB insertion loss. A product that specifies 25 dB return loss is better than one that specifies 20 dB return loss.

A dataset might not pass if the insertion loss is too high or the return loss too low from the specified typical value.

In the example datasheet, the QA team would flag the work order if the graph showed -0.8 dB or lower insertion loss and -18 dB or higher return loss.

See below for two data graphs. The first graph is taken from the example datasheet, but with the Y axis altered to show a more detailed trend. The first graph is passing. The second graph is not passing.
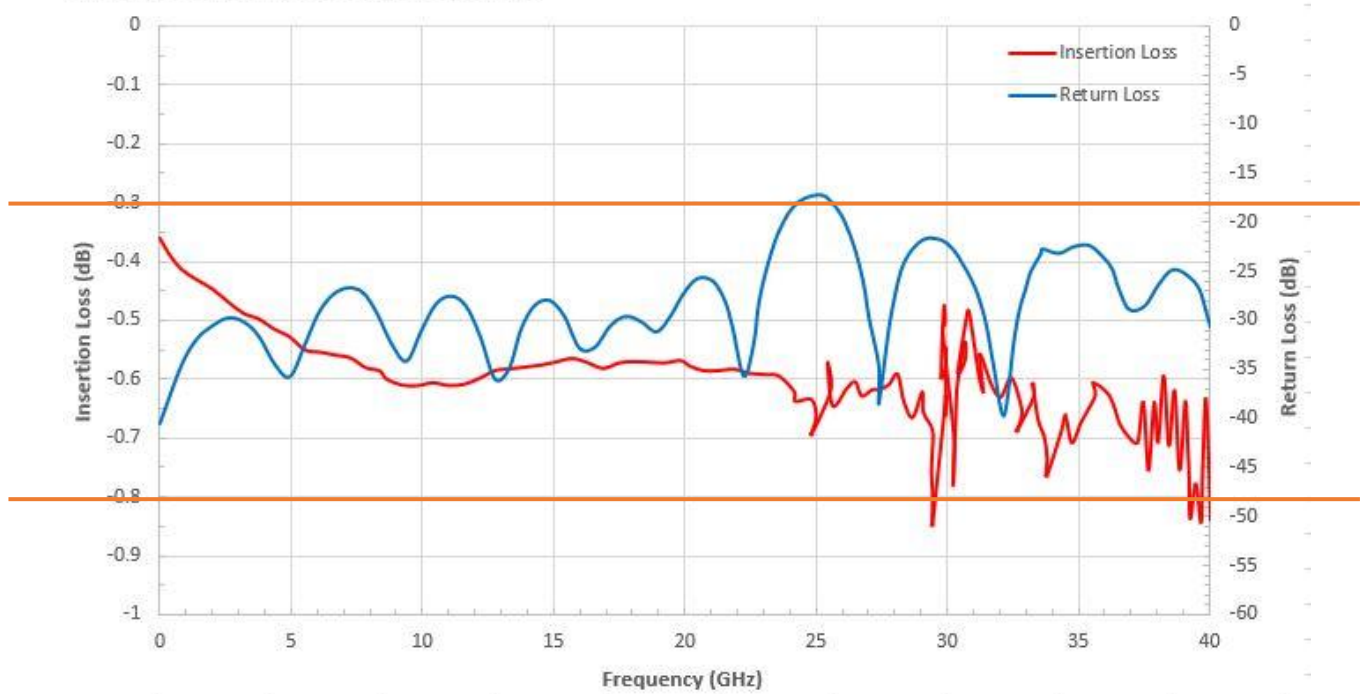
Pass

Typical Performance vs. Frequency
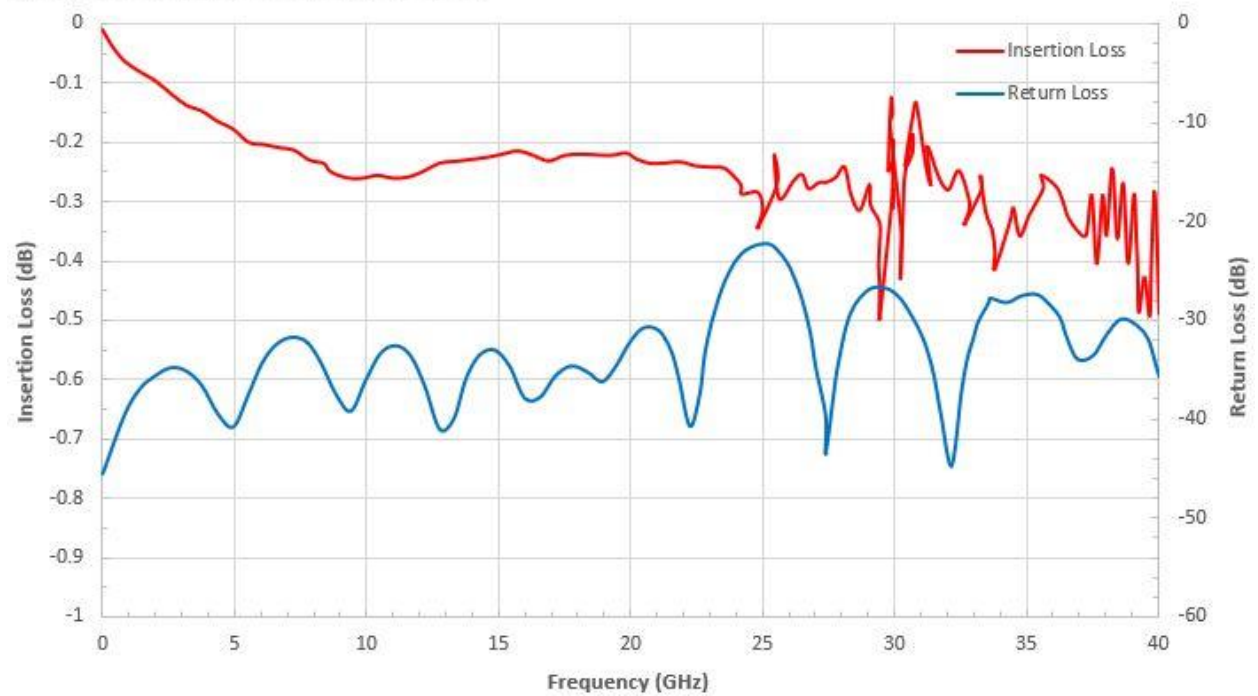
Fail (note where the points cross the orange line)

Typical Performance vs. Frequency

Data also does not pass if it does not cover the correct frequency range as noted on the datasheet. DC is the same as 0 GHz.

Fail (note the frequency range in orange)

Typical Performance vs. Frequency