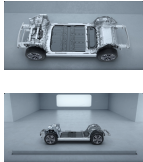# XPENG

XPENG Technology Glossary

[For reference only, subject to potential changes or updates]

Feature / Product	Notes / What is it / How does it work	Customer benefits	Visual Assets
AI-defined vehicle			
AI Hawkeye Visual Solution	The XPENG AI Hawkeye Visual Solution is a cutting-edge smart driving perception system designed for end-to-end AI applications. • It integrates two 8M cameras (front and rear), millimeter-wave radars, and ultrasonic radars to deliver smart driving performance on par with previous LiDAR-based systems, but at a lower cost. • The system provides high precision, longer-range vision, and better color resolution, even in low-light, backlit, and high-contrast environments. • Powered by end-to-end large models, it directly processes visual data into the	The AI Hawkeye Visual Solution offers a safer and more reliable smart driving experience by providing clearer, more accurate perception and longer-range vision. • It performs effectively in various lighting conditions and recognizes different road signs and traffic signals across cities, ensuring seamless functionality in diverse urban environments. • The solution delivers advanced autonomous driving performance comparable to LiDAR systems but without the added cost, offering customers an innovative, cost-effective driving experience.	

	neural network, enhancing perception sensitivity and response.		
SEPA 2.0			
SEPA 2.0	SEPA 2.0 ("Fuyao") is XPENG's independently developed fully intelligent vehicle evolution architecture. It represents the ultimate technology framework for advanced intelligent electric vehicles before the advent of autonomous driving, aiming to redefine high-end intelligent electric vehicles and maintain a 3-year technology lead. Over 5 years of continuous exploration, with more than 10 billion RMB in cumulative R&D investment.	SEPA 2.0 will support XPENG goal of making intelligent technology more accessible, reducing vehicle costs, unifying product experiences, and speeding up product iteration by 20%. It also increases the parts commonality rate to 80%.	Smart manufacturing capabilities SPEA 2.0
EEA	XPENG's in-house developed electronic architecture that includes a data platform, vehicle software platform, and hardware architecture.	Reduces R&D costs by 50%. Shortens intelligent feature iteration cycles by 30%. Increases OTA update speeds by 300%.	What is X-EEA? X-EEA & Integrated die-casting & XPower

800V SiC platform	First mass-produced 800V SiC (Silicon Carbide) platform in China, powering high-voltage components like the battery, motor, and compressor. Faster charging using 3C cells (50% higher charging rate than previous technology) and supporting up to 4C cells. Enables charging of 200 km range in just 5 minutes, akin to refueling a traditional car.	Compatible with both XPENG and third-party charging networks, offering superior charging speed. Charging to 80% in just 20 minutes, leading the industry. Offers a peak charging rate of 320 kW and a peak current of 480A for 3C battery versions. Charging in 5 minutes delivers 130 km of range. Integrates SiC to reduce energy loss and improve efficiency.	XPENG Supercharging
Front and Rear Integrated Die-casting	Die-casting is the act of integrating multiple separate structural body parts into a single, significantly stronger component. The XPENG G6 SUV, XPENG P7+ sedan both feature front and rear die-casted suspension body components, as well as a center floor featuring next generation cell integrated body, whereby the battery becomes part of the structure of the vehicle.	Die-casting parts benefits customers in numerous ways, many they won't see, but they will feel. The increased torsional rigidity of die-casted structural cells ensures a smoother ride with greater driving performance, while cell integrated body helps to reduce the height of the body and create more cabin space. Die-casting also reduces manufacturing costs by 10 to 30%, which ultimately leads to more affordable premium vehicles.	Smart manufacturing capabilities SPEA 2.0 X-EEA & Integrated die-casting & XPower

		In Sept 2024, XPENG G6 has earned ENCAP 5-star safety ratings.	
CIB	CIB (Cell Integrated Body) Technology is the integration of the battery pack as part of the car's body structure.	Increases cabin space by 5%, improves safety, and supports the highest safety standards in China, North America, and Europe.	
ADAS			
XNGP	XNGP is XPENG's next-generation advanced ADAS system, featuring full-scenario ADAS capabilities. It can assist drivers across a full range of driving situations, from starting point to destination, including exiting a parking lot, urban and highway streets, unstructured roads, and within parking lots finding and parking in an available space. It is available in more than 50 cities across China, and is the final step before realization of full autonomous driving. The technology hardware behind it includes a minimum 508 TOPS of computing power, dual-lidar, and 8 megapixel HD cameras. It uses XNet to create HD maps in	Customers using XNGP can now experience end-to-end assisted driving in all cities across China, covering everything from leaving the parking garage, driving in urban, high-speed, and unstructured roads, and finding a parking space at the end of the journey, or returning to a saved space if they have one. XNGP is the final step before full autonomous driving is realized. The ability for the system to run without reliance on HD maps opens it up for potential application in other countries as and when available. Due to current laws in China, drivers must still retain full responsibility for the vehicle and remain vigilant and ready to take over at all times.	XNGP ADAS XPENG's powerful XNGP - takes you anywhere

	real-time, and no longer relies on HD maps for operation.		
XBrain	XBrain is the ultimate architecture for full-scenario ADAS functions, encompassing both XNet 2.0 and XPlanner	(See the XNet 2.0 and XPlanner for detailed benefits.)	
XNet 2.0	XNet 2.0 is the next-generation of autonomous vision-based object identification from XPENG, a system that unites the inputs from the cameras and sensors on the car to generate a self-learning visual image of the vehicle's surroundings, automatically tagging a wide range of objects and identifying their predicted pathways and behaviour, to support the autonomous decision making of the vehicle. Using visual-based systems enables cars to perform assisted driving functions in areas without HD mapping, at the same time generating a real-time HD map of the area including lanes and lane markings. It is backed by China's largest supercomputing center for autonomous driving, Fuyao, which is itself supported by Alibaba Cloud's intelligent computing platform.	XNet 2.0 is the intelligence behind the XNGP function. Its visual-based self-learning system opens up wider coverage for autonomous driver assistance functions and greater accuracy of object identification, which ultimately leads to a safer, smarter system that can be used in an increasing number of cities and scenarios due to its constant self-improvement and learning.	How an AI in-car OS enhances driving experience?

XPlanner	XPlanner is a neural network-based planning and control system, capable of making more insightful and human-like decisions based on minute-by-minute information and inputs to perform highly complex multi-tasking. It can work with incomplete or unclear data sets to make flexible decisions as a human would.	Key to the acceptance of high-level technology is its ability to 'connect' with people on a similar-level. By being able to process information, even incomplete information, as a human would, XPlanner can best serve the needs of humans in flexible and changing situations.	
Smart cockpit			
Smart Cabin	Smart cabin is the most advanced in-car voice assistant of its kind, offering multiple input multiple output (MIMO) multi-zone voice control technology. The system can understand multiple inputs simultaneously from different areas of the car, understanding the context of the conversation with an accuracy of over 96% for voice acceptance and rejection. It works regardless of internet connection and can be summoned without a direct command in under a second.	With over a 99% utilization rate in XPENG cars, the smart cabin offers customers hands-free control of a vast range of in-car functions, with GPT-style technology enabling the car to understand conversational style feedback and act on requests in less than one second. By being able to understand multiple conversations and inputs simultaneously, car users don't have to wait to get their request in.	[XPENG Tianji XOS 5.2 OTA Asset Library](link) [Smart cockpit](link)
Tianji XOS	XOS Tianji XOS is XPENG's fifth-generation smart cabin system, which seamlessly integrates intelligent driving capabilities and next-generation smart cabin scenarios to	Customers benefit from an overall enhanced cabin experience with greater personalisation and customisation, smart access via a single screen for multiple users, best-in-class AI	[XPENG Tianji XOS 5.2 OTA Asset Library](link) [Smart cockpit](link)

	enhance the human-machine co-driving experience. Highlights of the system include split-screen multi-tasking for easy presentation of information and dual-screen access on a single screen, the ability to 'dock' your favourite icons and functions based on preferences and seasons/times, full surrounding reality (SR) vision 24/7, and XPENG's enhanced AI voice assistant.	voice assistant (see smart cabin for more details) and a complete, uninterrupted 360-degree virtual recreation of the vehicle surroundings enabling multiple smart scenarios, safety alerts, and zero blind spots.	XPENG XOS 5.2 OTA highlights - Part 1 Tianji XOS
XPENG Robotics			
XPENG Robotics	XPENG is using its AI capabilities to expand into the realm of robotics and has developed a number of prototypes capable of performing a wide range of activities on a variety of terrains, including stairs, slopes, and gravel. The technical requirements of the robotics are directly compatible with the technologies being developed for XPENG's smart vehices, including motor movements, battery life, component flexibility, object awareness and identification, and decision-making.	XPENG robotics are not yet available to the public but could feasibly reach a point where customers can purchase such robots for use around the home or in other areas of life. The cross-compatibility of the work involved also helps to continuously improve the ability of XPENG cars.	XPENG Robotics
XPENG AEROHT			

| Flying Car | XPENG's work on flying cars currently takes a couple of forms, including purpose-built vertical take-off and landing (VTOL) (AEROHT) and vehicles with dual-purpose, where one vehicle can be used on the road and carry a separate VTOL vehicle for flying (Land Aircraft Carrier). While the latter is still at the investigative stage, AEROHT is at a much more advanced stage, completing numerous flights in China and abroad. It is currently in development for commercial deliveries. | Flying vehicles, while likely to be beyond the reach of most people in the early years, have the potential to revolutionise travel. Safer, cleaner, and cheaper than helicopters, they can serve the purpose of short-haul travel within cities far above the congestion on the streets below, reducing journey time, bringing fascinating new perspectives to aerial flying, and significantly reducing the current associated risks with vehicles such as helicopters. | XPENG AEROHT |