

Microwave Application Products

Main products

Microwave application products cover the following sections; the terrestrial communications, satellite communications, satellite broadcasting and other (sensor module). The main products of each field are broadband outdoor units; C-band (5 to 6 GHz) transmitters, Ku-band (14 GHz) transmitters, and Ka-band (30 GHz) transmitters; and 26-GHz Terrestrial outdoor units.

[Business results in fiscal 2002]

Sales accounted to ¥1,225 million (down 63.7% from the previous year), accounting for 2.2% of all sales. Operating losses amounted to ¥384 million (operating profits in the previous year were ¥228 million). Markets are mostly overseas, Europe and North America.



Wireless IP access system subscriber station unit
This is a compact subscriber station unit for 26-GHz band FWA (Fixed Wireless Access) developed as an OEM product. Setup outside on a porch, etc., pointed at a base station enables a PC in house to access high-speed Internet services at 40 Mbps.

• Terrestrial communications

We started mass-producing an NTT model of "26-GHz band point-to-multipoint Fixed Wireless Access (FWA) outdoor transceiver," which we have developed in collaboration with Japan Radio Co., Ltd. for these five years. This compact and inexpensive transceiver provides broadband communications through high-speed wireless access with collective housing and individual housing where broadband communications cannot be used due to environments around there, etc. Making broadband communications available by the transceiver will promote the introduction of IT into medical treatment and education in remote districts, and SOHO (Small Office Home Office) and personal-level business.

From the second half of fiscal 2003, we will apply the transceivers to the 18 GHz band for public works released in the near future, and introduce on overseas markets.

• Satellite communications

We succeeded in reducing size and weight of the "Ku-band (14 GHz) outdoor transmitters" even with 4 W output, which was previously large-sized. This frequency band is most suitable for communications in a group islands because it can avoid attenuation due to moisture, such as rain.

We will further develop the following products from 2003:

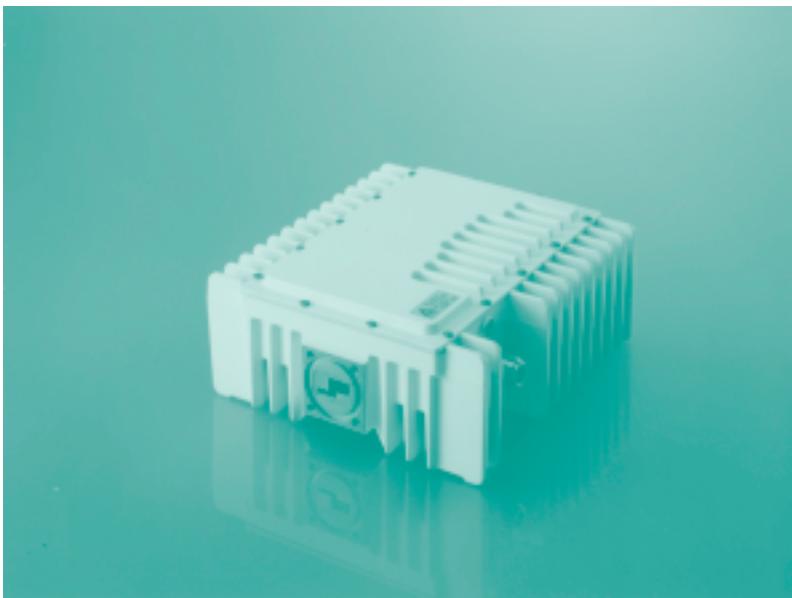
- (1) Development of products with output higher than the existing lineup: 10-W type transmitters in C band (5 GHz to 6 GHz) and 8-W type transmitters in Ku band (14 GHz)
- (2) Small and inexpensive Ku-band 1-W/2-W type transmitters for end users (consumers)
- (3) Ka-band (30 GHz) transmitters for high-speed transmission



Ku-band (14 GHz) 4-W Block Upconverter
The NJT5017 is more compact than our conventional 4-W class transmitter and weighs 30% less. It is used mainly for satellite transmission of large data size at high speed.

• Other (Sensor modules)

We will be committed to "security & sensing" technology. Based on the core technology in our experienced sensor field, we have developed a K-band (24 GHz) direct-oscillation doppler sensor modules using a dielectric resonator and FET in accordance with revision of the Radio Law. This sensor module is expected to be applied to various products, such as a security system for houses or vehicles, automatic doors, speed guns, and toys due to its capability to detect the motion of a human body or an object. From fiscal 2003, we plan to develop the radar-based sensor modules that can realize presence sensing (detection of stationary object) and distance measuring. These microwave sensors are more reliable and suitable for integration than the optical sensor susceptible to obstacles, and will attract attention from various fields.



[General overview]

We emphasized improving line-ups and developing high-performance products in fiscal 2002. Our division has just reached the new step. In addition to promoting higher performance, we will offer low-priced products by reducing the production costs, and will enrich customer support according to the widened range of products for end users (consumers).



K-band (24 GHz) Doppler Sensor Module (single type)

The NJR4251J uses the Doppler Effect of a radiated electronic wave to detect the motion of a human body or an object. It can measure speed and has applications in crime prevention and speed guns, etc.

K-band (24 GHz) Doppler Sensor Module (dual type)

The NJR4261J is the same shape as the NJR4251J, but has two IF output ports arranged at a 90° phase. In addition to detecting objects, it can also measure direction and distance (near or far). It can be used for automatic doors and automatic operation of escalators, etc.



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