

Sales Launch of Single Jacket Single Armor WTC™

Fujikura has launched Single Jacket Single Armor WTC™ (SJSA-WTC™) with SWR™, intermittent bonded ribbon fiber which allows simultaneous mass fusion splicing. The product has achieved a reduction by 31% in cross-sectional area and 25% in weight compared to our existing product.

Our existing product has a double jacket structure (Double Jacket Single Armor, see Figure 1) in which a standard WTC™ is covered with outer jacket with a steel tape. However, the newly developed SJSA-WTC™ has a single jacket structure (see Figure 2) in which fibers are covered with a tube, instead of WTC™, then the strength members are in the outer jacket. This structure further reduces diameter and weight. Cables with an armor structure are mainly used for installation in environments where mechanical strength is required, such as along railway lines, directly buried in the ground, and in rural and underground areas where there is a risk of wildlife damage by rodents. However, the newly developed SJSA-WTC™

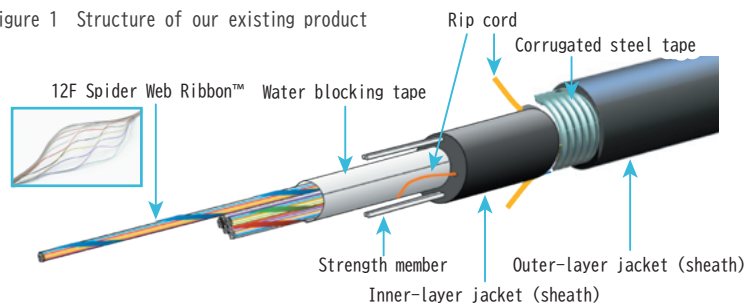
achieves high fiber density without compromising required mechanical strength through an optimized design, and the access to optical fibers by removing jacket is greatly improved compared to existing products.

As the data traffic continues to increase, utilization of underground area, construction of network along intercity railway network, improvement in telecommunication service in rural area, are expected to increase. We believe that the newly launched SJSA-WTC™ will further contribute to the rapid and high-density construction of telecommunication networks.

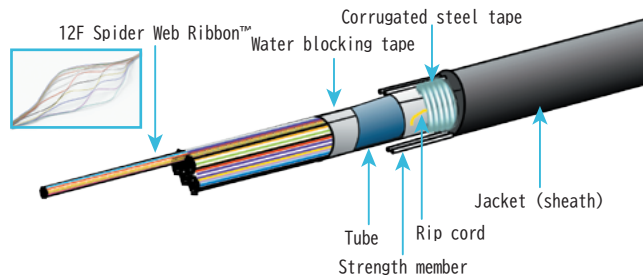
Fujikura will continue to develop high-quality and innovative technologies and products to help resolve customers' issues and contribute to the growth of society.

*Spider Web Ribbon™, SWR™, Wrapping Tube Cable™, WTC™, Single Jacket Single Armor WTC™ and SJSA-WTC™ are trademarks of our company.

■ Figure 1 Structure of our existing product



■ Figure 2 Structure of Single Jacket Single Armor WTC™



■ Table 1 Structural comparison of our existing product and SJSA-WTC™

	Our existing product			SJSA-WTC™		
Fiber count	144	288	432	144	288	432
Cable diameter (mm)	16.5	17.5	19.0	14.0	14.5	16.0
Weight (kg/km)	230	255	300	175	190	215

Website
<https://www.optic-product.fujikura.com/optical-fiber-cables/en/products/single-jacket-single-armor-wtcsjsa-wtc/>



■ Points relevant to the 17 SDGs

The SJSA-WTC™ fiber optic cable has mechanical characteristics comparable to those of existing products, while realizing a small-diameter and high-density structure, which contributes to effective use of installation spaces, shortening the construction period of communication networks, and reducing costs. Furthermore, the significant reduction in diameter and weight compared to the existing product helps lower the environmental impact.



Development of Transparent Metal Mesh Film

Fujikura has developed a transparent metal mesh film that has both high optical transparency and excellent electrical conductivity by utilizing the gravure offset printing technology we have built over many years.

In this development, we adopted gravure intaglio printing with a higher aspect ratio than conventional methods and a new conductive paste containing fine silver powder. By optimizing the printing conditions on the highly transparent PET substrate, we have significantly improved the visibility of wiring and the reduced transmittance that were issues with metal mesh. As a result, we achieved the contradictory properties of transmittance of 90% or more and a resistance of 100 Ω /sq. or less, which was difficult to achieve with conventional ITO (indium tin oxide) transparent conductive

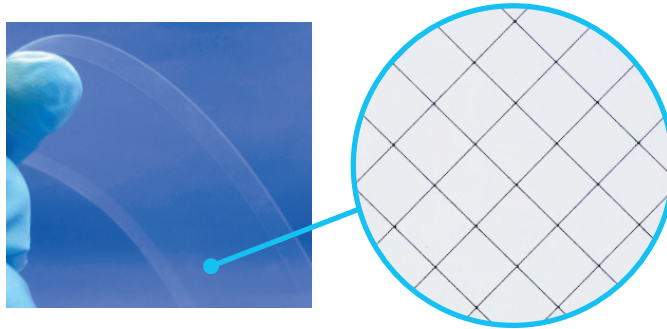
films.

Our metal mesh film is made by printing fine metal wires into a lattice pattern on a flexible PET substrate. This gives the film great resistance to bending and excellent flexibility and durability. In addition, compared to ITO film, which requires a vacuum deposition process and exposure, development and etching processes, the film is more cost-effective and environmentally friendly.

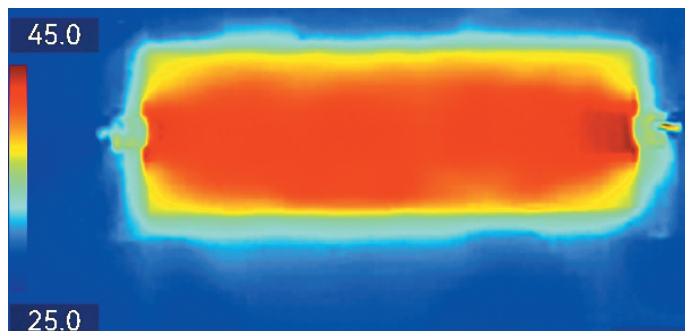
Transparent conductive coating films such as ITO are being considered for use not only in touch displays but also in transparent film heaters and transparent antennas.

We expect that our transparent metal mesh film with its many excellent features will contribute to increasing the value of our customers' products.

■ Figure 1 Appearance of transparent film heater



■ Figure 2 Transparent film heater heating condition



■ Points relevant to the 17 SDGs

In addition to the additive method, which is more environmentally friendly than the subtractive method, the fine mesh circuit contributes to the reduction of the material itself.



Sales Launch of Electric Protective Tube Inserter

Nishi Nippon Electric Wire & Cable Co., Ltd. handles uninterrupted construction equipment for indirect live line construction. In particular, the company, which has been selling hydraulic protective tube inserters for attaching and detaching construction protective tubes and insulated wire protective tubes (hereinafter referred to as a “tube”) to and from overhead distribution lines, have now started selling an electric protective tube inserter that uses electric power instead of hydraulic power.

This product consists of four units: an inserter main body, a biaxial control rod, a motor unit, and an operation remote controller. By electrifying the power source as described above, the design takes into consideration the improvement of the working environment by eliminating hydraulic pressure.

Since the motor unit and the operation remote controller are connected wirelessly, it can be operated

remotely, so operation information of the operation remote controller is received by the motor unit, and the tire rotates to attach and detach the tube to and from the wire. By incorporating wireless operation and a new automated driving function, the product has been able to contribute to the reduction of user labor (from two-person work to one-person work).

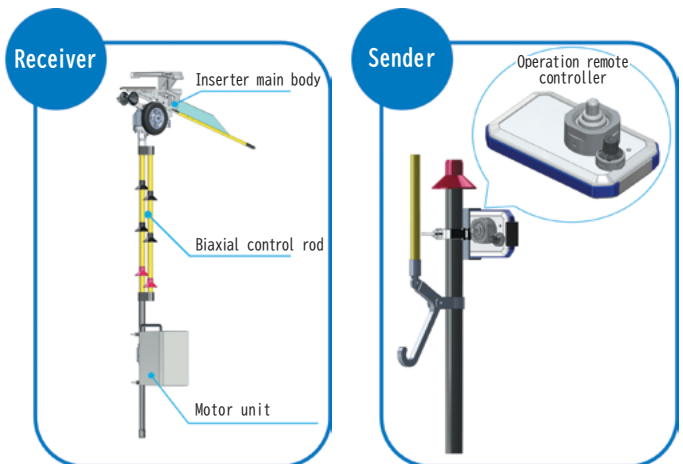
In addition, the product has IPX4 waterproof performance and can be used in rainy weather.

The product is the next generation model based on the concept of saving labor and improving the working environment, and we believe that it can contribute to further improvement of work efficiency in the field.

Nishi Nippon Wire & Cable Co., Ltd. will continue to develop products that meet the needs of our customers so that we can supply electricity stably and efficiently, which is part of the infrastructure of an advanced information society.



Work using the product



Website
<https://www.nnd.co.jp/products/900>



Points relevant to the 17 SDGs

This product, which is used for infrastructure development, achieves zero carbon dioxide emissions by electrification, and contributes to the construction of an efficient and safe working environment by saving labor by enabling one-person work.



Achievement of Industry Paper Award at RFIC Symposium 2024

At the IEEE RFIC Symposium 2024, a major international conference in the field of radio frequency integrated circuits, our joint paper with IBM entitled "A 21-27 GHz Frequency Quadrupler in 0.13 μm SiGe BiCMOS with 0-dBm POUT and 40-dBc HRR for Wideband 5G Applications" won the Industry Paper Award.

This paper describes a jointly developed frequency multiplier*. Our multiplier uses a Gilbert cell-type circuit for its basic configuration and a harmonic trap circuit for its output section, making it possible to significantly suppress the generation of spurious waves while maintaining high output.

In addition, we confirmed the suppression effect of

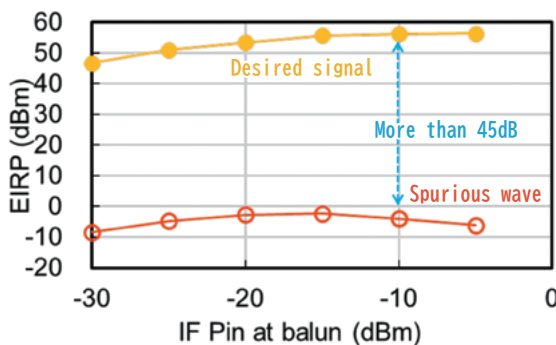
spurious waves in the out-of-band emission region and spurious region, which are subject to legal regulations, by actually measuring with a module (PAAM: Phased Array Antenna Module) using a frequency converter IC (FCIC) equipped with this multiplier. These were highly evaluated and led to the award.

Through active research and development, we will continue to respond to customer needs and absorb market needs to develop high-value-added radio frequency band ICs.

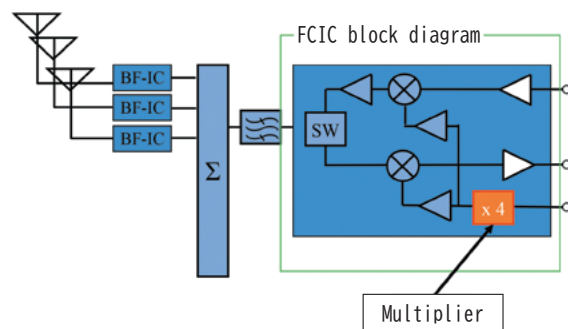
*Frequency multiplier: A circuit that converts the frequency of an input signal to an integral multiple and outputs it.



IEEE RFIC Symposium award plaque



FCIC block diagram and output spectrum of PAAM



Points relevant to the 17 SDGs

Leveraging technologies jointly developed by Fujikura and IBM, we will contribute to the development of infrastructure by providing products compatible with the increasing capacity of wireless communication networks.



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