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S T A N D A R D S

Interface Practices Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 174 2018

**Radio Frequency over Glass
Fiber-to-the-Home (RFoG) Specification
Extension**

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1. Introduction

1.1. Executive Summary

This document defines a fiber-to-the-home system optimized for compatibility with hybrid fiber-coax (HFC) plant, using the same end equipment at both the home and at the headend or hub. The RFoG system is defined to begin where the plant becomes passive, extending from that point to the home. This interface is referred to as the Optical Hub. There are many possible variations on the structure of the optical hub, depending on the needs of the system. The RFoG system is defined to terminate at the subscriber-side interface of an RFoG Optical Network Unit (R-ONU) at the home.

1.2. Scope

The specifications in this document define the performance requirements that apply to the R-ONU and are designed to allow interoperability between R-ONUs from various manufacturers.

The following system parameters and devices are NOT specified by this document:

- Downstream transmitter and optical amplifier
- Upstream receiver
- System carrier-to-noise and distortion

Additionally, the following items are not specified for the R-ONU. The user is cautioned that there *may* well be variations between manufacturers.

- Physical mounting arrangement
- Weight
- Fiber management
- Element management
- Service disconnect
- Extended reach

1.3. Benefits

The benefits of this standard are:

- Defines the performance of the R-ONU so equipment manufacturers have a guideline for the requirements and design of the R-ONU
- Allows for interoperability between equipment manufacturers
- Describes the overall RFoG System and provides guidelines for system design and performance
- Discusses Optical Beat Interference (OBI) and means of mitigating OBI

1.4. Intended Audience

The intended audiences for this standard are equipment manufacturers, service providers, design engineers, system engineers and system integrators.

1.5. Areas for Further Investigation or to be Added in Future Revisions

This document provides specifications or procedures for frequencies up to 1218 MHz. DOCSIS 3.1 specifications include operation at frequencies up to 1218 MHz, and optionally, to 1794 MHz. Specifications or procedures for frequencies above 1218 MHz should be considered in a future revision of this document.