

Microwave Application Products

Main products

Microwave application products division covers the following products; satellite communications, satellite broadcasting, terrestrial communications, and others (sensor modules). The main products of each field are broadband outdoor unit; C-band (5 to 6 GHz) transmitters, Ku-band (14 GHz) transmitters, and Ka-band (30 GHz) transmitters; 26 GHz transceivers; and K-band (24 GHz) direct-oscillation Doppler sensor modules.

[Business results in fiscal 2003]

Sales accounted to ¥3,066 million (up 150% from the previous year), accounting for 4.6% of all sales. Markets are mostly and centered around Europe. Sales by product: ¥123 million for satellite broadcasting components, ¥1,800 million for satellite communication components, and ¥1,143 million for terrestrial communication components.



NJT5018F is a 14 GHz 8 W high output power transmitter, which can be used to high speed and high capacity application for VSAT (Very Small Aperture Terminal) system of satellite communications.

• Satellite communications section

Sales of our new 4 W output Ku-band transmitter were good. This is because we succeeded in reducing the 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 group islands like Asia because it can avoid attenuation due to moisture, such as rain.

From fiscal 2004, we will further develop the following products:

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



NJT5037F is a flagship model, 14 GHz 3 W output power transmitter for VSAT (Very Small Aperture Terminal) system of satellite communications, developed as generic product.

• Terrestrial communications section

We have mass-produced an NTT model of “26 GHz point-to-multipoint Fixed Wireless Access (FWA) outdoor transceiver”, which we have developed in collaboration with Japan Radio Co., Ltd over the last five years. This product was awarded the prize of “The 15th Meritorious Award on Radio” presented by the Minister of Public Management and we expect it to sell well in the future. 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 operational environments, 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.

In fiscal 2004, we plan to bring this 26 GHz point-to-multipoint FWA outdoor transceiver to the US market and are also placing hopes on 18 GHz products for public-works.



This is a compact subscriber station unit for 26 GHz 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.

• Others (Sensor modules)

We will be committed to “security & sensing” technology. Based on the core technology in our experienced sensor field, we started selling “K-band (24 GHz) direct-oscillation Doppler sensor” module 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 2004, we plan to develop products focused on the large auto market. Because we expect anti-collision sensors, environmental monitoring sensors, etc., to be in the market in the future, we will collaborate with auto manufacturers and electrical equipment manufacturers. These microwave sensors are more reliable and suitable for integration than the optical sensor, which is susceptible to obstacles, and will attract attention from various fields.

[General overview]

In fiscal 2003, we emphasized improving product line-ups and developing high-performance products while focusing on market analysis. In addition to promoting higher performance, we will have to offer products for end users (consumers) including products for in-car applications with lower costs.



NJR4251J is a 24 GHz Doppler module, which detects the deviance of frequency (Doppler frequency), which is proportional to the velocity of moving object or human. It is utilized as intruder detector for security system and radar gun for speed measurement. NJR4261J is a 24 GHz Doppler module, which detects moving of human or objects every bit as NJR4251J. Then two IF ports with difference of 90 degrees between them function for discrimination of direction of moving objects. It is utilized as human detector for automatic door and escalator system.

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