

# INVENTION DISCLOSURE

1. **Invention Title.**

**Amplifier Upstream Automatic Gain and Slope Control Based on Downstream Settings**

2. **Invention Summary.**

A solution is disclosed to allow mid-split and top-split upstream cable loss compensation with temperature variation. The upstream gain and slope settings are determined based on the downstream settings, which are applied to the same span of cable, but in a different frequency band.

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?**

This is an unsolved problem for the AMP (Advanced MAC and PHY) project. Thermal controls don't work well when the amplifier is above ground but the cable is buried. Pilot signals that are generated from many end-points and combined are problematic.

c. **Briefly outline the potential commercial value and customers of the invention.**

Large with AMP amplifier upgrades coming.

4. **HOW is this invention different from existing products, processes, systems?**

Thermals controls and pilot upstream systems are currently used, or have been used, and will not work well for AMP deployments.