



AOI Brings First Live Quantum30 3.0 GHz Concept Demo to SCTE TechExpo in Atlanta

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Company Publishes White Paper on Expanding CATV Spectrum to 3.0 GHz

September 24, 2026 – Sugar Land, TX – Applied Optoelectronics Inc. (NASDAQ: AAOI), a leading provider of advanced optical and HFC networking products powering AI, today announced plans for a future-forward 3.0 GHz demo at next week's SCTE TechExpo in Atlanta, September 29 – October 2, at booth H1448.

The company has also published a new whitepaper examining the cable TV (CATV) industry's plans to expand network capacity to meet bandwidth demands, titled "[Beyond 1.8 GHz: Evaluating Paths to 3.0 GHz HFC Networks](#)."

While the cable industry is working to deploy DOCSIS 4.0 at 1.8GHz capacity, operators and suppliers are already evaluating what comes next. Extending HFC network capacity toward 3.0GHz brings increased focus to the physical plant, looking at amplifiers, power, and the overall outside plant architecture. The DOCSIS and DAA layer will need to evolve as well, to fill the spectrum when available.

As considerations are discussed for a 3.0GHz standard, AOI's proof-of-concept demo and whitepaper are intended to help the industry understand the engineering requirements the new standard will need to address.

"The cable industry is moving fast on DOCSIS 4.0 at 1.8GHz, but the engineering decisions for what comes next at 3.0GHz need to start now, well before any standard is set," said Corey Chapman, Senior Director of Product Management for AOI's Broadband Access Business Unit. "Operators have to understand what changes at these higher frequencies: the amplifier architectures, the outside plant implications, and the power demands. That's exactly why we built this demo. We want to show customers real working hardware at 3.0GHz, gather their feedback, and bring AOI's learnings into the standards process when and where it matters."

About the Quantum30 Proof-of-Concept Demo

- Demonstrates a live downstream operation at 3.0GHz over a coaxial plant, showing how the spectrum migration path continues beyond 1.8GHz.
- Consists of actual working hardware featuring a 3.0GHz concept amplifier, SC-QAMs, OFDM channels, and a 3.0GHz DOCSIS signal generator.
- Builds on the engineering foundation AOI established for its Quantum18 Quantum Bandwidth product family.

About the White Paper: *Beyond 1.8 GHz: Evaluating Paths to 3.0 GHz HFC Networks*

- Presents a three-part decision framework for operators evaluating spectrum expansion, including engineering constraints, engineering responses, and operational/economic considerations
- Covers key networking constraints at 3.0GHz: higher cable attenuation, increased power and thermal demands, tighter mechanical tolerances, signal integrity challenges
- Reviews emerging amplifier architectures under consideration: high-TCP wideband, low-TCP/distributed gain, split-band and channelized, and hybrid analog/digital approaches
- Concludes practical guidance: design for flexibility, modernize the outside plant strategically, and planning beyond 3.0GHz.
- Download the whitepaper [here](#).

Learn more by listening to the Podcast: 'The Layer 1 Lounge' in the [AOI Studio](#)

Why 3.0GHz, and why now? In this episode, Corey Chapman breaks down what the shift to 3.0GHz really means, the planning timelines operators should be thinking about today, how amplifier architectures will need to evolve, and what the outside plant constraints will look like in practice.

View the Podcast [here](#).

Additional Resources:

- [AOI Quantum Bandwidth](#)
- [AOI HFC Amplifiers](#)
- [QuantumLink](#)

- [AOI Newsroom](#)
- [AOI Studio](#)

About AOI

Applied Optoelectronics, Inc. (AOI) is a leading developer and manufacturer of advanced optical and HFC networking products that are the building blocks for AI datacenters, CATV and broadband fiber access networks around the world. AOI supplies this critical infrastructure to tier-one customers across cloud computing, CATV broadband, telecom, and FTTH markets. The company has R&D facilities in Atlanta, GA, and engineering and manufacturing facilities at its corporate headquarters in Sugar Land, TX, as well as in Taipei, Taiwan and Ningbo, China. For additional information, visit www.ao-inc.com.

Media contact:

Sara Cicero

sara_cicero@ao-inc.com

770-331-0269