



詮欣股份有限公司  
CHANT SINCERE CO., LTD.

# FAKRA





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## About Chant Sincere

■ **Chant Sincere Co.,Ltd.** was set up in 1985., With the management concept of "Honest, Innovative, Quality, Longterm" to design and manufacture connector and cable. Keep developing new innovative products and integrating vertically from R&D, tooling, assembly and quality control to meet the demands (quality/cost/delivery) from customers. Chant Sincere Co.,Ltd. Has been constructing various of product families to provide a total solution to customers.

The connector and cable products are widely used in many different application, such as Computing, Industrial & Automation, Telecommunication, Automotive, Waterproof, Consumer and Medical Industry.

■ **Chant Sincere** won the "National Bedrock Award" & "Small Giant Award" from Taiwan Connector maker competition and got many "Best Supplier awards" from Global customers.

We are focusing on improving our design and manufacture technology, and we have been applying for a lot of international patents for our products including I/O connector, Board to Board connector, Waterproof connector, Industrial Connector, Automotive connector, Memory Card connector and adaptor, High Speed connector and cable (USB3.1), Audio & Vidio connector and cable (HDMI, Display Port)...etc.

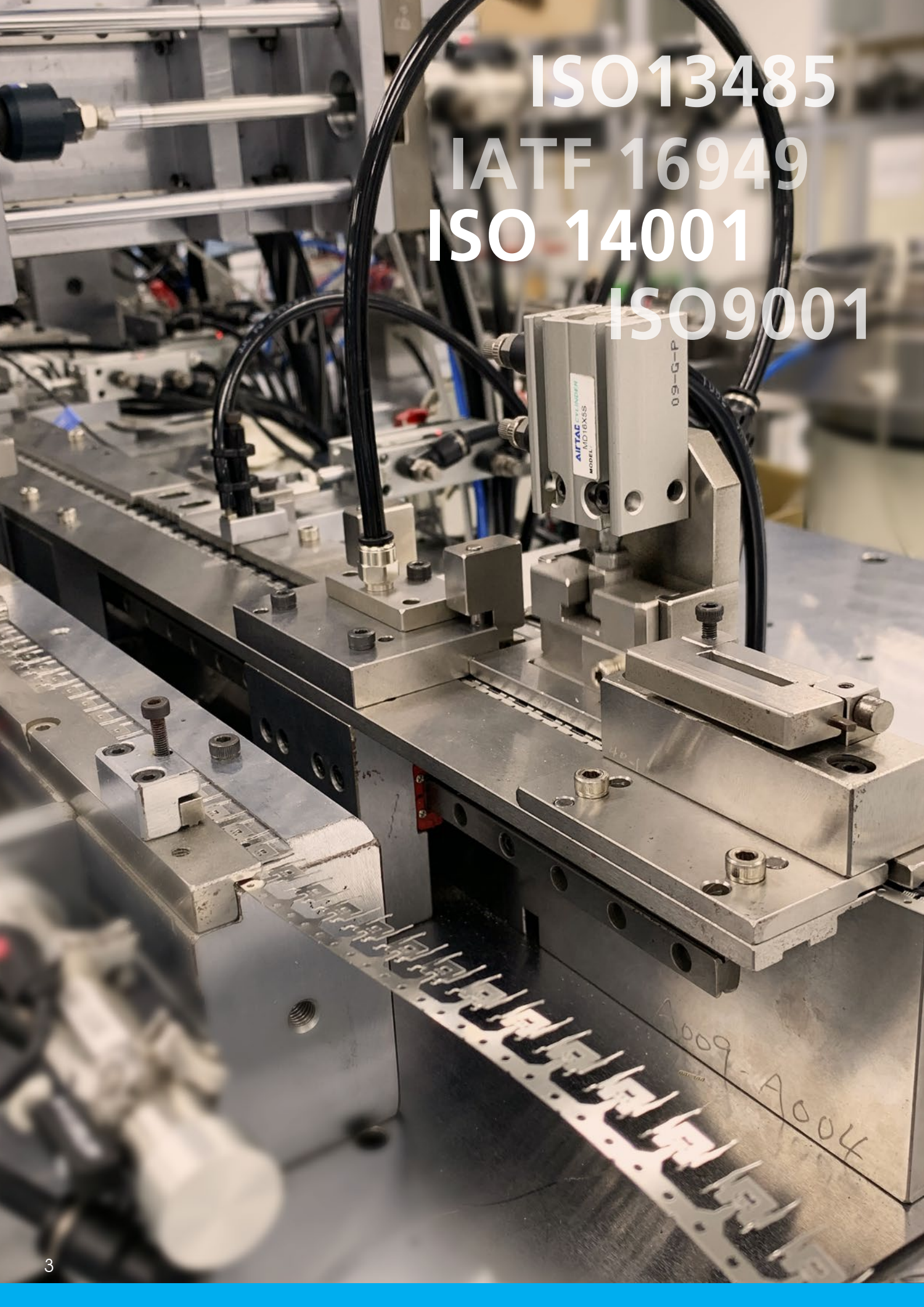
Chant Sincere Co.,Ltd. Has been growing up as a global professional manufacturer for connector and cable.

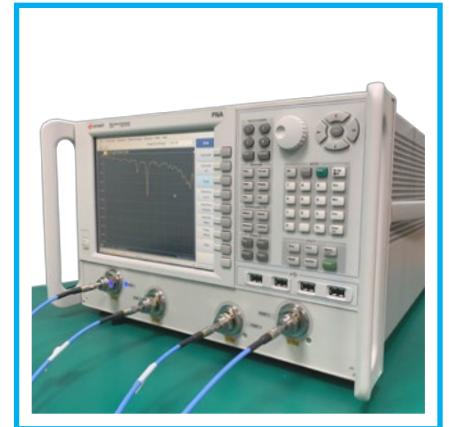
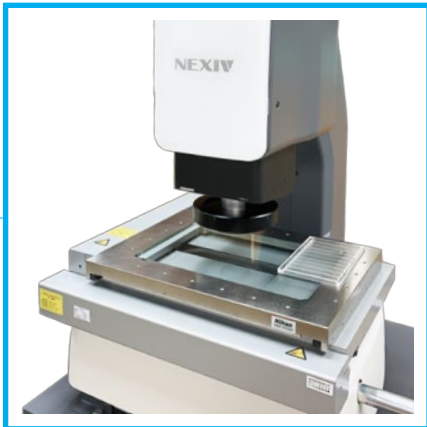


## The Core Competence of Chant Sincere Co.,Ltd. including.

- Over 34 Years Manufacture Experience
- ODM/OEM Capability
- Vertical Integration (Design, Tooling, Manufacturing, Test)
- Automation Capability
- Precise Tooling Center
- Wide Range of Product Line
- Systematic Testing Process
- Customized Capability
- Quality System (ISO,IATF)
- National Awards Rising Sun Awards/Best Supplier Awards

ISO 13485  
IATF 16949  
ISO 14001  
ISO 9001





## Quality systems

COXOC Quality Assurance department meets our customers' quality requirements by practicing continual improvement in our quality assurance processes and increasing customers' satisfaction in the quality of our products.

The effectiveness of COXOC QA operation is certified by well-known organizations such as ISO9001 Quality Assurance Management System, ISO 14001 Environmental Management System, ISO/IATF 16949 for Automobile Industry Quality Management System, and ISO 13485 Medical Devices Quality Management System, COXOC integrated supply chain and devoted staff has enabled us to build a solid foundation and core capability to better serve our customers. It is COXOC principal to always meet and exceed customer expectation by providing superior products and services. COXOC ultimate goal is to create value for our customers by building collaborative and mutually beneficial relationships.

# Competencies & Technology

The R&D Center at Chant Sincere leads the industry in research, design, and manufacturing of numerous key parts. This center has successfully developed for both wired and wireless solutions for computer peripherals, communication systems, and automobiles / industrial / medical equipment. Our solid R&D team formed a strong foundation in advance manufacturing technology and superior quality control that also enabled high value adding service for customers.

USB type C connectors is an example of the fruits of our research. This miniature and unidirectional interface provides many useful functions such as lighting data transfer rate up to 10 Gbits/s, DP ALT Mode high-definition video signal support, and brilliant 100W charging capability. Chant Sincere advanced the research further into higher specs such as USB 3.2 and USB 4.0 and offers customized solution for various of industrial applications. We delivered comprehensive solutions in bridging the diverse need for new interface and solve on-going product design issues for customers.

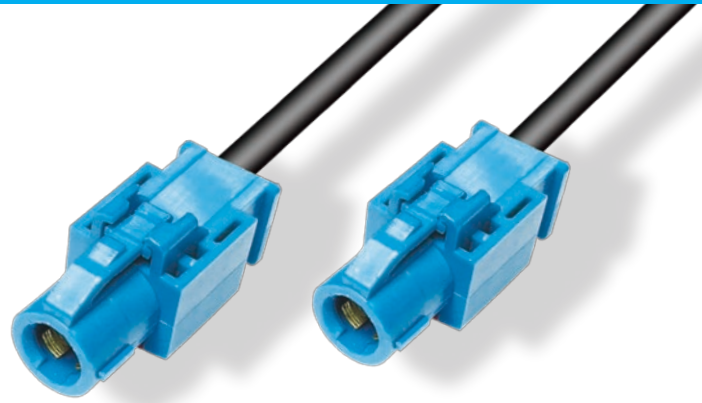
QSFP -DD is an ultra-fast interface that transmit data at 400Gbps speed. At this speed, stringent requirement for signal integrity and operating temperature is inviable which imposed huge challenges for the industry. At Chant Sincere, we implemented comprehensive computational software, state of art measuring equipment and eminent R&D capability to aid the solution delivering process. The analysis process includes simulation under CST MSW (Time Domain Simulation), ANSYS HFSS (Frequency Domain Simulation) for signal integrity as well as real-time measurement using test boards and PNA (up to 43.5GHz) to deliver quality reports for signal integrity (S-parameter, Gain compression, conversion gain/loss, noise level). We further performed simulation of its operating temperature using Icepak (Heat transfer and fluid flow simulator). This enabled the performance optimization for heat dissipation solution. With the above R&D skills we successfully delivered the desired professional service within the shortest time frame for our customers.







**HSD**



## HSD Application

The digital HSD Connector system enables excellent data transfer through LVDS ( Low Voltage Differential Signaling ) / MHL / Flexray / USB2.0 / USB 3.0 / IEEE1394 / Ethernet / APIX / CAN . The optimized impedance connector system offers a first-class transfer quality ; external source of interference and crosstalk are prevented. The main product characteristic S.S.R. ( Smart Stain Relief ) , an intelligent stain relief unit , leaves the soldering points free of stain in circuit board connections .

## Application

- Infotainment
- HD-entertainment
- Driver assistance
- Telematics
- LVDS-camara
- GVIF-video transmission
- IEEE 1394,USB2.0,USB3.0,Ethernet-data
- More 100 ohm high speed data Connectors

## Product Characteristics

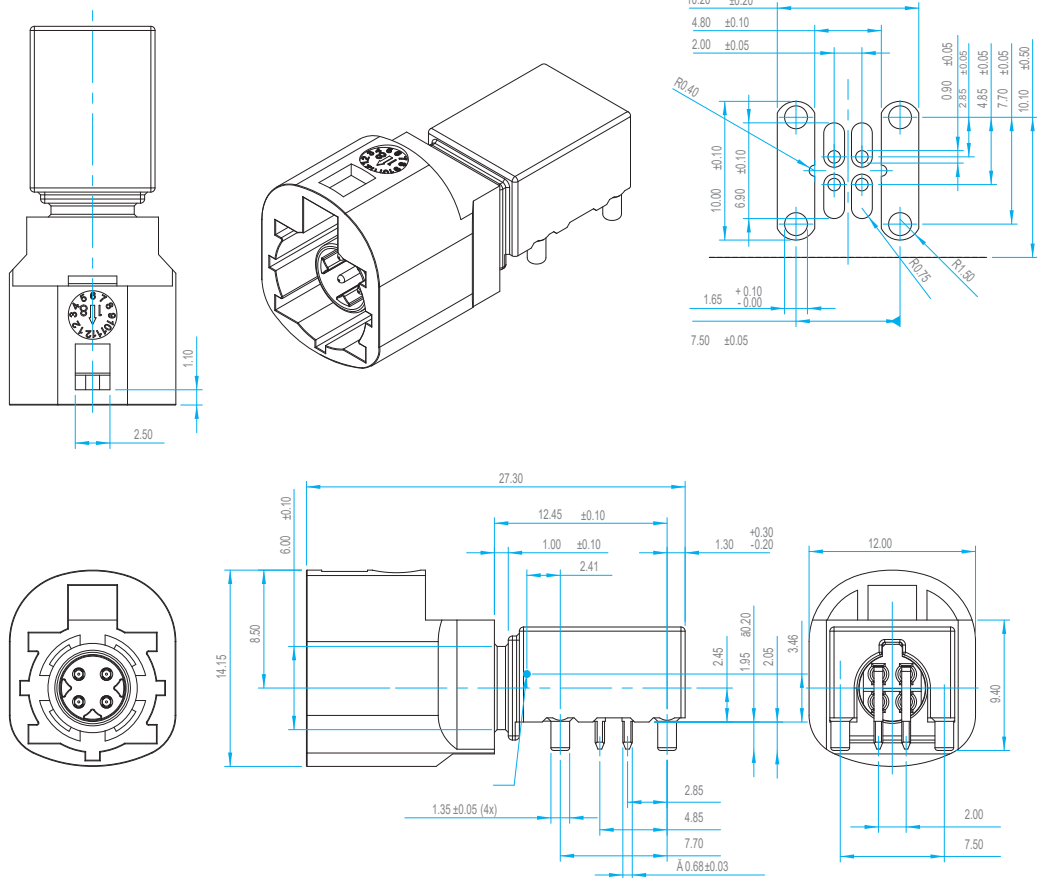
S.S.R. enables unstressed solder joints for PCB types  
Tilt safety  
High data bit rate up to 6 Gbits/s  
Excellent resistance against cross-talk and RF EMC  
Mechanical robustness according to automotive requirements  
THR and THT capable for automated assemblies  
Mechanical and color coding prevents mismatching  
Primary and secondary locking mechanism ensures highest interconnection security



## HSD (High Speed Data) Right Angle Type



## Drawing





## Specification

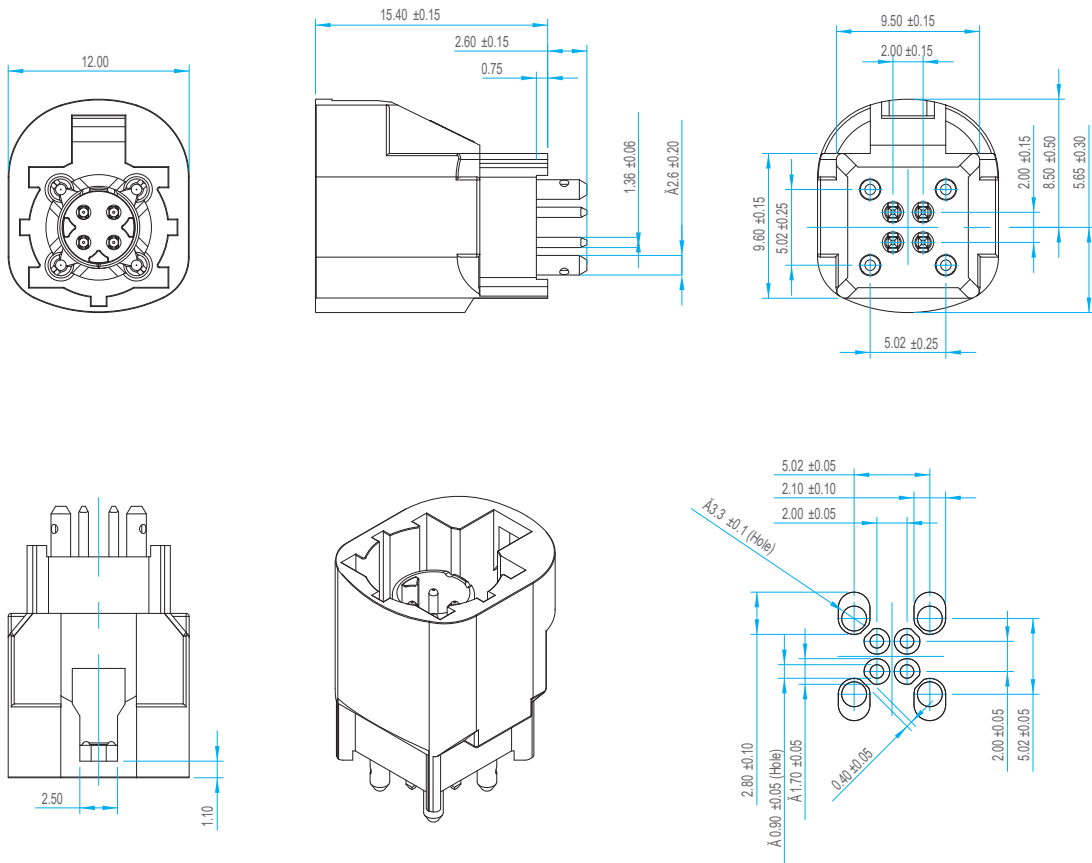
Description		HSD Connector
Part no.		410AF04R6TSITICX
Contacts		4
Material	Housing	Thermoplastic, Black
	Contact	Brass
	Shell	Zinc Alloy
Contact Plating	Under plating	80 ~ 160 u" Nickel
	Contact Area	6 u" Selective Gold
	Solder Tail Area	100~200 u" Tin(Lead Free)
Electrical	Impedance	100 +/- 10% Ohm
	Operating frequency	up to 2 GHz
	Return loss ( typical )	at 1 GHz : >= 20dB ; at 2GHz : >= 17dB
	Insertion loss	<= 0.1dB
	NEXT ( Near end Crosstalk )	<= 33dB
	FEXT ( Far end Crosstalk )	<= 28 dB
	Skew	<= 25 ps ( Right Angle type )
	Insulation Resistance	1000 MΩ min. @100V DC
	Center contact resistance	<= 10 mΩ
	Outer contact resistance	<= 7.5 m
	contact current max. ( DC )	<= 1.5A DC
	Withstanding Voltage	min. 250 V
	Operating Voltage	max. 100V DC
Mechanical characteristics	Engagement force ( typical )	<= 30N
	Separating force ( typical )	>= 5N
	Mating cycles	>= 50
	Cording efficiency	>= 80N
	Retention force locked system	>= 110N
Environmental	Operating Temp. Range	-40 up to +105 degree
	Thermal Shock	DIN IEC 60068-2-14 test NA
	Temperature and humidity	USCAR 2-4 5.6.2
	Vibration ( Random )	DIN IEC 60068-2-64
	Mechanical shock	DIN IEC 60068-2-27
	High-Temp. exosure	DIN IEC 60068-2-2
	Soldering Profile	IEC 60068-2-58 Group 3&4



## HSD (High Speed Data) Vertical



## Drawing



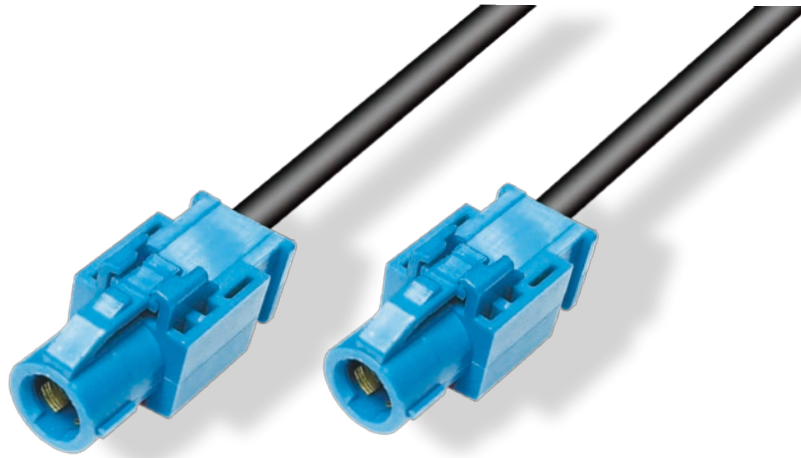


## Specification

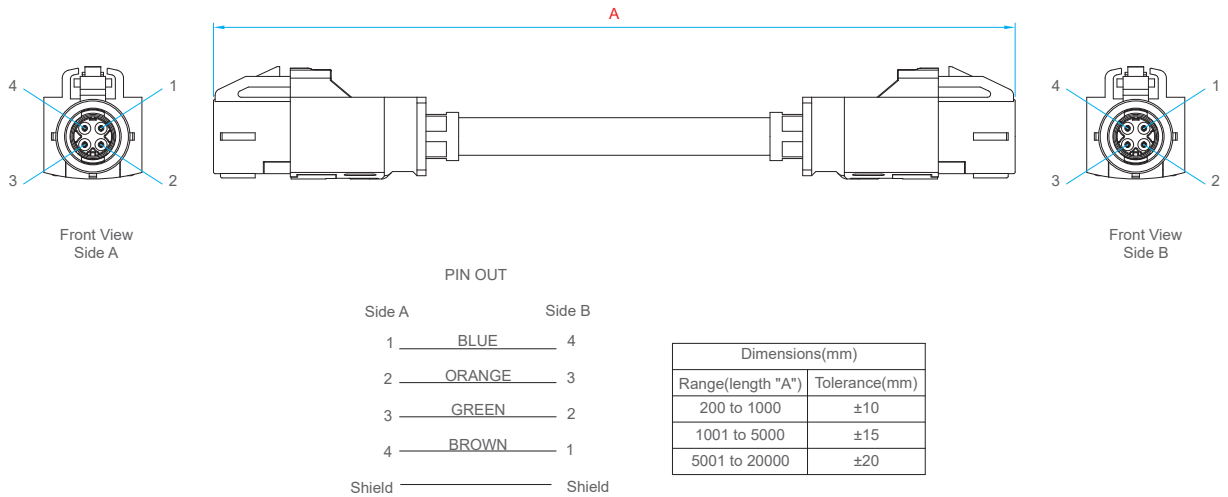
Description		HSD Connector
Part no.		410AF04N6TS2T1CX
Contacts		4
Material	Housing	Thermoplastic, Black
	Contact	Brass
	Shell	Zinc Alloy
Contact Plating	Under plating	80 ~ 160 u" Nickel
	Contact Area	6 u" Selective Gold
	Solder Tail Area	100~200 u" Tin(Lead Free)
Electrical	Impedance	100 +/- 10% Ohm
	Operating frequency	up to 2 GHz
	Return loss ( typical )	at 1 GHz : >= 20dB ; at 2GHz : >= 17dB
	Insertion loss	<= 0.1 dB
	NEXT ( Near end Crosstalk )	<= 33dB
	FEXT ( Far end Crosstalk )	<= 28 dB
	Skew	<= 25 ps ( Right Angle type )
	Insulation Resistance	1000 MΩ min. @100V DC
	Center contact resistance	<= 10 mΩ
	Outer contact resistance	<= 7.5 m
	contact current max. ( DC )	<= 1.5A DC
	Withstanding Voltage	min. 250 V
	Operating Voltage	max. 100V DC
Mechanical characteristics	Engagement force ( typical )	<= 30N
	Separating force ( typical )	>= 5N
	Mating cycles	>= 50
	Cording efficiency	>= 80N
	Retention force locked system	>= 110N
Environmental	Operating Temp. Range	-40 up to +105 degree
	Thermal Shock	DIN IEC 60068-2-14 test NA
	Temperature and humidity	USCAR 2-4 5.6.2
	Vibration ( Random )	DIN IEC 60068-2-64
	Mechanical shock	DIN IEC 60068-2-27
	High-Temp. exosure	DIN IEC 60068-2-2
	Soldering Profile	IEC 60068-2-58 Group 3&4



## ■ HSD (High Speed Data) Cable



## ■ Drawing









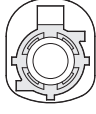










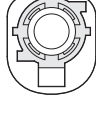
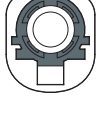

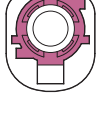
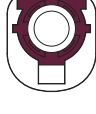
## Specification

Description		HSD Connector
Part no.		C7SI4ZZ3A0IE1M0
Contacts		4
Material	Insulator	PA/PBT
	Contacts	Phosphor Bronze
	Contact sleeve	Phosphor Bronze
	Outer Contacts	Brass
Contact Plating	Contact area	6u" Selective gold
	Solder tails area	40u"~150u" Tin (Lead Free)
Electrical	Impedance	100Ω
	Frequency	DC to 2.0 GHz
	Return loss	≥ 20 dB to 1.0 GHz; ≥ 17 dB to 2.0 GHz
	Insertion loss	≤ 0.1 dB @ 1.0 GHz
	Insulation resistance	≥ 1000MΩ
	Signal contact resistance	≤ 10mΩ
Mechanical	Mating Cycles	≥ 25 Cycles
	Engagement force	≤ 30N
	Disengagement force	≥ 5N
	Retention force latch	≥ 110 N
	Coding efficiency	≥ 80N
	Temperature range	-40°C TO +105°C



# Fakra Plug Coding

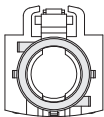
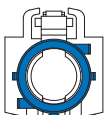
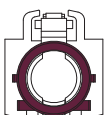
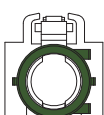
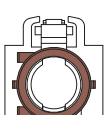
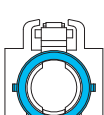
## CODINGS 1:1

Coding	Plug	Color	RAL	Coding	Plug	Color	RAL
A		Black	sim.9005	J		Beige	sim.1001
B		White	sim.9001	K		Curry	sim.1027
C		Blue	sim.5005	L		Yellow Green	sim.6018
D		Bordeaux	sim.4004	M		Pastel Orange	sim.2003
E		Green	sim.6002	O		Light Green	sim.6027
F		Brown	sim.8001	A Reverse		Black	sim.9005
Z		Water Blue	sim.5021	B Reverse		White	sim.9001
G		Blue Grey	sim.7031	C Reverse		Blue	sim.5005
H		Heather Violet	sim.4003	D Reverse		Bordeaux	sim.4004

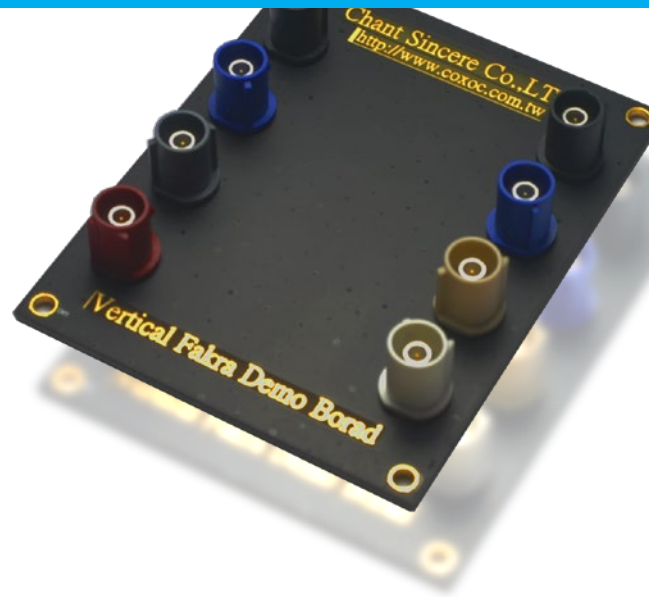


## Fakra Plug Coding

### CODINGS 1:1

Coding	Plug	Color	RAL
A		Black	sim.9005
B		White	sim.9001
C		Blue	sim.5005
D		Bordeaux	sim.4004
E		Green	sim.6002
F		Brown	sim.8001
Z		Water Blue	sim.5021

**FAKRA**



## FAKRA Application

The FAKRA Connectors are specially designed for automotive applications . They are based on the SMB connector interface and comply with the standard for a uniform connector system established by FAKRA ( Automobile Expert Group ) . Due to their special standardized locking system FAKRA connector fulfill the high functional and safety requirements of today's automotive industry. The Coaxial connectors meet the specification of USCAR-18 and ISO 20860-1 .

## Application

- GPS antenna
- Engine management system
- Analog / Digital radio
- Auxiliary heating
- TV / Video-displays
- Antenna
- Distributor box
- Accident data analysis
- Cellular Phone
- Remote control keyless entry
- Distance control
- Amplifier
- Air pressure control
- Navigation system

## Product Characteristics

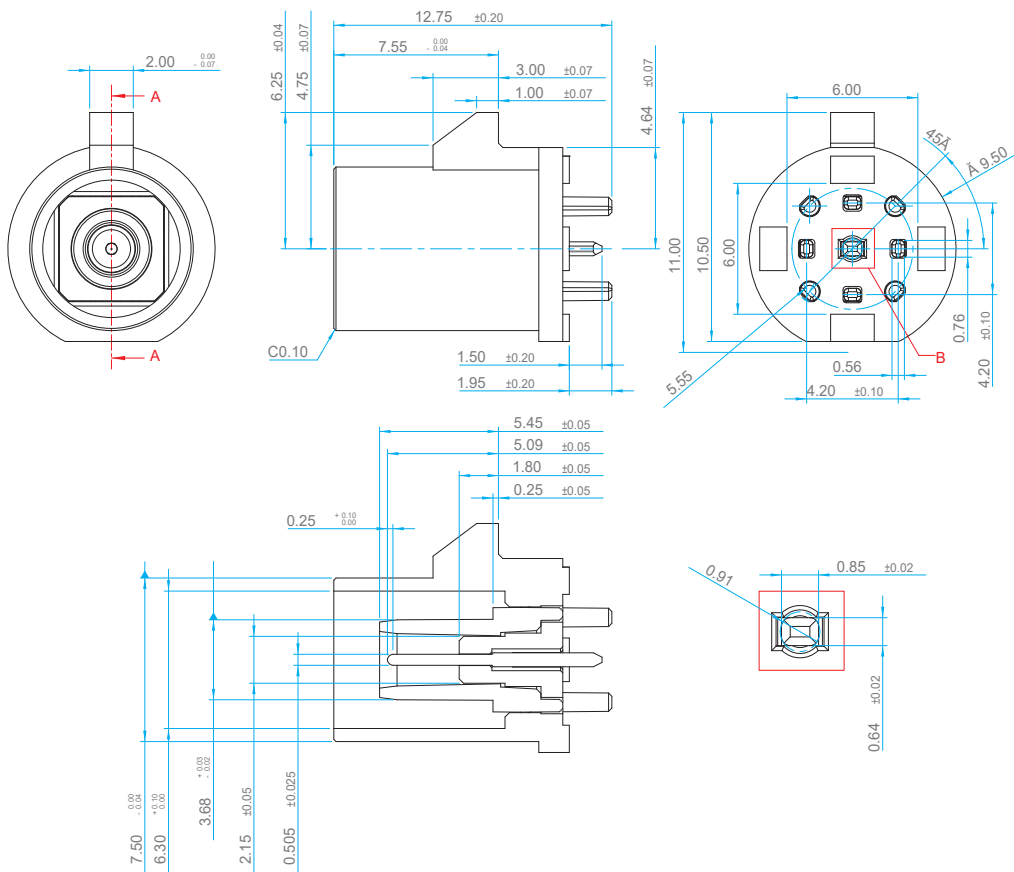
- Mature mechanical and color coding system
- Highest possible mounting safety
- efficient automated capabilities for further processing
- Rotating coaxial inert and cable in plastic housing



## FAKRA Vertical Connector



## Drawing





## Specification






Description		HSD Connector
Part no.		410AF01R6TA292XX
Contacts		1
Material	Housing	Thermoplastic, Black
	Contact	Brass
	Shell	Zinc Alloy
Contact Plating	Under plating	80 ~ 160 u" Nickel
	Contact Area	6 u" Selective Gold
	Solder Tail Area	100~200 u" Tin(Lead Free)
Electrical	Impedance	50 Ohm
	Operating frequency	up to 6 GHz
	Return loss ( typical )	> = 18dB typ.
	Insertion loss	< = 0.1dB
	RF leakage	> 55 dB
	Insulation Resistance	1000 MΩ min. @100V DC
	Center contact resistance	< = 5 mΩ
	Outer contact resistance	< = 2.5 mΩ
	contact current max. ( DC )	< = 1.0A DC
	Withstanding Voltage	min. 750 V
	Operating Voltage	< = 335V max.
	Mechanical characteristics	Engagement force ( typical )
Separating force ( typical )		min. 2 N max. 25 N
Mating cycles		> = 50
Retention force locked system		> = 100N
Environmental	Operating Temp. Range	IEC 682-2, -40 up to +105 degree
	Temperature Change	IEC 68-2-14
	Vibration	IEC 68-2-64
	Shock	IEC 68-2-29
	Humidity ( Cyclic )	IEC 68-8-30



# Fakra Plug Coding

**CODINGS 1:1**

Coding	Plug	Color	RAL
A		Black	sim.9005
B		White	sim.9001
C		Blue	sim.5005
D		Bordeaux Violet	sim.4004
E		Green	sim.6002
F		Brown	sim.8011
G		Grey	sim.7031
H		Violet	sim.4003
I		Beige	sim.1001

Coding	Plug	Color	RAL
K		Curry	sim.1027
L		Camine Red	sim.3002
M		Pastel Orange	sim.2003
N		Pastel Green	sim.6019
Z		Water Blue	sim.5021





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