Optical Tour: Top 10 takeaways from our visits with entrepreneurs on technology development, demand, supply, and competition

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We visited optical companies during the Asia Leader Conference, Semicon Taiwan, and China AI Tour on Aug 31 to Sep 7 in Hong Kong, Taiwan, and Suzhou: **(1) Optical module:** Innolight (300308.SZ / 3308.HK, Buy), Dongshan Precision (002384.SZ, Not Covered), HG Tech (000988.SZ, Not Covered), CIG (6166.HK, Not Covered), Lightelligence (1879.HK, Not Covered), **(2) Photonics IC testing and coupling equipment suppliers:** Robotechnik (300757.SZ, Buy), ASMPT (0522.HK, Neutral), GMT (4573.TWO, Not Covered), Enlitech (7728.TWO, Not Covered), Fittech (6706.TW, Not Covered), **(3) FAU for NPO / CPO:** FOCI (3363.TWO, Buy), **(4) InP epiwafer / CW lasers:** VPEC (2455.TW, Buy), Everbright (688048.SS, Not Covered). We summarize the key takeaways in this report.

Top 10 takeaways

1. Optical module demand outlook: Companies we visited remain positive on optical module demand, driven by AI server racks ramp up, optical module adoption expansion (from scale out to scale up / across), and specification upgrade. On global market demand on 800G and 1.6T, demand could be at 130m to 200m; for the China market, overall demand could also grow at mid double digits to 50m+ units, with the majority 800G and 400G, and 1.6T emerging. Nevertheless, companies we visited with also mentioned that tight raw material supply (e.g. DSP, lasers, PCB) could continue to cap shipments in 2027. The positive tone echoes our positive view on global demand, on which we raised 800G and above optical module demand by 39% / 36% in 2027E / 2028E to 144m / 171m (report link). Supply chain positive tone reflects further upside to our estimates.

2. Optical module competition: Companies we visited see pricing competition remaining healthy, with 800G optical module pricing decline within single digits in 2027, and 1.6T optical module price to sustain at US$700+. Managements highlight that optical module is not a pure assembly but with multiple SKUs and require suppliers' strong R&D and timely development as compared to telecom, the product cycle could shorten to 1-2 years in datacom vs. 5 years in telecom. Supply chain management and mass production capability are also important to win orders, especially under the current tight supply situation and clients' requirements of diversifying production sites under geopolitical tension. Innolight, as the global leader works with supply chain closely, including R&D collaboration, invests directly in their suppliers, and pre-payment and long-term agreements to secure a

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sustainable supply through cycles.

3. Laser supply: Chinese suppliers are ramping up capacity and capability in 200G EML, supporting the 1.6T optical module ramp up in 2027. Nevertheless, shipment also depends on other raw material supply (e.g. DSP), and customers penetration. Everbright's laser capacity 2027 is EML slightly higher than CW laser, and within the EML majority is for 100G, with the remaining for 200G; Dongshan Precision highlights their 200G EML is already in mass production, while volume is still small currently given the tight supply of DSP; nevertheless, the company also secured 10m supply of DSP in 2027, supporting their lasers and optical modules shipment ramp up. VPEC, global leading InP epiwafer supplier, also sees improving InP substrate supply, with steady export permission from China government, more customers bringing InP substrate, and growing second to fourth suppliers outside of China. VPEC's MOCVD is also in expansion, from current 62 MOCVD to 69 MOCVD by 2Q27, and planning a new production site in 2027.

4. CPO timeline: As a new technology, CPO will naturally take time and could face challenges in the path of commercialization. For example, laser suppliers see thermal challenges for 300mW / 400mW CW lasers in ELS (external laser source), and is working on 100mW+ with PA for NPO first. Optical module suppliers also see strong 3.2T NPO optical engine demand across China and overseas markets. Nevertheless, equipment suppliers remain the earliest beneficiary in CPO, with the strong testing and coupling demand reflecting in equipment suppliers' revenues in mid 2026. For example, Robotechnik 2Q26 revenues were up 172% QoQ, or 141% higher than our estimates. As we highlighted in Sep (report link), we estimate CPO switch at 10k / 92k / 131k units in 2026E-28E.

5. AI spending sustainability: Management highlighted that AI is a revolution, and we are at an early stage of infrastructure spending and application development. It will be a long cycle for the coming 10 to 20 years, and some of their customers are planning beyond 2030. The demand for the coming 2 to 5 years remains very strong and management highlighted their industry enjoys short return on investment, which is around 1 to 2 years. Management highlighted the AI spending is not only building more AI data centers, but also includes technology migration, such as making power consumption more efficient, making data transmission faster, etc., driving the supply chain growth. Compared to the internet bubble in the 2000s, management sees much more transparency between end-customers (demand) and supply chain (supply), as end customers are involved more in supply chain product development and capacity investment, reducing the information gap between demand and supply, and reducing the chance of double booking. Management noted that currently every module they produce is being deployed in data centers, reflecting real demand.

6. Photonics IC scaling up: AI drives data transmission speed and bandwidth requirement, leading to strong demand on Photonics IC, requesting it to catch up Electrical IC automated production and testing ecosystem in 1 to 2 years, while EIC / semiconductors has been developed for decades. The strong demand brings opportunities to tool suppliers, across coupling and testing, which are necessary tools to accelerate PIC production. Robotechnik / FiconTEC describes the number of tools they target to ship in the coming 1 year would be over 50% of what they've shipped in the past 25 years, reflecting the strong demand and orders visibility.

7. Testing - CPO earliest beneficiary: As a new technology, CPO naturally takes time and faces challenges in the path of commercialization; however, we identify testing equipment suppliers as the earliest beneficiaries, considering the expensive final module means multiple testing during the production process is necessary, given the earlier a failure is found, the lower cost a failure is. As a result, companies we visited continue to see Insertion 2 (double-sided wafer-level testing) as necessary, and Robotechnik / FiconTEC launched the new generation in 3Q26, which fully complied with the global leading foundry's communication infrastructure.

8. Testing - shortening time with KGD (know good die) at early stage: To facilitate photonics IC scaling up, not only are more tools needed but better tools, requiring suppliers' strong R&D and execution, delivering continuous specification upgrade. Robotechnik / FiconTEC, as global leaders in PIC testing, aim to shorten the wafer-level testing time by 50-60% next year, and target 4x faster die-level testing next year. Enlitech (7728.TWO, Not Covered) offers NightJar, a hyperspectral image system, revealing AWG (arrayed waveguide grating) optical loss pathways with absolute optical power mapping, allowing customers to KGD at Insertion 1 (PIC wafer testing) or Insertion 0 (PIC wafer early defect screening), saving failure costs.

9. Coupling - automated production becoming necessary in high-speed connection: AI drives optical module towards high speed and high density / bandwidth, driving demand on automated production. GMT (4573.TWO, not covered) showcased dual FA active alignment equipment for 1.6T optical module, which could do the coupling for both Tx and Rx simultaneously, saving 50% of coupling time compared to traditional equipment. FitTech (6706.TW, not covered) has showcased an optical engine assembly system, featuring passive / active alignment and customized development of coupling algorithms, which could be used in multiple products: high-speed optical modules, ELS, OCS, NPO, CPO, SiPh and optical chiplets. ASMPT has showcased MEGA multi-chip bonding solution for complex multi-chip and photonics packaging applications, combining high-precision placement with adhesive dispensing, UV fixation and 3D inspection in one platform.

10. FAU & Laser specification upgrade: With optical networking expanding from scale out to scale up, FAU and laser specification is also migrating. FOCI's FAU in 2026 to be mainly 40 channels (starting in 3Q26) for 3.2T, followed by 80 channels (within 2026) for 6.4T, and 100 channels under R&D, per management. The company's FAU enjoys several customers across fabless, foundry, laser suppliers, etc. FOCI Aug revenues accelerated to +20% MoM (vs. +9% MoM in Jul), reflecting the ramp up of high-end FAU. VPEC's optoelectronics revenues enjoy strong growth on the back of strong CW lasers demand and InP substrate supply getting better. Its InP epiwafer for CW lasers is also migrating from 70mW / 100mW (scale out) to above 100mW (scale up, NPO) and 300mW / 400mW (scale up, CPO), along with expansion from CW lasers to 100G / 200G EML, supporting its growth ahead.



Price Target Risks and Methodology - Zhongji Innolight Co.
Valuation: Our 12-m TP for Innolight A-share of Rmb2,645 is based on 35.6x 2027E P/E, and our 12-m TP for Innolight H-share of HK$3,267 is based on a H-A premium of 13%. We derive our target P/E multiple from the networking peers' trading P/E vs. forward-year fundamentals (NI YoY and OPM). Compared to Innolight's historical trading range, the target multiple reflects our view of its leading market position in high-speed connections and product-mix upgrade toward SiPh optical modules, driving GM expansion. We are Buy rated.

Key downside risks: 1) slower-/worse-than-expected 800G+ optical modules demand; 2) slower/worse-than-expected new optical devices ramp pace; 3) faster-than-expected market share normalizing in 800G+ optical modules; 4) geopolitical risks; and 5) worsening component supply situation to constrain shipment growth.

Price Target Risks and Methodology - VPEC
Valuation: We adopt a discounted P/E method and apply a 22.2x target P/E on VPEC's 2029E EPS, discounting back to 2027E at a COE of 10.5% (beta 1.7x, risk free rate 1.6% and market risk premium at 5.1%), to derive our 12m TP of NT$793. Our target P/E is based on a 0.4x PEG&M ratio derived from the average level of peers in the photonics supply chain.

Key risk: Slower-than-expected SiPh business ramp up; weaker-than-expected microelectronics demand from smartphones clients; IDM offers EPI wafer in-house.

Price Target Risks and Methodology - RoboTechnik
Valuation: Our 12-month target price of Rmb796 is based on a 20.7x 2031E P/E, discounted back to 2027E at a COE of 11.3%. Our target multiple is derived from the correlation between consumer electronic peers' PEG&M (2026E P/E to 2027E NI YoY and OPM), with RoboTechnik's 2032E net income at 2% YoY and 2032E OPM at 32%.

Key downside risks: Fiercer-than-expected market competition; lower-than-expected optical connection end demand; worse-than-expected photovoltaic market downcycle.

Valuation: Our 12-month target price of NT$833 is based on a 15.4x 2030E P/E, discounted back to 2027E at a COE of 12.6%. Our target multiple is derived from peers' correlation between forward-year trading P/E and earnings growth.

Key downside risks: Fiercer-than-expected market competition, technology migration trends in optical networking, and slower-than-expected capacity ramp-up.

Price target methodology and risks - ASMPT
Valuation methodology: We are Neutral rated on ASMPT with a 12-month target price of HK$177, which is based on a 24.9x 2030E discounted P/E (discounted back to 2027E). Our target P/E is derived from correlation between peers P/E to the sum of NI YoY and OPM.

Key upside/downside risks: 1) customers' faster-/slower-than-expected adoption of Advanced Packaging tools; 2) stronger-/weaker-than-expected demand from automotive customers; and 3) stronger-/weaker-than-expected demand for traditional IC packaging and SMT equipment.