

Overview



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Breakthroughs in Electro-Optics Microwave & Communication Technologies

Communications and sensing—mobile communications, satellite communications, wireless LAN, Fiber To The Home (FTTH), onboard information devices, home information appliances, and various radar and optical sensors—provide the foundation of the IoT society. Mitsubishi Electric Corporation's electro-optics microwave and communication technologies span a diverse range of systems and end-use hardware in both sectors and are used in many of its business areas. Our electro-optics microwave and communication technologies contain many elemental technologies, such as sensor signal processing, communications (radio and optical), optical sensors, antennas, microwave circuits, and EMC. Each technology has been advancing while involving other technologies in different sectors. This issue introduces industry-leading examples of such development.

Example combinations of technologies in the electro-optics microwave and communication sectors include array antennas for secure communications, pulsed serrodyning optical transceivers, and increased capacity of satellite communications. Example combinations of technologies in other sectors include the use of compressive sensing for synthetic aperture radar and digital transceivers using GaN switching amplifiers.

The IoT will play a key role in meeting the needs of modern society for safety, security, resilience, and sustainability. Electro-optics microwave and communication technologies, which are the foundation of this IoT, must continue to be developed in the future.