

GLOSSARY OF TECHNICAL TERMS

In this document, unless the context otherwise requires, explanations and definitions of certain terms used in this document in connection with our Company and our business shall have the meanings set out below. The terms and their meanings may not always correspond to standard industry meaning or usage of these terms.

“5G”	a fifth-generation mobile communications standard designed to support wireless data transmission with enhanced capacity, connectivity and performance compared with previous generations
“AAU”	active antenna unit, an object that integrates the antenna element and radio unit into a single physical unit, used in 5G networks to improve performance and reduce signal loss
“ABS”	anti-lock braking system, a vehicle safety system that prevents wheels from locking up during heavy braking, maintaining steering control and preventing uncontrolled skidding
“ADAS”	advanced driving assistance system, any of groups of electronic technologies that assist drivers in driving and parking functions
“AI”	artificial intelligence, a branch of advanced technological science dedicated to the research, development, and application of theories, methodologies, techniques and systems designed to simulate, enhance, and extend human intelligence
“AI servers”	servers designed to support artificial intelligence-related workloads, such as data processing, model training and inference, typically used in data centers
“ANT”	antenna, an accepted abbreviation in the PCB industry
“AOI”	automated optical inspections, a system that uses digital optical equipment to automatically inspect the appearance of circuit patterns
“ASIC”	application-specific integrated circuit, a type of integrated circuit that is customized to the needs of a specific application
“aspect ratio”	the ratio of the board thickness to the drill hole diameter for plated-through holes, or the ratio of the hole depth to the drill hole diameter for blind holes

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“automated driving”	a category of driving solutions covering Level 0 to Level 5 automation, with Level 0 versions featuring solely partial object and event detection and response without continuous vehicle dynamic control capacity, and Level 1-5 versions enabling tiered automated vehicle control capabilities
“automotive Tier 1 companies”	automotive system integrators, which are companies that supply assembled components or systems directly to vehicle manufacturers. Tier 1 companies need to work closely with vehicle manufacturers during the design and development stages of vehicles, ensuring the integration of their components into the final products
“autonomous driving”	a category of driving solutions corresponding to Level 4 and above automation, featuring full vehicle dynamic control under defined or unrestricted operational design domains without reliance on continuous human driver intervention
“back-drilling”	a drilling process that removes the excess conductive material from the signal holes of a PCB from the reverse side
“backplane”	a type of PCB that serves as a central interconnection backbone and mechanical support structure used to connect multiple electronic modules or circuit boards within a system, providing standardized slots or connector interfaces to enable power distribution, data transmission and signal exchange among the modules
“BBU”	baseband unit, a device in telecom systems that transports a baseband frequency, usually from a remote radio unit, to which it may be tied through optical fiber
“BGA”	a surface-mount package with solder balls formed at the bottom lead terminals for interconnection
“blind-via boards”	a type of PCBs that incorporate blind vias, where the vias connect a PCB outer layer (top or bottom layer) to one or more inner layers without passing through the entire board
“BMS”	battery management system, an electronic system that monitors, manages and protects battery packs
“body controllers”	a category of automotive electronic control units used to manage and control vehicle body-related systems and functions

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“bonded zone(s)”	closed-format comprehensive open areas in the PRC, the main functions of which are transit trade, export processing, warehousing and international transportation. Bonded zones are subject to special preferential policies. Enterprises within the bonded zones will, under the direct supervision of the customs department of the PRC government, be entitled to special preferential policies and must develop trading activities between enterprises within the bonded zones and overseas enterprises
“CCL”	copper-clad laminate, a laminated board with copper foil on one or both sides
“CoWoP”	chip-on-wafer-on-PCB, an advanced system-in-package (SiP) technology. It first involves flip-chip bonding of chips onto a silicon interposer via microbumps to achieve high-density interconnection between the chips and the silicon substrate. Subsequently, the chip-on-wafer (CoW) assembly is directly bonded to a multilayer PCB, eliminating the need for traditional organic packaging substrates
“CPU(s)”	central processing unit, the general-purpose processor that fetches, decodes and executes program instructions, orchestrating virtually all computational tasks in a computer system
“crosstalk”	a signal integrity phenomenon in which electromagnetic coupling between adjacent signal paths causes unwanted interference in electronic circuits
“CTE”	coefficient of thermal expansion, the amount of dimensional change in an object per unit of temperature change under constant atmospheric pressure
“data communications”	applications involving data transmission between the various components of facilities such as data centers (including high-speed network switches and routers, AI servers and HPC and general-purpose servers) and wireless telecommunications networks
“data rate”	the amount of data transmitted over a communication channel in a unit of time, typically expressed in bits per second

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“dielectric property requirements”	a set of technical requirements relating to the dielectric characteristics of materials used to support reliable electrical insulation and signal transmission in electronic applications
“domain controllers”	a category of automotive electronic control units designed to integrate and manage multiple vehicle functions within a specific functional domain
“DPPM”	defective parts per million, a quality control measurement in manufacturing
“DPU(s)”	data processing unit, a hardware accelerator for data-intensive tasks like networking, storage and security
“electroplate/electroplating”	a process that utilizes electro-deposition to form a uniform, dense, and well-adhered metal or alloy layer on the surface of a workpiece
“EMI”	electromagnetic interference, a physical phenomenon involving electromagnetic interference that can affect the performance or operation of electronic systems or equipment
“EMS”	electronic manufacturing service, an accepted term for a contract manufacturer in the PCB industry
“ENIG”	electroless nickel immersion gold
“fine line control”	the capability to control and maintain the accuracy of fine circuit line widths and spacing during the PCB manufacturing process
“FPC”	flexible printed circuits, being PCBs made on flexible substrates that allow bending or folding during use
“FR-4 materials”	a grade of glass-reinforced epoxy laminate materials commonly used as a base material in PCBs
“GaN”	gallium nitride, a binary III/V direct bandgap semiconductor well-suited for high-power transistors capable of operating at high temperatures
“Gbps”	giga bits per second, a unit of data transfer rate commonly used to measure data transfer speed
“GFA”	gross floor area
“glass fiber cloth”	a woven fabric made from glass fibers, commonly used as a reinforcing material in the manufacture of PCBs

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“GPU(s)”	graphics processing unit, a microprocessor designed to handle graphics-related tasks
“HDI”	high-density interconnect, a PCB design and manufacturing technology that utilizes microvias, fine-line traces, and thin dielectric layers to achieve high component density and high wiring density per unit area
“high-frequency”	a technical characteristic relating to the transmission or operation of electrical signals at relatively high frequencies in electronic and communication applications
“high-speed materials”	raw materials used in the manufacturing of high-speed PCBs and designed to support high-frequency and high-speed signal transmission
“high-speed network switch and router”	an industrial term; for network switches, referring to switches with port speeds of 100G or above and high switching capacity, which are typically deployed inside data centers; for routers, referring to routers with high throughput and high-speed interfaces, which are typically used at data center boundaries or in telecom carrier backbone networks
“HPC”	high-performance computing, a computing paradigm integrating advanced hardware architectures, parallel processing technologies, and optimized software ecosystems to deliver ultra-high computational power
“HVLP3”	High Very Low Profile 3, a type of advanced copper foil designed to minimize signal loss at high frequencies, used in the production of high-performance and high-reliability PCBs
“hyperscale switches”	a category of network switches designed for deployment in hyperscale data center environments to support large-scale connectivity and data traffic
“IGBT”	insulated gate bipolar transistor, a three-terminal power semiconductor device primarily forming an electronic switch
“impedance”	the opposition encountered by alternating current when passing through a conductor in an electrical network composed of resistance, capacitance, and inductance
“inverters”	power electronic devices used to convert direct current into alternating current, commonly applied in industrial equipment, renewable energy systems and electric vehicles

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“L2+”	L2+ (advanced assisted driving) indicating an enhanced tier of partial automation that provides advanced driver-assistance features built upon L2 capabilities, while still requiring the driver to remain fully engaged and supervise the driving environment at all times
“lamination”	a manufacturing process in which multiple layers of materials used in PCBs are bonded together under heat and pressure to form a unified structure
“LED”	light-emitting diode, a semiconductor device that emits light when current passes through it, used in displays and lighting
“LiDAR”	light detection and ranging, a remote sensing technology that uses laser pulses to measure distances, detect targets and create 3D spatial models for scenarios like driving automation and mapping
“loss materials”	a category of PCB materials characterized by their signal attenuation properties during electrical signal transmission
“M7/M8/M9 grade”	a grade of PCB material designed for use in applications involving high-speed signal transmission
“mil”	a unit of measurement equal to one-thousandth of an inch, commonly used to specify thickness and spacing in circuit design
“MLPCB(s)”	multilayer printed circuit board
“MOSFET(s)”	metal oxide semiconductor field effect transistor, used for amplifying or switching electronic signals
“motherboard(s)”	a PCB assembly used for interconnecting and connecting electronic module arrays
“mSAP”	modified semi-additive process, a PCB production method that enables the manufacturing of finer lines and spaces than traditional subtractive processes
“multilayer alignment”	the manufacturing capability to accurately align and register multiple layers during the fabrication of multilayer PCBs
“NEV(s)”	new energy vehicle that is powered by alternative energy sources, such as electricity or hydrogen
“OAM”	computational accelerator module specification developed under the Open Accelerator Infrastructure (OAI) standard

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“oversize”	those that exceed standard dimensions, typically being more than 24 inches wide
“PCB(s)”	printed circuit board
“PCIe”	peripheral component interconnect express, a type of connection used for high speed data transfer between electronic component
“photolithography”	a manufacturing process that uses near-ultraviolet or ultraviolet light to transfer circuit patterns onto a substrate during the fabrication of PCBs and other semiconductor-related products
“PLC”	programmable logic controllers, being industrial digital control devices used to automate and control machinery or industrial processes
“power system controllers”	a category of automotive electronic control units used to manage and control vehicle power-related systems and functions
“prepreg(s)”	also known as “PP sheet” or “resin sheet”, it is the sheet or roll material made from fiber-reinforced material impregnated with thermosetting resin and cured to the semi-cured stage
“PTFE”	polytetrafluoroethylene, a synthetic fluoropolymer of tetrafluoroethylene
“power semiconductor embedded PCB”	a technology embedding of power semiconductors into PCBs
“roughness”	the degree of unevenness on the surface and edges of the circuit conductors on PCBs after etching
“REACH”	Regulation (EC) No 1907/2006 of the European Parliament and of the European Council concerning, among others, registration, evaluation, authorization and restriction of chemicals
“RF circuit design”	a technical discipline involving the design of electronic circuits intended to process, transmit or receive radio frequency signals
“RF signal”	electromagnetic signal operating within the radio frequency range
“RoHS”	Restriction of Hazardous Substances Directive of the EU
“routers”	network devices used to forward and direct data traffic between different computer networks

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“SAE International”	a U.S.-based global association of engineering professionals in various industries with a focus on transport industries. SAE International classifies driving automation into six levels based on the extent of human intervention and the scope of the driving scenario, namely L0, L1, L2, L3, L4 and L5, with L5 being completely autonomous with no human intervention needed and L0 having no autonomous system control
“SiC”	silicon carbide
“signal integrity”	the quality of the signal along the transmission path
“stub(s)”	The residual conductive part in a via
“substrates”	base materials used to support and interconnect electronic components and circuits in PCBs and related electronic products
“switches”	network devices used to connect multiple devices within a network and to direct data traffic between such devices,
“tce”	Tonnes of standard coal equivalent
“tCO ₂ e”	Tonnes of carbon dioxide equivalent
“Tg value”	glass transition temperature, the critical temperature at which a PCB’s laminate transitions from a rigid, glassy state to a softer, more pliable state. A higher Tg value indicates the material can withstand greater heat during manufacturing and operation, which is crucial for maintaining the PCB’s structural integrity and reliability
“UBB”	universal baseband board, is a common carrier board specification developed under the Open Accelerator Infrastructure (OAI) standard, designed to host accelerator modules
“UL material certification”	a formal recognition issued by Underwriters Laboratories (UL), a global safety science organization, confirming that a specific raw material meets rigorous safety standards for properties like flammability, electrical insulation and thermal resistance
“ultra-small aperture processing”	the manufacturing capability to form and process very small-diameter holes in PCBs with controlled accuracy
“via(s)”	a hole that is drilled through the board to create a pathway for electrical connections between different layers
“warpage”	a physical condition referring to the deformation or distortion of a PCB from its intended flatness during or after manufacturing