



# AI-20

**THE FOURTH GENERATION TRUNK LINE  
OPTICAL FIBER FUSION SPLICER**

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The Fourth Generation trunk line optical fiber fusion splicer

# CRAFTSMAN SPIRIT

Upholding the original aspiration with craftsmanship  
Winning trust through quality



**0.1  $\mu\text{m}$**

**Accurate of fiber alignment**

Signal fire AI-20 fusion splicer applies multiple of the latest patented technologies of Signal fire, and adopts a more advanced central processing unit, more advanced algorithms, and higher precision cameras. In such a compact and compact situation, the combination design of workbench and bench has been achieved simultaneously. 1s startup, 6s rapid fusion, 15s heating, 5-inch color touchscreen, 320x magnification, 7800mAh large capacity lithium battery can fuse and heat 240 cores, still performs well in harsh environments such as high altitude, dry, and cold.



# Full link integration design Highly integrated

**4.50KG**

**Total weight**

**Machine+Toolbox+Complete  
Accessory Set**



Six motors



Fiber core  
alignment



6s splicing



15s heating



Within OPM  
function



Within VFL  
function



Electric  
one-step fiber  
cleaver



SIGNAL FIRE  
Stripper

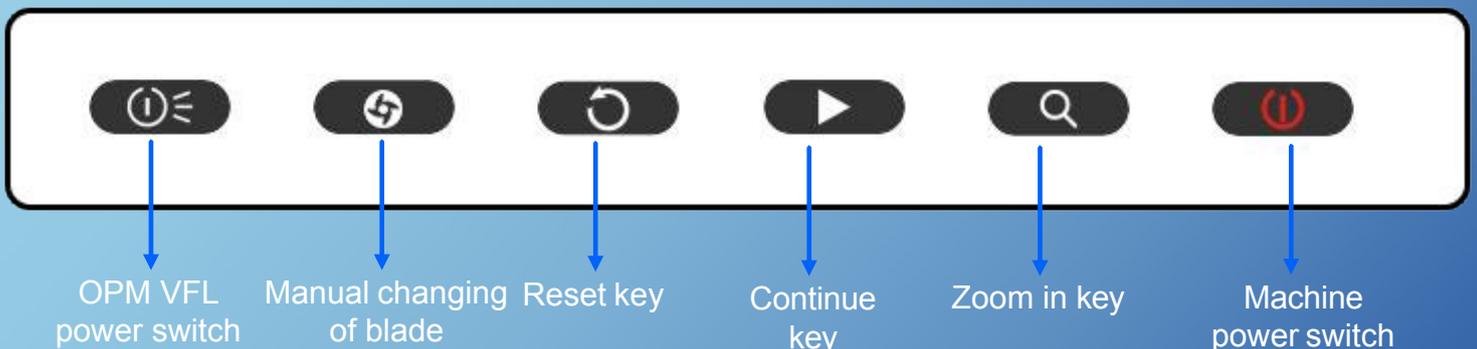
The AI-20, the fourth generation fiber fusion splicer developed by Signal fire, is the latest generation of fiber fusion splicer designed for full link integration. It combines Signal fire's latest research and development of a delayed return electric one-step cleaver with fiber fusion splicing, while integrating OPM and VFL functions. Combined with a nine in one signalfire fiber stripper, a combinable workbench and worktable, it truly becomes a compact, lightweight, and easy to operate fiber fusion splicer, which will greatly improve your work efficiency.



# Exquisite craftsmanship High standard design



## The buttons are clear and beautiful

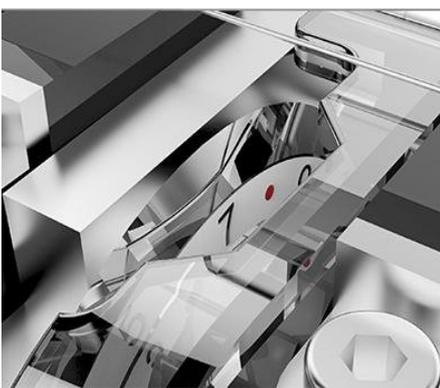




# Built-in high precision delay return electric one-step fiber cleaver



Signal fire new generation fiber fusion splicer has significantly reduced the actual weight and volume of the entire equipment by reducing auxiliary tools and improving the automation level, ultimately achieving a true improvement in fusion quality and efficiency. This is the fourth generation fiber fusion splicer that we first launched, and the core is full link integration design, highly integrated.



**Automatic/Manual change**

Cleaver blade surface automatically change when the current cutting point cut fiber more than 1000 times and continuously shown three times unqualified cutting results.



**Automatic delayed cleaver return**

Perfectly solves the problem of traditional mechanical one-step cleaver back cutting scratching the fiber end face. The factory standard delay time is set to 0.5s, and the adjustable range is 0.2s to 2s.



**Cleaver LED auxiliary lighting**

Brightness can be adjusted through APP.



# Built-in VFL and OPM function

Measure fiber link loss/luminous flux  
Fiber line tracking, breakpoint/light leakage detection



**OPM**(Measurement range: -50+30dbm)

**VFL**(10km)

## OPM

Switch between ten states

Wavelength: 850nm、1300nm、1310nm  
1490nm、1550nm、1625nm、980nm  
1270nm、1577nm、1650nm

## VFL

Switch between three states

power: 15mW, 2Hz flashing and steady on mode



# Real-time luminous flux assisted alignment

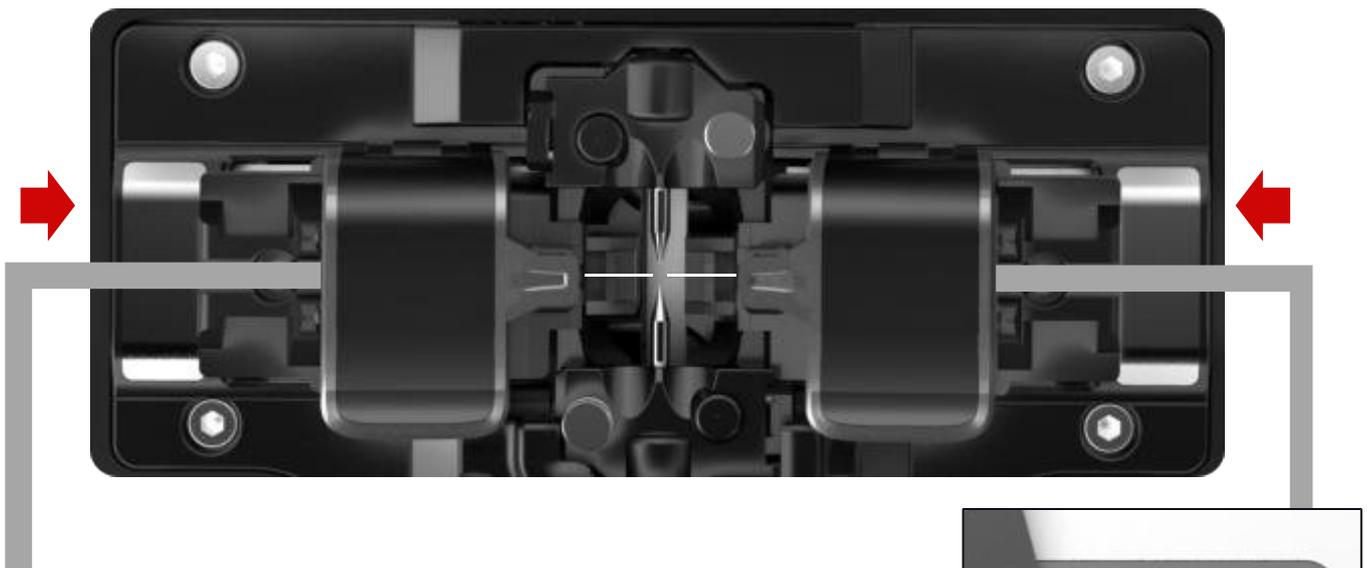
Only applicable to environments with stable optical signal link from front

Intelligently analyze the alignment point with the lowest splicing loss and then splice the fiber

Splicing is completed



Real-time luminous flux assisted alignment technology developed by Signalfire, which intelligently analyzes the alignment point with the least loss to minimize the fiber fusion loss.



Optical fiber on the left which is stable optical signal link

Optical Fiber on the right with fast connector which has plugged to OPM Port



# 5-inch color touchscreen

Intuitive operation, easily accessible with just one touch



11 languages to switch freely



Chinese



English



French



Russian



Italian



Ukrainian



Portuguese



Polish



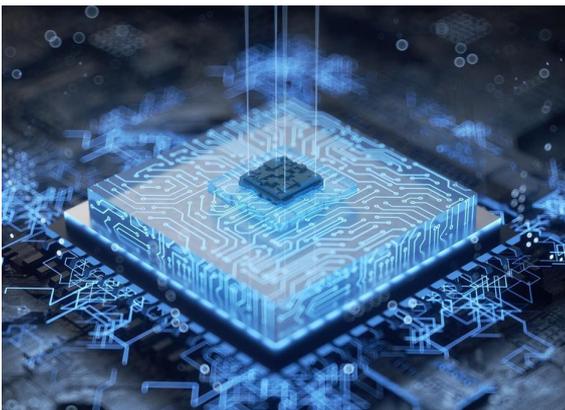
Spanish



Thai



Arabic



## Industrial-grade CPU

1 second startup

Sensitive response/Smooth experience



# Equipped with signal fire stripper



A **GOOD**  
STRIPPER  
**NINE**  
FUNCTIONS

kevlar scissors  
Three-port Miller stripper  
5G FTTH Drop cable  
Both regular FTTH Drop cable  
FTTH Drop cable steel wire pliers  
Rotary ruler  
Cleaning cotton



# 7800mAh lithium battery

## Dual charging path

In full state, 240 cores can be continuously fused and heated



Charging channel ①  
Input voltage :13.5±0.5V  
Input current :4.8A

Power indicator  
light

Charge indicator light  
Indicator light turns off  
when fully charged

Press to check the  
power level

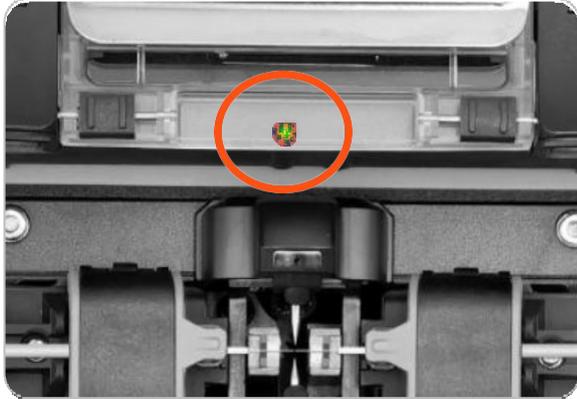
Press to popup  
the battery  
Press the button and the battery will pop up slightly Can charge  
the battery separately

Charging channel ②

**Charging time ≤3.5 hours**



- **Activate preheating function in winter**



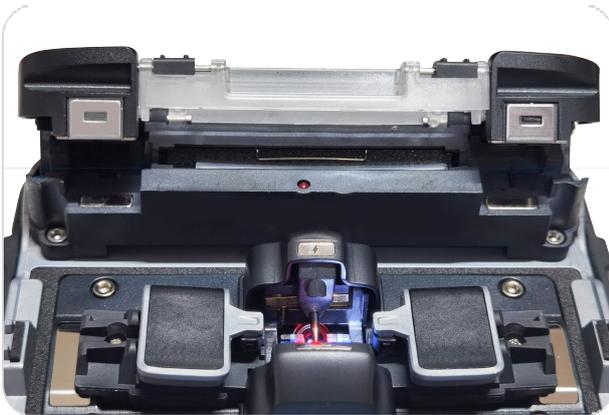
The fiber fusion is successful. At the same time as opening the windproof cover, the heating tank automatically starts preheating for 6 seconds.

- **Heating part compatible with SC fiber**



SC Fiber: Push up  
Ordinary fiber: Push down

- **Heating part automatic lid closing**



- **Cooling rack Expandable and closable**



- **Dust prevention/fall prevention/shock prevention**



- **3 in 1 fiber holder**





The Fourth Generation trunk line optical fiber fusion splicer

# Outdoor fiber splicing Compact and portable





# Exported to nearly 100 countries and regions worldwide



**Get unanimous praise from customers!**



# Basic parameter

<b>Fiber alignment</b>	Core/cladding ; Real-time luminous flux assisted alignment (Only applicable to environments with stable optical signal link from front)
<b>Motor number</b>	6 motors <b>Accurate of fiber alignment :0.1<math>\mu</math>m</b>
<b>Splicing time</b>	6s
<b>Heating mode</b>	15s, can be customized according to the external environment
<b>Fiber type</b>	Single-mode fiber (SMF/G.652), multimode fiber (MMF/G.651), dispersion-shifted fiber (DSF/G.653), G.654 fiber, non-zero dispersion-shifted fiber (NZ-DSF/G.655), and bend-insensitive fiber (BIF/G.657); suitable for splicing bare fiber, pigtail, drop fiber, patch cord, and invisible fiber.
<b>The cladding diameter</b>	80-150 $\mu$ m
<b>Splicing loss</b>	0.02dB (SM) 、 0.01dB (MM) 0.04dB (DS/NZDS)
<b>Splicing mode</b>	Automatic focusing core alignment, conventional/high precision splicing
<b>Splicing way</b>	Automatic, semi-automatic,manually
<b>Fiber cleaver</b>	High precision delay return electric one-step fiber cleaver
<b>Fiber holder</b>	Three in one fixture, no need to change, suitable for single/multi-mode, multi-core cable/bare fiber, tail fiber, jumper fiber,drop cable
<b>VFL</b>	The machine comes with power: 15mW, 2Hz flashing and steady on mode
<b>OPM</b>	Wavelength: 850nm、 1300nm、 1310nm、 1490nm、 1550nm、 1625nm、 980nm、 1270nm、 1577nm、 1650nm/Measurement range: -50+30dbm Absolute error: <0.3dB (-50dbm ~+3dBm range)
<b>Fusion splicer languages</b>	11 languages (chinese、 Russian、 english、 French、 Italian、 Ukrainian、 Thai、 Portuguese、 Spanish、 Arabic、 polish)
<b>Battery capacity</b>	7800mAh large capacity lithium battery charging time $\leq$ 3.5 hours; It can continuously weld and heat about 240 cores
<b>Magnification</b>	320x (X or Y axis single display) , 200x (x and Y axis dual display)
<b>Fiber diameter</b>	Coating diameter: 80-150 $\mu$ m/Coating diameter: 100-1000 $\mu$ m
<b>Cutting length</b>	Coating layer 250 $\mu$ m below: 8-16mm/coating layer 250-1000 $\mu$ m: 16mm
<b>Heat shrink tube</b>	60mm、 50mm、 40mm、 25mm
<b>Tensile testing</b>	standard 2N
<b>display</b>	5-inch color touchscreen
<b>Boot time</b>	1s, boot can enter the working mode
<b>Data is stored</b>	Unlimited, machine storage 1000 groups, the excess part can be stored in the server, can export data.
<b>Wireless communication</b>	Based on bluetooth 4.2 protocol standard, the working band is 2.4GHz, the maximum transmission range is 60m
<b>Software upgrade</b>	Mobile phone APP Internet update, enable Bluetooth synchronization upgrade machine software
<b>Management function</b>	The equipment owner can be bound as the highest authority, and can remotely view the splicing records, splicing time, loss, etc. through the mobile phone APP. The number of splicing times or working time of the equipment can be set. The manager can effectively manage a single or multiple equipment.
<b>Return loss</b>	Better than 60 db
<b>Product protection</b>	Waterproof, dustproof and fall proof
<b>Power supply</b>	Input AC100-240V 50/60Hz, output DC13.5V/4.8A, the current power mode can be identified, real-time monitoring of the current battery level
<b>The work environment</b>	Temperature: -15 ~ +50 $^{\circ}$ C, humidity: < 95%RH (no condensation), working altitude: 0 ~ 5000m, maximum wind speed: $\leq$ 15m/s



# Accessories in the tool box



- ① Toolcase
- ② Fusion splicer
- ③ Spare electrode
- ④ signal fire stripper  
(Including a bag of cleaning cotton)
- ⑤ Alcohol bottle
- ⑥ Cleaver cleaning cotton swab
- ⑦ Allen wrench
- ⑧ Brush
- ⑨ Climbing combination hanging chain
- ⑩ Toolbox strap
- ⑪ Belt
- ⑫ Power adapter
- ⑬ User's manual / Quality Certificate / Warranty Card / Fiber for ARC



# Size and weight



## Machine size

165mm x 255mm x 185mm

## Machine weight

3.09kg



## Toolbox size

165mm x 255mm x 230mm

## Weight of toolbox

(complete set) 4.50kg



## Total size

340mm x 255mm x 325mm

## Total weight

5.50kg

## SERVICE COMMITMENT

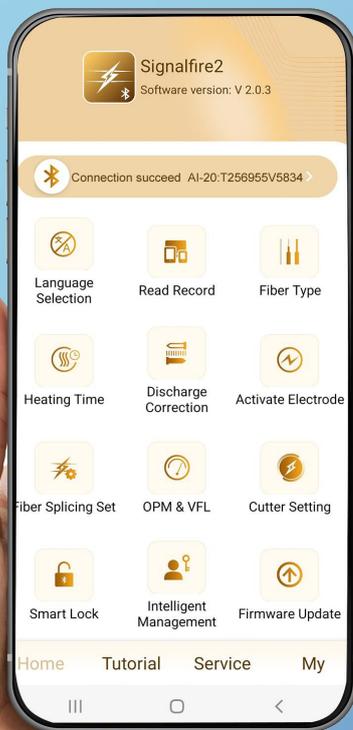
**One years warranty, but these circumstances are not within the scope of this provision.**

- 01.** Except for the cleaver, Signal fire stripper, fiber holders and other tools whose life depends on the frequency of use and the use of the environment. Also electrodes are consumption material which are not in the warranty.
- 02.** Battery and power adapter are warranty for six months.
- 03.** Electrodes are consumables, the service life of each pair of electrode is 4000 times.



# Support bluetooth Bluetooth connection

Intelligent interaction, avoid tedious



## Bluetooth™

Scan the QR code of the welding machine startup screen to download the Mobile APP. The phone connects to the splicer via Bluetooth.



- ✓ Welding record can be read through mobile phone, and the data can be exported;
- ✓ You can set the parameters of the welding machine, such as selecting the machine language, changing the heating time, selecting the fiber optic alignment mode, etc;
- ✓ You can manage the welding machine, such as setting the use time of the machine, welding times, etc;
- ✓ Upgrade the phone APP, bluetooth connected to the machine to upgrade the machine software;



Signal Fire Technology Co., Ltd. is a high-tech joint-stock enterprise specializing in the research and development, production, and sales of communication equipment, with a registered capital of 10 million. It is a national high-tech enterprise. Our main products include fiber optic fusion splicers, electric fiber cleaver, OTDR (Optical Time Domain Reflectometer), and 9-in-1 optical fiber stripper. They are widely used in the construction, maintenance, emergency repair, security monitoring, and research and teaching of optical cable lines in telecommunications, mobile, China Unicom, radio and television operators, post and telecommunications, railway, engineering companies, and public institutions.





The factory is located in Chengdu High tech International Enterprise Port, with a modern production factory and standardized office buildings. We have passed the ISO9001 international quality management system certification, and our products have passed the EU CE, ROHS. International certifications such as FCC in the United States and UKCA in the United Kingdom have been passed by the National Institute of Quality Supervision and Inspection, China Academy of Information and Communications Technology.





# The Fourth Generation trunk line optical fiber fusion splicer





The qualified testing of Taier Laboratory has obtained nearly a hundred domestic and international patents at the same time. The "Signal Fire" series products have been sold to over 100 countries and regions including North America, South America, Europe, Africa, and Asia, and have received unanimous praise from customers.





# Product testing certificate

Signal Fire Technology Co., Ltd. has passed the ISO9001 international quality management system certification. The product has passed international certifications such as the CE, RoHS, the United States FCC, and UKCA in the United Kingdom, and passed the qualified test through National Quality Supervision Institute, China Xintong Institute, and Tel Laboratory. At the same time, we obtained nearly 100 patents.

**CERTIFICATE**

**Anbotek**  
Product Safety

**CERTIFICATE**  
Of Conformity  
Directive 2014/53/EU  
On The Radio Equipment Directive

Certificate No.: AT18220WC202819  
Certificate Holder: SIGNAL FIRE TECHNOLOGY CO., LTD.  
Address: Building 18, Chengdu Hi-Tech International Enterprise Park, Liando U Valley, 1111 Changsheng Bridge, Pidu District, Chengdu China  
Manufacturer: SIGNAL FIRE TECHNOLOGY CO., LTD.  
Address: Building 18, Chengdu Hi-Tech International Enterprise Park, Liando U Valley, 1111 Changsheng Bridge, Pidu District, Chengdu China  
Product Name: OPTICAL FIBER FUSION SPLICER  
Model No.: AI-9, AI-6C, AI-6V, AI-7C, AI-8C, AI-8X, AI-7V, AI-X, S9  
Trade Mark: Signal fire  
Rating: Input: 13.5V/4.8A DC (with DC 11V, 7800mAh Battery inside)

The radio equipment meets the following essential requirements	Complied
Article 3(1)(a) Safety	Yes
Article 3(1)(a) Health	Yes
Article 3(1)(b) EMC	Yes
Article 3(2) Radio	Yes

Note: The attached Annex forms part of this certificate which consists of 2 pages.

Jan. 03, 2023  
Date

**CE**

Shenzhen Anbotek Compliance Laboratory Limited  
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China 518128  
Tel: (86)755-26066440 Fax: (86)755-26014772  
Http://www.anbotek.com Email: service@anbotek.com

CE

**CERTIFICATE**

**Anbotek**  
Product Safety

**CERTIFICATE**  
Of Conformity  
Radio Equipment Regulations 2017  
(SI 2017 No. 1208)

Certificate No.: AT18220WC202820  
Certificate Holder: SIGNAL FIRE TECHNOLOGY CO., LTD.  
Address: Building 18, Chengdu Hi-Tech International Enterprise Park, Liando U Valley, 1111 Changsheng Bridge, Pidu District, Chengdu China  
Manufacturer: SIGNAL FIRE TECHNOLOGY CO., LTD.  
Address: Building 18, Chengdu Hi-Tech International Enterprise Park, Liando U Valley, 1111 Changsheng Bridge, Pidu District, Chengdu China  
Product Name: OPTICAL FIBER FUSION SPLICER  
Model No.: AI-9, AI-6C, AI-6V, AI-7C, AI-8C, AI-8X, AI-7V, AI-X, S9  
Trade Mark: Signal fire  
Rating: Input: 13.5V/4.8A DC (with DC 11V, 7800mAh Battery inside)

The radio equipment meets the following essential requirements	Complied
CHAPTER 1 (General)(1)(a) Safety	Yes
CHAPTER 1 (General)(1)(a) Health	Yes
CHAPTER 1 (General)(1)(b) EMC	Yes
CHAPTER 2 (Radio)	Yes

Note: The attached Annex forms part of this certificate which consists of 2 pages.

Jan. 03, 2023  
Date

**UK CA**

Shenzhen Anbotek Compliance Laboratory Limited  
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China 518128  
Tel: (86)755-26066440 Fax: (86)755-26014772  
Http://www.anbotek.com Email: service@anbotek.com

UKCA

**TCB**

**GRANT OF EQUIPMENT AUTHORIZATION**  
Certification  
Issued Under the Authority of the  
Federal Communications Commission  
By:

LGAI Technological Center S.A. (APLPLUS)  
Ronda de la Font del Carme, s/n <BR>P.O. Box 08193,  
Barcelona, Spain  
Date of Grant: 01/17/2024  
Application Dated: 01/17/2024

Signal Fire Technology Co., Ltd.  
No.8-8 Qingyang Zone, Jiaolong Industrial Park  
Qingyang District, Chengdu, China  
Chengdu, China  
Attention: Jason Yang

**NOT TRANSFERABLE**  
EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: 2AB98-AI-10A  
Name of Grantee: Signal Fire Technology Co., Ltd.  
Equipment Class: Digital Transmission System  
Notes: OPTICAL FIBER FUSION SPLICER

FCC Rule Parts	Frequency Range (MHz)	Output Watts	Frequency Tolerance	Emission Designator
15C	2402.0 - 2498.0	0.00193		

Output power listed is conducted. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons. End-users must be provided with operating procedures for satisfying RF exposure compliance.

**FCC**

FCC

**EACC**

**QUALITY MANAGEMENT SYSTEM CERTIFICATE**

Certificate No.: 11243Q45347R2M

This is to certify that the Quality Management System of  
**SIGNAL FIRE TECHNOLOGY CO., LTD.**  
Unified Social Credit Code: 9151010007241028RD

Registered Address: No.1111 Changsheng Bridge, Hongguang Town, Small and Micro Enterprise Innovation Park, North Area of Chengdu Modern Industrial Port, Pidu District, Chengdu  
Production Office Address: Building 18, Chengdu High-Tech International Enterprise Park, Liando U Valley, No.1111 Changsheng Bridge Road, Pidu District, Chengdu City, Sichuan Province, China

Has been audited to conform to the following Quality Management System standard  
GB/T19001-2016/ISO9001:2015  
The Applicable Scope  
The production of optical fiber fusion splicer

Date of initial issuance: Aug. 22, 2017  
Date of issuance: Jul. 11, 2023  
Date of expiry: Jul. 31, 2026

Issued by: *Wei Fongmei* Beijing East Allreach Certification Center Co., Ltd.

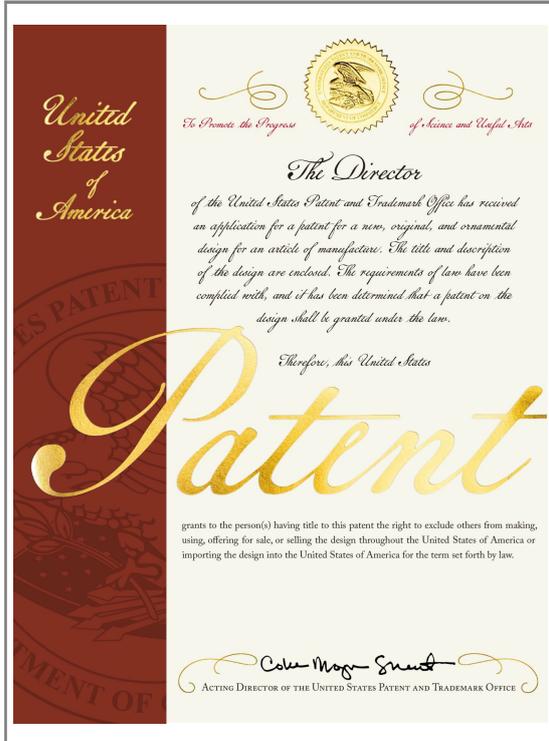
**EACC** **IAF** **CNAS**

China Quality Management System Certification Center  
北京东阿路认证中心有限公司  
MANAGEMENT SYSTEM CERTIFICATION

ISO9001



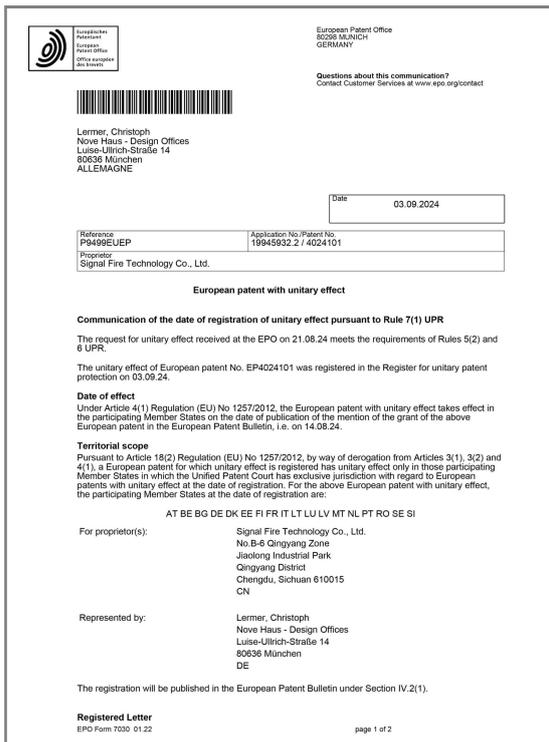
# International Patent



US Design Patent Certificate



European PCT Patent



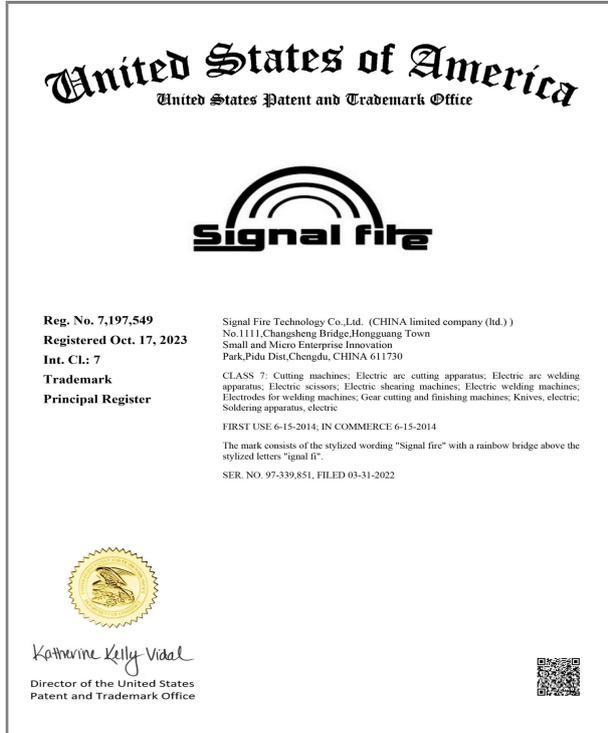
European Unified Patent



EU design patent



# International trademark



U.S. Trademark



EU trademark



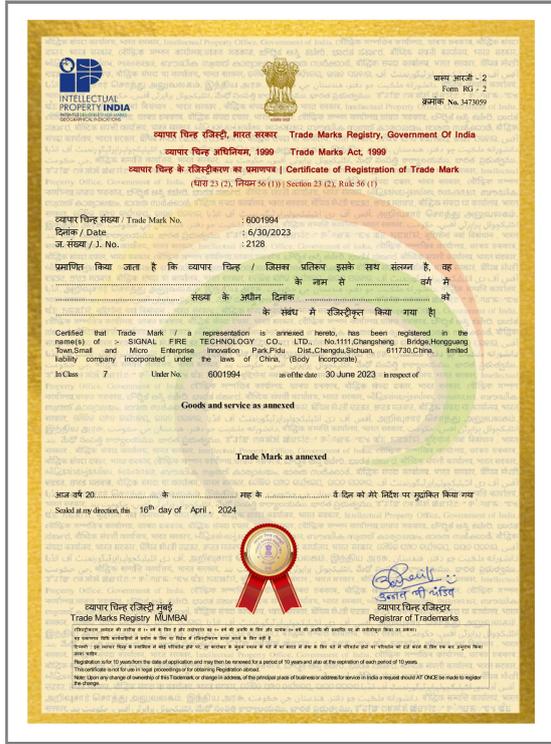
Australian trademark



Russian trademark



# International trademark



Indian trademark



Mexican trademark



UK trademark



EU Registration Certificate