Fujikura

FUJIKURA NEWS

No.484 2022 07

Evaluation Samples for 28 GHz 5G Millimeter Wave Phased Array Antenna Modules Now Available

We are pleased to announce that we have started offering evaluation samples of our 28 GHz-band millimeter wave Phased Array Antenna Module (PAAM) FutureAccess™ for 5G base stations, which offers the highest level of performance available.

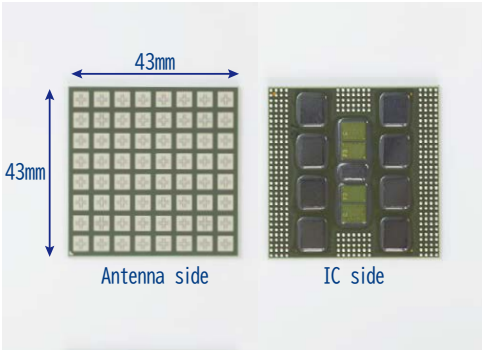
Telecommunication carriers around the world are currently adopting millimeter waves for their 5G networks. As the demand for higher capacity and lower latency in wireless networks increases, the millimeter wave market is expected to grow steadily in the future. To accelerate and maintain the momentum of this millimeter wave network expansion, base station manufacturers and telecommunication carriers need the highest performance millimeter wave components.

The 28 GHz-band millimeter wave PAAM developed by Fujikura achieves the optimal structure, performance, power consumption, and total cost of ownership (TCO) required for 5G millimeter wave base stations. We plan to provide samples to our customers and receive valuable feedback, in order to move forward with commercialization.

To be configured as a base station, a baseband unit, in addition to our PAAM, is also required to control communications.

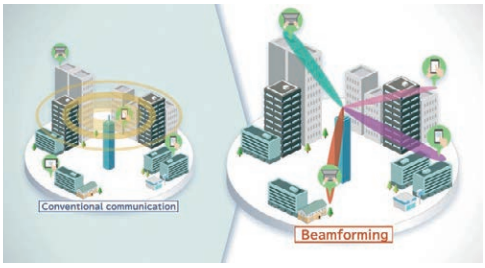
We have decided to form a partnership with Avnet, a leading global technology distributor and solutions provider, to develop and sell a cutting-edge evaluation and development platform for the 5G millimeter wave frequency band.

The evaluation and development platform consists of AMD Xilinx's Zynq® UltraScale+TM RFSoC Gen3 functioning as the baseband unit and Fujikura's PAAM, controlled by Avnet's RFSoC Explorer® software. The combination of these cutting-edge components and software enables customers to easily develop and design advanced 5G millimeter wave systems, and quickly create and evaluate 5G base station prototypes.



28 GHz band millimeter wave PAAM

PAAM-equipped evaluation board



Beamforming technology is important for millimeter wave communications

For more information, please visit the URL or use the QR code below.
http://mmwavetech.fujikura.jp/5g/

■Points relevant to the 17 SDGs

Broadband networks using millimeter waves will help create a more advanced social infrastructure and cultivate new industries.

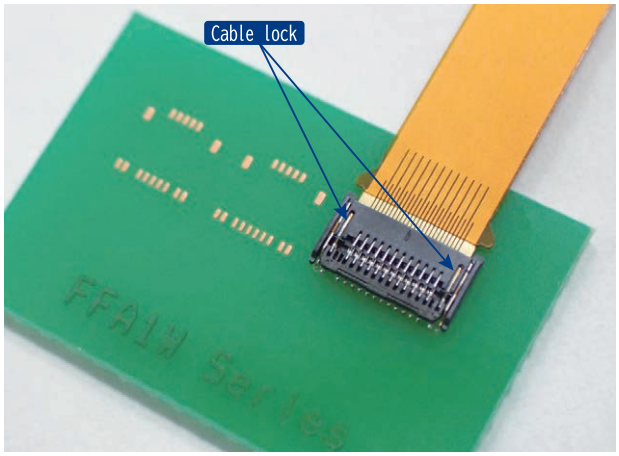
Electronic Technologies R&D Center : mmwavetech@jp.fujikura.com

Lineup of the Industry's Smallest FPC Connectors
FFA1W Series

As mobile devices become smaller and thinner, there is a growing demand for even smaller FPC connectors. The FFA1W series connectors were developed to meet this need.

This product is a connector with a terminal pitch of 0.15mm, a small footprint in the industry, and a height of 0.55mm when fitted with an FPC. Even though it is the smallest in the industry, its high performance is maintained by our proprietary lock structure and cable lock mechanism. Moreover, this product contributes to further miniaturization of wearable and other devices because the cable lock also serves as a signal connection terminal.

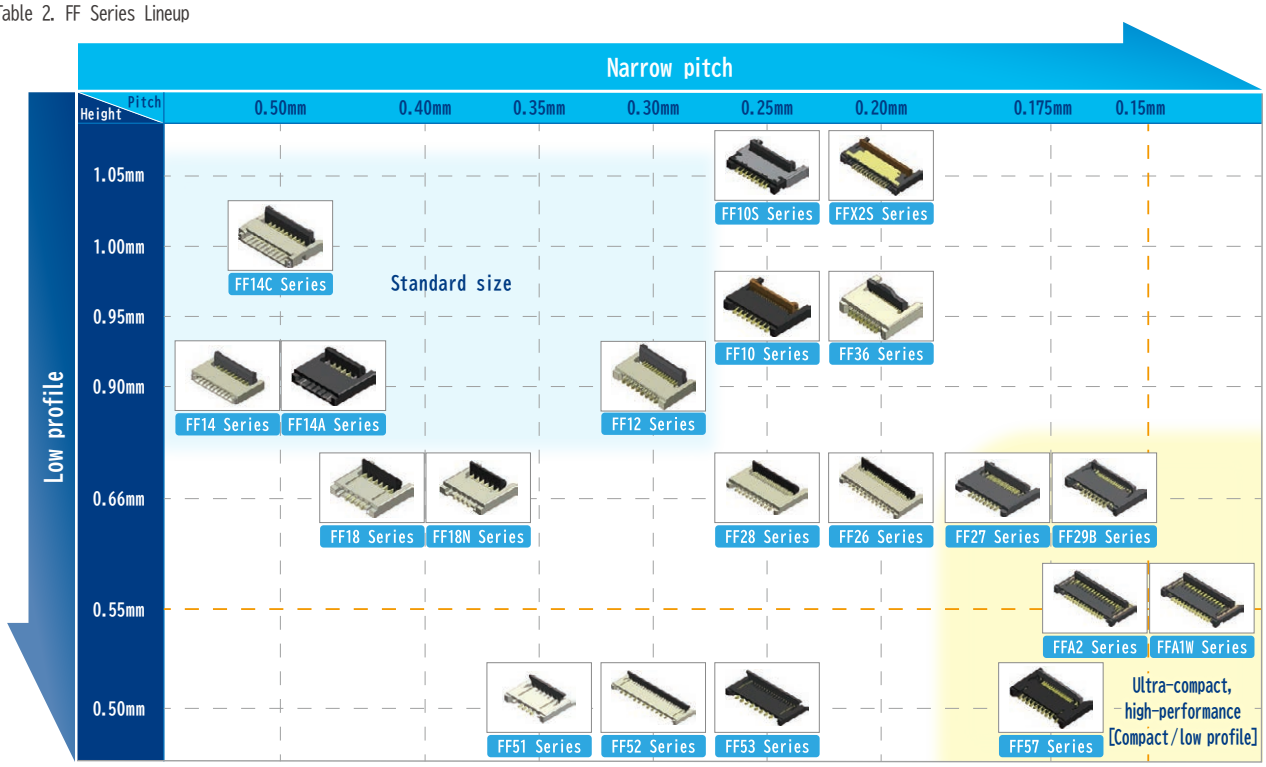
■Figure 1. Appearance



■Table 1. Product specifications

	Current product	New product
Series	FFA2	FFA1W
Mating height	0.55mm	
Pitch	0.15mm	
Depth	3.00mm	
Rated voltage	AC 50V (r.m.s.) / DC 50V	
Rated current	Signal contact : 0.2 A/pin Power contact : 2.0 A/pin	Signal contact : 0.2 A/pin Power contact : None
Dielectric withstand voltage	AC 200 V (r.m.s) / minute	
Dielectric resistance	50 MΩ min. at 250V DC	
Contact resistance	Signal contact : 100mΩ max. Signal contact : 40mΩ max.	Signal contact : 100mΩ max. Power contact : None
Operating temperature range	−55℃ to +85℃	
Number of contacts	Signal contact : 4,20 Power contact : 2	Signal contact : 12,26 Power contact : None

■Table 2. FF Series Lineup



■Points relevant to the 17 SDGs

Our connectors leverage our proprietary technology and contribute to making IT technology more accessible by supporting the development of wearable devices.

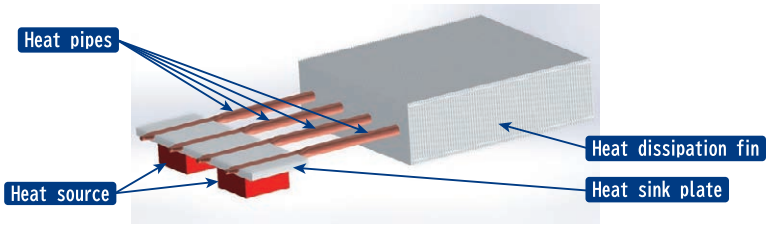
Connector Division : ddk.contact@jp.fujikura.com

Development of Heat Pipe Module for Cooling of Automotive Power Electronics

Power electronics in electric vehicles such as converters, inverters, and rectifiers tend to generate ever-increasing amounts of heat as driving performance improves, driving range increases, and faster charging times are demanded. Therefore, higher performance cooling systems are required to improve equipment reliability and extend service life.

Fujikura has improved the internal structure of heat pipes which are widely used for cooling computers, servers, and other electronic devices, and is further developing heat pipe modules for cooling automotive power electronics that can handle the large amount of generated heat by using heat pipes with maximum heat transport capacity of approximately 20% greater than that of our conventional products. Additionally, we have started creating thermal designs and prototyping for automotive equipment manufacturers and Tier#1 using these improved two-phase devices.

We will continue to contribute to the development of safe and environmentally-friendly next-generation electric vehicles by improving the performance of our cooling systems.



Heat pipe module for cooling automotive power electronics

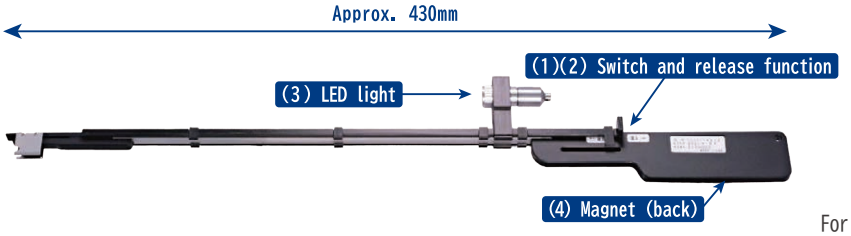
■Points relevant to the 17 SDGs

We will contribute to the development of safe and environmentally-friendly next-generation electric vehicles by improving the performance of cooling systems.

Thermal Tech Department : netsu-info@jp.fujikura.com

Start of Sales of LC Connector Insertion and Extraction Tool

Suzuki Giken has launched a tool that enables safe and easy insertion and extraction of LC connectors that are densely installed in optical networks of telecommunication carriers and data centers. This product was developed by incorporating user needs and has achieved performance that satisfies our customers. The product includes four functions: (1) one-action connector switching, (2) a release function to prevent accidental disconnection, (3) LED lamps for working in dark places, and (4) a magnet mounted on the main body for storage in a rack or other location onsite. We will continue to contribute to the development of society and industry through telecommunications infrastructure.



LC connector insertion and extraction tool

For more information, please see the video on the official YouTube page.
https://youtu.be/1M4znhqcxNk

■Points relevant to the 17 SDGs

Our products will continue to contribute to the development of society and industry through telecommunications infrastructure.

Suzuki Giken Co., Ltd. : wwwadmin@jp.fujikura.com

Information About Our Exhibit at the Cable Technology Show 2022

Fujikura will be exhibiting at the Cable Technology Show 2022 on July 28 and 29.

The theme of our booth is to propose optical network solutions for the new era, and we will mainly focus on Wrapping Tube Cable® (WTC®), a thin and high-density optical fiber cable that is markedly thinner and lighter than conventional optical cables thanks to the use of the latest optical fiber technology, Spider Web Ribbon® (SWR®). We will also showcase various types of cables including cased, self-supporting, non-metallic, and flame-retardant types, and we welcome you to check out our full lineup.

An online exhibition will also be held, which will run from July 13 to September 16.

We look forward to seeing you there.

Event Associated with the Cable Convention

Cable Tech Show

Cable Tech Show 2022

Technology Exhibition

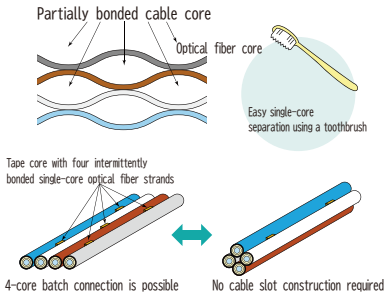
09 : 30 to 18 : 00 Thursday, July 28, 2022
09 : 30 to 17 : 00 Friday, July 29, 2022
Tokyo International Forum Exhibition Hall (Booth No. S-04)

Online Exhibition

July 13(Wed) to September 16(Fri), 2022
Cable Tech Show Official Website : www.catv-f.com

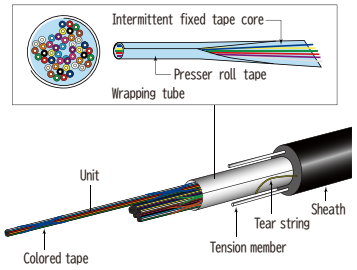
Spider Web Ribbon® (SWR®)

- Multiple core optical fibers are bonded in parallel and intermittently.
- Easy deformation eliminates the need for a cable slot structure.
- When connected, the tape reverts to a parallel shape, enabling batch tape connection.

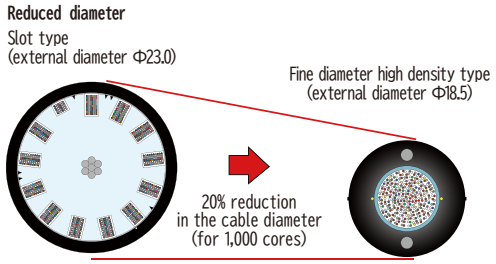


Wrapping Tube Cable® (WTC®)

- SWR® structure wrapped with presser roll tape.
- Safe and secure mouth opening is possible with sheath removal operation.



Comparison with conventional cables



* SWR® + WTC® is the latest and future-oriented key technology essential for reducing cable diameter and weight.

■Points relevant to the 17 SDGs

This cable that leverages our proprietary technology will contribute to the development of a secure and robust infrastructure to support the development of 5G and the increase in network capacity.
We will also fulfill our responsibility to create and use environmentally-friendly materials.

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