INVENTION DISCLOSURE

1. **Invention Title.**

Determining In-Channel Frequency Response by Capturing Signals at a Tap

2. **Invention Summary.**
A non-disruptive test is disclosed using a 2-channel time capture of a downstream signal with one channel seeing signals going downstream and the other channel seeing signals going in both directions. With directional and non-directional times series captures, the traces can be processed together to find impedance mismatches in a cable line.

3. **Invention Description**.

   a. Describe the invention in detail.
   See below.

   b. Why was the invention developed? What problem(s) does the invention solve? How is it better?
   Preventative Network Maintenance project at Cablelabs can find echoes, which require an echo "cavity" to create a downstream echo. This technique detects a signal going the "wrong way", caused by a single impedance discontinuity.

   c. Briefly outline the potential commercial value and customers of the invention.
   Could be valuable if a test equipment manufacturer implements.

4. **HOW is this invention different from existing products, processes, systems?**
   No known similar ideas.