

Welcome to



C-FLINK



www.c-flink.com





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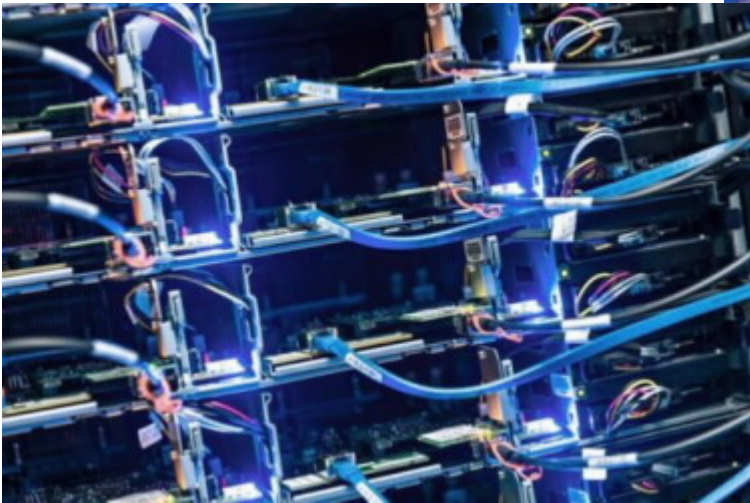
Company Introduction

Founded in:	March 2017
Registered Capital:	10 million RMB
Address:	No. 7 Guangtai Rd, Hui-nan Science Park, Zhongkai High-tech Zone, Huizhou, Guangdong Province, China
Main Business:	R & D and sales of DAC cables, AOC cables and transceiver modules
Workspace :	Plant area of 2000m ² (including 400m ² of dust-free workshop), 56 employees (15 technicians)
Certificates	ISO9001, CE, ROHS, FCC



Application

Data center, cloud storage, cloud computing interconnection



Company Introduction

Product Range:

Huizhou C-FLINK Technology Co., Ltd

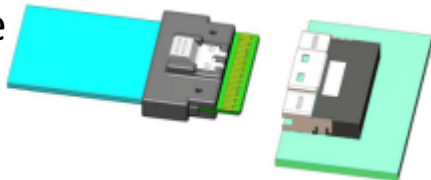
DAC Cable

Mini
sas



HD
mini
sas

Slimline
sas



SAS series- Applied
data storage.

QSFP28



Switch big data
transmission, up to
400Gps

Transceivers

SFP & RJ45 Module

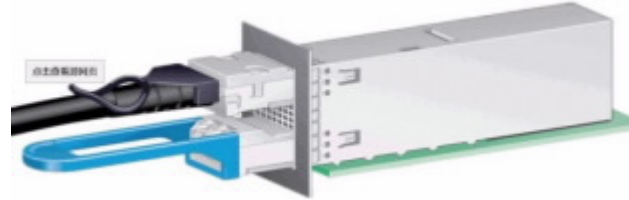


SR & LR module

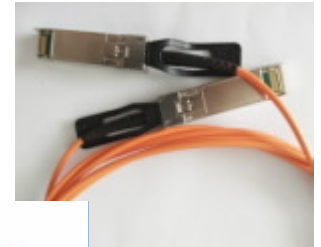
SFP28



QSFP DD 400G



AOC Cable



SFP AOC

QSFP
AOC



HD mini sas AOC

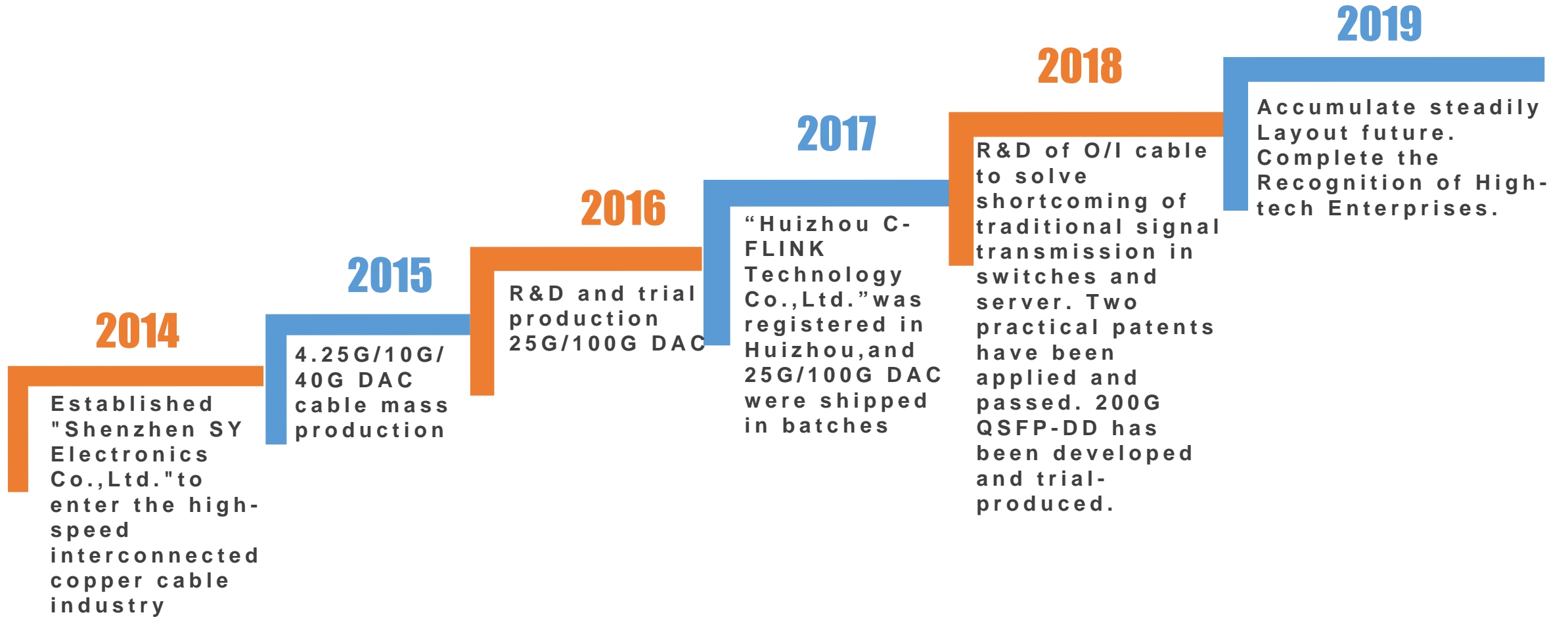
HDMI
AOC



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Company Introduction

Development History



Corporate Culture

Enterprise core values

- People-oriented innovation and pragmatism.
- Honest management, return society.

Enterprise spirit

- Professionalism, Integrity,
- Quality, Innovation.

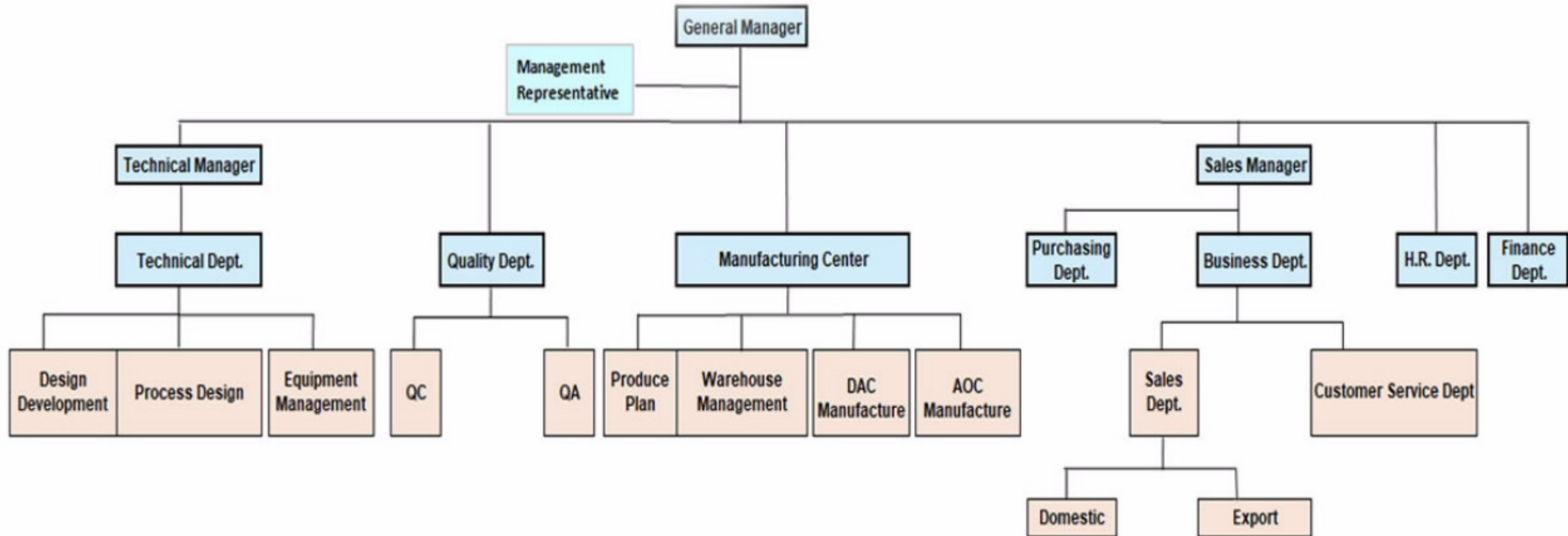
Service

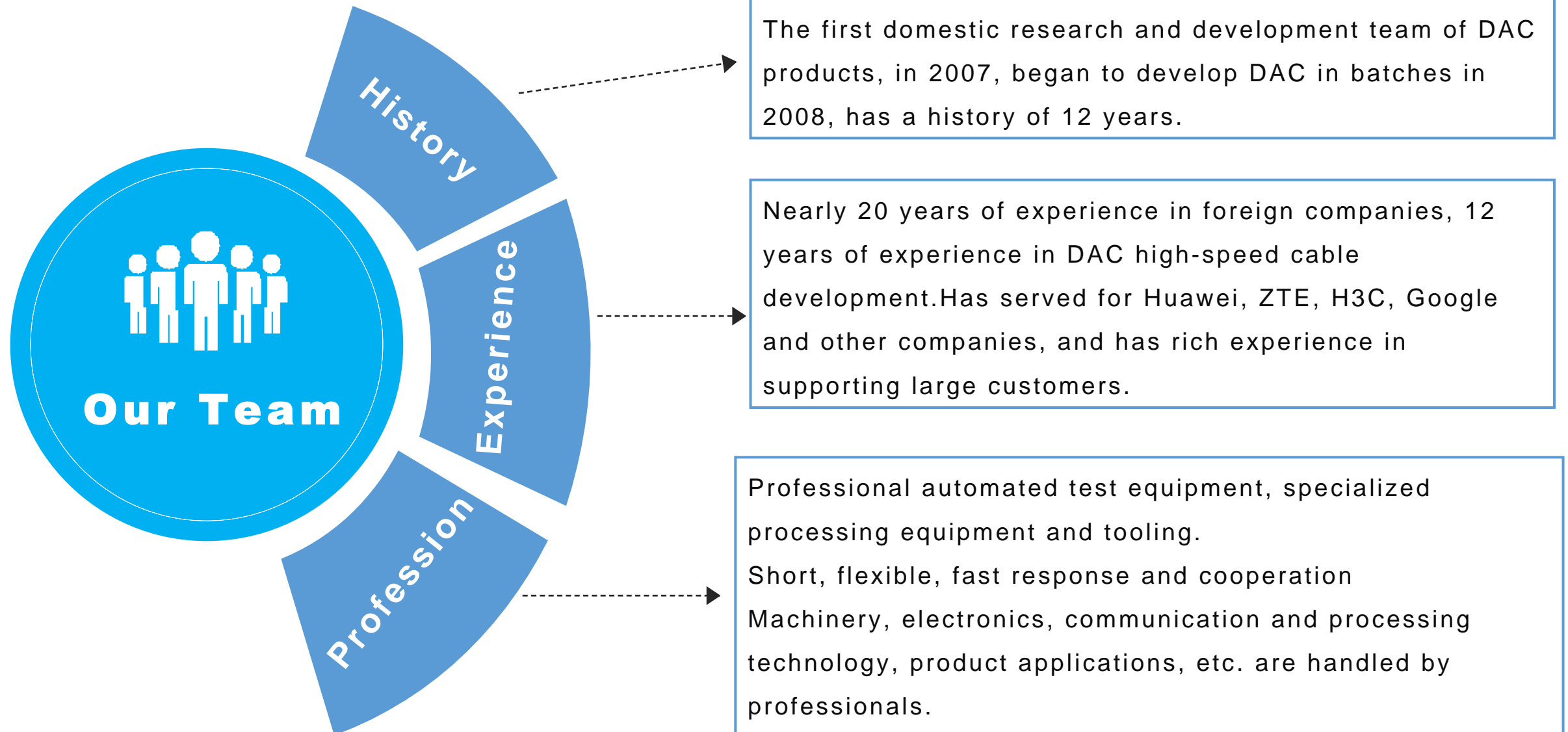
- More perfect design, better products, more reasonable prices, more considerate service.
- Customer needs oriented to bring more comprehensive solutions to customers.

Enterprise mission

- Excellent suppliers for data center and Cloud computing.

Organizational Structure



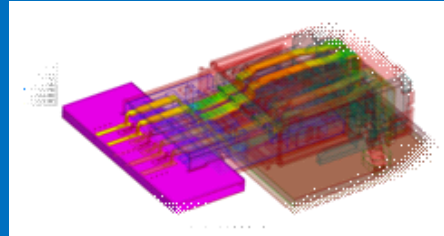


Company Overview

Software and Hardware Capabilities

Process Validation

AUTOCAD and Pro-E are applied to design verification, product data management and design communication to ensure product design reliability.



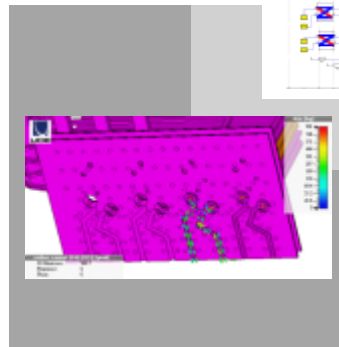
Signal Simulation

Cooperate with professional signal simulation institutions to simulate high-frequency signals in the early stage of product development, shorten product development cycle and ensure project progress.



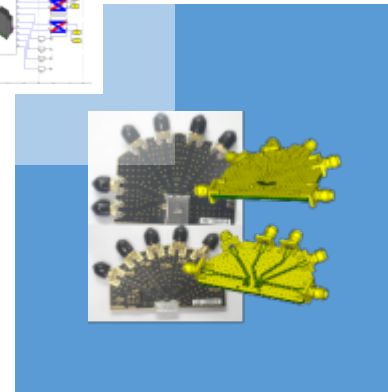
Product Development

Have rich experience in PCB material selection, circuit design and structural parts development for different speed products, and can independently complete all development of the entire product.



Test Equipment

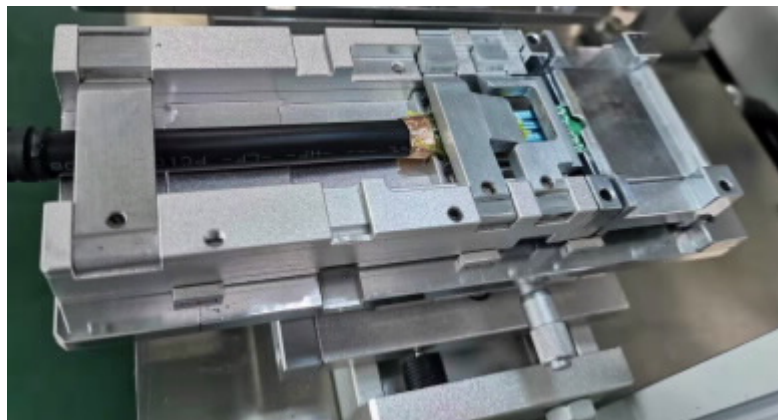
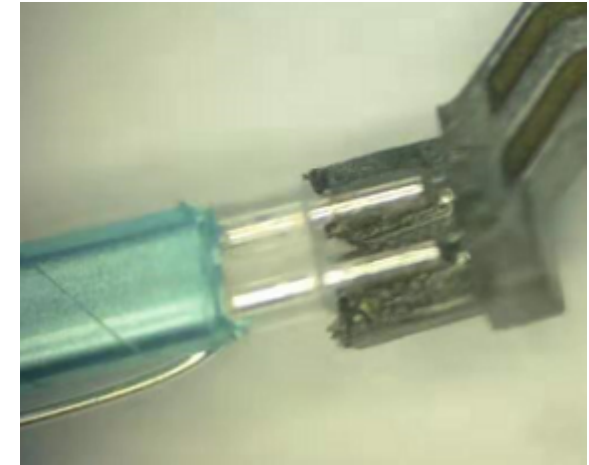
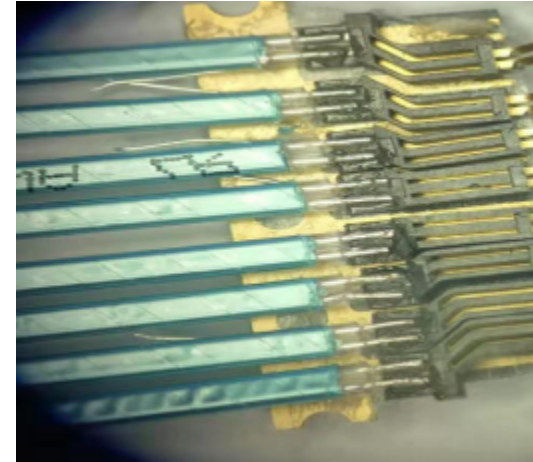
We have the ability to develop test fixture and switch independently, reduce product test cost and improve test efficiency.



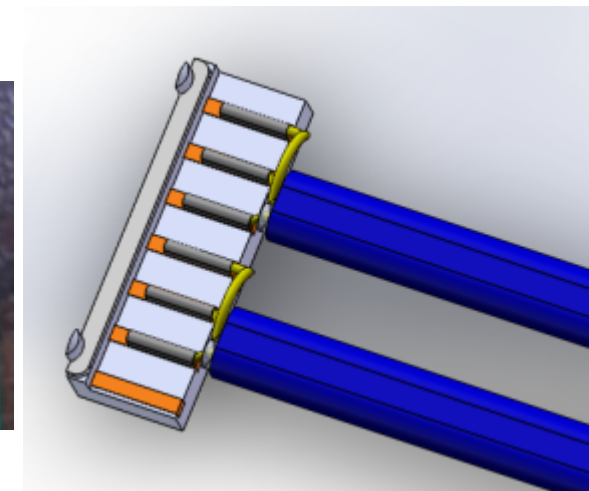
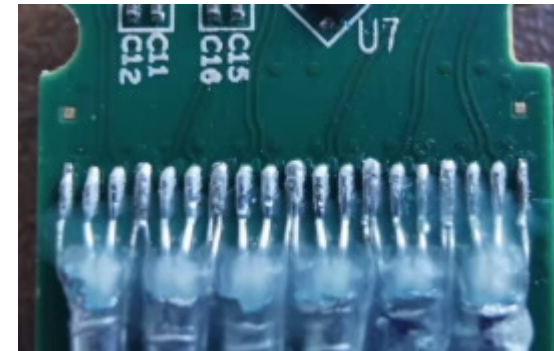
Mature and stable processing technology



High-density design, high-precision processing has always been a difficult problem in the industry, we can make the products refined, we have laid a solid foundation for future product orientation.



The unique processing technology ensures the integrity and consistency of the signal transmission of the product, and the overall process has its own invention patent.



Supply Chain Management

1. We choose the nearest supply chain to provide competitive and reliable components.
2. Meet ROHS and REACE standards.
3. We seek win-win results among the three parties.

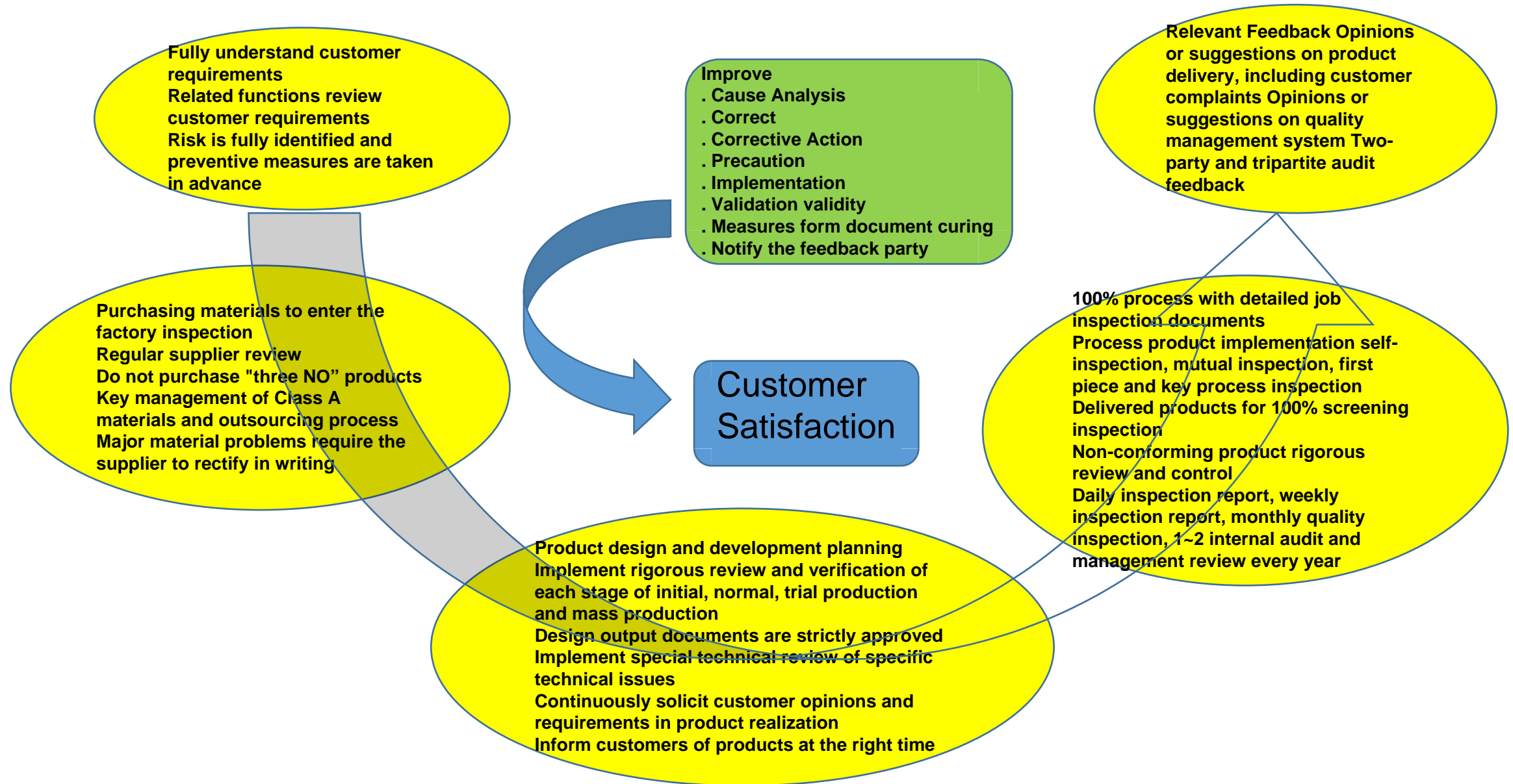
Supply chain
Management



Materials/Parts



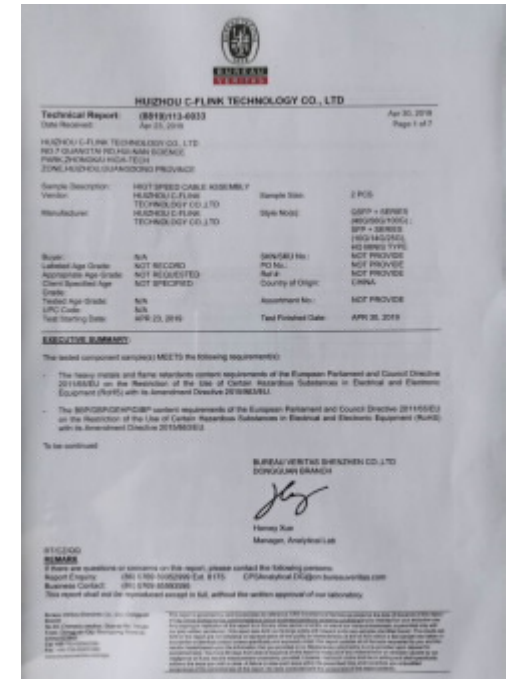
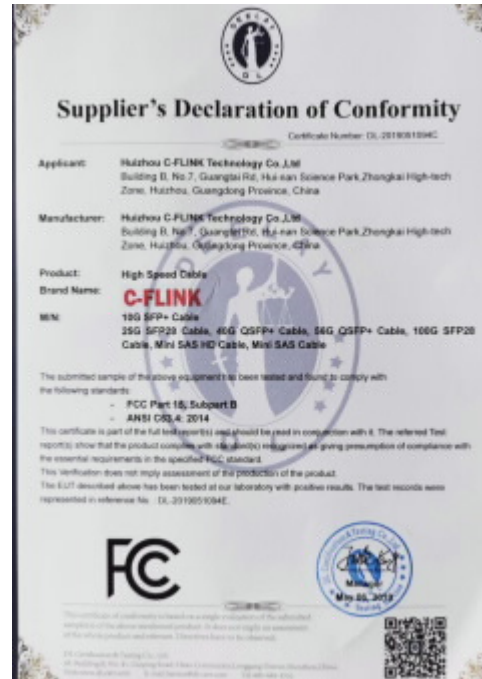
Strict Quality Management System



Our Quality Management

		
<h2>国际标准认证证书</h2>		
标 准:	GB/T19001-2016 idt ISO9001:2015	
证书编号:	UKS001-202402063	
获证商:	惠州市京阳网络科技有限公司	
证书持有者:	惠州市京阳网络科技有限公司 创研中心 (番禺) 454453000AAWAC2800 注册地址: 惠州市仲恺高新区江湾大道惠平路五福工业区广一街 经营地址: 惠州市仲恺高新区江湾大道惠平路五福工业区广一街	
认证范围:	通讯设备、电子产品、(通信网络) 的研发、生产及销售服务	
	通过中国合格评定认证 (深圳) 有限公司现场审核。 认证依据为 GB/T19001-2016 idt ISO9001:2015 标准的要求	
有效期:	本次发证日期: 2024 年 05 月 31 日 下次换证日期: 2025 年 05 月 30 日	
发证注册日期:	2024 年 05 月 31 日	注册有效期至: 2025 年 05 月 30 日
		
<p>本证书由本中心按照认证 (深圳) 有限公司认证规则及获证组织生产有效日期届满前经获证组织申请并缴纳本证书认证费后亦有效应继续认证中国合格评定认证 (深圳) 有限公司官方网站 www.uki-sz.com 或国家认证信息公共服务平台 www.cnca.gov.cn 上查询。</p> <p>地址: 中国·广东·深圳市福田区香蜜湖街道金岗社区金岗一路 154 号 邮编: 518032</p>		

ROHS

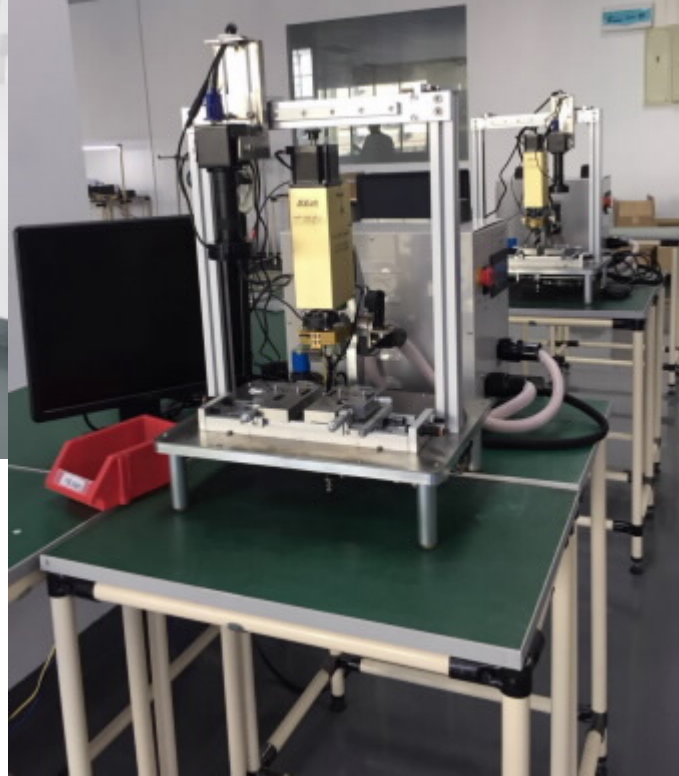


Capability

Our equipments



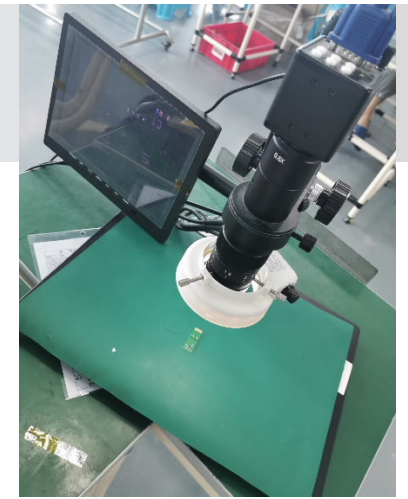
Automatic cutting machine



HB Welding machine



Dispenser



CCD Test



Hydraulic riveting machine



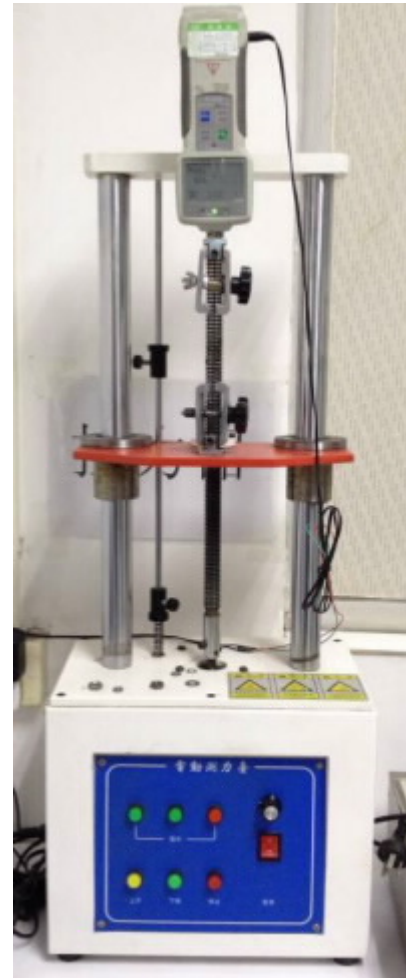
CO2 Cutting machine



YG Cutting machine



Swing test equipment
Salt spray test equipment

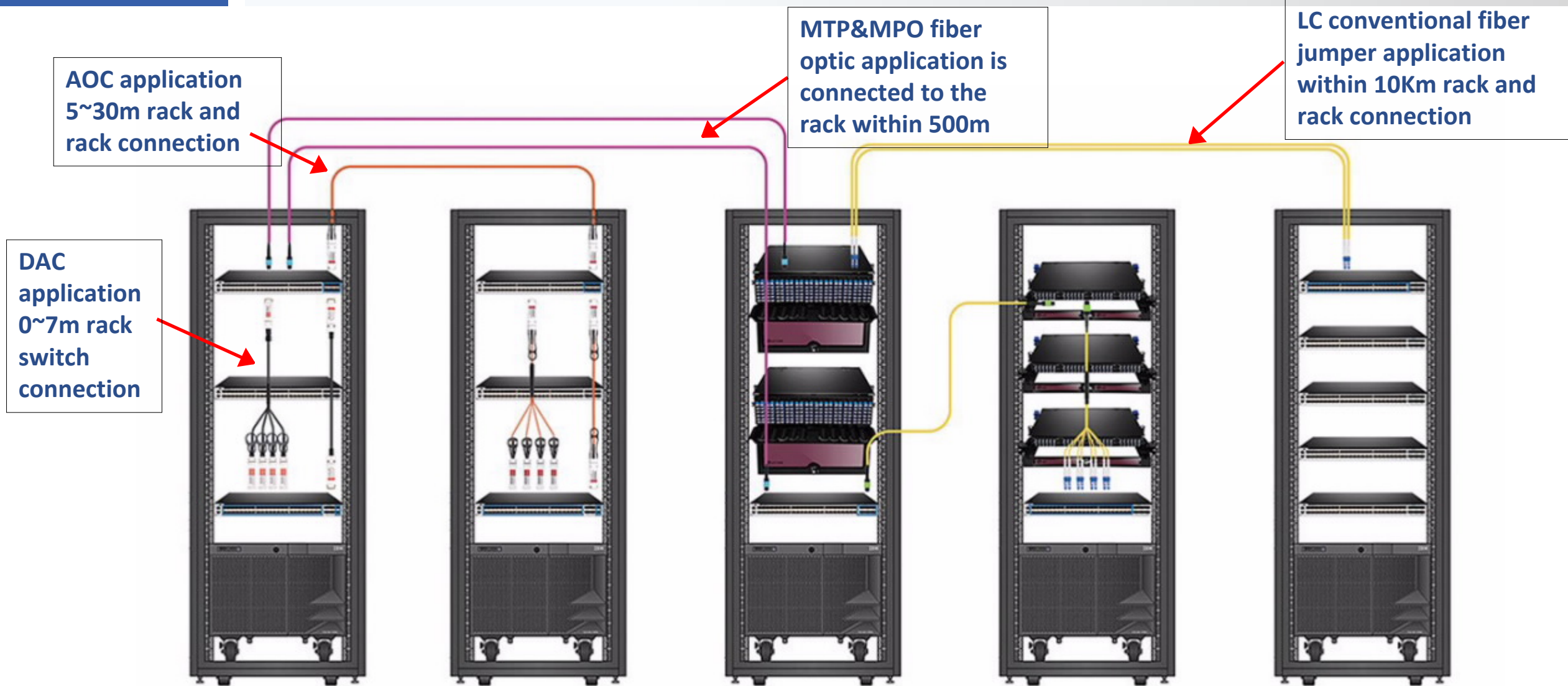


Tension machine

High and low temperature
Test Equipment

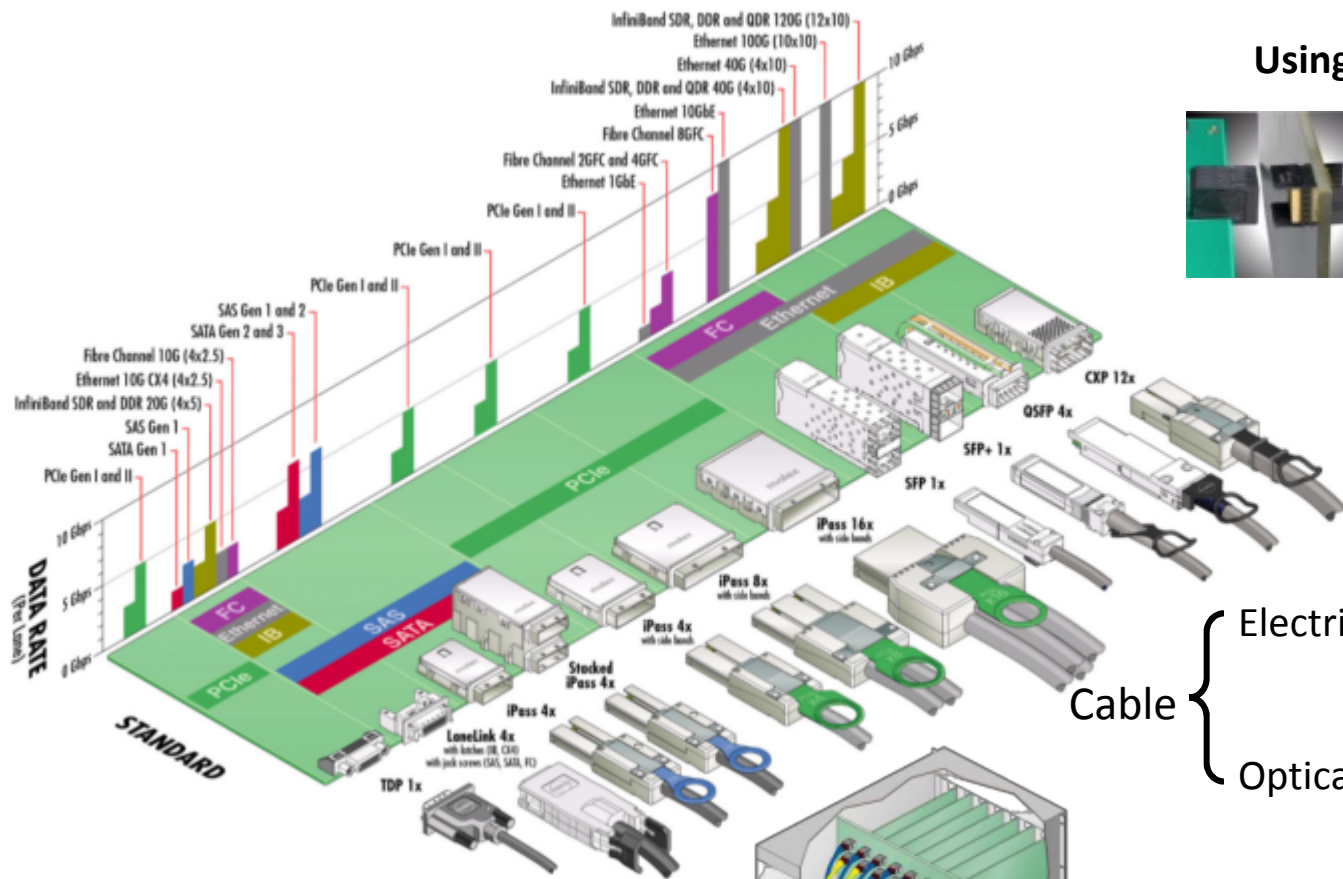


Data Center Cable Applications



Application

Data center & big data storage applications



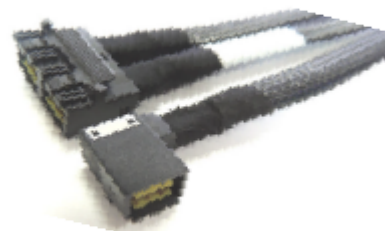
High-speed Interconnect Product Selection Solution

C-FLINK.COM 2018.8

速率	产品	传输距离	1Meter	3Meter	5Meter	7Meter	10Meter	15Meter	70Meter	100Meter	300Meter	500Meter	2KM	10KM	40KM	80KM	120KM
4.25G	SFP		Copper	Copper	Copper	Copper	Copper	Copper Active &AOC	AOC	AOC	SR			LH	ER	ZR	EZX
10G	SFP+		Copper	Copper	Copper	Copper	Copper	Copper Active &AOC	AOC	AOC	SR	LR	LR	LR	ER	ZR	
25G	SFP28		Copper	Copper	Copper	Copper Active &AOC	Copper Active &AOC	Copper Active &AOC	AOC	SR/OM4	LR	LR	LR	LR			
40G	QSFP+		Copper	Copper	Copper	Copper	Copper Active &AOC	Copper Active &AOC	AOC	AOC	SR4	PSM4 &CWDM4	CWDM4	LR4			
100G	QSFP28		Copper	Copper	Copper	Copper Active &AOC	Copper Active &AOC	Copper Active &AOC	AOC	SR/OM4		PSM4 &CWDM4	CWDM4	LR4			
6G	mini SAS		Copper	Copper	Copper	Copper	Copper Active &AOC		AOC								
12G	HD mini SAS		Copper	Copper	Copper	Copper	Copper Active &AOC	Copper Active &AOC	AOC	AOC							
120G	CXP		Copper	Copper	Copper	Copper	Copper Active &AOC	Copper Active &AOC	AOC	SR10							
10G	XFP		Copper	Copper	Copper	Copper	Copper				SR			LR		ER	TBD
4.5G	CX4		Copper	Copper	Copper	Copper	Copper										
200G	QSFP-DD		copper	copper	copper	Copper Active &AOC	Copper Active &AOC	Copper Active &AOC	AOC	SR8							
100G	micro QSFP		copper	copper	copper	Copper Active &AOC	Copper Active &AOC	Copper Active &AOC									
8G	Oculink		copper														
12G	Slimline SAS3.0		copper														
24G	Slimline SAS4.0		copper														
400G	iQSFP3		copper														
600G	iCXP4		copper														

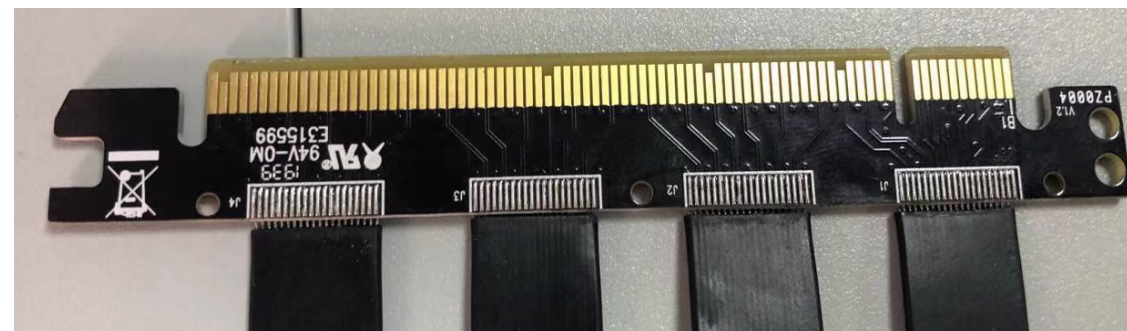
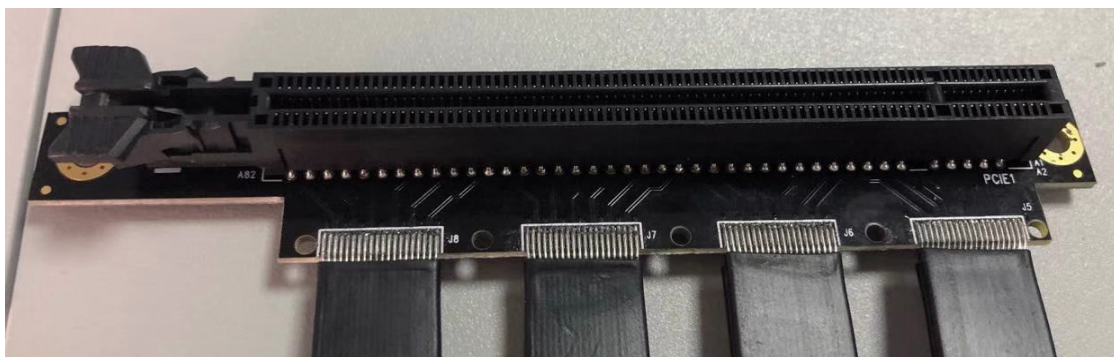
Internal Mini-SAS HD Cables Series

- SFF-8643
- 4i 36Pos 12Gbps/Channels (Dual ports 8i is available)
- With & Without side band or PCIe application
- Customize length for your application up to 1200mm
- Customize cables
- Plug type with Straight / Right Angle / Side Exits (Left & Right)
- Hybrid cables / Y cables



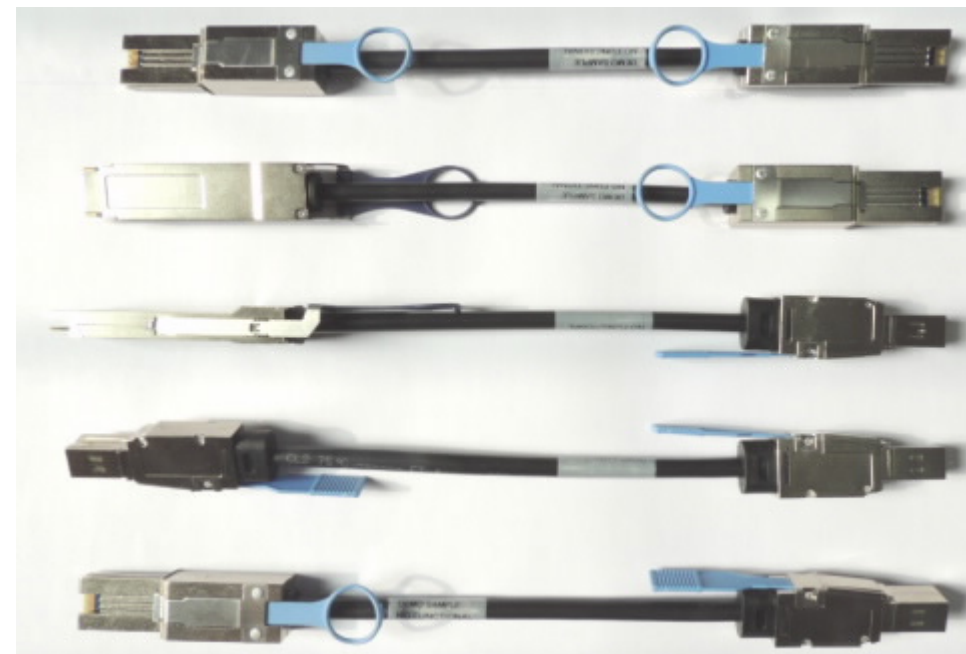
PCIE3.0&4.0 Cable

- . Comply with PCIE3.0 & 4.0 protocol requirements
- . Meet Gen3, Gen4, Gen5 design
- . Single-pass speeds reach 8Gbps, 16Gbps, 24Gbps
- . Meet the highest 56Gbps PAM4 signal requirements
- . Supports existing PCI hot-plug and hot-plug solutions
- . Supports end-to-end data integrity for high availability solutions

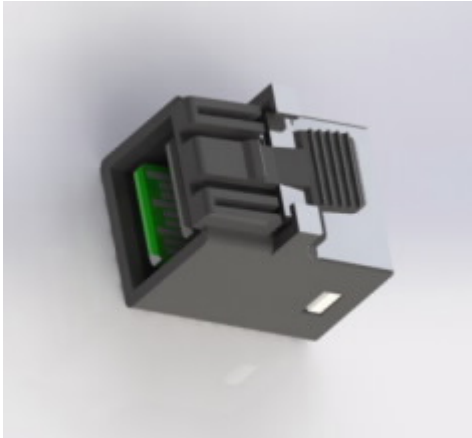


External Mini-SAS HD Cables Series

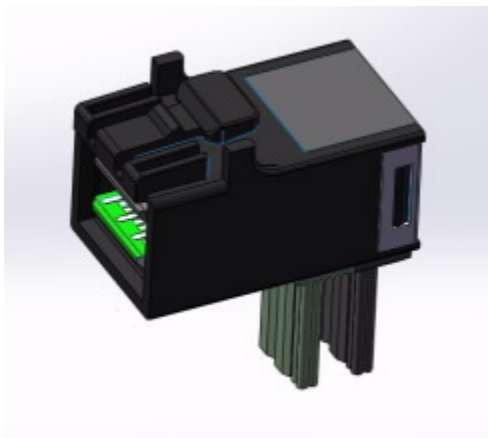
- . Compliant with external Mini SAS HD MSA SFF-8644 protocol
- . Compliance with single channel 6Gps and 12Gps SAS2.1 and SAS3.0 interface design
- . 4x36pos 12Gps/channel
- . Low power, EMI anti-jamming design
- . Support customer custom and hybrid cable
- . External Mini SAS supports 24~30AWG diversity selection, supporting passive 10M and active 15M transmission distance
- . Support serial port ID function via EEPROM
- . Meet REACH and ROHS



Different Right Angle Plug Design



SFF-8643
Short Body

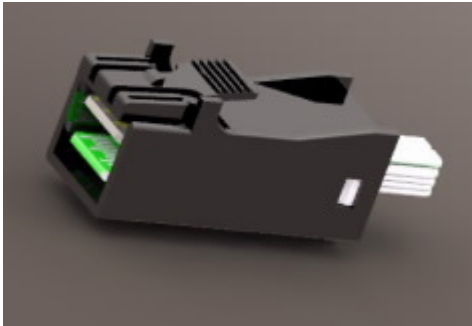


SFF-8643
Right Angle

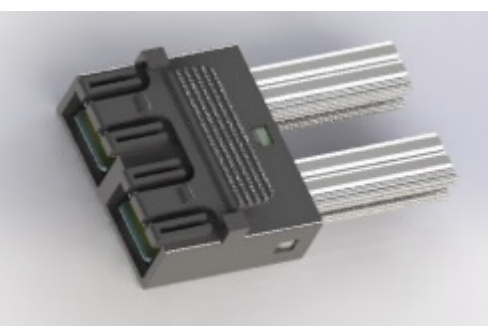


Discrete 4i/8i/12i/16i applications

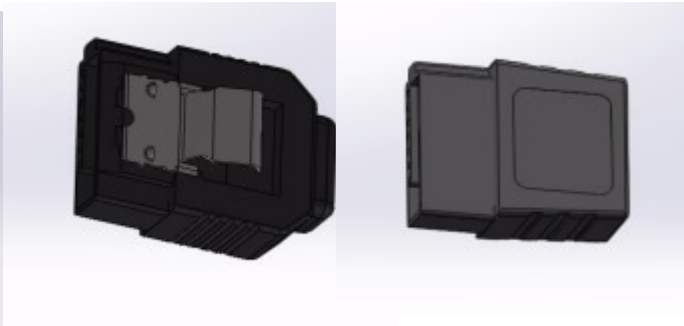
SFF-8643
Long Body



8i Dual Port
Short Body Type



SATA 6G/12G
with/without Latch



SAS Series



SFF-8644 to
4xSAS29P+4P



SFF-8644 to SFF-
8087



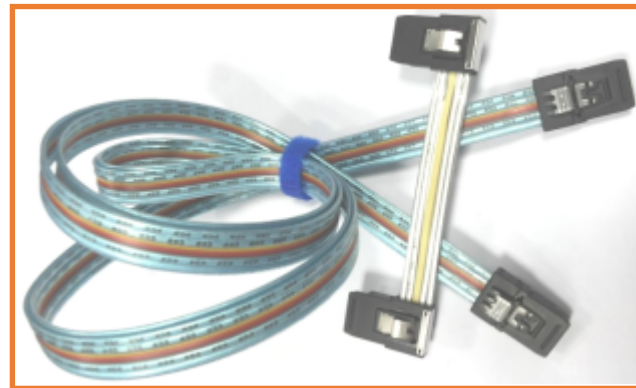
SFF-8087 to
4xSATA+4P



8639 68P to 8643 36P With
SATA 15P Power Flying



SAS7P/15P to
4xSAS29P



SFF-8087 with Ribbon SAS
Cable



SFF-8088 to SFF-
8087



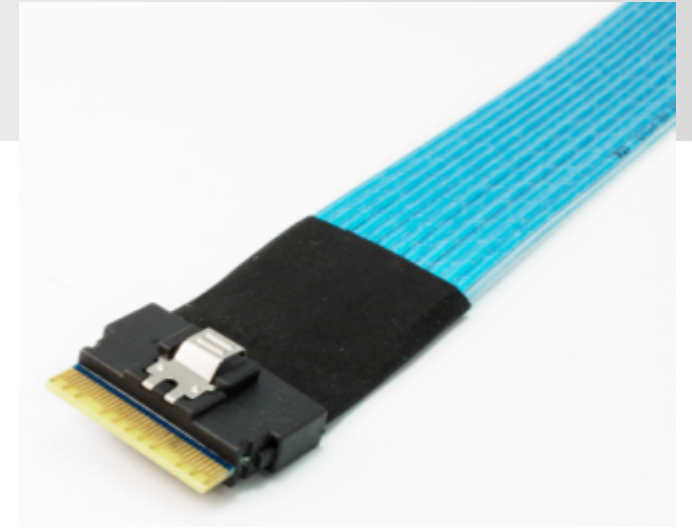
8639 68P to 8643 36P With
4P Power Flying

Slim SAS Series

C-FLINK's Slim SAS is developed to meet anticipated I/O and directly attached storage needs

Features:

- High density, flexible and compact
- A strong lock structure
- Supports transmission rate up to 24Gbps
- Signal plus clock
- 16 pairs of signals
- Compliant with SFF- 8654
- Support PCIe3.0 and PCIe 4.0
- 100Ω and 85Ω characteristic impedance for selection
- Operating temperature ranges from -20°C to 75°C

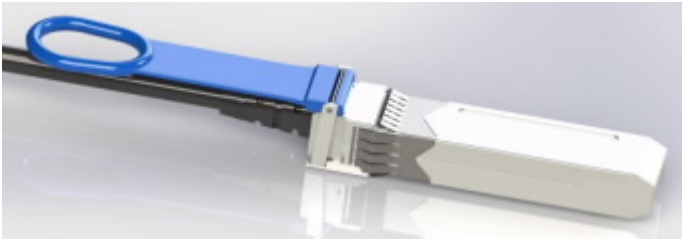


SFP+ Direct Attached Cable

Passive unlocking structure



- Small Form-Factor Pluggable - SFP, SFP+, SFP28(SFP+ EDR 25G)
- SFP-MSA/SFF-8431/SFF-8432/SFF-8461/SFF-8081
- Data-rate up to 25Gbps per channels
- 24 AWG to 32 AWG cable size available
- Customize length for your application up to 7M
- Compatible with IEEE 802.3by and IBTA EDR



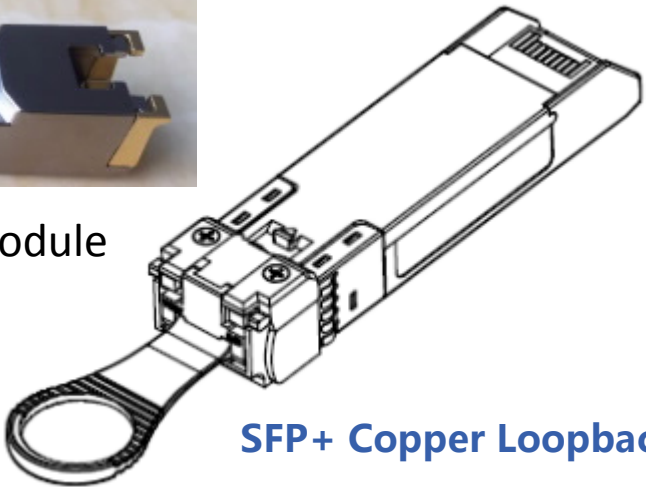
Active unlocking structure



SFP=4.25Gbps; SFP+=10Gbps; SFP++=14Gbps; SFP28=25Gbps



SFP & RJ45 electrical module



SFP+ Copper Loopbacks

Attenuation: 0dB, 3dB, 5dB
Power consumption: 0W, 1W, 1.5W

QSFP+ DAC Series

- 4 channel small hot plug transceiver QSFP, QSFP+, QSFP++,QSFP28(QSFP+ EDR 25G)
- Comply with QSFP-MSA / SFF-8635 / SFF-8636 / SFF-8665 / SFF-8685 protocol
- Supports up to 25Gbps data transmission rate per channel
- Cost-effective alternative to active optical cables
- Low power consumption, EMI anti-interference design
- Compatible with IEEE 802.3ba and InfiniBand
- Patented unlocking device for easier operation
- 24 ~ 30AWG wire gauge diversity choice, support passive 10M and active 15M transmission distance

QDR=40Gbps;
FDR=56Gbps;
EDR=100Gbps;
Intel Omni-Path100G

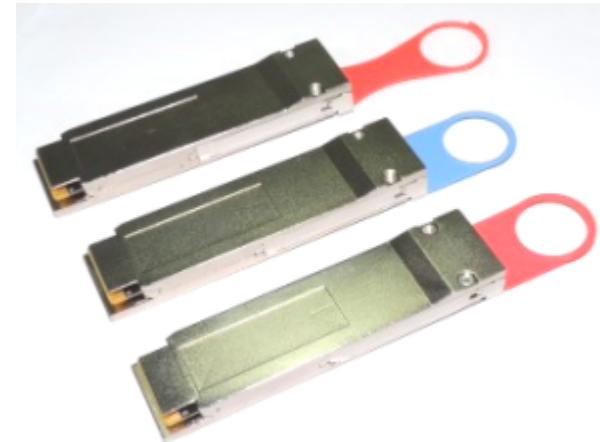
Copper DAC



QSFP to 4xSFP



Loopback



200G/400G QSFP DD DAC

QSFP-DD (four small form-factor pluggable dual density) doubles the density of QSFP interconnects using eight electrical interfaces that support 28 Gbps NRZ or 56 Gbps PAM-4 for 200 or 400 Gbps aggregation per port. The backward compatibility of the QSFP-DD portfolio allows existing QSFP modules to be plugged into QSFP-DD ports. The QSFP-DD housing features a proprietary heat sink design, which makes it the only low cost solution for 15-18W applications-providing superior thermal and signal integrity performance.

Features :

1. Double the QSFP density through 8 differential pairs, each can reach 50Gbps to achieve 400G
2. Provides excellent thermal performance and signal integrity performance
3. Support next-generation high-density data center / cloud computing data transmission solutions
4. Comply with IEEE 802.3cd SDD21
5. 16 pairs of 28AWG cable maximum installation (2.5m), minimum of 32AWG

Structural Combination :

- . QSFP-DD to QSFP-DD
- . QSFP-DD to 2x or 4x QSFP28/56
- . QSFP-DD to 8x SFP28/56



- . Compliant with Ethernet SFF-8431&IEEE802.3.ba/bj
- . Transmission rate up to 1/2/4/8/10/25Gbps
- . Supporting I2C two-wire serial interface
- . 850nm VCSEL laser and PIN photo detector
- . 10G SFP AOC supports up to 150m with OM2 fiber and 300m with OM3 fiber
- . 10G SFP AOC supports up to 70m with OM3 fiber and up to 100m with OM4 fiber
- . Operating temperature 0℃ to 70 ℃
- . Power supply voltage 3.3V
- . Hot plug/low power/good EMI performance
- . Compliance with REACH and ROHS
- . Meet Infiniband: SDR (2.5Gbps), DDR (5Gbps), QDR (10Gbps), FDR (14Gbps), EDR (25Gbps)



- . Compliant with SFF-8436/ Ethernet IEEE802.3Ba; 25G/100G Ethernet IEEE802.3Bj
- . Supporting transmission rate 40G(4X10Gbps), 100G(4X25Gbps)
- . Supporting I2C two-wire serial interface
- . 850nm VCSEL laser
- . 40G supports up to 70m with OM2 fiber and 100m with OM3 fiber
- . 100G supports up to 70m with OM3 fiber, and 100m with OM4 fiber
- . Operating temperature 0°C to 70 °C
- . Power supply voltage 3.3V
- . Hot plug/low power/good EMI performance
- . Meet Infiniband: SDR (2.5Gbps), DDR (5Gbps), QDR (10Gbps), FDR (14Gbps), EDR (25Gbps)
- . Compliance with REACH and ROHS



Mini SAS HD AOC Series

Mini SAS HD AOC is fully compliant to SAS2.1 and SAS3.0 industry standards as well as the SFF-8644 interface standard. The managed interface includes connection discovery functionality, I2C bus communication, and the capability to customize labeling and MCU memory map extensions. Compared to conventional copper cables, longer, lighter, and flexible optical cables enable the data-center cabling more convenient. High-quality 850nm VCSELs and PIN PDs are utilized in the AOC cables, with superior signal integrity and bit-error-rate performance, which enables reliable operation performance.

- Full duplex 4 channel 850nm parallel active optical cable
- Transmission data rate up to 12Gbps per channel
- Meet sff-8644 mini SAS HD compatible
- Hot plug electrical interface
- Differential ac coupled high speed data interface
- 4 channels 850nm VCSEL array
- 4 channels PIN photo detector array
- Links up to 100m over OM3 MMF
- Low power consumption <1W (per end)
- Operating temperature 0°C to +70°C
- 3.3V power supply voltage
- Comply with REACH and ROHS



Features

- . Transmission rate 10Gbps
- . Plug and play, easy to use
- . Support all optical fibers (not USB 2.0) and mixed copper optical cables (USB 2.0)
- . Fully compatible with USB3.1 second-generation specifications
- . USB power supply, no additional power supply

Applications

Used in personal computers and laptop computers, medical imaging equipment display, blue light, 3D video, projector, set-top box, DVR, game console, LED signs, airport, stadium and outdoor advertising panel information display.



- . Support bandwidth 10Gbps
- . Support distance up to 300 meters
- . Optical Converter 850nm VCSEL
- . Power supply voltage 5V
- . Operating temperature 0~80°C
- . Connector Type USB Type A and Type C
- . Cable Type All Fiber, Hybrid Copper Fiber
- . Differential input impedance 100 ohms
- . Differential output amplitude 940mV
- . Compliance with regulations
- . USB 3.1 second generation super high speed
- . USB 2.0 high speed / full speed with copper wire

Features

1. Support HDMI 2.1 and HDCP 2.2
2. The Image transmission with out signal compression, the image quality with out distortion
3. Support DDC CEC HPD ARC HEC signal transmission
4. OM3 multimode fiber, 18Gbps band width transmission distance upto 100 meters
5. Support all 4Kx2Kx60 optical converter
6. Standard HDMI interface, comply with HDMI 2.1 specification
7. EMI/RFI impedance
8. 850nm VCSEL and PIN photodetector
9. Plug and play, no external power supply or signal amplifier
10. Cable outer diameter only 4.2mm, suitable for small space installation construction

Applications

This product is widely used in large international conference center, home theater, gymnasium, commercial cinema, medical equipment, industrial automation, large ornamental Hall, International Exhibition Hall, Outdoor screen advertising, Airport, Railway display screen and soon



Figure 1 Cable Structure



Absolute Maximum Ratings

Parameter	Min	Typ	Max	Unit	Note
Transmission rate		18	48	GHz	Total bandwidth
Operating temperature	-20	25	50	° C	
Power consumption		0.6	1	W	
Operationg voltage	4.5	5	5.5	V	
Operating current		70	120	mA	RX
		60	100	mA	TX
Tensile Strength		200		N	Short-term 300N Long-term 150N
Crush Resistance		100		N	Short-term 500 N/100mm Long-term 100N/100mm
Bending radius	20	40		mm	static 40mm, dynamic 80mm
Repeated bending		2000 0		次	180° Swing Sheath without cracking

Parameters

Parameter	Min	Typ	Max	Unit	Note
Cable outer diameter	3.8	4.2	4.5	mm	
Cable length	1	30		M	
Refresh rate	Up to 120 Hz			Hz	MAX Support 120Hz 1080P & 2160P 4:2:0
Support resolution	Up to 4Kx2K			px	4Kx2K 4:4:4 60Hz
Support 3D	Yes				
Support HDCP	HDCP1.4/HDCP2.2				
Wavelength	850			nm	
Execution error rate	1.00E-12				
Output power	Class 1				EN 60825-1 2007 EN 60825-2 A2 2010
Ethernet	Yes				
Audio return	Yes				
CEC	Yes				
Hot pluggable	Yes				

Specifications

Parameter	Min	Typ	MAX	Unit	Note
Cable specification	Optical fiber	4*OM3-850		nm	Four optical and seven electric hybrid copper-optical cable
	Copper cable	AWG20+AWG22+5*AWG28		UIT	
Mechanism specification	19			Pins	HDMI A Type Port
Environmental performance	complies with RoHS				

SFP+ /SFP28 SR Transceiver

DESCRIPTION:

- Compliant with SFF-8431/ SFF-8402&IEEE802.3.Ba/IEEE802.3.Bj
- SFP SR Channel Data Rate up to 10.3125Gbps;SFP28 SR Channel Data Rate up to 25.78125Gbps
- Digital diagnostics functions are available via the I2C interface
- 850nm VCSEL laser and PIN photo-detector
- 10G SR Maximum link length of 150m on OM2 MMF and 300m on OM3 MMF
- 25G SFP28 SR Maximum link length of 70m on OM3 MMF and 100m on OM4 MMF
- Commercial temperature range(COM): 0 to 70°C
- Single 3.3V power supply
- Duplex LC Connector Interface
- Compliant with RoHS



QSFP+/QSFP28 SR Transceiver

DESCRIPTION:

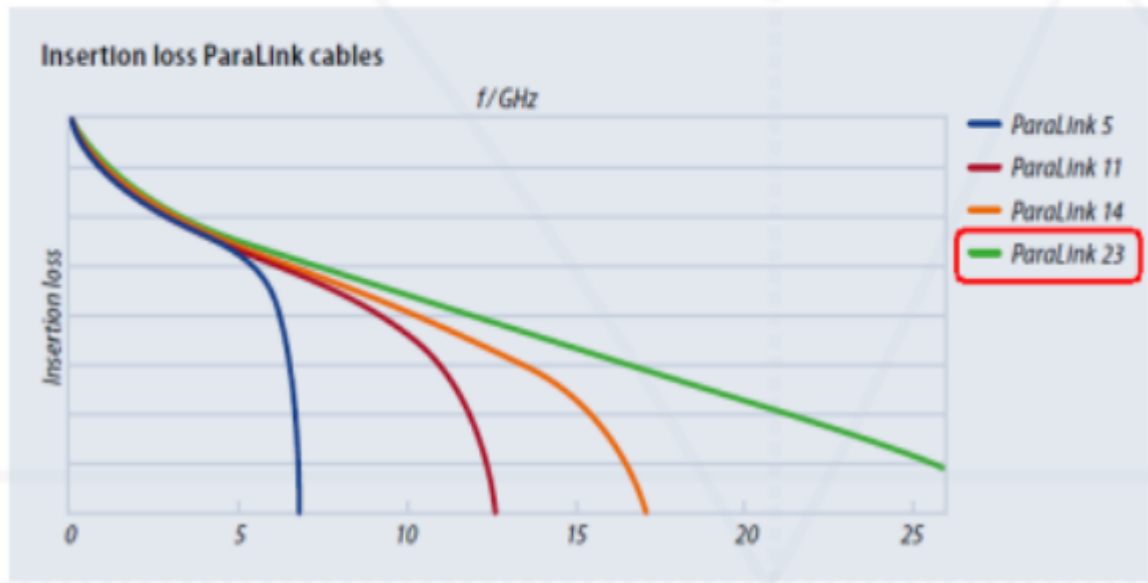
- Compliant with SFF-8431/SFF-8402 & IEEE802.3.Ba/IEEE802.3.Bj
- SFP SR supports transmission rate of 10Gbps, SFP28 SR supports transmission rate of 25Gbps
- Support I2C two-wire string interface
- DDM protocol function
- 850nm VCSEL laser and PIN photodetector
- 10G SFP SR can meet transmission within 300 meters
- 25G SFP28 SR can meet transmission within 100 meters
- Operating temperature 0°C to 70 °C
- 3.3V single power supply
- LC pluggable dual connection design, convenient for dynamic and flexible configuration data connection application
- Compliant with REACH and RoHS



Leoni & Belden & LTK

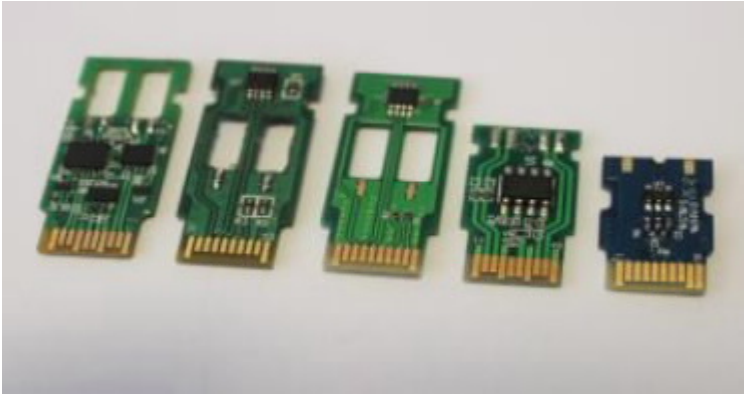
1. Optimised signal integrity

- technical expertise leads to suck-out free frequency ranges up to 26 GHz, as well as excellent XT and shielding performance
- insertion loss 15 – 20 % improvement in different frequency ranges with an insertion loss variation (ILV) of $\pm 5\%$
- shielding effectiveness (EMC) up to 90 dB



AWG	Single pair	1x	4x
30	L45468-J112-C60	L45468-J12-C855 (PVC)	L45468-J412-C855 (PVC)
		L45468-J12-C856 (FRNC)	L45468-J412-C856 (FRNC)
28	L45468-J113-C60	L45468-J13-C855 (PVC)	L45468-J413-C855 (PVC)
		L45468-J13-C856 (FRNC)	L45468-J413-C856 (FRNC)
26	L45468-J114-C60	L45468-J14-C855 (PVC)	L45468-J414-C855 (PVC)
		L45468-J14-C856 (FRNC)	L45468-J414-C856 (FRNC)
24	L45468-J115-C60	L45468-J15-C855 (PVC)	L45468-J415-C855 (PVC)
		L45468-J15-C856 (FRNC)	L45468-J415-C856 (FRNC)

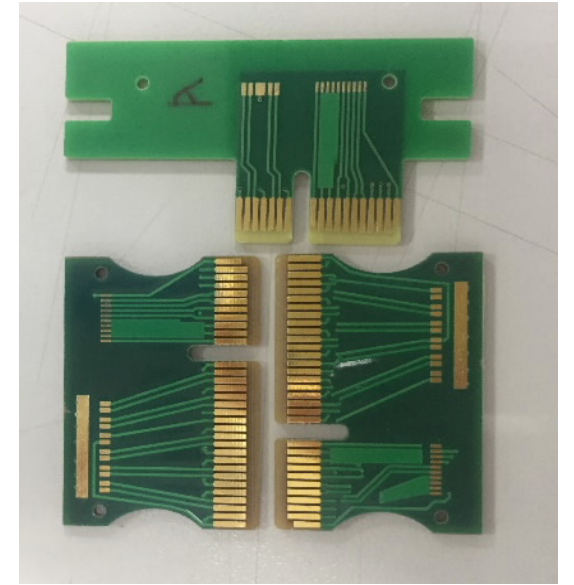
PCB Materials	Price Level	Data Rate Applications	Product Applications	Selection
FR4 Hi-Tg	Low	<6Gbps/Channel	Mini-SAS 6G	Major
FR-370HR	Middle	<16Gbps/Channel(FDR)	Mini-SAS HD, SFP+, QSFP+,	Major
FR-406HR				N/A
FR-408HR	High	>25Gbps/Channel	Mini-SAS HD 24G	24G
Panasonic M6/M7/M8	Very High	>25Gbps/Channel(EDR)	SFP28, QSFP28	EDR 28G
ROGERS 4350	Expensive		SI Test Boards	Test Boards



SFP+ series

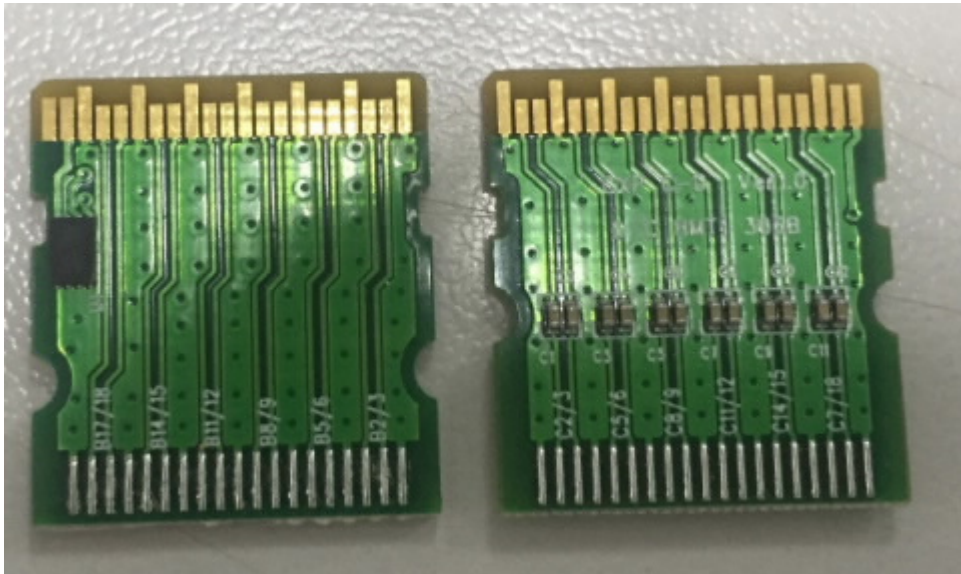


Mini SAS series



PCIE series

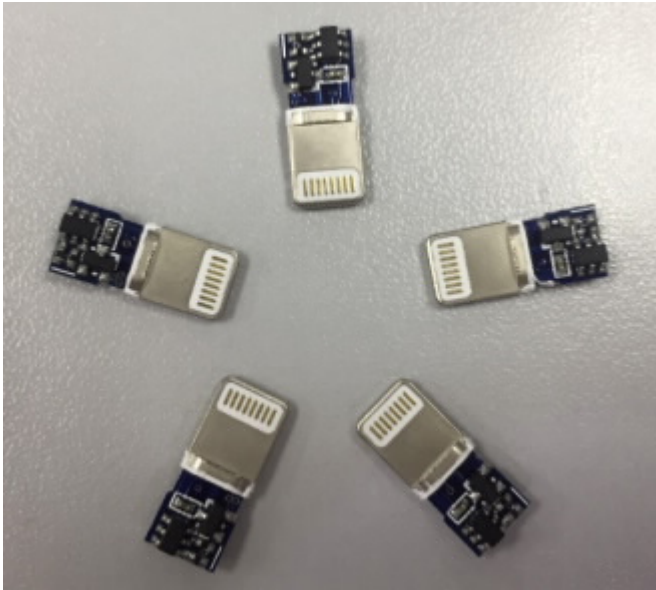
CXP series



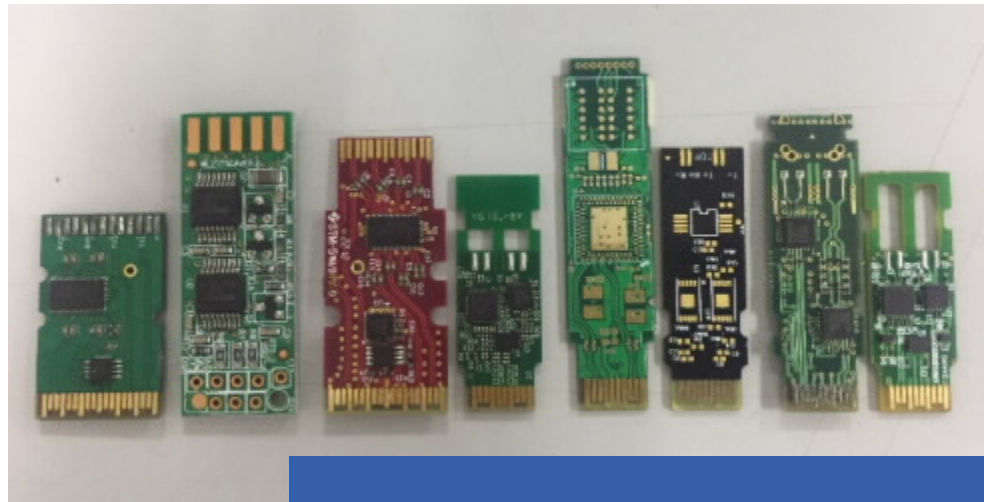
HD mini SAS series



Apple interface



USB TYPE-C



AOC and Active series

SI Test Boards Design

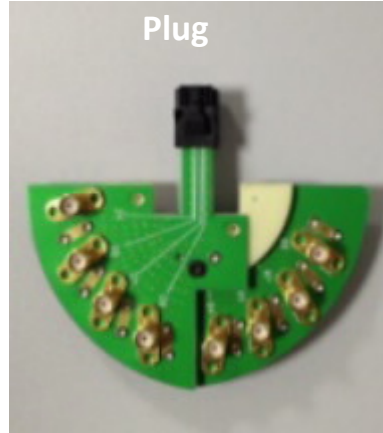
Int. Mini-SAS



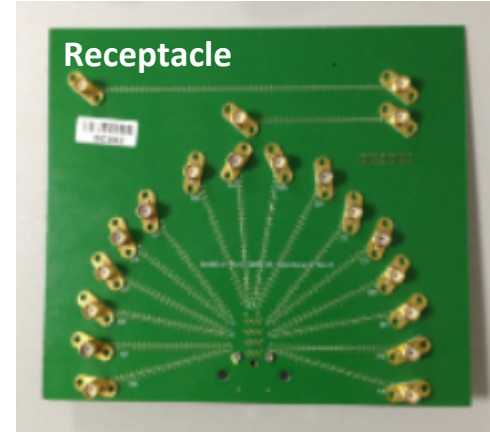
Ext. Mini-SAS



Int. Mini-SAS HD



Int. Mini-SAS HD



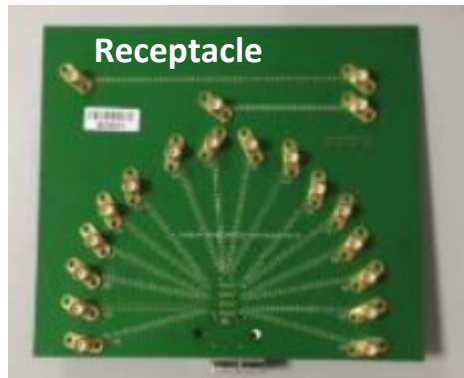
Int. Mini-SAS HD



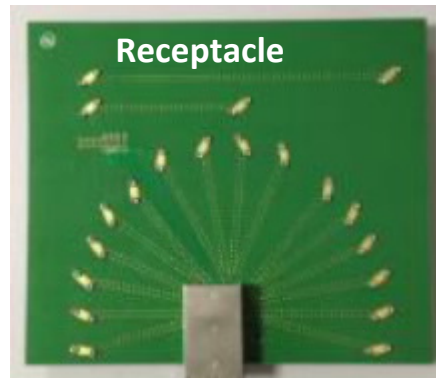
Ext. Mini-SAS HD



Ext. Mini-SAS HD



Ext. Mini-SAS HD



QSFP+ FDR



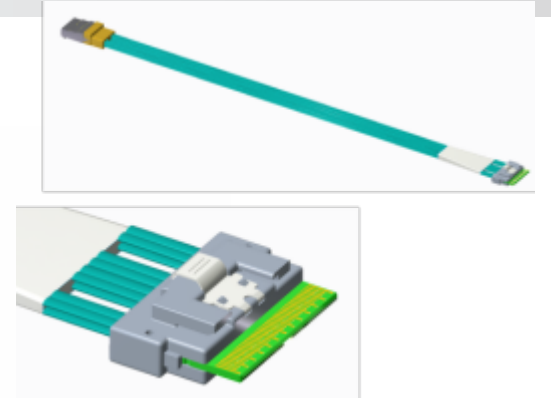
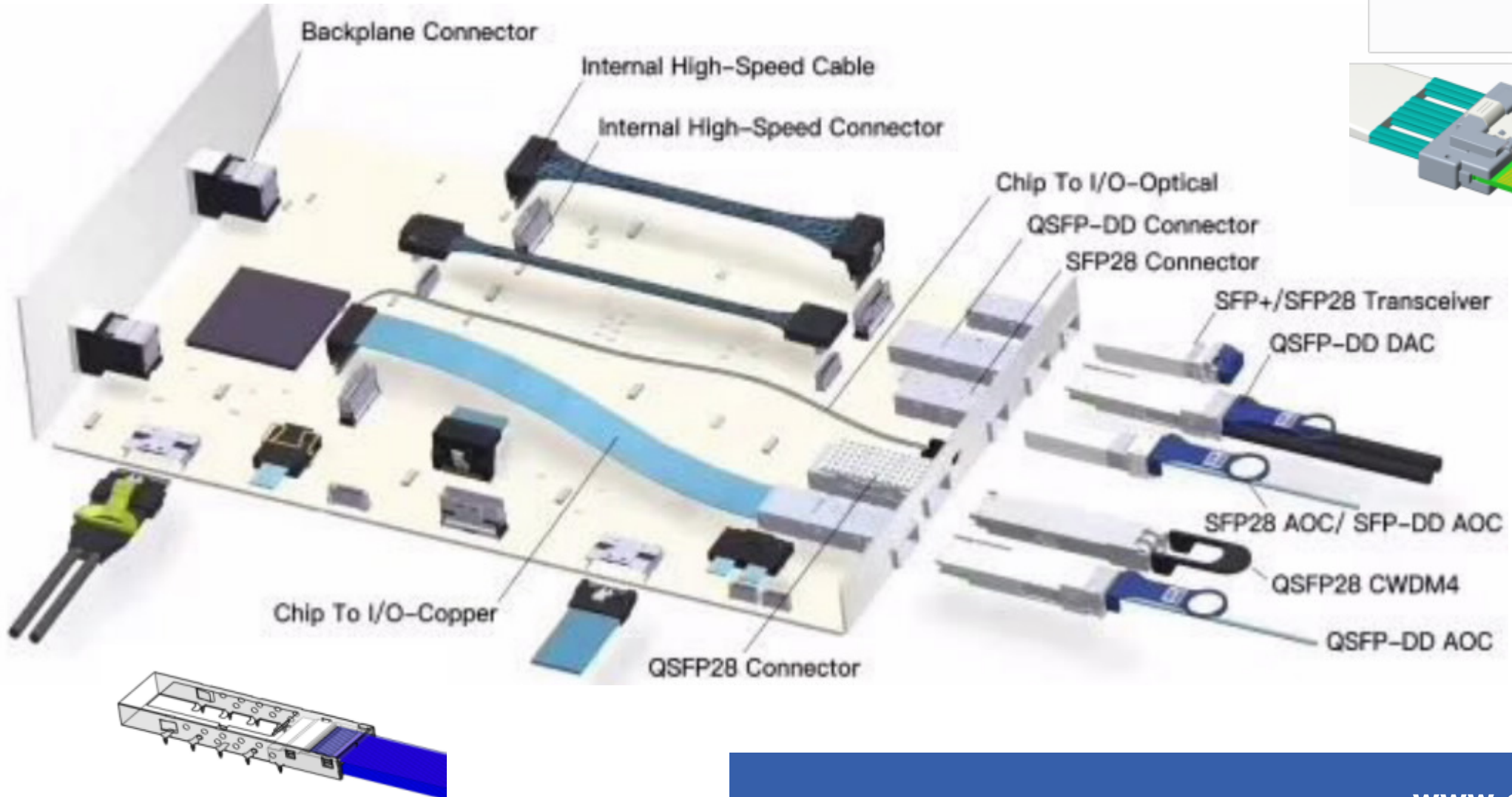
SFP+ FDR



High Speed Interconnectivity Solutions Roadmap				
Internal Cables	Mini-SAS 12G	Slimline SAS 4i&8i 12G	Slimline SAS 4i&8i 24G	
	Mini-SAS HD 12G		Mini-SAS HD 24G	
		OCulink/Nano-Pitch		
External Cables	SFP28 Passive	Intel Omni-Path SFP28-25G		OSFP 400G
	QSFP28 Passive	Intel Omni-Path QSFP28-100G	QSFP DD 400G Passive/Active	micro QSFP 200G
	Mini-SAS HD 12G	Mini-SAS HD 24G	Mini-SAS HD 24G Active	
		SAS 4.0 24G	SAS 4.X 48G	
Timeline	2017	2018	2019	2020

Future

The future application and development of high-speed cable in data center



EEPROM compatibility

We have successfully tested, and in several cases supplied, our DACs with all the handshaking firmware listed as follows :

***Cisco
Mellanox
Huawei
Juniper
Dell&EMC
Arista
Broadcom
Qlogic(Cavium)
Chelsio
Intel
HP***

***Alcatel Lucent
Allied Telesis
SolareFlare
Winyao
ZTE
D-Link
TP-Link
Ruijei
Maipu
Feixun
H3C***

***Brocade (Broadcom)
Netgear
SMC
Foundry
Force 10(Dell)
Linksys
McAfee
Extreme
Marconi
Blade***





Thank you!

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C-FLINK

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