

• **Editorial-Chief**

Hideyuki Ichiyama

• **Editorial Advisors**

Masayuki Sato  
Hisao Takahashi  
Omi Kuriwaki  
Yukiko Funada  
Tomohito Nakata  
Kiyofumi Takeuchi  
Tetsuo Kojima  
Makoto Sato  
Takao Ikai  
Hiroshi Usui  
Satoru Yamaguchi  
Hideya Tadokoro  
Eunjin Choi  
Kazuki Yamanaka  
Yuichiro Arata  
Toshihiro Kurita

• **Vol. 177 Feature Articles Editor**

Eitaro Ishimura

• **Editorial Inquiries**

Hideyuki Ichiyama  
Corporate Productivity Engineering &  
Logistics Dept.  
Fax: +81-3-3218-2465

**Mitsubishi Electric Advance** is published on line quarterly (in March, June, September, and December) by Mitsubishi Electric Corporation. Copyright © 2022 by Mitsubishi Electric Corporation; all rights reserved. Printed in Japan.

The company names and product names described herein are the trademarks or registered trademarks of the respective companies.

**CONTENTS**

Overview .....1  
by Masayoshi Takemi

**Technical Reports**

GaN HEMT Supporting Multi-Carrier Communications for Ku-band Satellite Communication Systems .....2  
by Takumi Sugitani and Takashi Yamasaki

High-power 10-Gbps EML CAN for Combo-PON .....5  
by Yu Uwadori and Takashi Nagira

50-Gbps EML CAN for 5G Base Stations .....8  
by Yojiro Watanabe and Hayata Fukushima

100-Gbps EML CAN for 5G Mobile Communication System ....11  
by Seiji Nakano and Masaki Nasu

80×60 Pixels Thermal Diode Infrared Sensor .....14  
by Yoshinori Takahashi and Tomohiro Maegawa

Shortening of Evaluation Time by Highly Accelerated Stress Test and Improvement of Analysis Technique for Passivation Film .....17  
by Koichi Inoue and Hajime Sasaki

**Precis**

Digital transformation (DX) is being promoted to reform products, services, and business models by using data and digital technologies, making information communication and sensor technologies increasingly important. This issue introduces the latest high-frequency and optical devices for telecommunications, infrared sensors, and related technologies.