



詮欣股份有限公司  
CHANT SINCERE CO., LTD.

# USB 3.0 DisplayPort HDMI





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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.

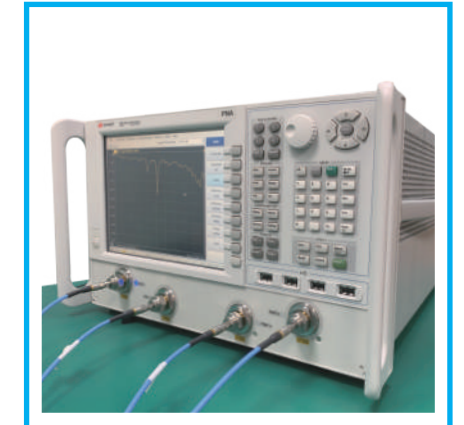
- **Chant Sincere** won the “National Bedrock Award” & “Small Giant Award” from Taiwan Connector maker competition and got many “Best Supplier awards” from Global customers. We are focusing on improving our design and manufacture technology, and we have been applying for a lot of international patents 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/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 36 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 ISO13485 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.



# USB 3.0



## HSD Application

- USB 3.0 is the third major version of the Universal Serial Bus (USB) standard for interfacing computers and electronic devices. Among other improvements, USB 3.0 adds the new transfer rate referred to as SuperSpeed USB (SS) that can transfer data at up to 5 Gbit/s (625 MB/s), which is about 10 times faster than the USB 2.0 standard. It is recommended that manufacturers distinguish USB 3.0 connectors from their USB 2.0 counterparts by using blue color for the Standard-A receptacles and plugs, and by the initials SS.

## Application

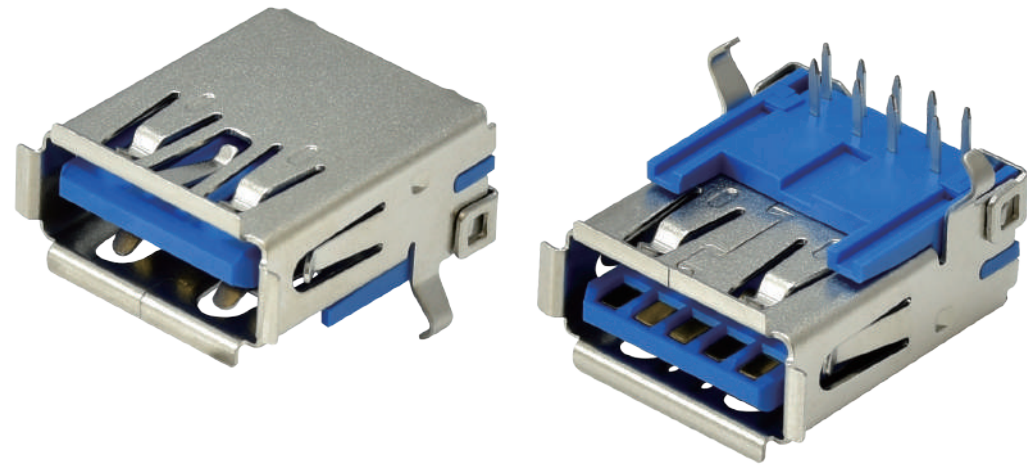
- External and portable storage products
- Desktops, laptops and docking stations
- Servers and workstations

## Product Characteristics

- USB 3.0 adds a new transfer type called SuperSpeed or SS, 5 Gbit/s (electrically, it is more similar to PCI Express 2.0 and SATA than USB 2.0)
- USB 3.0 uses two unidirectional data paths instead of only one: one to receive data and the other to transmit
- U0 to U3 link power management states are defined
- new feature is added (using packets NRDY and ERDY) to let a device asynchronously notify the host of its readiness, with no need for polling



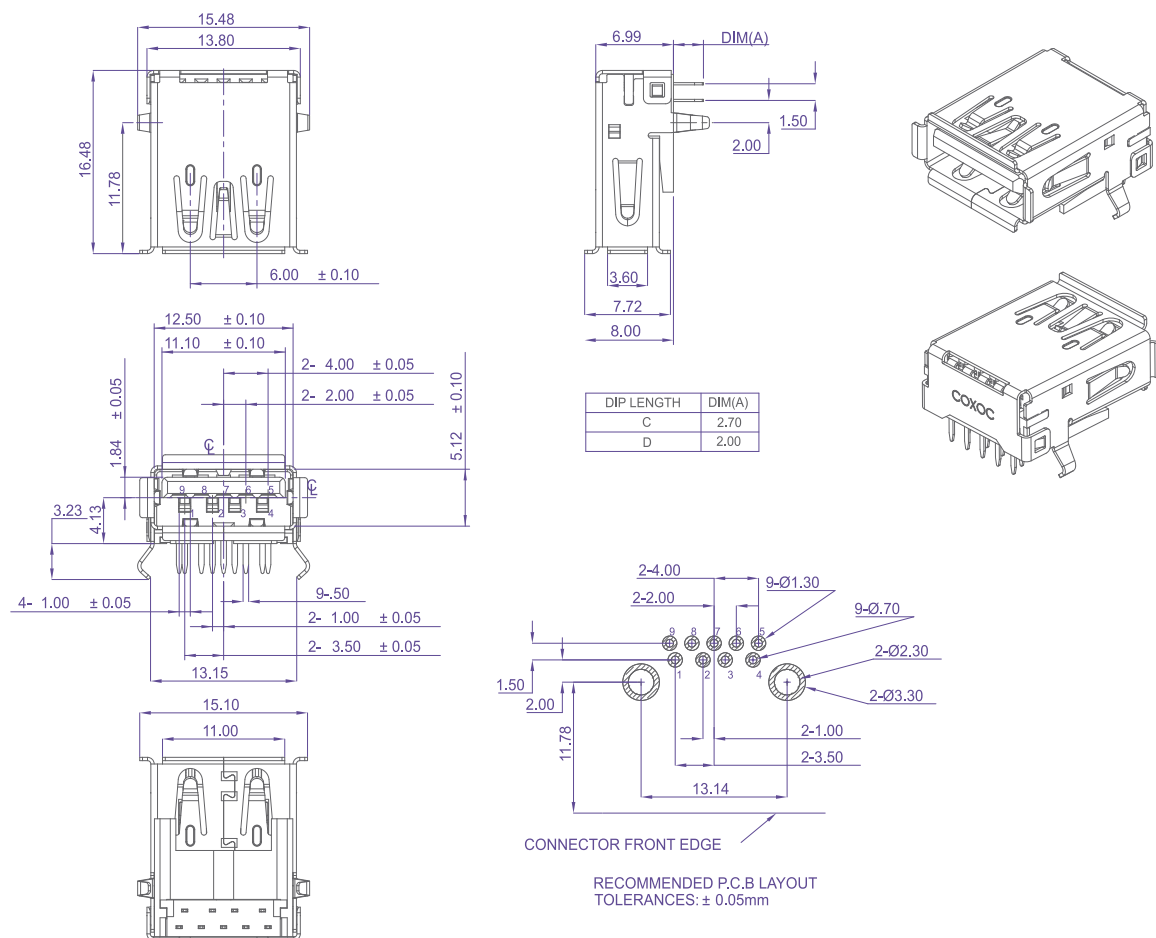
## ■ USB 3.0 A Type Female Connector



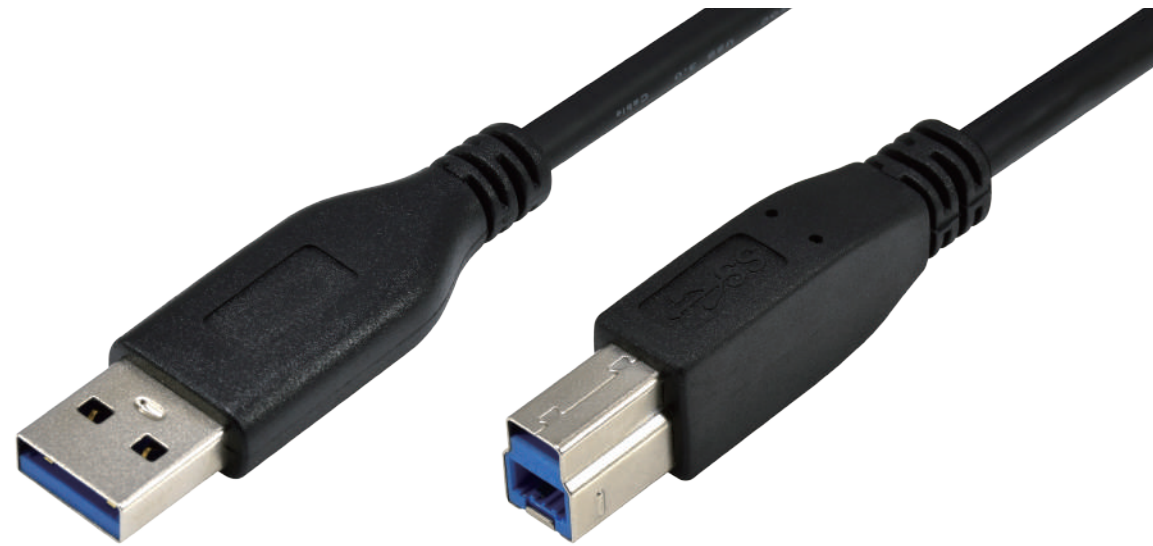
## ■ Specification

Description		USB 3.0 A Type Female Connector
Part no.		377AH09FXXS6NDX2
Material	Insulator	Thermoplastic (BLUE), Flame Class HB
	Contacts	Copper Alloy
	Shell	Steel
Contact Plating	Underplate	50u"~100u" Nickel
	Contact area	1u"~30u" Gold or 30u"Pd-Ni+2u"Gold or 15u"Pd-Ni+1u"Gold
	Solder tails area	100u"~200u" Matte Tin or 2u" Gold
Electrical	Current rating	1.8 Amps (max) shall be applied to Vbus pin and its corresponding GND pin. 0.25 Amp (Min) shall be applied to all the other contacts.
	Contact resistance	30 mΩ [ (Max) initial for VBUS and GND Contacts. 50 mΩ [ (Max) initial for All Other Contacts.
	Insulation resistance	100 Mohms min @ 250 VDC
	Dielectric withstanding voltage	100 VAC / minute
	Temperature range	-20°C TO +85°C

## ■ Drawing



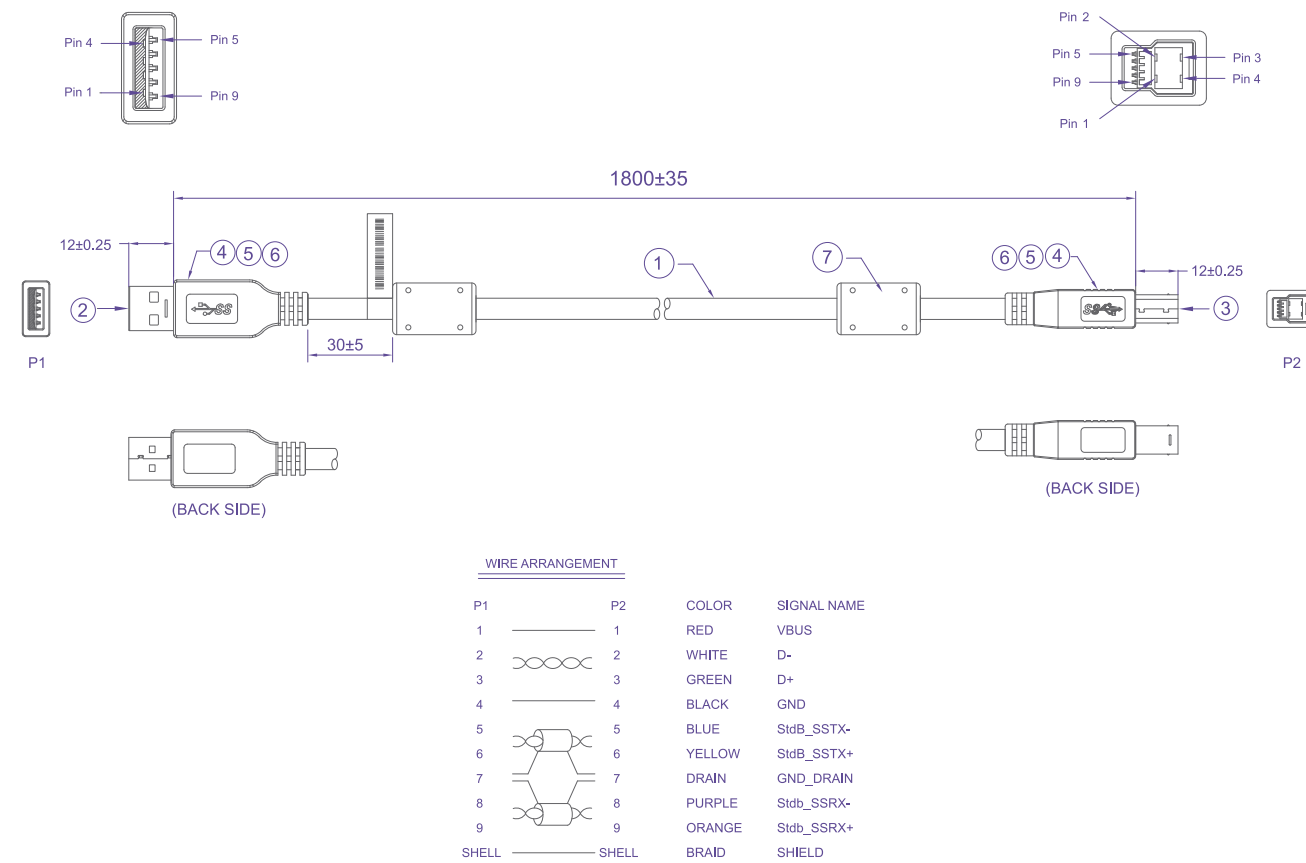
## ■ USB 3.0 A to B Type Cable



## ■ Specification

Description		USB 3.0 A to B Type Cable
Part no.		C85073AA9E1M8
Material	Cable	USB 3.0 UL 20276 [28AWG*1P+D+AL+MYLAR]*2C+ 28AWG*1P+24AWG*2C+ADB(AL85%), OD=5.4mm,PVC JACKET BLACK
	Conn.	USB 3.0 A MALE, BLUE INSULATOR, CONTACT GOLD FLASH. SHELL PLATED NICKEL USB 3.0 B MALE, BLUE INSULATOR, CONTACT GOLD FLASH. SHELL PLATED NICKEL
	COPPER	COPPER FOIL
	PVC	INNER PE MOLDED.
	PE	PVC PLASTIC MOLDED BLACK.
Electrical	Voltage	300V DC.
	Contact Resistance	5 Ohm Max.
	Insulation Resistance	2M Ohm Min.






## ■ Drawing





■ USB 3.0 Connector

Photo	Description	Part no.
	USB 3.0 A Type, Female Right Angle, DIP Type	377AH09FZTS6NCA2
	USB 3.0 A Type, Female Right Angle, DIP Type	317AE09FSTS6N2A2
	USB 3.0 A Type, Female Right Angle, SMT Type	377DH09FZTS1NAC2
	USB 3.0 A Type, Male Plug, SMT Type	317DH09MZTS2N1A2
	USB 3.0 A Type, Female Straight, DIP Type	377AG09FSTS881A2

Photo	Description	Part no.
	USB 3.0 A Type, Female Up Right Angle, DIP Type	317AE09FSTSBN0A2
	USB 3.0 A Type, Female Reverse, Right Angle, DIP Type	377AH09FSTS4NZC2
	USB 3.0 A Type, Female Reverse, Right Angle, DIP Type	377AE09FSTS4P8A2
	USB 3.0 A Type, Female Dual Port, Right Angle, DIP Type	377AH18FZTS3NEA2
	USB 3.0 A Type, Female Dual Port, Right Angle, DIP Type	317AE18FSTS3PCA2

■ USB 3.0 Connector

Photo	Description	Part no.
	USB 3.0 A Type, Female High Stacked, Right Angle, DIP Type	377AD18FCTSFP1AB
	USB 3.0 A Type, Female Plug SIP, SMT Type	377DD05MATSC07C2
	USB 3.0 B Type, Female Right Angle, DIP Type	317AF09FSTS7N7A2
	USB 3.0 B Type, Female Straight, DIP Type	317AH09FSTSHN1A2
	USB 3.0 A Type, Female Mid-Mount, DIP Type	377AH09FCTSRN1CB

Photo	Description	Part no.
	USB 3.0 A Type, Female Vertical, DIP Type	377AH09FXTS8NA43
	USB 3.0 A Type, Female Quad Stacked, DIP Type	377AG36FXTSFN0AB
	USB 3.0 A Type + RJ45 Stacked Female, DIP Type	377AE17FXTSNN1AH
	USB 3.0 + 2.0 A Type, Female Quad Stacked, DIP Type	377AG26FXTSJ80AH
	USB 3.0 A Type, Female Dual Port, Straight, DIP Type	377AF18FXTSPL1A2



■ USB 3.0 Cable

Photo	Description	Part no.
	USB 3.0 A to A Cable, 3.5M	C85083A13E3M5
	USB 3.0 A to B Cable, 1.8M	C85073AA9SE1M8
	USB 3.0 A to micro B, 50C	C852I3A21AE50C
	USB 3.0 AM to AF Cable, 1M	C85063A01AE1M0



# DisplayPort



## DisplayPort Application

- DisplayPort (DP) is a digital display interface developed by a consortium of PC and chip manufacturers and standardized by the Video Electronics Standards Association (VESA). The interface is primarily used to connect a video source to a display device such as a computer monitor, and it can also carry audio, USB, and other forms of data. DisplayPort was designed to replace VGA, DVI, and FPD-Link. The interface is backward compatible with other interfaces, such as HDMI and DVI, through the use of either active or passive adapters.

## Application

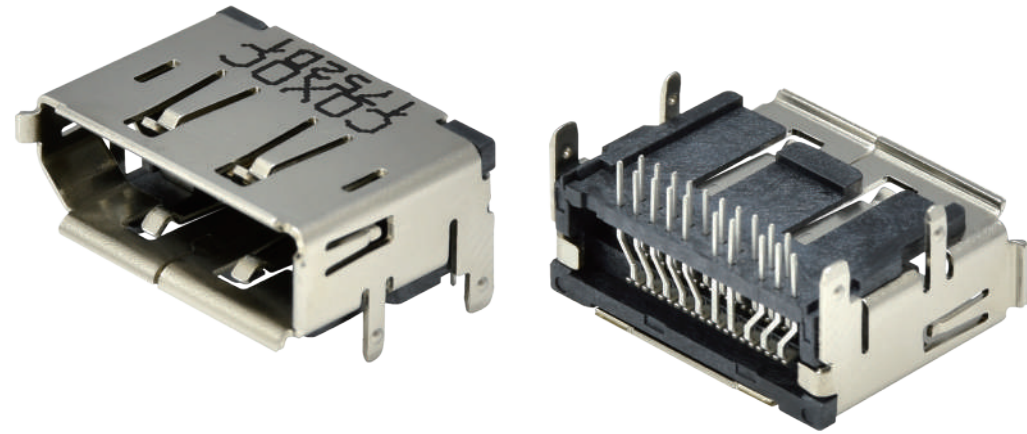
- Computer Monitor
- Desktops/Notebooks
- TV

## Product Characteristics

- HBR3 (High Bit Rate 3):  $4 \times 8.10 \text{ Gbit/s} = 32.40 \text{ Gbit/s}$  bandwidth (data rate of 25.92 Gbit/s or 3.24 GB/s)
- DisplayPort 1.4 can Support 8K UHD (7680 × 4320) at 60 Hz or 4K UHD (3840 × 2160) at 120 Hz with 30 bit/px RGB color and HDR.
- DisplayPort Dual-Mode (DP++) allows DisplayPort sources to use simple passive adapters to connect to HDMI or DVI displays.
- Multi-Stream Transport (MST) allows multiple independent displays to be driven from a single DP port on the source devices by multiplexing several video streams into a single stream and sending it to a branch device.



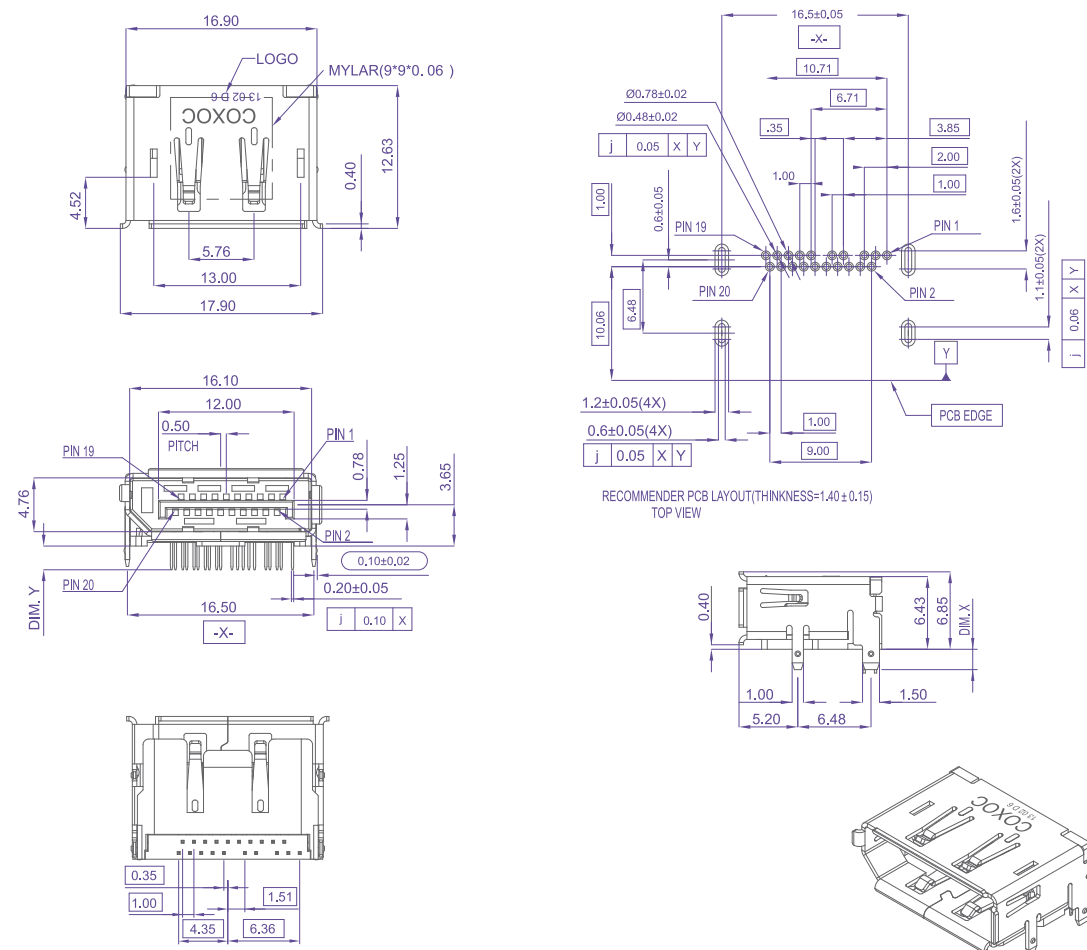
## DisplayPort DIP Type Connector



## Specification

Description		DisplayPort DIP Type Connector
Part no.		909AD20FCT01NBCC
Material	Insulator	LCP, rated UL94V-0
	Contacts	Copper Alloy
	Shell	Alloy
Contact Plating	Underplate	50u"~100u" Nickel
	Contact area	1u"~30u" Selective gold
	Solder tails area	100u"~200u" Tin (Lead Free)
Electrical	Operation voltage	40V
	Current rating	0.5 Amps min.
	Contact resistance	30 mohms max.
	Insulation resistance	100 Mohms min.
	Dielectric withstanding voltage	500 VAC / minute
	Temperature range	-20°C TO +85°C
	Mating cycles	10,000 insertions

## Drawing



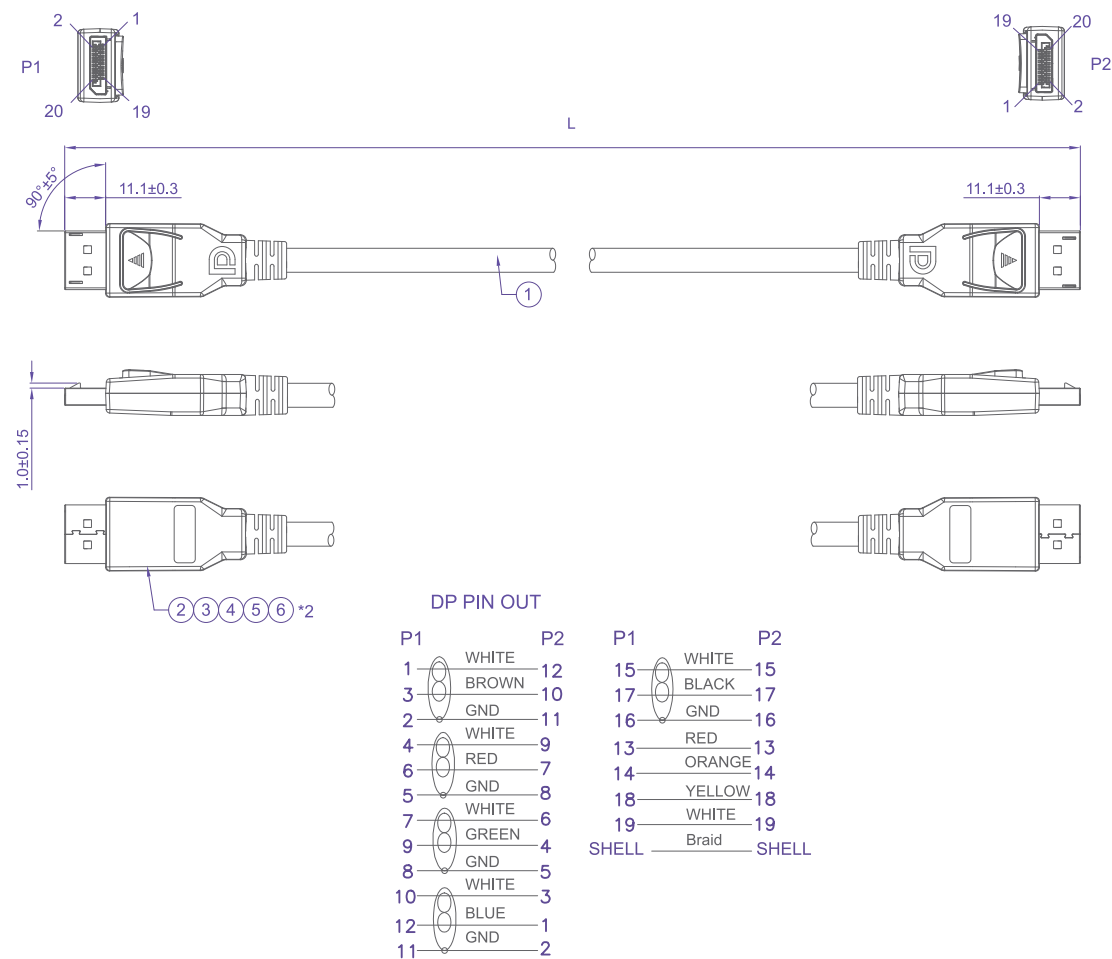
## DisplayPort Cable rev.1.4



## Specification

Description		DisplayPort Cable rev.1.4
Part no.		CK0113A29EEXXX
Material	Cable	UL20276 (1P#30+D+AL+MYLAR)* 5C+4C#30+MYLAR+ADB (AL85%) OD6.5mm, PVC Jacket Black
	Conn	DP 20P Male, Black Insulator, Contact Gold Plated 15u", Shell Nickel Plated, (W/TIN Plate) Top & Bottom Assembly Cover Color Black
	Tin	Tin Stick, Tin Wire
	PE	PE
	FOIL	COPPER FOIL
	PVC	PVC BLACK
Electrical	Voltage	300V DC.
	Contact Resistance	5 Ohm Max.
	Insulator Resistance	2M Ohm Min.

## Drawing





## DisplayPort Connector

Photo	Description	Part no.
	DP Connector, Female, DIP Type	909AD20FCT01NBA3
	DP Connector, Female, SMT Type, W/O MYLAR, W/O PEG (SHELL DIP, W/ FLANGE)	909DF20FCT01NGAC
	DP Connector, Female, SMT Type, W/O MYLAR, W/O PEG (SHELL DIP, W/O FLANGE)	909DF20FCT01NDA3
	DP Connector, Female, SMT Type, Vertical Type	909DD20FCT07A0CC
	mini DP, Female, Off-set 5.9mm, DIP+SMT Type	909JH20FSTC4N3C3
	mini DP, Female, Off-set 4.2mm, DIP+SMT Type	909JH20FSTC4N5C3
	mini DP, Female, Off-set 3.2mm, DIP+SMT Type	909JF20FSTC496C3

## DisplayPort Cable

Photo	Description	Part no.
	DP to DP Cable, Rev.1.2a, 1.8M	CK0113A19SE1M8
	DP to DP Cable, Rev.1.4, 1.8M	CK0113R29SE1M8
	DP to mini DP Cable, 1.8M	CK041331A01AE1M8
	mini DP to mini DP Cable	CK0313B06E

# HDMI



## HDMI Application

- HDMI (High-Definition Multimedia Interface) is a proprietary audio/video interface for transmitting uncompressed video data and compressed or uncompressed digital audio data from an HDMI-compliant source device. HDMI is a digital replacement for analog video standards.

## Application

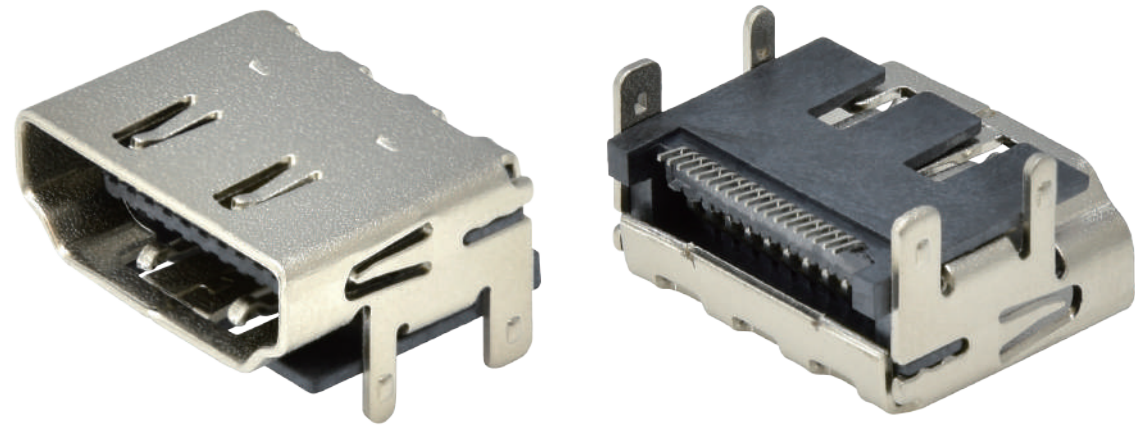
- Display controller
- TV
- Computer monitor
- Video projector
- Digital audio device

## Product Characteristics

- HDMI 2.0 to carry 4K video at 60 Hz with 24 bit/px color depth, maximum bandwidth up to 18.0 Gbit/s
- Up to 32 audio channels for a multi-dimensional immersive audio experience
- Up to 1536kHz audio sample frequency for the highest audio fidelity



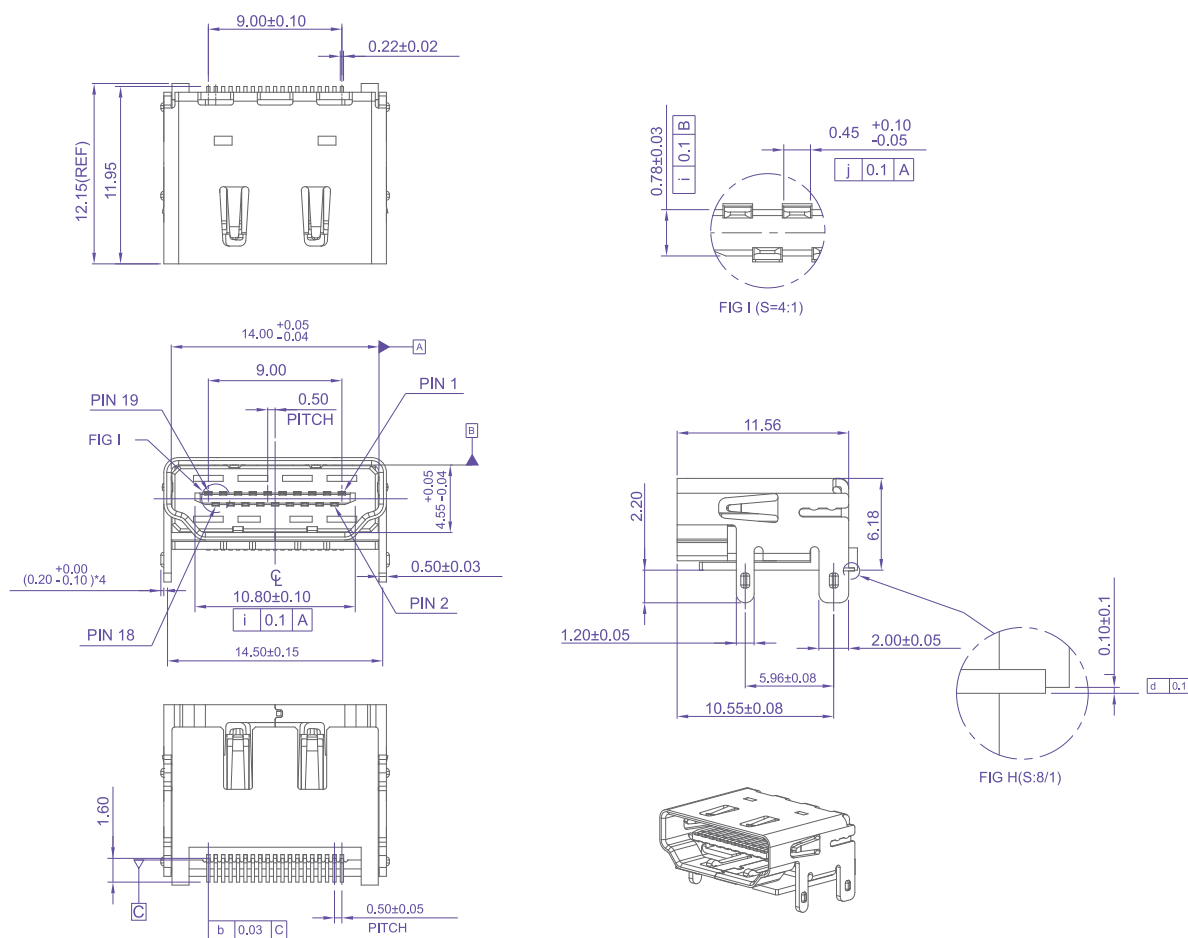
## HDMI SMT Type Connector



## Specification

Description		HDMI SMT Type Connector
Part no.		908DA2X19FXNCX3
Material	Housing	Thermal Plastic UL94V-0
	Contact	Copper Alloy
	Shell	Copper Alloy
Finish	Shell	50u"Nickel Plated
	Contact Area	Gold Plated 15u"~30u" Over Nickel 50u" Under Plated
	Solder End	Tin Plated 100u" Tin/Lead Free (Brighten Tin/Matte Tin)

## Drawing



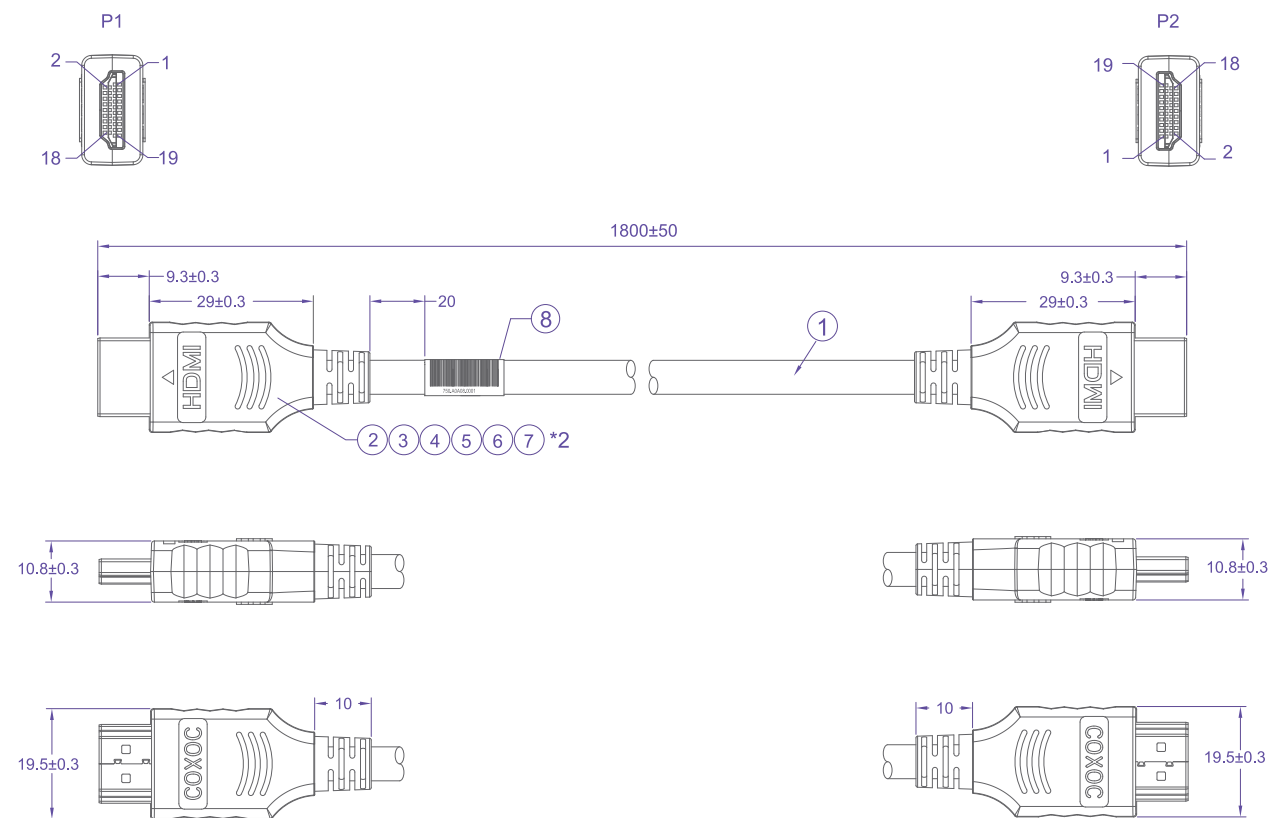
## HDMI Cable



## Specification

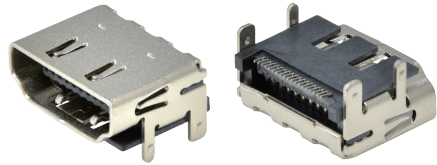


Description		HDMI Cable
Part no.		CF0313A136AE1M8
Material	Cable	30#(7/0.10TC*1P+7/0.10TC+AL-foil+PET) *4C+(7/0.10TC+PE)*1P+(7/0.10TC+PE) *5C+AL-foil+7/0.10TC+128/0.12AL-MG,OD=6.00 BK
	HDMI A/M	19P Gold Flash, Black Insulator ,Shell Nickel
Finish	HI-POT	300V DC/10ms
	Conductive Resistance	5 Ohms MAX
	Insulation Resistance	10M Ohms MIN

## Drawing





## HDMI Connector

Photo	Description	Part no.
	HDMI Connector, Female, SMT Type	908DA2E19FXNC03
	HDMI Connector, Female, DIP Type w/ Flange	908AH19FBTA7TAA3
	HDMI Connector, Female, SMT Type	908DE19FCSD19DC3



2020 11 rev 1



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