

GLOSSARY OF TECHNICAL TERMS

This glossary explains certain technical terms used in this document that relate to our business and the industry in which we operate. These terms and their meanings may not always correspond to standard industry meanings or usages of these terms.

“buried heterojunction waveguide”	A semiconductor heterojunction-based device structure in which the core active layer (e.g., the gain region of a laser) is completely surrounded vertically by a wide bandgap, low refractive index material (e.g., InP or AlGaAs) and filled transversely by selective epitaxy or etch to form a buried region. The structure realizes carrier confinement through the material band gap difference, the light field confinement through the refractive index difference, and the lateral confinement of the current channel by using the buried layer
“CW”	Continuous wave, an electromagnetic wave of constant amplitude and frequency
“DFB”	A distributed feedback laser, utilizing the Bragg reflection (a periodic structure that reflects specific wavelengths of light while transmitting others) of a diffraction grating along an active waveguide to consolidate the laser’s longitudinal mode
“DSP”	Digital signal processors or digital signal processing technology, as applicable
“EML”	An electro-absorption modulated laser, integrating a laser diode with an electro-absorption modulator (EAM) in a single chip
“EPON”	Ethernet passive optical network, a passive optical network (PON) technology based on IEEE standards, used to provide broadband internet access over optical fiber; IEEE further provides definitions of new EPON technologies, including 10G EPON (10-gigabit EPON with symmetric or asymmetric transmission options)
“FTTx”	Fiber-to-the-X, a generic term for any broadband network architecture using optical fiber to provide all or part of the local loop used for last-mile telecommunications; for example, FTTP/FTTH/FTTB, which refers to fiber-to-the-premise/fiber-to-the-home/fiber-to-the-building, respectively, means that fiber is laid all the way to the premise/home/building
“FTTR+X”	An advanced Fiber to the Room (FTTR) technology that integrates a smart home ecosystem with a unified optical network; the “+X” signifies the addition of intelligent features and broader connectivity, transforming the home into a smart, networked environment
“GPON”	Gigabit passive optical network, a PON technology based on ITU-T standards, capable of delivering gigabit-level internet access over optical fiber; ITU-T further provides definitions of new GPON technologies, including XGS-PON (10-gigabit symmetric PON), 50G PON, NG-PON2 (next-generation PON) and Combo-PON (a technology which integrates 1-gigabit and 10-gigabit PON)
“IEEE”	The Institute of Electrical and Electronics Engineers, the world’s largest technical professional organization dedicated to advancing technology

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“ITU”	The International Telecommunication Union, the United Nations specialized agency for information and communication technologies; and “ITU-T” refers to ITU Telecommunication Standardization Sector
“non-specialized optical transceiver manufacturers”	Companies that produce optical transceivers mainly for internal use or as part of their information and communications products, mainly including telecom and network equipment vendors that primarily integrate optical transceivers into their own products rather than sell optical transceivers as standalone products
“ONT”	Optical network terminal, a device that converts optical signals to electrical signals in a fiber-optic network, also known as optical network unit, or ONU
“OSFP”	Octal small form factor pluggable, a high-speed, high-density optical transceiver form factor for next-generation data center and networking applications
“PON”	Passive optical network, a telecommunications technology that uses fiber-optic cables to deliver internet services
“QSFP”	Quad small form factor pluggable, a compact, hot-pluggable transceiver form factor that supports four data lanes, allowing for aggregate data rates four times that of a standard SFP module; “QSFP112”, “QSFP28” and “QSFP56” are variant forms of QSFP, which allow speeds up to 112Gbit/s, 28Gbit/s and 56Gbit/s per lane, respectively; and “QSFP-DD” refers to quad small form factor pluggable double density, an enhanced QSFP
“ridge waveguide”	A planar dielectric optical waveguide by growing a high refractive index material on a substrate and etching a raised strip-like ridge structure on the high refractive index material. The principle of light guidance is based on the difference in the effective refractive index between the ridge and the two regions: the equivalent refractive index of the ridge is higher than that of the adjacent region due to the convex structure, which creates a light confinement in the transverse direction, so that the light field energy is concentrated and propagated below the ridge
“SFP”	Small form factor pluggable, a compact, hot-pluggable network interface module format used for both datacom and telecom applications, usually supporting data rate at 1Gbit/s; “SFP-DD” refers to small form factor pluggable double density, a next-gen form factor that doubles the number of interfaces for high speed in network equipment; and “SFP+” refers to an enhanced version of SFP which usually supports data rate at 10Gbit/s
“specialized optical transceiver manufacturers”	Companies that have the design, development and production of optical transceivers as their core business
“VCSEL”	Vertical-cavity surface-emitting laser, a type of III/V compound semiconductor-based laser whose laser is perpendicular to the top surface