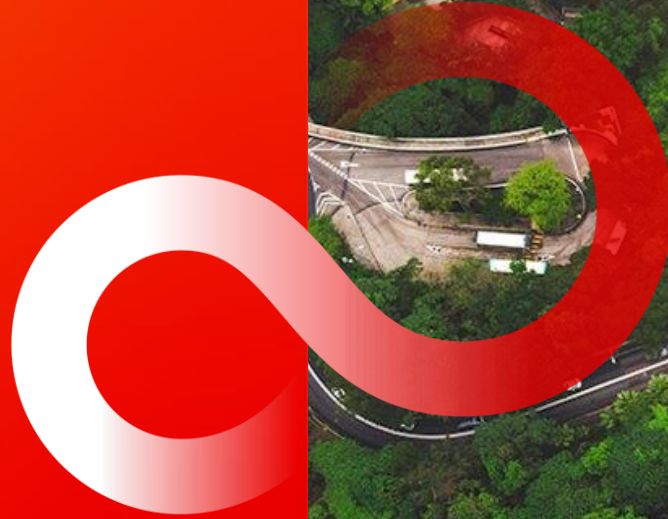


FUJITSU

Fujitsu Radio Unit

FUJITSU-PUBLIC

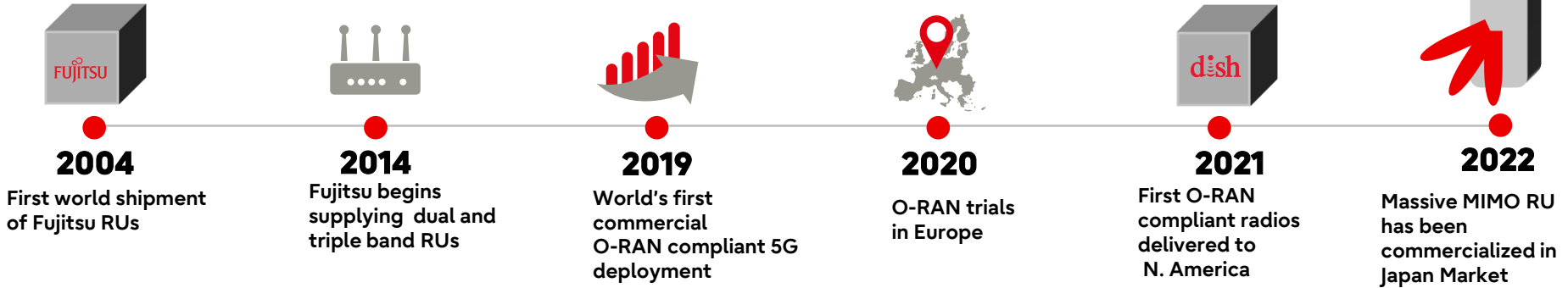


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Fujitsu radio unit history



Fujitsu has over 15 years of radio unit(RU) expertise.
Over 600K RUs have been delivered since 2004.



O-RAN commitment and leadership
Driving Open RAN ecosystem and technology



Performance

- High efficiency
- Contact and light weight
- Wide band
- High output power



Proven Reliability

- High MTBF
- Very low return rate
- Natural cooling
- FMEA applied



Flexibility

- LTE & NR RAT
- Dynamic Spectrum Sharing
- Hybrid M-Plane

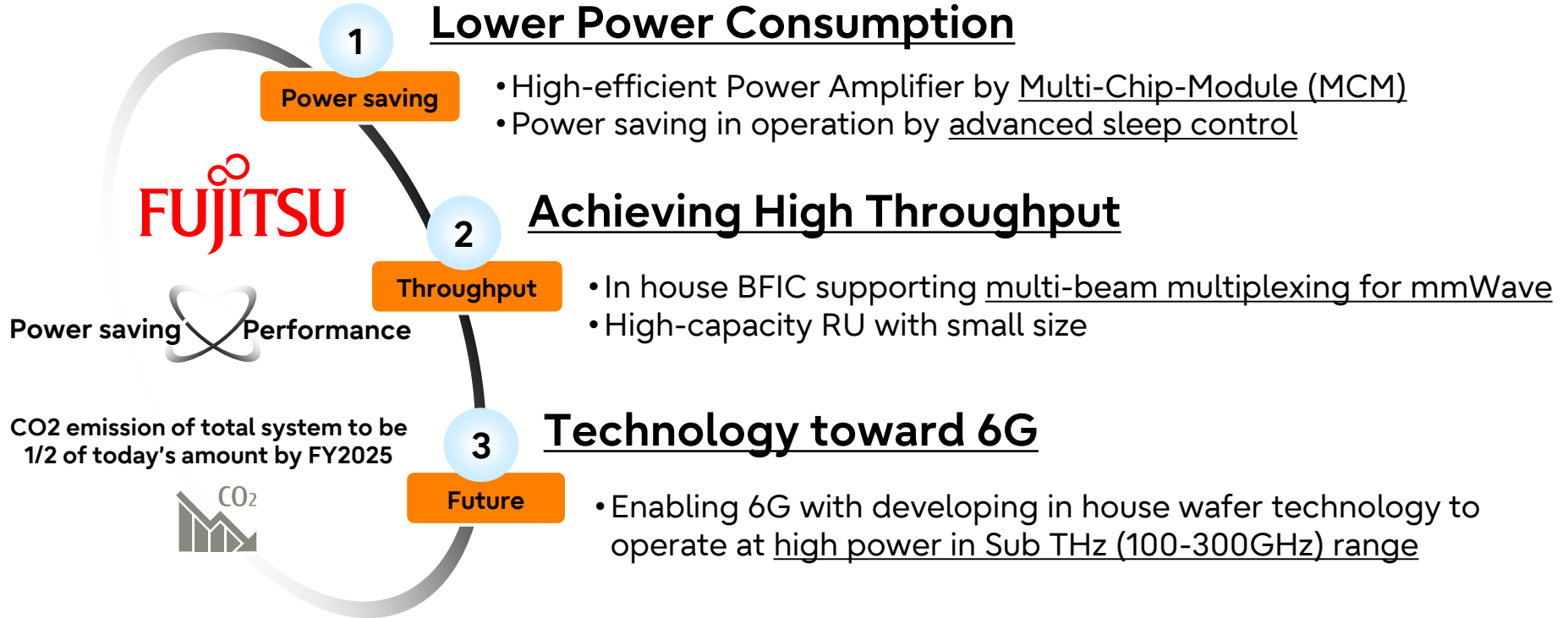


Industry Compliance

- ORAN 7-2x
- 3GPP
- SSHv2 & TLS security compliance
- FCC / ISED / CE / Telcordia

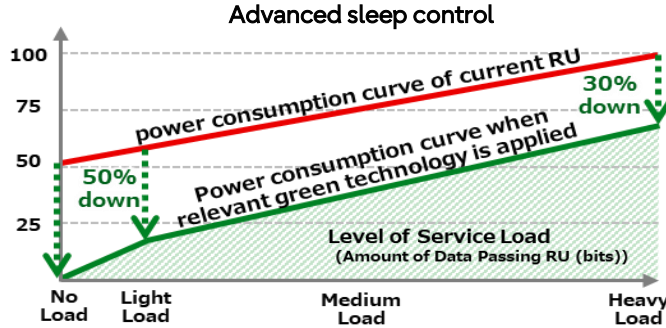
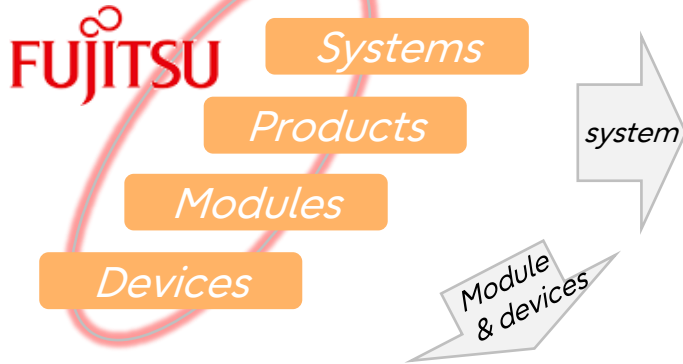
RU Technologies



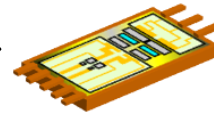
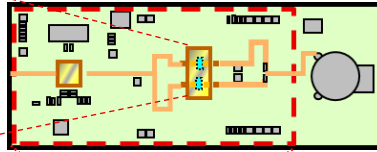


Lower Power Consumption

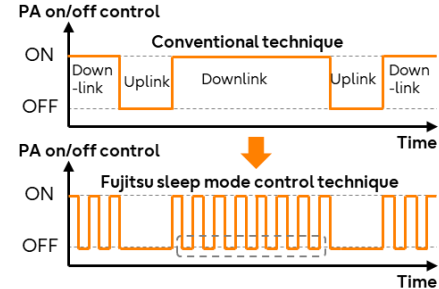
Fujitsu can provide lower power consumption solutions based on Systems, Products, and Module & Devices.



Power consumption
**30~50%
down**



MCM
(Multi-Chip-Module)



Advanced PA on/off control with DPD

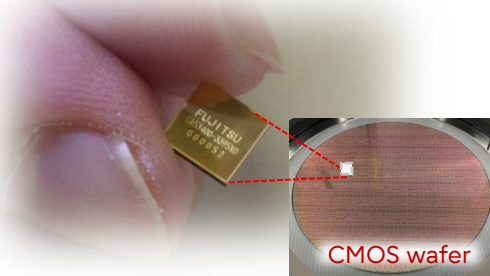
- PA (power amp.) miniaturization achieves lower loss elements in module.
- Linearized techniques (DPD) for GaN save energy dissipation from power source.

mmW technologies for high throughput

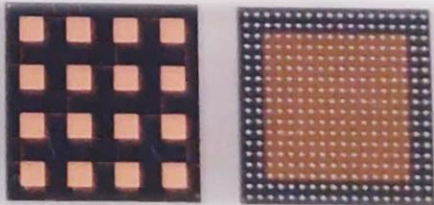
- FUJITSU has mmWave devices, antenna in packaging (AiP), and multi-beam radio technologies. High performance (>10Gbps) and small size (<1/2) RU is realized by those technologies.

mmWave device technology

CMOS beam-forming IC



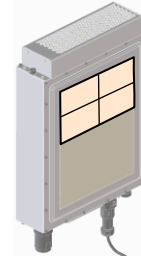
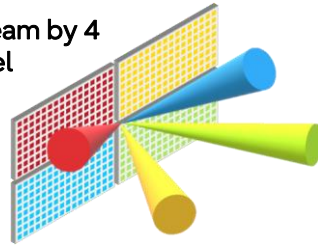
Antenna in packaging Technology (AiP)



Multi-beam antenna technology

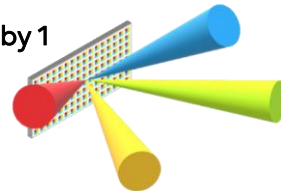
multi-panel multi-beam antenna
(Conventional)

4-beam by 4
panel

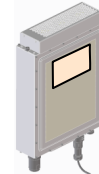


single-panel multi-beam antenna
(Proposed)

4-beam by 1
panel



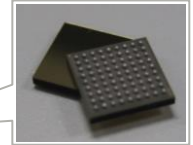
Size <1/2



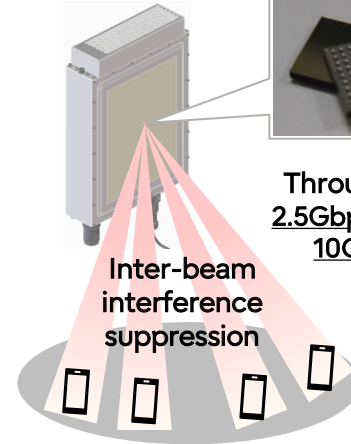
Multi-beam Radio Unit

28GHz 8ch TRX
beam-forming IC

RU



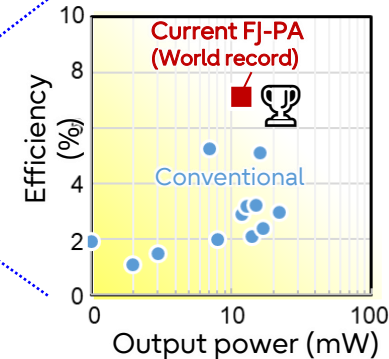
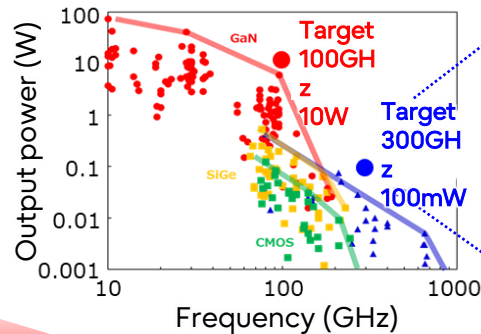
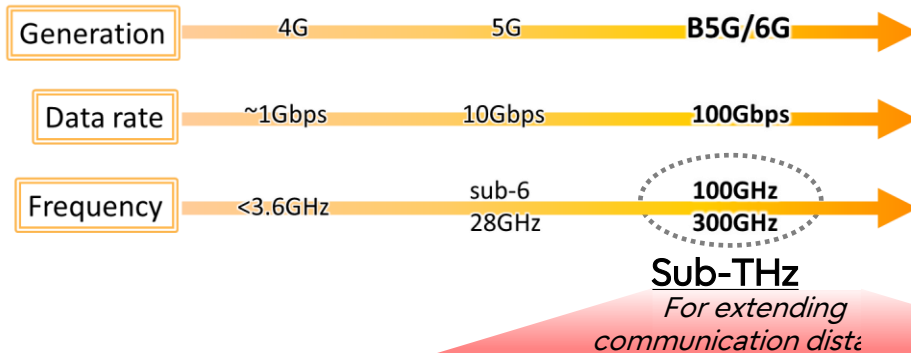
Throughput
 $2.5\text{Gbps} \times 4 =$
10Gbps



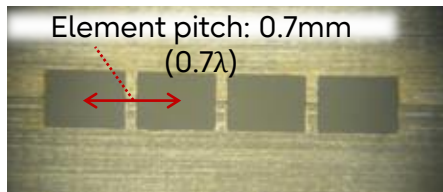
This material is based on results obtained from the project, "Research and Development Project of the Enhanced infrastructures for Post-5G Information and Communication Systems" (JPNP20017), by the New Energy and Industrial Technology Development Organization (NEDO).

Technology toward 6G

To establish leading position in the market by developing the sub-THz array antennas and the world No1 high-power and high-efficient power amplifiers for 100/300GHz

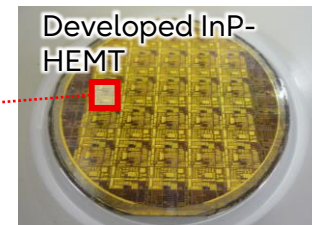
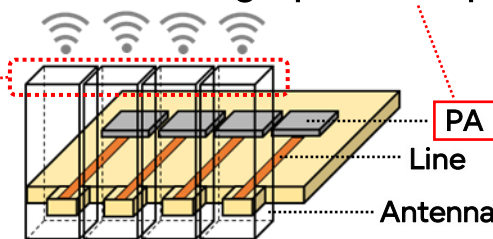


① Array antennas for beam forming



Developed array antennas (1×4 array)

② High-power amplifiers (PAs)



6G joint trials press release
<https://www.fujitsu.com/global/about/resources/news/press-releases/2022/0606-01.html>

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Thank you

