

INVENTION DISCLOSURE

1. **Invention Title.**

Method to detect F-connector disconnection

2. **Invention Summary.**

In this invention, the cable device employs an energy detection circuit connected to its F-connector, a circuit having a long (perhaps programmable) time-constant and a programmable threshold that can be utilized to enable a micro-power standby function and to trigger a wake from standby operation.

3. **Invention Description.**

Internally connected to the F-connector, the cable device implements an energy detection circuit with programmable threshold and long time constant that controls a very low power (sub 0.5 watt) standby mode for the device. An example operation would be that the device, while in normal operation, establishes a threshold RF receive power that is a small fraction of the current RF receive power as detected by the energy detection circuit. Upon detecting certain pre-conditions, including (among other pre-conditions) both loss of QAM/OFDM signal on the tuned channels, and RF receive power that is below threshold, would enter a condition in which it would enter very low power standby (essentially only supporting RF energy detection and a trigger-able resume function). While in very low power standby, the RF energy detection circuit would monitor RF receive power relative to the established threshold, and trigger the device to exit the very low power standby state when the threshold is exceeded (subject to the time constant).

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

The recently adopted Networked Standby regulation in Europe requires that, beginning on January 2017, all networked devices have the ability to enter a sub-0.5 watt standby or off state when all interfaces are disconnected. Currently, cable devices are not capable of attaining this low power state while still being capable of resuming operation upon re-connection of the coax link.

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

No cable devices that I'm aware of enter a sub 0.5 watt standby or off state when they are disconnected from the coax plant. An alternative solution to what is described here would be to simply enter an "off" state after some long timeout without receiving a valid downstream channel. This off state would require user intervention (pressing the power button) in order to resume operation. The invention disclosed here would provide automatic reactivation upon connection to the coax plant.