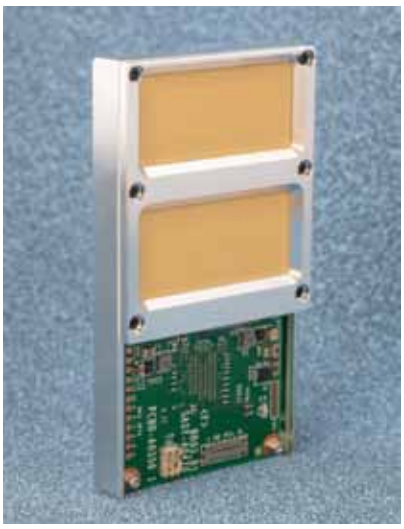
New Products

60 GHz mmWave Wireless Communications Module

We started providing samples of 60 GHz Millimeter Wave Wireless Communications Module employing "High-gain phased array antenna" which realizes high speed wireless communication in the 60 GHz frequency band. As shown in Fig. 1, their compact design combines a baseband wireless modem function and an antenna with an included RF front end function.

The millimeter wave band is susceptible to large transmission losses due to wiring in the device. Therefore, the wiring between the RF-IC and antenna must be as short as possible in order to maximize the benefits of the millimeter wave wireless communications module. We selected low loss materials for the circuit board and modularized the RF-IC and antenna. This has allowed us to simultaneously achieve world-class communications speeds (over 2 Gbps) and long-distance transmission (over 500 m). Our advanced antenna design and electromagnetic field analysis technologies led us to develop a 4 x 16-element phased array antenna. It achieves not only wide angle ±45 degree automatic beam forming (Fig. 2), but at the same time outstanding wide bandwidth that fully covers the 57 to 71 GHz frequency band. The major specifications is shown in Table 1.

The module can be used in communications networks embedded in backhaul equipment, access points (AP), customer premises equipment (CPE), V2X (Vehicle to everything) equipment, etc. Our technology contributes to building high speed, high capacity communication networks such as 5 G by supplying products for high frequency band including these modules.



Size(mm) : 60 (W) x 110 (H) x 13.4 (D)

Fig. 1. 60 GHz Millimeter Wave Wireless Communications Module.

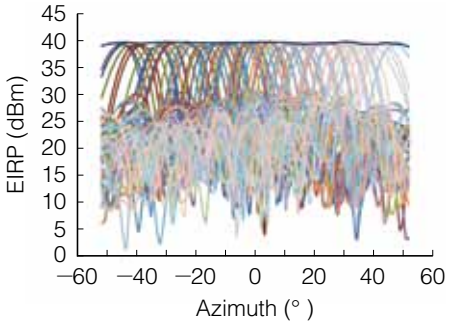


Fig. 2. Beam forming characteristics.

Table 1. Major Specifications.

Frequency Band	57～71 GHz (CH1-CH6)
EIRP	40 dBm
Azimuth Beam Steering Angle	±45 deg
Interface	PCIe Gen 2 x 2 lane

[Information]
Wideband Radio System Reseach Department
Tel : +81-43-484-1705
E-mail : mmwavetech@jp.fujikura.com