

Chinese Joint Venture OEMs' Telematics System and Entertainment Ecosystem Research Report, 2022

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Telematics System Research 2: Baidu Family Bucket, Huawei and Tencent Become the Mainstream Ecosystems

ResearchInChina released Chinese Joint Venture OEMs' Telematics System and Entertainment Ecosystem Research Report, 2022 (hereinafter referred to as " this report"), combing through telematics systems of joint venture brands in China.

From January to December 2022, joint venture brands in China sold a total of 10.74 million passenger cars, a year-on-year decrease of 8.6%, of which 6.59 million units were equipped with telematics systems, with the installation rate up to 61.3%, 5 percentage points higher than in the previous year.

Installations and Installation Rate of Telematics Systems in Passenger Cars of Chinese Joint Venture Brands, 2022





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Market Shares of TOP10 Chinese Joint Venture Brands by Telematics System Installations, 2021-2022

By brands and their telematics system installations in 2022, Volkswagen moved up to first position, with its market share increasing by 5.2 percentage points on an annual basis (Volkswagen sold 2.193 million new vehicles in 2022, down 8.1% year on year); Nissan fell to third, with its market share dropping by 3 percentage points (Nissan sold 802,000 new vehicles in 2022, down 23% year on year).



Source: ResearchInChina



Cockpit hardware offer big improvements, and high-resolution integrated displays and rear entertainment screens become the norm

In 2022, the development of joint venture brands in telematics systems highlighted the following:

1. Cockpit hardware offer big improvements, and highresolution integrated displays and rear entertainment screens become the norm.

In 2022, the new models of joint venture brands offer big improvements in cockpit displays. Take GM and BMW as examples:

* Buick and Cadillac under GM carry virtual cockpit systems (VCS). Buick Century is equipped with a 30-inch 6K curved display in the front row, and a 32-inch entertainment screen and two 8-inch armrest control screens in the rear row (both front and rear rows are equipped with a Qualcomm 8155 chip); Cadillac LYRIQ packs a 33-inch 9K curved display, with the PPI up to 271.

* The front row of BMW i7 adopts a curved display that integrates the 12.3-inch dashboard and 14.9-inch center console screens, with the resolution of 2880*1080 and the PPI of 201. A 31-inch 8K entertainment screen is first introduced in the rear row, and can be controlled via the two 5.5-inch rear door screens on the left and right.

Rear Entertainment Screen of BMW i7



Source: BMW



Brand		Buick	Cadillac	Mercedes- Benz	BMW
Latest Telematics System		Buick eConnect 3.0	Next- generation CUE	MBUX Hyperscreen	iDrive 8.0
Typical Model		Buick Century	Cadillac LYRIQ	Mercedes-Benz EQS	BMW i7
Telematics Service Provider		Baidu	Baidu	/	/
IVI Chip		Qualcomm 8155	Qualcomm 8155	NVIDIA Xavier	Intel A3960
Dashb <mark>oard</mark> (inches)		30	33	12.3	12.3
Cente <mark>r Cons</mark> ole (inches)		30		17.7	14.9
Center Console Resolution		6008 x 934	8960 x 1230	3088 × 1728	2880 x 1080
Cente <mark>r Cons</mark> ole PPi		200	271	210	106
Co-pilot Seat Entertainment Screen		/		12.3	/
Air Conditioner Touch Screen		ooyai		шца. ч	
Others		32-inch lifting entertainment screen, 8-inch clock screen, 8- inch rear armrest control screen		Rear central armrest screen	31-inch 8K rear entertainment screen + two 5.5-inch rear door armrest screens
Integrated or Not		\checkmark	\checkmark	\checkmark	\checkmark
HUD (inches)	AR-HUD		/	\checkmark	
	W-HUD	12.6	/		\checkmark

Comparison of Cockpit Displays between Some Joint Venture Brands in China, 2021-2022

Source: ResearchInChina



2. In cockpit interaction, voice interaction becomes a standard configuration, but few advanced functions are installed in vehicles.

In 2022, typical models of joint-venture brands came with voice interaction, but few of them bore advanced voice functions, such as "see and speak", four-zone sound recognition, and sound reproduction. Among the 12 models in this report, only Buick Century is equipped with "see and speak" and voice reproduction features, and Nissan ARIYA supports four-zone sound recognition.

Toyota bZ3, to be launched in March 2023, is planned to be equipped with voice interaction functions from dual-zone sound recognition, wakeup-free, sound reproduction and scenario DIY to 20/30/60/120second continuous dialogue and semantic interruption, which will be gradually upgraded and opened up later.

Compared to Chinese independent brands which have developed such functions as user-defined voice command, voice-controlled ADAS and external voice interaction, joint venture brands still have a long way to go in interaction modes. (see details in Chinese Independent OEMs' Telematics System and Entertainment Ecosystem Research Report, 2022)

Brand			Buick	Ford	Mercedes-Benz	Honda
Latest Telematics System			Buick eConnect 3.0	SYNC+2.0	MBUX Hyperscreen	Honda CONNECT 3.0
Typical Model			Buick Century	Ford EVOS	Mercedes-Benz EQS	e:NP1
Voice Technology Provider			Baidu	Baidu	Cerence	IFLYTEK
	Voice Avatar		/	VPA	/	HPA.
Voice	Voice Wakeup Words		Hi, Buick	Hi, Ford	Hi, Benz	Hi, Honda
	Voice Functions	Voice wakeup-free	√ (call, zoom in on the map, navigate to, I want to listen)	v	V (25 commands, covering volume adjustment, radio switch, music switch, map page adjustment, driving recorder control, etc.)	√ (multimedia, navigation)
		See and speak	\checkmark	1	1	/
		Multi-round/ continuous dialogue	V	V	V	/
		Sound localization	Driver's seat	Front row	Front row	Driver's seat
		Parallel command	1	/	/	1
		Special voice- controlled function	- 7	/	, , , , , , , , , , , , , , , , , , ,	
	WWW	Wakeup words	eavic	ni√ c	hina.c	o n√
		Voice image	/	Interactive actions available, yet to support customization	/	√ (17 emotions with command- linked movements)
	Voice customized content	Voice command	√	/	/	/
		Voice response words	√ (2-8 Chinese characters)	/	/	/
		Voice tone switch	~	\checkmark	\checkmark	\checkmark
		Voice reproduction	\checkmark	/	/	/
Others		Gesture recognition	/	√ (6 gestures)	$\sqrt{(2 \text{ gestures})}$	/
		Gesture recognition module position	/	Center console	Door panel (wave hand to close the door) and in the integrated display (wave hand to switch the sunshade)	/

Comparison of Cockpit Interaction Functions between Some Joint Venture Brands

Source: ResearchInChina



3. In terms of ecosystem, Baidu Family Bucket (Baidu's applications) has found massive application in vehicles, and Huawei and Tencent cooperate with more brands.

Among the 13 joint venture brands researched in this report, 8 brands cooperate with Baidu, of which Buick, Cadillac and Chevrolet under GM, Toyota and Hyundai choose to install Baidu Family Bucket. In addition, Tencent Aiquting, Tencent MINI Scenario and Huawei APP Store are gradually available to vehicles. For example, BMW i7 integrates Tencent Aiquting and Tencent MINI Scenario applications on its front row center console screen, and Huawei APP Store on its rear row entertainment screen.

In contrast, the cooperation of Alibaba Ecosystem with joint venture brands is being scaled down. Except for Amap, Tmall Genie falls short of expectations, losing its partner BMW in 2022 (in October 2022, BMW announced that starting from November 14, 2022, it will phase out Tmall Genie and related functions in its IVI system and My BMW APP).



1 Telematics System Market Size of Chinese Joint Venture OEMs

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