OFF WALL STREET

Applied Optoelectronics, Inc. (AAOI)

DATE: 04/27/2026 | **SECTOR:** Information Technology | **SETUP:** Competitive
MARKET CAP: $10.84B | **SHORT INTEREST:** 12.95% | **ADV:** $1,431M

- **Bull Case:**
  - AAOI is a major manufacturer of optical transceivers, perceived as a beneficiary of AI driven demand.
    - Differentiated through its vertical integration moat and its proprietary manufacturing technology (MBE and MOCVD epitaxial processes).
    - Consensus estimates a 100+% increase in revenue from 2025 to 2026, driven almost exclusively by increasing transceiver sales.
    - Has secured orders from major hyperscalers (MSFT, ORCL), reinforcing its status as an established player.
  - The company is aggressively expanding manufacturing capacity to exceed 700k units of next-generation (800G and 1.6T) transceivers per month by YE2027.
    - Opening new manufacturing plants in Texas, expecting to benefit from onshoring trends as preferences shift toward domestically produced products to mitigate tariff impacts and decrease supply chain risks.
    - Is likely to capture market share from Chinese competitors as a result.

- **Short Thesis:**
  - AAOI temporarily appears to have caught lightning in a bottle.
  - AAOI is perceived by experts as a Tier-2 player, lacking technological capabilities possessed by other incumbents.
    - Tier-1 competitors (LITE and COHR) produce their own 400G/lane EMLs, which are necessary to overcome challenges with next-generation 1.6T/3.2T transceivers.
    - COHR has established 6-inch InP wafer fabrication processes, enabling 4x chip yield at less than half the cost compared to 3-inch wafers; AAOI remains reliant on the latter.
    - Former AAOI Engineer raised concerns regarding innovation stagnation, stating the company hasn’t released a new successful laser in 7 years.
  - Weaker technological innovation increases the firm's dependency on outsourced products, limiting achievable margin expansion.
    - Management’s gross margin expectations of 40% by YE2027, a nearly 10ppts increase from today, is dependent on delivering 1.6T transceivers.

        - If AAOI is unsuccessful in producing viable 1.6T transceiver products utilizing proprietary lasers, margin expansion would be limited by component costs - AAOI would essentially become a lower-margin assembler.
    - AAOI's weaker customer relationships will make them the first company 'dropped' once Tier-1 competitors can meet data center demand.
        - On March 2, 2026, NVDA invested $2B into both COHR and LITE to expand manufacturing capacity and for R&D investment, highlighting their strong strategic position in the supply chain.
        - Hyperscaler customers note issues with AAOI's transceivers "flapping and disconnecting," which point to deficient quality.
        - Several customers experienced firmware-related issues with the 800G products, requiring modification to utilize them effectively, delaying order fulfillment.
        - The fact that AAOI can expand capacity with low capex spend suggests that overcapacity may result sooner than expected.

- **Risks:**
    - AAOI continues to get large orders for 800G and 1.6T transceivers as hyperscalers reduce reliance on Chinese suppliers.
    - AAOI benefits substantially from broadband network upgrades to DOCSIS 4.0; Comcast and Charter have announced plans to spend billions of dollars to upgrade in the next few years.
    - Hyperscalers invest in AAOI to enable it to expand operations and become a Tier-1 player.