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FOR IMMEDIATE RELEASE

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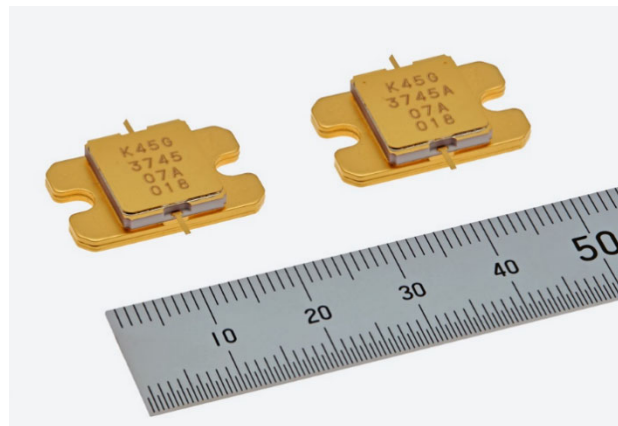
Mitsubishi Electric to Expand Product Range of Ku-band GaN HEMTs

For multi- & single-carrier communications, larger data capacity and smaller SATCOM earth stations

TOKYO, February 18, 2021– [Mitsubishi Electric Corporation](https://www.mitsubishielectric.com) (TOKYO: 6503) announced today that two new 13.75–14.5 GHz (Ku-band) 30W (45.3dBm) gallium-nitride high-electron-mobility transistors (GaN HEMTs) will be added to the company’s GaN HEMT lineup for satellite-communication (SATCOM) earth stations. The two products, one for multi-carrier¹ communication and the other for single-carrier² communication, will support increased data-transmission capacity and smaller earth stations. Sales will begin on March 15.

¹ Voice, video and data communication method that uses carrier signals of various frequencies

² Communication method that uses a single-frequency carrier signal



GaN HEMTs for Ku-band SATCOM earth stations
Single-carrier 30W MGFK45G3745 (left) and multi-carrier 30W MGFK45G3745A (right)

Ku-band satellite systems are increasingly being deployed for emergency communication during natural disasters and for satellite news gathering (SNG) by TV broadcasters in remote areas where cable networks do not exist. Meanwhile, in addition to the growing use of conventional single-carrier communication, multi-carrier communication is increasingly needed for fast, high-volume communication and to support the downsizing of mobile stations for purposes such as SNG.

So far, Mitsubishi Electric has introduced five GaN HEMTs for multi-carrier and single-carrier SATCOM earth stations. The two new 30W GaN HEMTs will enable more flexible amplifier designs, including for rated power levels and the use of GaN drivers. They also will support the downsizing of earth stations as well as faster, larger-capacity satellite communication.

Sales Schedule

| Product | Application | Model | Overview | | | Release |
|-------------------|-----------------------|--------------|----------------|------------------------|----------------|---------------|
| | | | Frequency | Saturated output power | Application | |
| Ku-band GaN-HEMTs | SATCOM earth stations | MGFK45G3745A | 13.75–14.5 GHz | 45.3dBm (30W) | Multi-carrier | Mar. 15, 2021 |
| | | MGFK45G3745 | | 45.3dBm (30W) | Single-carrier | |

Product Features

1) *Low IMD3 with wide offset frequencies of up to 400MHz for large-capacity SATCOM*

The MGFK45G3745A for multi-carrier communications delivers low IMD3³ with wide offset frequencies⁴ of up to 400MHz for large-capacity, high-speed satellite communication.

³ Frequency difference between two-tone signals, used in IMD3 measurements.

⁴ Third-order intermodulation distortion, a measure of amplifier distortion in the case of two-tone signals.

2) *Expanded GaN HEMT lineup will enable smaller SATCOM earth stations*

Multi-carrier communication (new model in bold)



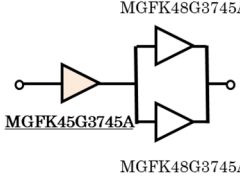
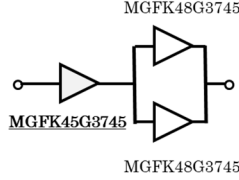
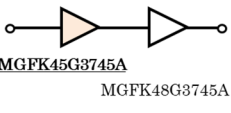

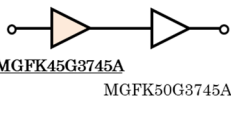
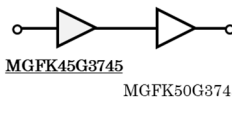
| Model | MGFK45G3745A | MGFK48G3745A | MGFK50G3745A |
|---------------------------------|---------------------|---------------|----------------|
| Frequency | 13.75GHz–14.5GHz | | |
| Saturated output power | 45.3dBm (30W) | 48.3dBm (70W) | 50.0dBm (100W) |
| Linear gain | 9.5dB | 11dB | 10dB |
| Offset frequency @IMD3 = -25dBc | Up to 400MHz | Up to 400MHz | Up to 200MHz |

Single-carrier communication (new model in bold)

| Model | MGFK45G3745 | MGFK48G3745 | MGFK50G3745 | MGFG5H1503 |
|---------------------------------|--------------------|---------------|----------------|---------------|
| Frequency | 13.75GHz–14.5GHz | | | |
| Saturated output power | 45.3dBm (30W) | 48.3dBm (70W) | 50.0dBm (100W) | 43.0dBm (20W) |
| Linear gain | 9.5dB | 12dB | 10dB | 24dB |
| Offset frequency @IMD3 = -25dBc | Up to 5MHz | Up to 5MHz | Up to 5MHz | Up to 5MHz |

Example Usage in Ku-band Power Amplifiers

The new products are suitable for final-stage applications in 30W-class SATCOM amplifiers and driver-stage applications in 70W- to 100W-class amplifiers.

| Amplifier output | Multi-carrier communication | Single-carrier communication | Amplifier output | Multi-carrier communication | Single-carrier communication |
|------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 30W |  MGFK45G3745A |  MGFK45G3745 | 120W |  MGFK45G3745A MGFK48G3745A |  MGFK45G3745 MGFK48G3745 |
| 70W |  MGFK45G3745A MGFK48G3745A |  MGFK45G3745* MGFK48G3745 *MGF5H1503 also usable | | | |
| 100W |  MGFK45G3745A MGFK50G3745A |  MGFK45G3745 MGFK50G3745 | | | |

Environmental Awareness

These products are compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU and (EU) 2015/863.

Note: These products are based on results obtained from a project subsidized by the New Energy and Industrial Technology Development Organization (NEDO)

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About Mitsubishi Electric Corporation

With 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its “Changes for the Better.” The company recorded a revenue of 4,462.5 billion yen (U.S.\$ 40.9 billion*) in the fiscal year ended March 31, 2020. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥109=U.S.\$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2020