

Global Force Feedback (Haptic) Device Market: Key Research Findings 2017

◆ Research Outline

Yano Research Institute has conducted a study on the global force feedback (haptic) device market with the following conditions:

1. Research period: From October 2016 to January 2017
2. Research targets: Makers of actuators for force feedback, driver ICs and software
3. Research methodologies: Face-to-face interviews by the expert researchers, surveys via telephone and email, and literature research

What is Force Feedback (Haptic) Technology?

Force feedback or haptic technology gives some kind of tactile sensation to users by applying forces, vibrations, or motions to smartphones, game machine controllers and other input devices, in order to enhance realness to the virtual reality or simulated world.

What is the Force Feedback (Haptic) Device Market?

The force feedback devices in this research indicate the actuators, the main devices to make the force feedback functions real. Those actuators include ERM (Eccentric Rotation Mass,) LRA (Linear Resonant Actuators,) and piezoelectric actuators. The market size is calculated based on the purchase amount at smartphone makers, etc. The actuators with just a vibration function used for buzzers to call attention are not included.

◆ Key Findings

■ **Global Force Feedback (Haptic) Device Market in 2017 Projected to Attain 151.922 Billion Yen, 139.7% of Size of Previous Year**

As the wearable device market has gradually been launched in the form of smart bands, smartwatches, HMD (Head Mount Displays), rings, and clothing, the actuators for force feedback is likely to be increasingly adopted in such wearable devices, in addition to smartphones. This tendency is expected to expand the global market of force feedback (haptic) devices to attain 151.922 billion yen in 2017, 139.7% of the size of the previous year.

■ **Ratio of LRA Likely to Occupy Maximum 74.9% of Global Force Feedback (Haptic) Device Market in 2017**

Although there are ERM, LRA, piezoelectric actuators, and etc. in force feedback (haptic) devices, the major actuators of force feedback devices have mainly been ERM because of their simple driving circuit, smallness in size, and low price. However, the actuators are recently needed to be more superior and have larger vibration, which is increasing the adoptions of LRA regardless of its higher unit price, and replacing ERM installations mainly in smartphones. As this seems to continue for the time being, the ratio of LRA in 2017 is likely to occupy up to 74.9% of the global force feedback (haptic) device market.

■ **CAGR of Global Force Feedback (Haptic) Device Market from 2016 to 2020 Attains 17.4%, with Market Size in 2020 to Exceed 200 Billion Yen**

The global force feedback (haptic) device market is expected to continue growing for the future, as piezoelectric actuators started being adopted in vehicle application, in association with the growing adoptions of LRA in spite of their high unit price. The CAGR of the market from 2016 to 2020 is likely to attain 17.4%, with the market size projected to achieve 206.467 billion yen by 2020.

◆ **Report Format:**

Published report: “Force Feedback Device Market 2017”

Issued on: January 31, 2017

Language: Japanese

Format: 133 pages in A4 format

Price: 180,000 yen (The consumption tax shall additionally be charged for the sales in Japan.)

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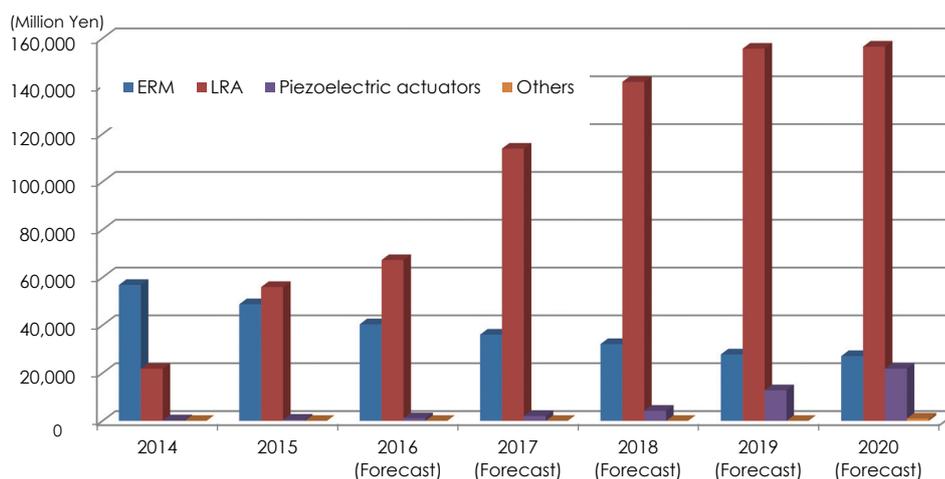
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■ **Figure & Table 1: Transition and Forecast of Global Force Feedback (Haptic) Device Market Size**

	2014		2015		2016 (Forecast)		2017 (Forecast)		2018 (Forecast)		2019 (Forecast)		2020 (Forecast)	
				Y-o-Y		Y-o-Y		Y-o-Y		Y-o-Y		Y-o-Y		Y-o-Y
ERM	56,840	48,763	85.8%		40,389	82.8%	36,042	89.2%	32,106	89.1%	27,782	86.5%	27,096	97.5%
Component ratio	(72.1%)	(44.3%)		(37.1%)		(23.7%)		(18.0%)		(14.2%)		(13.1%)		
LRA	21,798	55,974	256.8%		67,261	120.2%	113,850	169.3%	141,750	124.5%	155,675	109.8%	156,520	100.5%
Component ratio	(27.6%)	(53.2%)		(61.8%)		(74.9%)		(79.6%)		(79.3%)		(75.8%)		
Piezoelectric actuators	240	500	208.3%		1,100	220.0%	2,030	184.5%	4,230	208.4%	12,822	303.1%	21,852	170.4%
Component ratio	(0.3%)	(0.5%)		(1.0%)		(1.3%)		(2.4%)		(6.5%)		(10.6%)		
Others	-	-	-		-	-	-	-	-	-	-	-	1,000	-
Component ratio													(0.5%)	
Total	78,878	105,237	133.4%		108,750	103.3%	151,922	139.7%	178,086	117.2%	196,280	110.2%	206,467	105.2%
Component ratio	(100.0%)	(100.0%)		(100.0%)		(100.0%)		(100.0%)		(100.0%)		(100.0%)		(100.0%)



Survey by Yano Research Institute

Notes:

1. The market size is calculated based on the purchase amount at smartphone makers, etc. Those actuators with just a vibration function used for buzzers to call attention are not included.
2. “ERM” includes brushless DC motors (BLDC).
3. “Others” include solenoid, SRA (Solenoid Resonant Actuators), SIA (Shape memory alloy Impact Actuators), EAP (Electroactive Polymers) actuators, etc.
4. Since the values are rounded, some ratios and totaled values in the figure and table may not match.

*Reference: “Global Wearable Device Market: Key Research Findings 2016” issued on May 16, 2016 by Yano Research Institute: <http://www.yano.co.jp/press/press.php/001535>