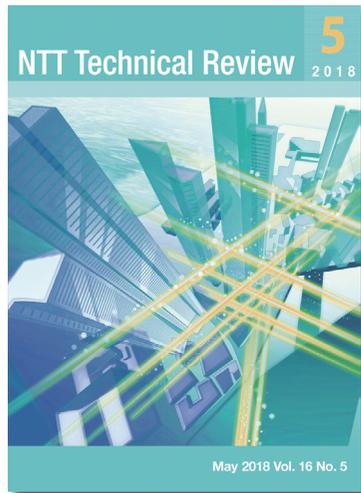


<https://www.ntt-review.jp/archive/2018/201805.html>



Feature Articles

NTT Group Security Confronts Escalating Cyberattacks

- ▶ Research and Development of Advanced Security Measures to Protect Customers from Sophisticated and Large-scale Cyberattacks
- ▶ Collecting, Analyzing, and Leveraging Threat Intelligence at NTT-CERT
- ▶ Security Business Solutions for Customer Needs
- ▶ Cyberattack Countermeasure Technology to Support NTT's Security Business

Regular Articles

- ▶ Digital-preprocessed Analog-multiplexed Digital-to-analog Converter for Ultrahigh-speed Optical Transmitter
- ▶ Satellite Communications Modem Unit *COM-U*—Enhanced Maintenance, Operations, and Spectrum Utilization Efficiency of Satellite Transponders for Remote Island Satellite Communications and Disaster Relief Satellite Communications

Global Standardization Activities

- ▶ Trends in Standardization of Blockchain Technology by ISO/TC 307

Information

- ▶ Report on NTT R&D Forum 2018

Short Reports

- ▶ Japan-Taiwan Joint Experiment Successfully Demonstrates White-box Based Carrier-grade Networking—International Service Provider Collaboration in Software-defined Networking Pushes Forward IP Packet Transport to Employ Commodity Products

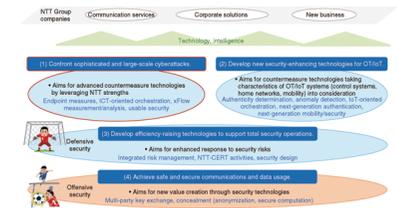
Feature Articles

NTT Group Security Confronts Escalating Cyberattacks

Research and Development of Advanced Security Measures to Protect Customers from Sophisticated and Large-scale Cyberattacks

▼ Abstract

The Feature Articles in this issue introduce recent trends and case studies of ever-escalating cyberattacks that are becoming increasingly sophisticated and large in scale, plus issues and needs in the security business of NTT Group companies. Additionally, new needs are arising for security measures for customers. These articles introduce the research and development of advanced technologies deemed necessary for countering cyberattacks and increasing business competitiveness.

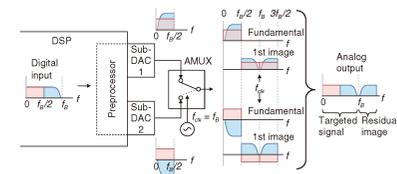


Regular Articles

Digital-preprocessed Analog-multiplexed Digital-to-analog Converter for Ultrahigh-speed Optical Transmitter

▼ Abstract

We have developed technology to extend the analog bandwidth of digital-to-analog converters (DACs), which are essential in advanced high-speed optical transmitters. We used a digital preprocessor, two sub-DACs, and an analog multiplexer to generate arbitrary signals with a bandwidth nearly twice that of each sub-DAC. This technology was used to successfully demonstrate various high-speed transmissions, including an intensity-modulated directly detected transmission at a record-high data rate of 250 Gbit/s.



Satellite Communications Modem Unit *COM-U*—Enhanced Maintenance, Operations, and Spectrum Utilization Efficiency of Satellite Transponders for Remote Island Satellite Communications and Disaster Relief Satellite Communications

▼ Abstract

A major advantage of satellite communications is the ability to implement communication networks virtually anywhere in Japan very simply. The NTT Group has been utilizing satellite communications to provide services in situations where optical fiber, mobile telephony, and other terrestrial facilities are impractical: remote islands, offshore areas, and stricken regions where people have been forced to temporarily flee in the face of earthquakes and other natural disasters. The Group continues to pursue research and development on satellite systems to make them more efficient and advanced. Here we present an overview of NTT's new satellite communications modem unit called *COM-U* (satellite circuit-terminating common unit), that markedly improves the spectrum utilization efficiency of satellite transponders and the maintenance and operations of satellite communications used for remote island and disaster relief satellite communications.

