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Management Research Telecommunication Solution Energy Infrastructure
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New Business & Development

No. 1 5 1 9
Furukawa Electric Co., Ltd.
Furukawa Automotive Systems Inc.
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Development and mass production of the new peripheral monitoring radar "MMR2"

- Selected for use in Mazda's new CX-60 crossover SUV -

- While continuing to possess the main features of quasi-millimeter wave radar, it can be used for more advanced peripheral monitoring applications
- Radar unit is 30% smaller, minimizing the impact to vehicle design and material considerations
- Conforms to the international standards for vehicle functional safety and cybersecurity

Furukawa Automotive Systems Inc. (Headquarters: Inukami-gun, Shiga Prefecture; President: Shigenobu Abe), a member of the Furukawa Electric Group, has developed a new peripheral monitoring radar model "MMR2" that offers greatly increased performance as a peripheral monitoring radar, an essential component of advanced driver assistance systems (ADAS) required in next generation vehicles. Mass production of the new MMR2 radar has commenced for Mazda's new CX-60 crossover SUV announced in Japan in April this year.

■ Background

In recent years, heightened awareness of vehicle safety has led to the increased installation of ADAS sensors in new vehicle models, and our company's peripheral monitoring radar is already standardly equipped in the Mazda CX-5. Within these trends, the Euro NCAP (New Car Assessment Program) and NCAPs in each country have added new items such as intersection assistance and the protection of pedestrians when driving in reverse as part of the measures to protect vulnerable road users, and the level of the safety assessment criteria is also rising. At the same time, in order to secure the security of the increasingly complex electronically controlled components, it is necessary for even peripheral monitoring radar to conform to the international standards for vehicle

functional safety and cybersecurity when installing in new vehicle models. However, when equipping the radar unit, it is often necessary to alter the vehicle design and bumper form depending on where the peripheral monitoring radar unit is installed.

■ **Details**

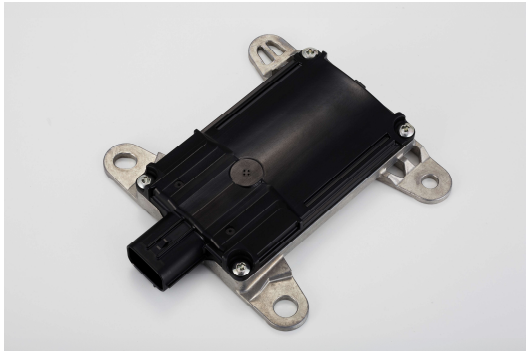
A new 24GHz (ISM band) peripheral monitoring radar "MMR2" was developed, and mass production has started. This new radar was developed using model-based design (MBD) in which development and verification proceeded simultaneously. It conforms to the ISO26262 international standard for vehicle functional safety and ISO/SAE 21434 international standard for vehicle cybersecurity. Currently, it has been adopted for use in the new Mazda CX-60 crossover SUV announced in Japan in April this year.

Because the MMR2 has improved conformance for the NCAP and new applications, it offers a broader range of detection than previous models, and both speed detection accuracy and spatial recognition performance were increased. Radar units are envisioned to be installed in the four corners of the vehicle, enabling a broad range of detection applications, including head-on collisions, when turning right or left at an intersection, when changing lanes, when the vehicle is stopped and general driving conditions. The volume and weight of the radar unit have been reduced by about 30%, making installation on the inside face of the bumper possible.

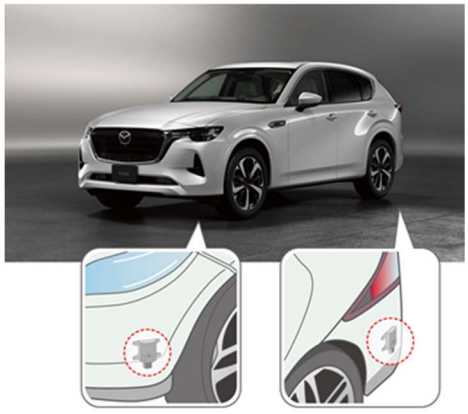
Our 24GHz peripheral monitoring radar has excellent features including low transmission loss when passing through the bumper and a small size that minimizes the impact on vehicle design and material considerations. Also, because the radar is not significantly affected by rain, snow or dirt, it offers solid performance in all weather conditions.

Furukawa AS will continue to advance the development of peripheral monitoring radar applications, promote the use of peripheral monitoring radar in a wide range of vehicles including automobiles and contribute to creating a safer society through the further application of this technology.

【MMR2】



【Installed on the inside face of bumper.】



■ **Related news release**

- New Vehicle-mounted Perimeter Monitoring Radar with the World's Most Advanced Detection Performance has Entered Mass Production_
  https://www.furukawa.co.jp/en/release/2017/ele_170131.html
- Start of mass production of “perimeter monitoring radar” for construction machinery, agricultural machinery, etc.
  https://www.furukawa.co.jp/en/release/2020/mob_20200226.html
- Furukawa Automotive Systems Expands Use of Submillimeter Wave Radars from Vehicles to Infrastructures
  https://www.furukawa.co.jp/en/release/2020/mob_20201116.html
- Perimeter Monitoring Radar to be Adopted in Komatsu’s New Electric Forklifts
  https://www.furukawa.co.jp/en/release/2021/mobi_20210917.html

■ **Furukawa Electric Group’s efforts towards the SDGs**

Based on the “Sustainable Development Goals (SDGs)” adopted by the United Nations, the Furukawa Electric Group has formulated the “Furukawa Electric Group Vision 2030” which sets the year 2030 as its target and is advancing efforts with the aim to “Build a sustainable world and make people’s life safe, peaceful and rewarding, Furukawa Electric Group will create solutions for the new generation of global infrastructure combining information, energy and mobility.” Toward the achievement of our Vision 2030, we will take open, agile, and innovative approaches to promote ESG management that that aims to increase corporate value over the medium to long term and will contribute to the achievement of the SDGs.

Furukawa Electric Group’s efforts towards the SDGs
https://furukawaelectric.disclosure.site/en/themes/182

■ **Inquiry**

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