GLOBAL ADAS AND AI SOC CHIP MARKET SIZE ANALYSIS 2026

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According to the different applications of semiconductors in smart cars, we will be divided into computing and control chips (CPU/GPU, etc.), storage chips (DRAM/FLASH, etc.), sensor chips (ISP/CIS, etc.), communication chips (PHY, etc.) and energy supply chips (IGBT/MOSFET). At the same time, the current vehicle semiconductor industry is highly monopolized by foreign manufacturers, and in the industry "lack of core" event catalyst, the trend of import substitution will accelerate, the domestic 100 billion vehicle semiconductor market can be expected in the future.

Chart 1 Automotive AI SoC Chip Market Size								
	2020	2021	2022	2023	2024	2025	2026	CAGR (20-26)
L0	50.2	50.0	49.8	49.6	49.5	49.3	48.8	-0.5%
Annual Growth Rate		-0.4%	-0.4%	-0.4%	-0.2%	-0.4%	-1.0%	
L1	70.2	70.0	69.8	69.5	69.3	69.0	69.3	-0.2%
Annual Growth Rate		-0.3%	-0.3%	-0.4%	-0.3%	-0.4%	0.4%	
L2	153.3	160.0	167.0	174.4	182.0	190.0	188.0	3.5%
Annual Growth Rate		4.4%	4.4%	4.4%	4.4%	4.4%	-1.1%	
L3	580.3	600.0	620.4	641.5	663.3	658.9	664.6	2.3%
Annual Growth Rate		3.4%	3.4%	3.4%	3.4%	-0.7%	0.9%	
L4-L5	1,621.1	1,600.0	1,579.2	1,558.7	1,538.4	1,487.9	1,411.5	-2.3%
Annual Growth Rate		-1.3%	-1.3%	-1.3%	-1.3%	-3.3%	-5.1%	
Market Size (in billion U.S. dollars)	4.1	5.1	5.6	6.2	6.9	7.5	7.9	11.8%
Annual Growth Rate		25.9%	8.8%	10.7%	12.1%	8.3%	6.0%	

With the increasing complexity of processing events, there are several different types of chips that are integrated together to form a system-on-chip (SoC).

Typically, SoC chips contain one or more processors, memories, analog circuit modules, digital-analog mixed-signal modules, and on-chip programmable logic, which can effectively reduce the development cost of electronic/information system products, shorten the development cycle, and improve the competitiveness of products. The market will be $4.1 billion in 2020 and will rise to $7.9 billion in 2026, growing at a compound annual growth rate of 11.8%.
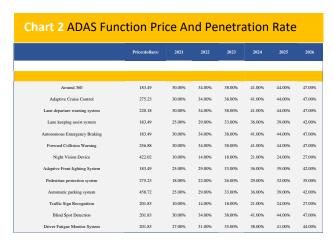
Advanced Driving Assistance System (ADAS) uses a variety of sensors (millimeter wave radar, LIDAR, mono- and binocular cameras and satellite navigation) installed in the car to sense the surrounding environment at any time during the driving process, collect data, identify, detect and track static and dynamic objects, and combine with The navigation map data is combined with the system calculation and analysis, so that the driver can be aware of possible dangers in advance, effectively increasing the comfort and safety of car driving.

In general, automotive advanced assisted driving systems usually include: lane departure warning system LDWS, lane keeping system LKS, adaptive cruise control system ACC, forward collision prevention system FCW, automatic parking system APA, blind spot monitoring system BSD, driver fatigue warning system DFM, adaptive lighting control ALC, automatic emergency braking AEB, night vision system NVD and other common top ten function systems.

In addition, it also includes pedestrian protection system, electronic police system ISA, navigation and real-time traffic system TMC, traffic sign recognition, downhill control system, electric car alarm system and so on.

At this stage, the penetration rate of ADAS function is basically less than 30%, with most features expected to exceed 40% penetration in 2026, the higher penetration rate is mainly closely related to driving safety detection and early warning function, and automatic parking, panoramic parking and other daily use scenarios frequently, the most concerned about the consumer function, also become the focus of car manufacturers to develop.

Chart 2 ADAS Function Price And Penetration Rate

	Price(dollars)	2021	2022	2023	2024	2025	2026
Around 360	183.49	30.00%	34.00%	38.00%	41.00%	44.00%	47.00%
Adaptive Cruise Control	275.23	30.00%	34.00%	38.00%	41.00%	44.00%	47.00%
Lane departure warning system	220.18	30.00%	34.00%	38.00%	41.00%	44.00%	47.00%
Lane keeping assist system	183.49	25.00%	29.00%	33.00%	36.00%	39.00%	42.00%
Autonomous Emergency Braking	183.49	30.00%	34.00%	38.00%	41.00%	44.00%	47.00%
Forward Collision Warning	256.88	30.00%	34.00%	38.00%	41.00%	44.00%	47.00%
Night Vision Device	422.02	10.00%	14.00%	18.00%	21.00%	24.00%	27.00%
Adaptive Front-lighting System	183.49	25.00%	29.00%	33.00%	36.00%	39.00%	42.00%
Pedestrian protection system	275.23	18.00%	22.00%	26.00%	29.00%	32.00%	35.00%
Automatic parking system	458.72	25.00%	29.00%	33.00%	36.00%	39.00%	42.00%
Traffic Sign Recognition	201.83	10.00%	14.00%	18.00%	21.00%	24.00%	27.00%
Blind Spot Detection	201.83	30.00%	34.00%	38.00%	41.00%	44.00%	47.00%
Driver Fatigue Monitor System	201.83	27.00%	31.00%	35.00%	38.00%	41.00%	44.00%

The ADAS market is expected to reach $22.2 billion in 2021 and rise to $68.7 billion in 2026, growing at a CAGR of 25.4%.

Chart 3 ADAS Market Size

	2021	2022	2023	2024	2025	2026	CAGR (20-26)
Around 360	1592.8	2052.2	2615.9	3273.1	3876.9	4496.5	23.07%
		28.8%	27.5%	25.1%	18.4%	16.0%	
Adaptive Cruise Control	2389.1	3078.3	3923.9	4909.7	5815.3	6744.8	23.07%
		28.8%	27.5%	25.1%	18.4%	16.0%	
Lane departure warning system	1911.3	2462.7	3139.1	3927.7	4652.3	5395.9	23.07%
		28.8%	27.5%	25.1%	18.4%	16.0%	
Lane keeping assist system	1327.3	1750.4	2271.7	2873.9	3436.3	4018.2	24.80%
		31.9%	29.8%	26.5%	19.6%	16.9%	
Autonomous Emergency Braking	1592.8	2052.2	2615.9	3273.1	3876.9	4496.5	23.07%
		28.8%	27.5%	25.1%	18.4%	16.0%	
Forward Collision Warning	2229.9	2873.1	3662.3	4582.3	5427.6	6295.2	23.07%
		28.8%	27.5%	25.1%	18.4%	16.0%	
Night Vision Device	1221.1	1943.6	2850.0	3855.9	4863.7	5941.2	37.22%
		59.2%	46.6%	35.3%	26.1%	22.2%	
Adaptive Front-lighting System	1327.3	1750.4	2271.7	2873.9	3436.3	4018.2	24.80%
		31.9%	29.8%	26.5%	19.6%	16.9%	
Pedestrian protection system	1433.5	1991.9	2684.8	3472.7	4229.3	5022.7	28.50%
		39.0%	34.8%	29.3%	21.8%	18.8%	
Automatic parking system	3318.2	4376.0	5679.3	7184.9	8590.8	10045.5	24.80%
		31.9%	29.8%	26.5%	19.6%	16.9%	
Traffic Sign Recognition	584.0	929.5	1363.0	1844.1	2326.1	2841.4	37.22%
		59.2%	46.6%	35.3%	26.1%	22.2%	
Blind Spot Detection	1752.0	2257.4	2877.5	3600.4	4264.6	4946.2	23.07%
		28.8%	27.5%	25.1%	18.4%	16.0%	
Driver Fatigue Monitor System	1576.8	2058.2	2650.4	3337.0	3973.8	4630.5	24.04%
		30.5%	28.8%	25.9%	19.1%	16.5%	
Total （Billion dollars）	**22.2**	**29.5**	**38.5**	**48.9**	**58.6**	**68.7**	**25.4%**
Annual Growth Rate		**32.9%**	**30.5%**	**26.9%**	**19.9%**	**17.2%**	

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