

Research and Development

At Oki, we are focusing our research and development efforts on areas of technology essential to the realization of network solutions. They are: personal and mobile; human interface; security; and broadband networks. The successful implementation of personal and mobile solutions requires miniaturization and weight-saving technologies, along with low power consumption technologies that will enable electronic devices to function for long periods. Human interface technologies help users get the information they want in the form they want it. Security technologies are indispensable in building networks able to transmit information securely and reliably. We are also focusing on technologies necessary to build high-performance broadband networks that will transcend time and space to communicate information in myriad forms.

Personal and Mobile

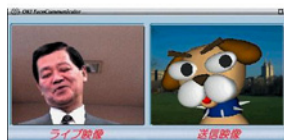
Power transistor for wireless communications with the world's best amplification characteristics

Oki successfully developed a gallium nitride high electron mobility transistor (GaN-HEMT) with T-shaped recessed gates that achieves the world's highest amplification characteristics. By fabricating a gate structure that reduces gate electrode resistance and improves amplification characteristics, the new device reduces the number of amplifier parts in transceiver equipment. Through these innovations, the transistor reduces the power consumption and space required for wireless communications systems in such applications as mobile phone base stations and wireless LANs.

Human Interface

Facial animation-based communications technology

Combining facial image processing and three-dimensional (3-D) graphics technology, we have developed a communications technology that adds to the fun of using videophones and other video-accompanied communications applications. Users may choose a face of their liking, such as that of their favorite cartoon character or animal, which is displayed on the handset or terminal screen of the other party, showing the user's own facial expressions and movements. The system can also be used as a means of privacy protection.



Combining facial image processing and 3-D graphics technology, this system offers users both a fun means of communication and privacy protection.

Security

Network security technology incorporating a damage assessment function

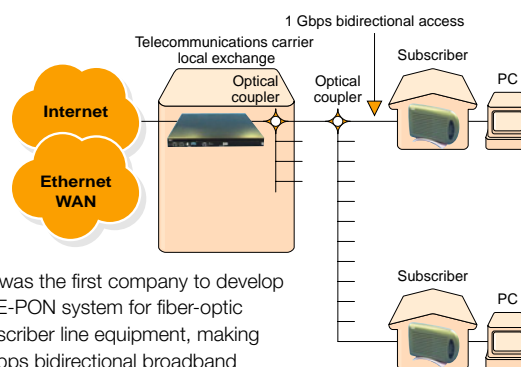
We developed automatic diagnosis and detection technology that acts only against attacks impairing the operation of the server, out of the huge number of occasions of unauthorized

access triggering the intrusion detection system's alarm mechanism. This technology automatically generates reports to network administrators specifying which part of the server under is attack. By employing the technology, the cost of network monitoring and surveillance operations is greatly reduced.

Broadband Networks

GE-PON optical transmission system

As a world leader in the field, we have developed a gigabit Ethernet passive optical network (GE-PON) system to be used in fiber-optic subscriber line equipment, making 1 Gbps bidirectional broadband access a reality. By incorporating bandwidth control and priority queuing into our GE-PON system—both prerequisites for stable broadband services—we have opened the way for the provision of a versatile menu of next-generation broadband services and cost-effective network development.



Oki was the first company to develop a GE-PON system for fiber-optic subscriber line equipment, making 1 Gbps bidirectional broadband access a reality.

SIP-AP platform to link Web and VoIP applications

Getting a head start over rivals, we have developed an SIP application platform (SIP-AP). This platform makes it easy to build new services linking Web applications with VoIP applications, without the need to install a new system. By adopting the platform, it becomes simple to incorporate such VoIP functions as voice and video communications into Web applications. Since the platform utilizes the industry standard SIP Servlet application programming interface (API), it is possible to provide new communications services by using it in conjunction with third-party applications.