Testing In-line Attenuators in MS12001

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This document will detail the correct procedure and steps to take in MS12001 to test in-line attenuators

The attenuator specifications in this example are as follows:

- Single-mode
- SC/APC
- IL = 7 ± 1 dB @ 1310, 1550 nm
- RL < -60 dB @ 1310, 1550 nm

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Begin by creating a connector configuration (see next slide).

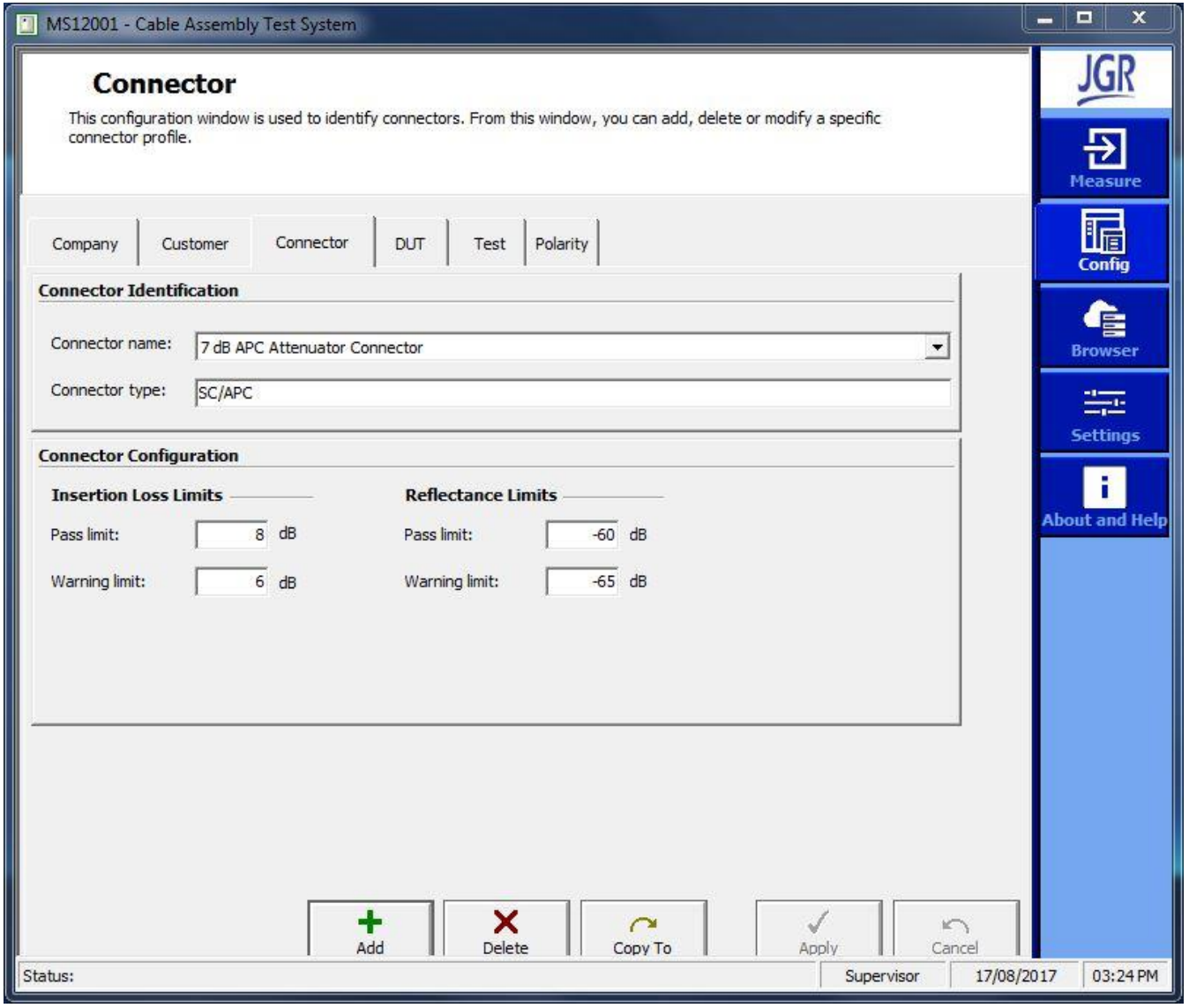
MS12001 was designed to test cable assemblies therefore below the limit is a pass and above is a fail. In the case of attenuators, the IL specification is a range.

Our example gives IL = 7 ± 1 dB so a pass is an IL between 6 dB and 8 dB. We can use the pass/warning/fail system to define the desired range:

- Pass limit = 8 dB
- Warning limit = 6 dB

With this configuration, MS12001 will display the IL in yellow for an attenuator in spec. It will display the IL in green or red for an attenuator out of spec.

Testing In-line Attenuators in MS12001



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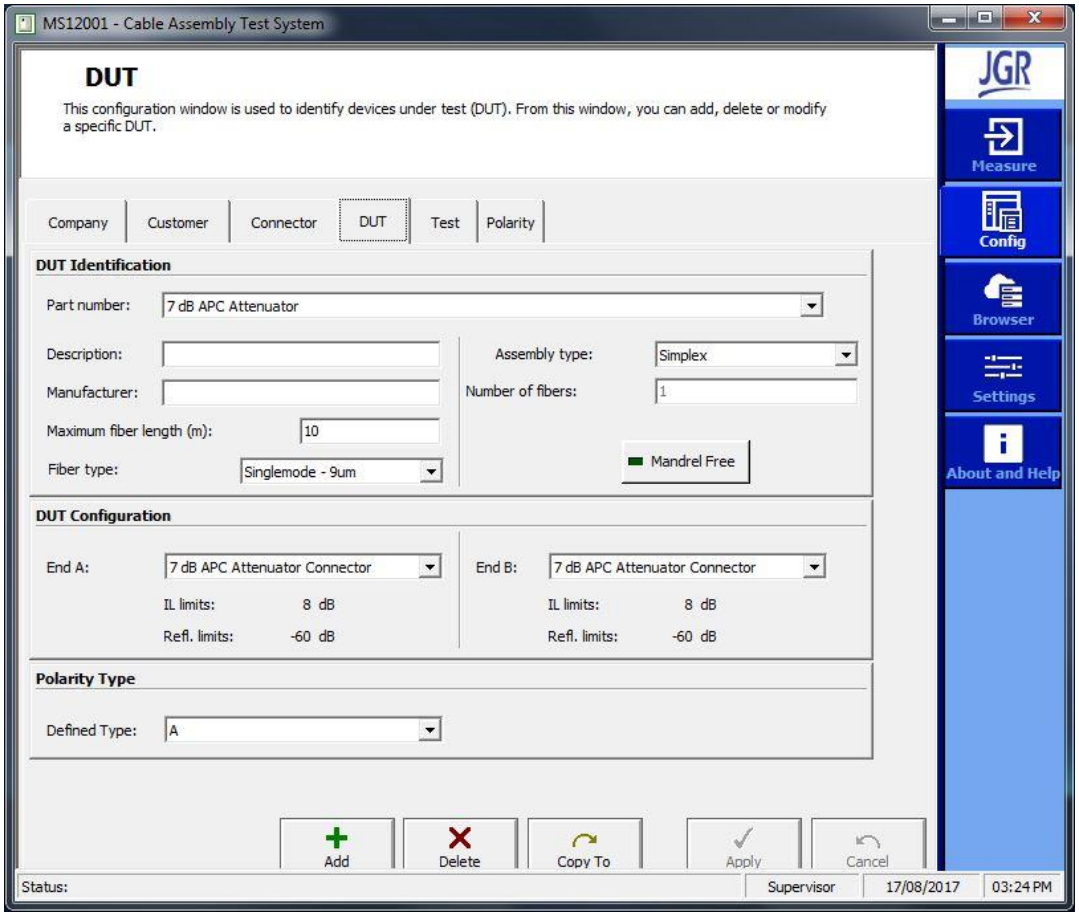
Create a DUT configuration for the attenuator.

Be sure to deselect the “Mandrel Free” option.

This will put a pause between the RL and IL measurements.



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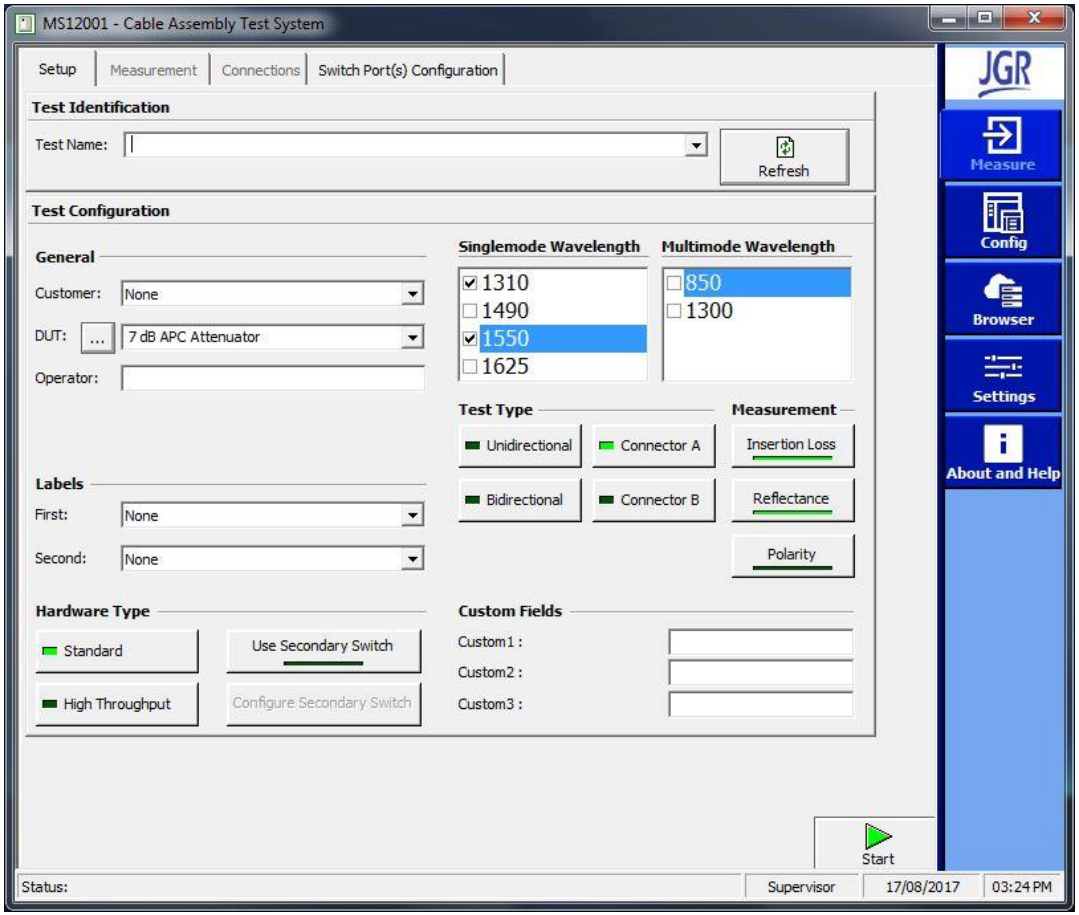
Setup a test with the desired parameters.

An attenuator can be considered as a single connector therefore a “Connector A” test is suitable.



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Begin by doing a reference measurement with your master test jumper (MTJ). It must be at least 3m long. Pictured here is a 3m FC/APC-SC/APC MTJ.

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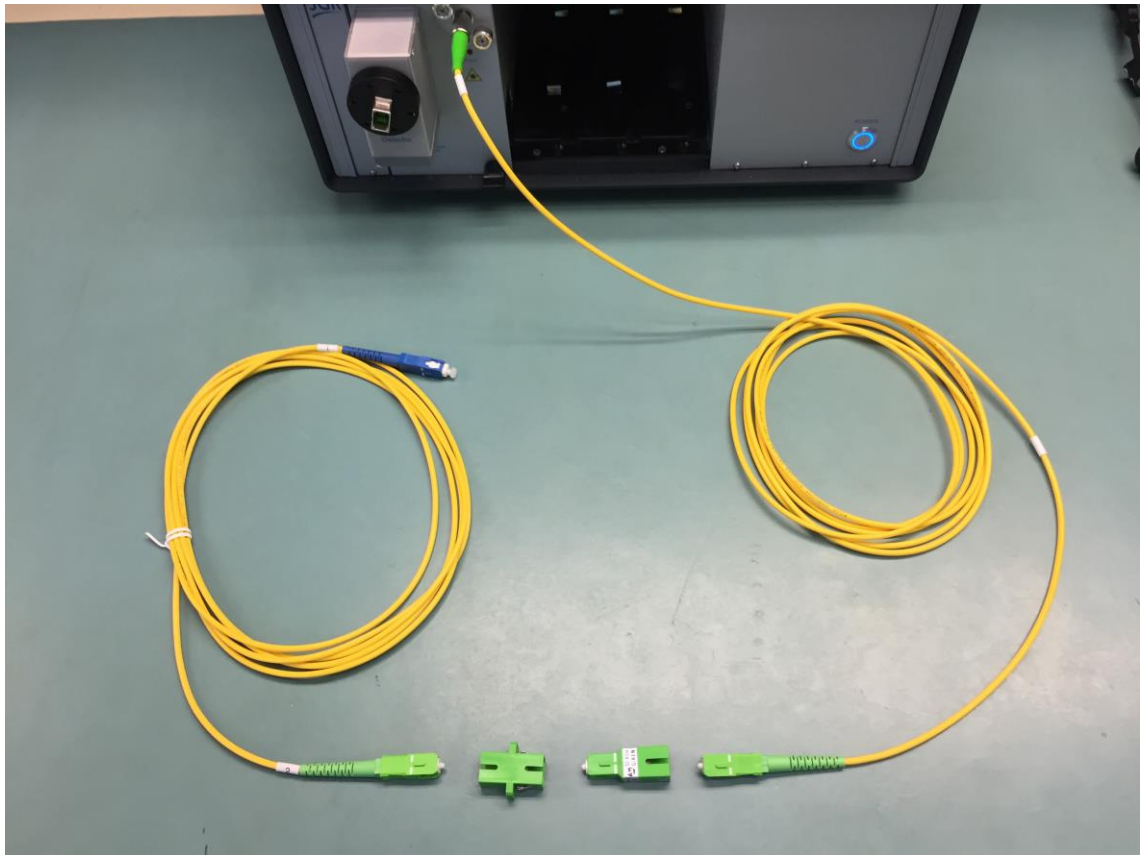
Click “Start Single” to make a measurement. The software will pause and a pop-up will ask you to mandrel wrap your fiber. Instead, connect your MTJ to the attenuator and your attenuator to a receive jumper. The receive jumper must be at least 1.7m long.



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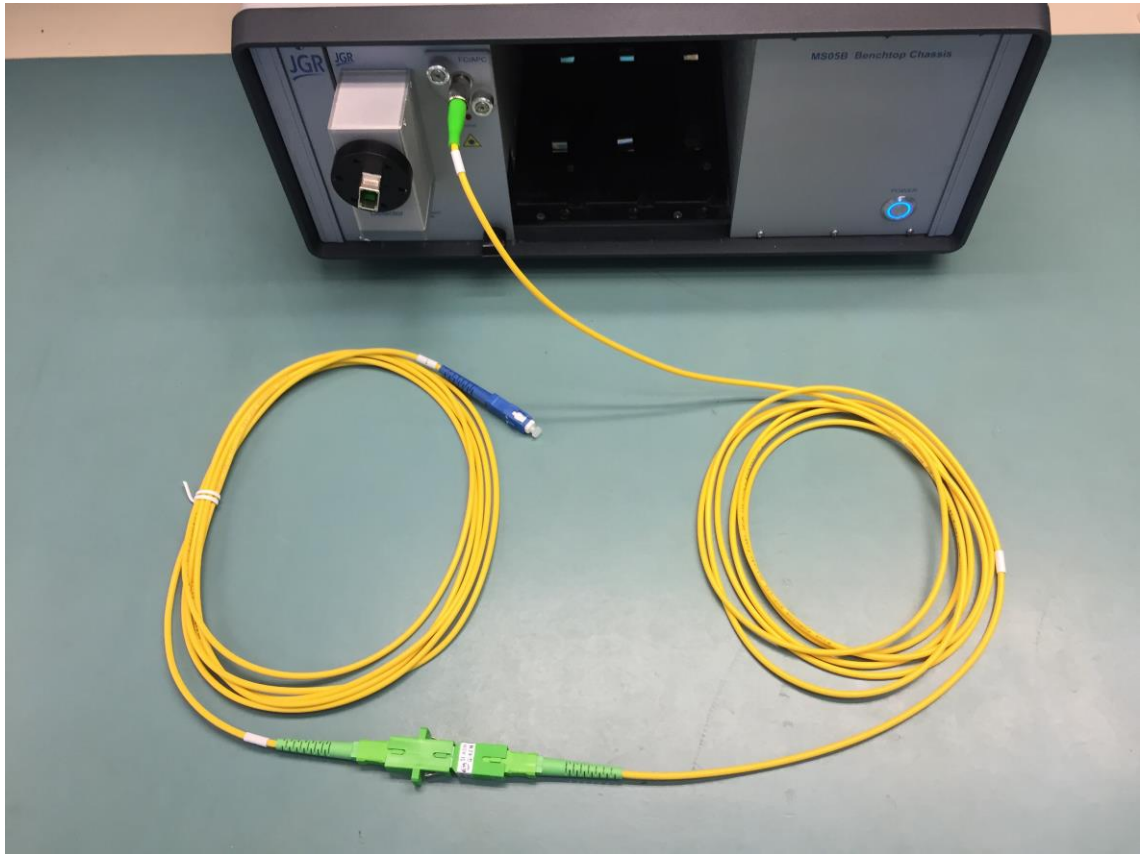
Once connected as below, click OK. In this first part, the software is only measuring RL therefore you don't need to connect the receive jumper to the detector.



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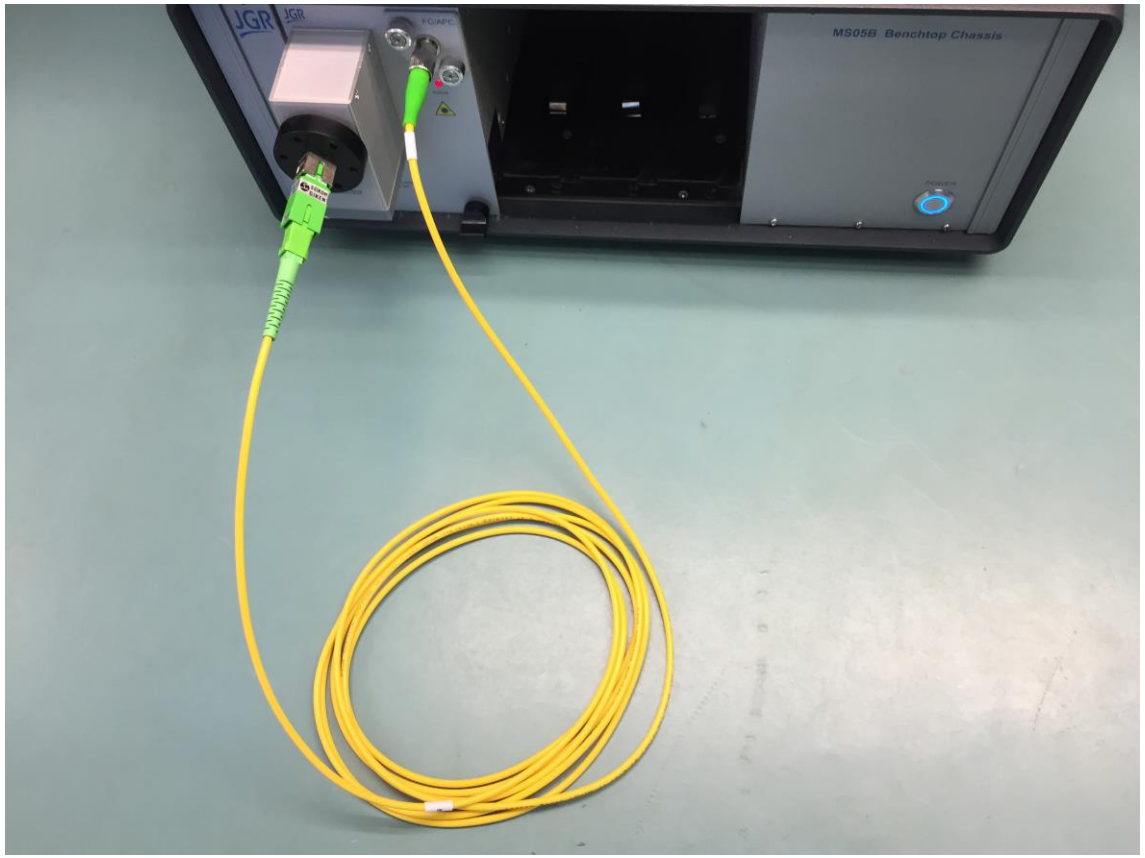
The software will pause again and a pop-up will ask you to unwrap the mandrel. Instead, connect the attenuator directly in the detector as below. Click OK. It will now measure IL.



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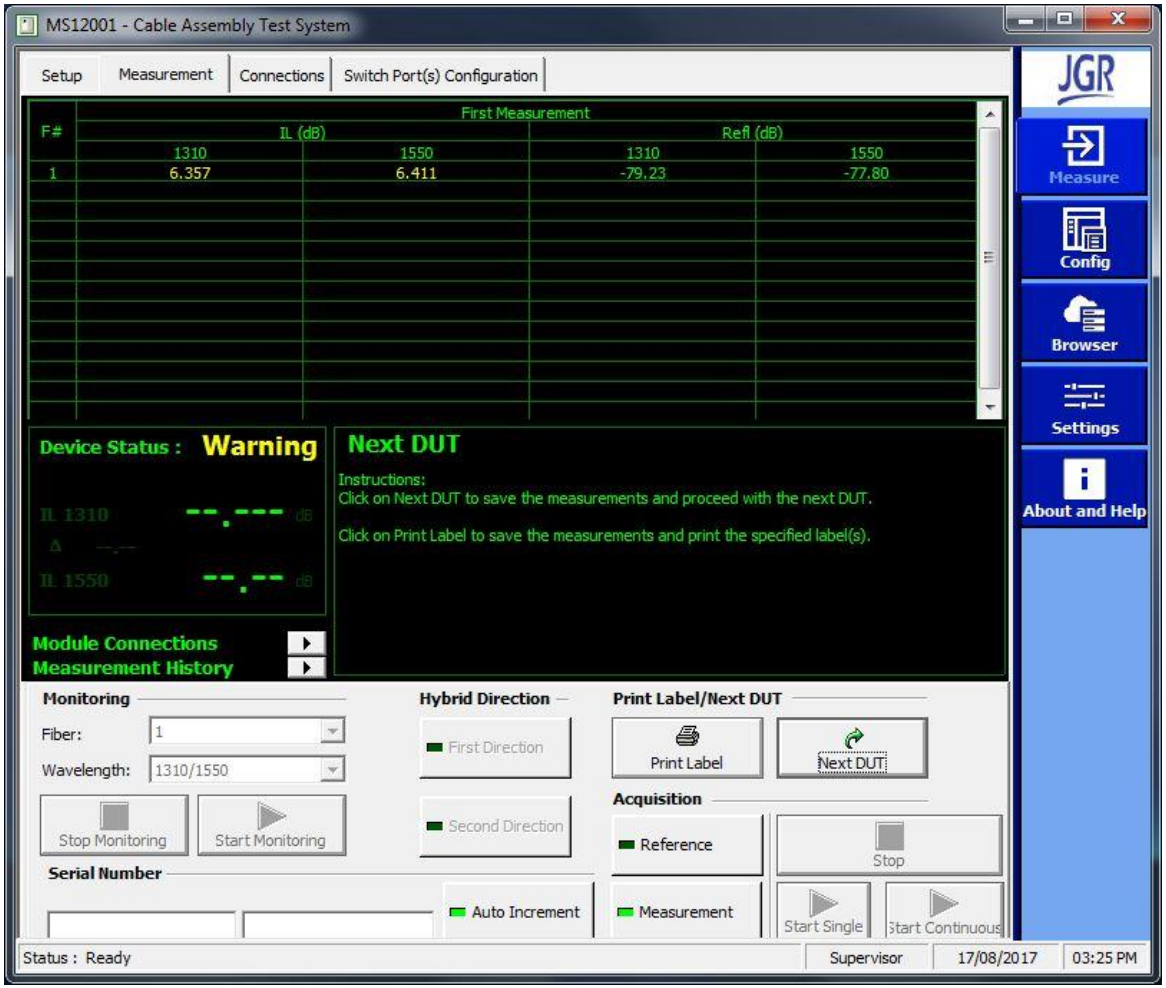

This attenuator passed our example specifications:

- IL = 7 ± 1 dB
- RL < -60 dB

Note that the IL shows as “warning”. For an attenuator, this is a pass.

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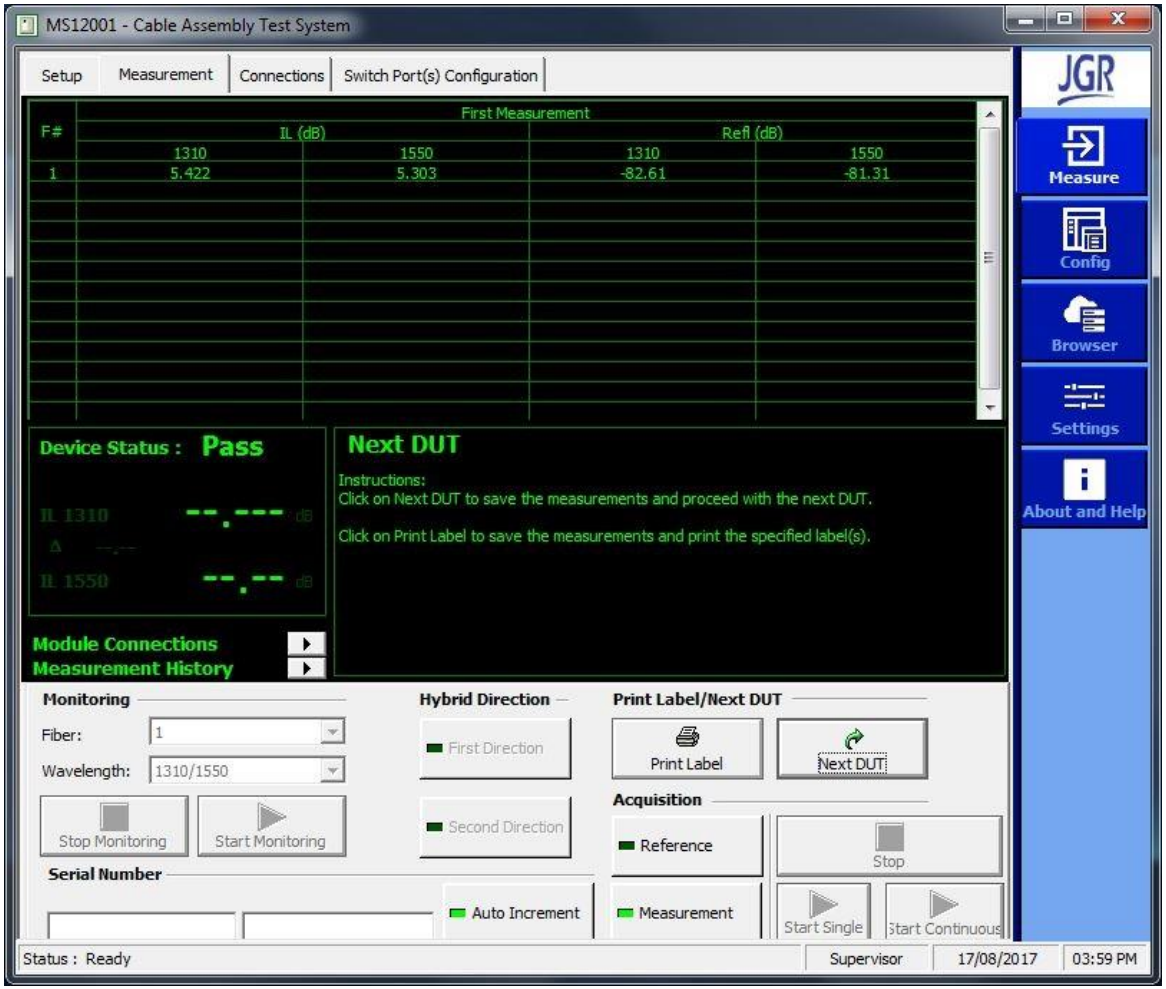

This attenuator failed our example specifications because the IL was too low.

Note that the IL shows as “pass”. For an attenuator, this is a fail.