

60 GHz Millimeter Wave Wireless Communications Module

Overview

Fujikura provides compact embedded 60GHz mmWave wireless communications modules using a high gain phased array antenna. Their compact design combines a baseband wireless modem function and an antenna with an included RF front end function.



Phased array antenna
with RF front end

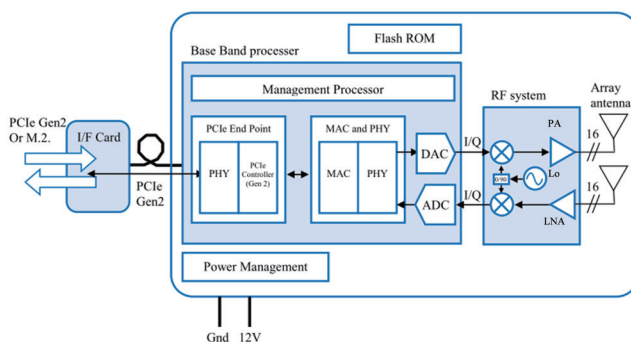
Baseband

size(mm): 62(W) x 113(H) x 17.4(D)

Features

- Low loss LCP materials and high output RF-IC
- Long distance & high capacity transmission: > 1 Gbps at 500 m
- Stress-free installation: automatic beamforming over ± 45 degrees
- Wide band: full coverage of the 57 to 71 GHz frequency bands

Block diagram



Specifications

Parameter	Unit	Min	Max	Note
Frequency range	GHz	57	71	*1
Channel bandwidth	GHz	0.54 / 1.08 / 2.16		Quarter / Half / Full
EIRP	dBm	—	40	
Azimuth beamforming	deg	+/- 45		
Interface	—	PCIe Gen2		x2 lane
Power supply voltage	V	12 (Typ.)		
Size	mm	62 x 113 x 17.4		W x H x D

*1 57-66GHz for Japan

This module can be independently certified for Technical Regulations Conformity Certification in Japan, which does not require a license. For commercial products, the similar certification required in other countries will be obtained, such as FCC (USA) and CE (EU).



Development kits for customer evaluation



Indoor development kit

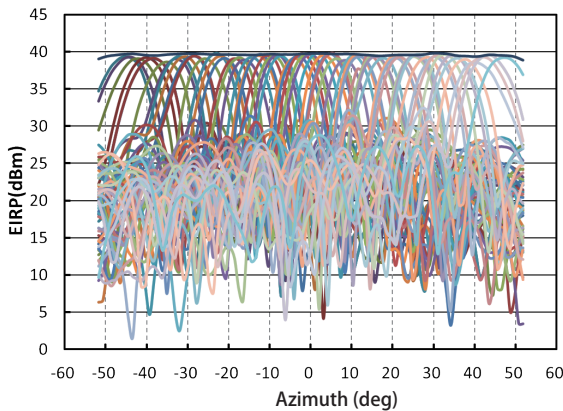
Consists of 60GHz Com. Module and NPU for indoor evaluation



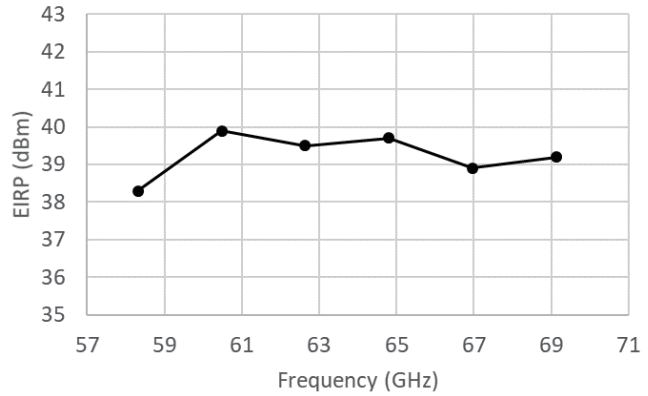
Outdoor development kit

Consists of 60GHz Com. Module, NPU, and a waterproof and dustproof enclosure for outdoor evaluation (equivalent to IP53)

Measurement data

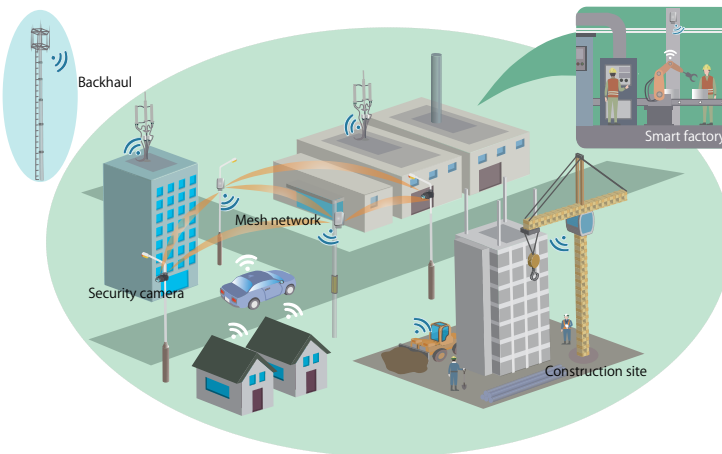


Beamforming characteristics



Output power (EIRP) performance

Applications



- High-speed private networks
- Smartification in commercial & industrial facilities
- High-definition, low-latency wireless video networks
- V2X for commercial & industrial vehicles
- Wireless backhaul & wireless mesh networks

Caution : All contents in this paper are subject to change without notice.