



# *AI-7C* PRODUCT MANUAL

## **OPTICAL FIBER FUSION SPLICER**



# MASTERPIECE

## High-end luxury



Accurate of fiber alignment :  
0.2 $\mu$ m

Signal Fire AI-7C use the latest core alignment technology with auto focus and six motors, it is a new generation of fiber fusion splicer. It is fully qualified with 20 km trunk construction, FTTH project, security monitoring and other fiber cable splicing projects. The machine uses industrial quad-core CPU, fast response, is currently one of the fastest fiber splicing machine in the market; with 5-inch color touchscreen, the operation is simple and intuitively; and up to 320 times focus magnifications, making it is very easy to observe the fiber with naked eyes. 6 seconds speed core alignment splicing, 15 seconds heating, the working efficiency increased by 50% compared to ordinary splicing machines.



# SIX MOTORS

## Core alignment

Disassembly free 3-in-1 fiber holder

320 times magnification  
auto focus

5-inch color  
touchscreen

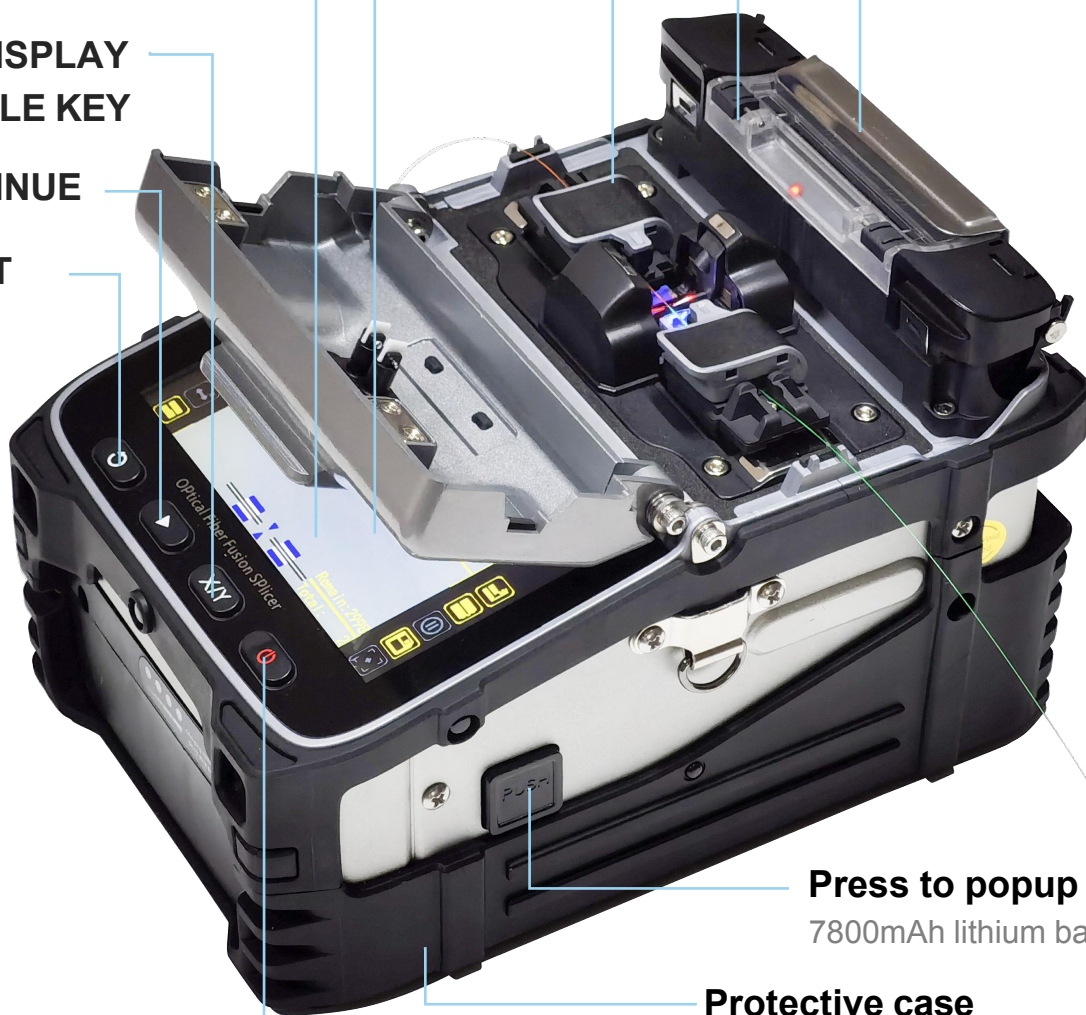
X, Y DISPLAY  
TOGGLE KEY

CONTINUE

RESET

15s automatic heating  
Automatic lid closing

Cooling rack  
Expandable and closable



Press to popup the battery  
7800mAh lithium battery

Protective case

Power key



# METAL BODY

## Aesthetic Details



Fiber mode

X screen display

Home

Left end face angle

Y screen display

Working mode

Fiber Splicing Pause

Auto Focus

Splicing loss

Preheating

Heating time

Right end face angle

Fusion Splicing Record

Preheating

Timed shutdown

Number of electrodes remain

Total splicing

Fiber status remind



# Machine metal core, eliminate shoddy work and inferior materials

Temperature and cold resistant, making splicing more reliable.



Exquisite details within a small space



# 5-inch color touchscreen

Intuitive operation, easily accessible with just one touch



## TOUCH SCREEN MENU



Language



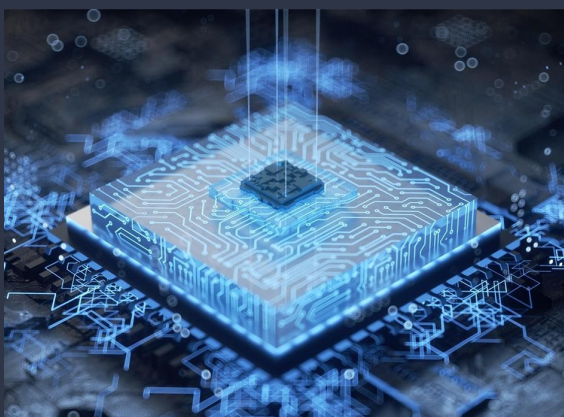
Configuration



Calibration



Records



## Industrial-grade CPU

1 second startup

Sensitive response/Smooth experience



# 11 languages to switch freely



Chinese



English



French



Russian



Italian



Ukrainian



Portuguese



Polish



Spanish



Thai



Arabic



## Configuration

### Fiber type

- SM  MM  AUTO  G654E
- BIF  80um  NZ  DS

Auto power off  15min

Heating time  15S

Heater Pre-heating

Pause splicing process

Auto-focus

Activate battery

Self test

Angle check  3.0°

Endface check

Basic  Standard  Precision

Tensile test

Factory restoration

Cleaver adjustment >

Replace blade assembly >

Screen brightness  10



## Records

No	Time	loss
000007	2025-11-10 14:26	0.00 dB
000006	2025-11-10 14:25	0.01 dB
000005	2025-11-10 14:24	0.01 dB
000004	2025-11-10 14:22	0.00 dB
000003	2025-11-10 14:22	0.02 dB
000002	2025-11-10 14:21	0.01 dB
000001	2025-11-10 14:20	0.00 dB



1/5





# 7800mAh lithium battery

## Battery charging "New upgrade"

### Dual charging path

Even if a fault occurs, another channel can be used for charging



#### Built-in USB port

It can charge mobile phones and other mobile devices

#### Charging channel ①

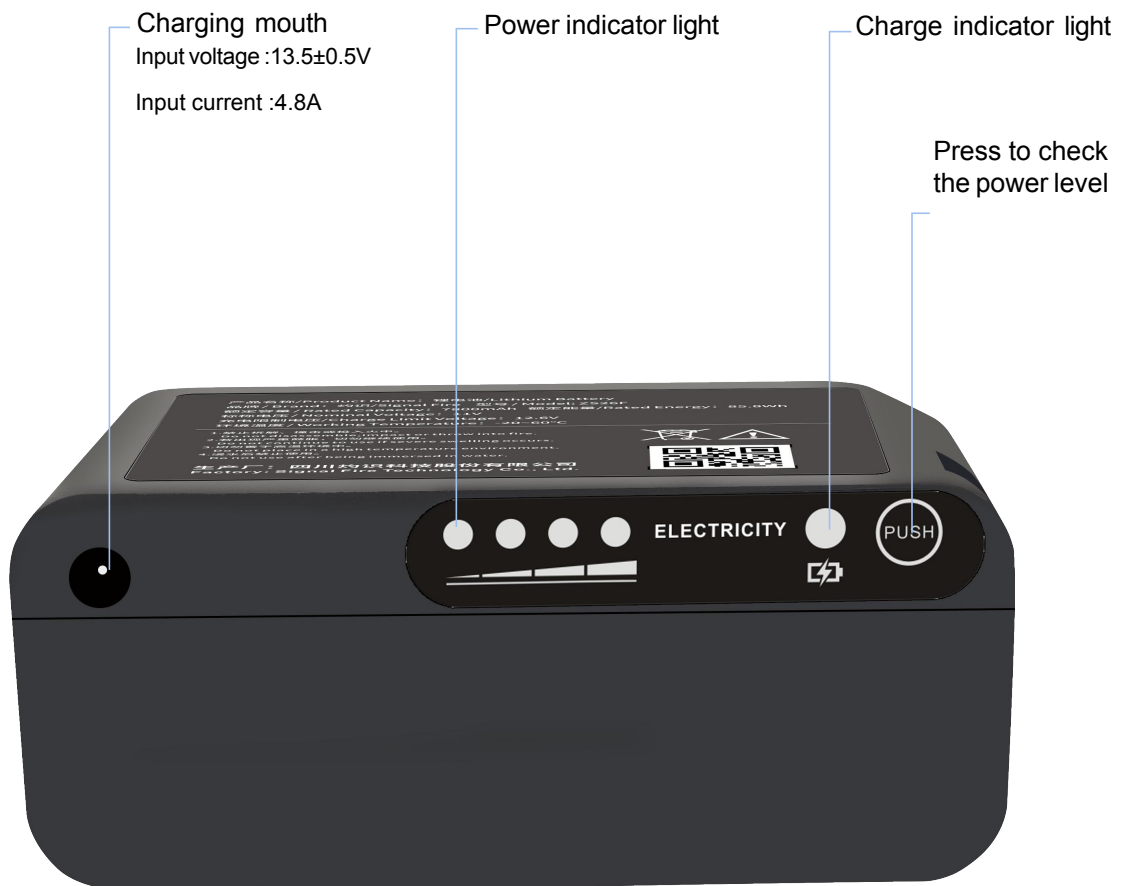
#### Charging channel ②



# The battery can be removed and charged separately

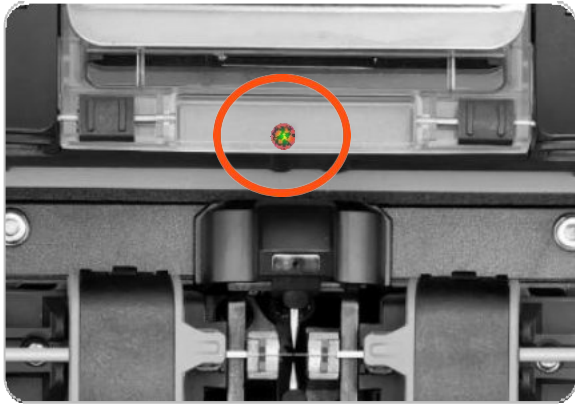


- Charging time  $\leq 3.5$  hours;
- In full state, 260 cores can be continuously fused and heated





● **Activate preheating function in winter**



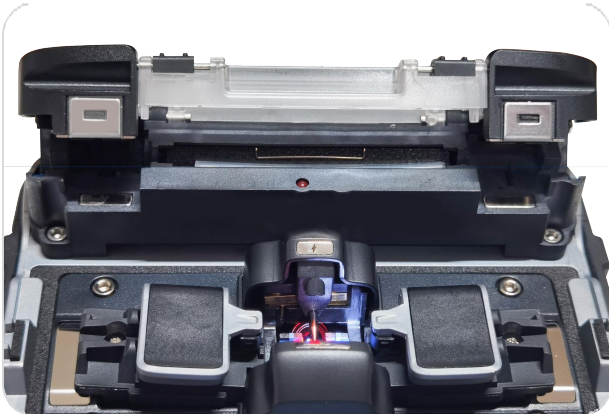
The fiber fusion is successful. At the same time as opening the windproof cover, the heating tank automatically starts preheating for 6 seconds.

● **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 TOOLBOX

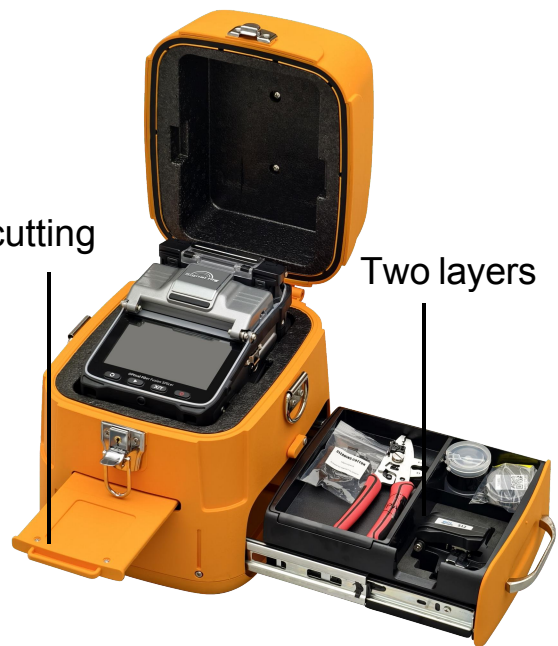
comes with a stool to facilitate the construction workers



Stool can bear: **100KG**

Fiber cutting  
table

Two layers



Do not need to take out the splicer machine from the toolbox while working

Patent no.ZL 2016 3 0402585.X



# BASIC PARAMETER

<b>Fiber alignment</b>	Core/cladding
<b>Motor number</b>	6 motors (accurate of fiber alignment : 0.2 $\mu$ m)
<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 welding
<b>Splicing way</b>	Automatic, semi-automatic
<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>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; It can continuously weld and heat about 260 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 welding records, welding time, loss, etc. through the mobile phone APP. The number of welding 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



# Signal fire stripper

**5G FTTH Drop cable**

Caliber: 2mm x 1.6mm

Both regular FTTH  
Drop cable

Caliber: 3mmx2mm

**Rotary ruler**

**FTTH Drop cable  
steel wire pliers**

**kevlar scissors**

(prohibit cutting steel wires )

**Three-port Miller stripper**

**Cleaning cotton**





# Standard configuration



**TOOLCASE**



**Fusion splicer**



**Electrode**



**S10 one-step  
fiber cleaver**



**signal fire stripper  
Including a bag of  
cleaning cotton**



**Power supply**



**Belt**



**key**



**brush**



**Toolbox strap**



**Inner hexagon**



**Alcohol  
pump**



**Quality Certificate  
Packing List  
Calibration Fiber  
Service Commitment  
Manual book**



# SIZE AND WEIGHT



**Machine weight**  
2.06kg (with battery)  
1.68kg (without battery)



**Toolbox weight**  
6.95kg (including  
machine and  
accessories)

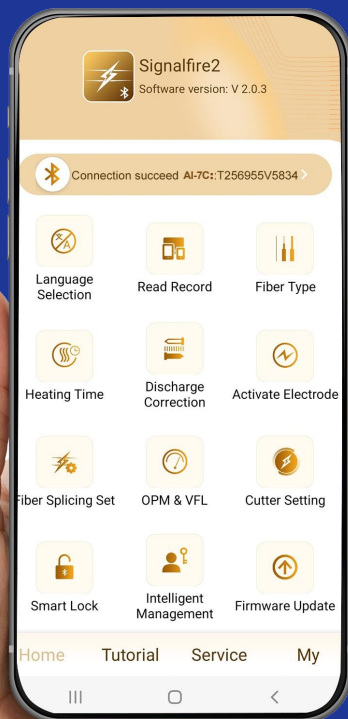


**Total weight**  
8.20kg



# 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;

# SERVICE COMMITMENT

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

01. Except for the cleaver, miller clamp, stripping pliers, 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.



# 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	EN IEC 62368-1:2020+A11:2020	Yes	Yes
Article 3(1)(b) ■ Health	EN 50663: 2017, EN 62479: 2010	Yes	Yes
Article 3(1)(b) ■ EMC	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)	Yes	Yes
Article 3(2) ■ Radio	ETSI EN 300 328 V2.2.2 (2019-07)	Yes	Yes

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

Jan. 03, 2023  
Date

Certified by  
*Kingkong Jin*  
Kingkong Jin

CE The CE Marking may only be used if all relevant and effective EU Directives are complied with

Shenzhen Anbotek Compliance Laboratory Limited  
1/F, Building D, Sogood Science and Technology Park, Sarwei 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. 1206)

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  
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The radio equipment meets the following essential requirements			Complied
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CHAPTER 1 (General)(1)(a) ■ Health	BS EN 50663: 2017, BS EN 62479: 2010	Yes	Yes
CHAPTER 1 (General)(1)(b) ■ EMC	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)	Yes	Yes
CHAPTER 1 (General)(2) ■ Radio	ETSI EN 300 328 V2.2.2 (2019-07)	Yes	Yes

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

Jan. 03, 2023  
Date

Certified by  
*Kingkong Jin*  
Kingkong Jin

UK CA The UKCA Marking may only be used if all relevant and effective UK Regulations are complied with

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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:

LGAJ Technological Center S.A. (APPLUS)  
Ronda de la Font del Carme, s/n -GR0-PD.  
Box 08193,  
Barcelona,  
Spain

Date of Grant: 01/17/2024  
Application Dated: 01/17/2024

Signal Fire Technology Co., Ltd.  
No.8-6 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

Grant Notes	FCC Rule Parts	Frequency Range (MHz)	Output Power (Watts)	Frequency Tolerance	Emission Designator
	15C	2402.0 - 2480.0	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 200m from all persons. End users must be provided with operating procedures for satisfying RF exposure compliance.

TCB

FCC

**EACC**

**QUALITY MANAGEMENT SYSTEM CERTIFICATE**

Certificate No.: 11423Q45347R2M  
This is to certify that the Quality Management System of  
**SIGNAL FIRE TECHNOLOGY CO., LTD.**  
Unified Social Credit Code: 91510100072411028D  
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 Port, 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, 2025

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

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

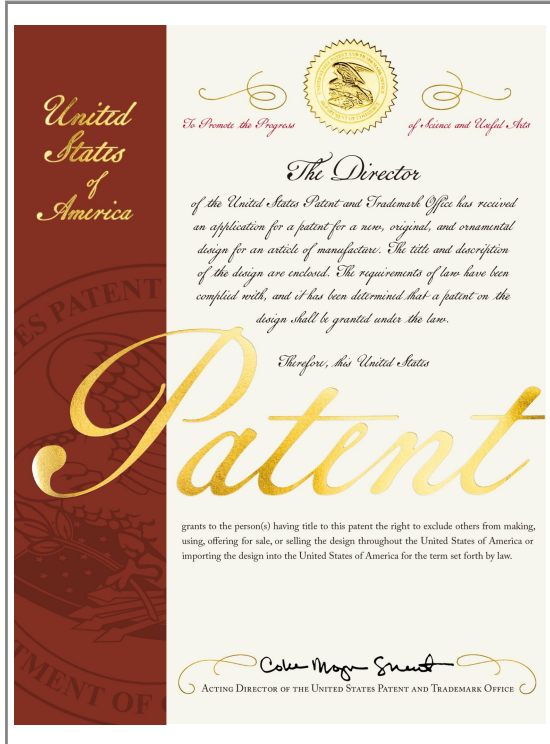
China Recognition  
Beijing East Allreach  
Certification Center Co., Ltd.  
MANAGEMENT SYSTEM  
CNAS C114-M

The certificate will remain valid only if the certified organization accepts surveillance audits at regular intervals and is added to be qualified. The information of this certificate is available at EACC website (www.eacc.com.cn) and CNAS website (www.cnas.com.cn). User's view available by scanning the QR Code on the lower right corner.  
Address: In Floor, No. 123 Building, No. 17, Zhongguo Road, Beijing Science & Technology Industrial Base (Zhongguo Road) of Zhongguo Science & Technology Park, Tongshou District, Beijing 100192

ISO9001



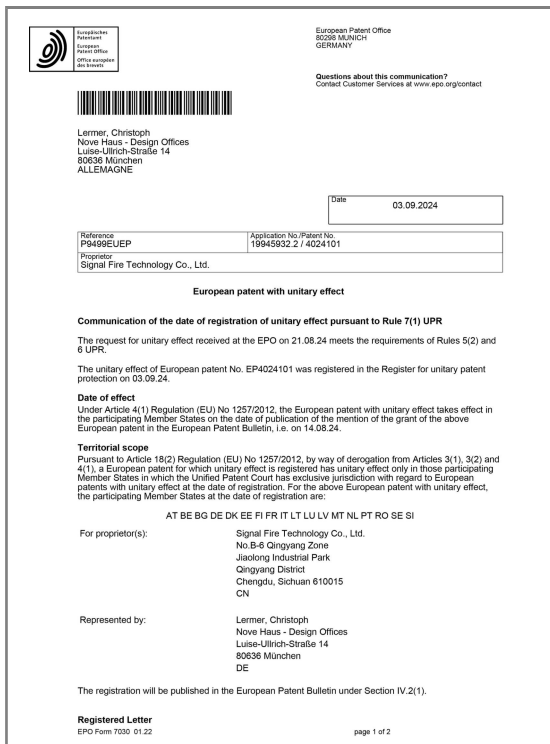
# International Patent



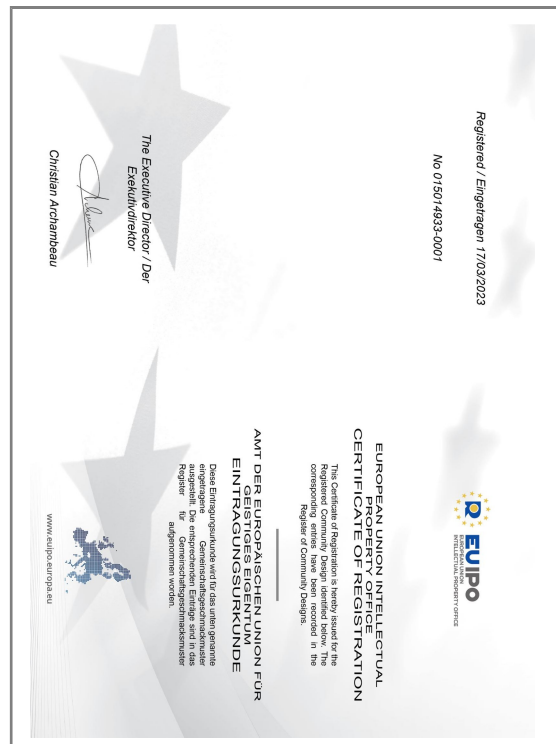
US Design Patent Certificate



European PCT Patent



European Unified Patent



EU design patent



# International trademark

**United States of America**  
United States Patent and Trademark Office



**Reg. No. 7,197,549**  
**Registered Oct. 17, 2023**  
**Int. Cl.: 7**  
**Trademark**  
**Principal Register**

Signal Fire Technology Co., Ltd. (CHINA limited company (Ltd.))  
No. 1111, Changsheng Bridge, Hongguang Town  
Small and Micro Enterprise Innovation  
Park, Pidu Dist., Chengdu, CHINA 611730

CLASS 7: Cutting machines; Electric arc cutting apparatus; Electric arc welding apparatus; Electric shears; Electric shearing machines; Electric welding machines; Electrodes for welding machines; Gear cutting and finishing machines; Knives, electric; Soldering apparatus, electric

FIRST USE: 6-15-2014, IN COMMERCE: 6-15-2014

The mark consists of the stylized wording "Signal fire" with a rainbow bridge above the stylized letters "gnal ir".

SER. NO. 97-339,851, FILED 03-31-2022



*Katherine Kelly Vidal*  
Director of the United States  
Patent and Trademark Office



U.S. Trademark

Registered / Eingetragen 04/12/2023  
No. 018660238



The Executive Director / Der  
Exekutivdirektor  
*Josef Negrad*  
Josef Negrad

**EU IPO**  
EUROPEAN UNION INTELLECTUAL PROPERTY  
OFFICE  
**CERTIFICATE OF REGISTRATION**

This Certificate of Registration is hereby issued for the European Union trade mark identified below. The mark is registered in the Register of European Union trade marks.

**AMT DER EUROPÄISCHEN UNION FÜR GEISTIGES  
EIGENTUM  
EINTRAGSURKUNDE**

Diese Eintragungsurkunde wird für die unten  
identifizierte Europäische Union-Zeichnung  
ausgegeben. Die Zeichnung ist in das  
Register der Europäischen Union-Zeichnungen  
eingetragen worden.




www.euiipo.europa.eu

EU trademark

**Australian Government**  
IP Australia

**CERTIFICATE OF REGISTRATION  
TRADE MARK**

Trade mark number: 2341304

The Registrar of Trade Marks has registered the trade mark represented on this certificate on 23 October 2023 and certifies that the following particulars have been entered in the Register of Trade Marks.

**Name and address of owner(s):**  
Signal Fire Technology Co., Ltd. of No. 1111, Changsheng Bridge, Hongguang Town, Small and Micro Enterprise Innovation Park, Pidu Dist., Chengdu, Sichuan, 611730 China.

**The trade mark is registered in the following class(es):**  
7

**Date of filing:** 13 March 2023  
**Registered from:** 13 March 2023  
**Registration expires on:** 13 March 2033

**Representation:**



Goods and/or services, and other information relating to the registration of this trade mark are listed on the following pages.



Dated this 23<sup>rd</sup> day of October 2023  
Registrar of Trade Marks

**TRADE MARKS ACT 1995**  
The Australian Trade Marks Register is the official record and should be referred to for the full details pertaining to this IP Right

Australian trademark

**РОССИЙСКАЯ ФЕДЕРАЦИЯ**



**СВИДЕТЕЛЬСТВО**  
на товарный знак (знак обслуживания)  
№ 991737



Правообладатель: **Сигнал Файер Текнолоджи Ко. Лтд., №1111, Чаншэнг Бридж, Хонгуанг Таун, Смол энд Микро Интерпрайз Инновейшн Парк, Пиду Дистрикт, Чэнду, Сычуань, Китай (СН)**

Заявка № 2023720455  
Приоритет товарного знака **16 марта 2023 г.**  
Зарегистрировано в Государственном реестре товарных знаков и знаков обслуживания Российской Федерации **11 января 2024 г.**  
Срок действия регистрации истекает **16 марта 2033 г.**

Руководитель Федеральной службы  
по интеллектуальной собственности  
*Ю.С. Зубов*



Russian trademark



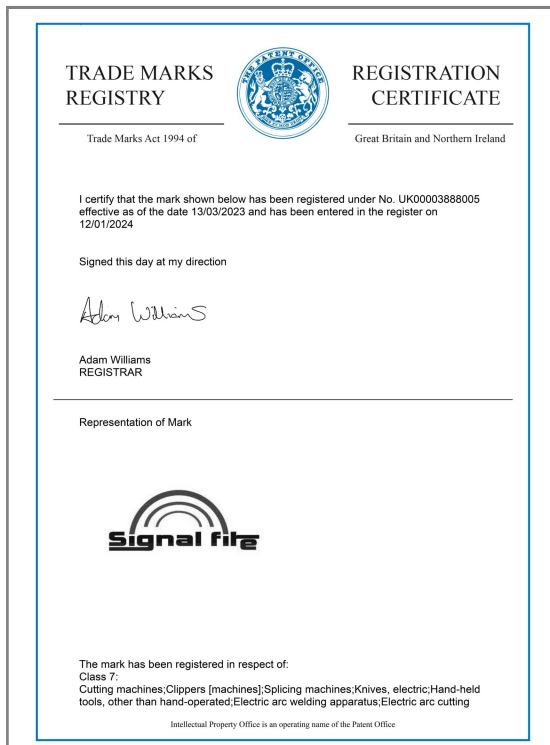
# International trademark



Indian trademark



Mexican trademark



UK trademark



EU Registration Certificate