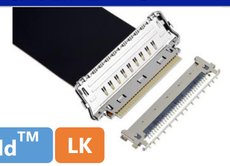
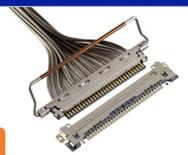
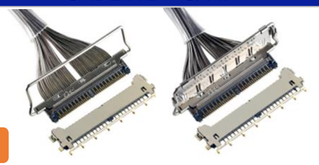
ZenShield™ Full EMI Shield
LK Mechanical Lock

Micro-coaxial connectors - Horizontal mating type / 0.5 and 0.25 mm pitch (Board pitch 0.5 mm)

(Related series FPC connectors)

Click the photos below to get more detailed product information.

Product name		CABLINE®-VS II	CABLINE®-VS IIF	CABLINE®-VS	CABLINE®-VSF	CABLINE®-CX II
Feature		ZenShield™ LK	 ZenShield™ LK	 LK	LK	 LK
		High-speed (20+ Gbps)	**VS IIF plug mates to VS II rece.**	**VESA standard for 16:9 panel High-speed (20+ Gbps)**	**VSF plug mates to VS rece.**	**Small and low height connector**
Plug Assembly P/N		20846	20862	20453	20645	Without cover : 20978 / With cover : 20977
Receptacle P/N		20849	20849	20455	20455	20976
Mating Type		Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Wire (FPC) Pitch (mm)		0.5	0.5	0.5	0.5	0.25
Board Pitch (mm)		0.5	0.5	0.5	0.5	0.5
Pin Count	Range	Up to 55	Up to 55	Up to 50	Up to 50	Up to 40
	Available	20, 30, 40	30, 40	20, 30, 40, 50	30, 40	40
		Please inquire for pin counts not listed or outside of the pin count range.				
Mated Size (mm) (*)	Height	1.2 max. with cover	1.2 max. with cover	1.0 +/- 0.1	1.0 +/- 0.1	Without cover : 0.73 +0.05 / -0.10 With cover : 1.0 max. with cover
	Width Formula	6.85 + (0.5*?p)	6.85 + (0.5*?p)	7.55 + (0.5*?p)	6.15 + (0.5*?p)	6.45 + (0.25*?p)
	Depth	6.70	7.27	5.80	5.97	Without cover : 5.21 / With cover : 5.60
Wiping Length (mm)		0.54	0.48	0.61	0.62	0.62
Reference applicable cable size (AWG#) (**)	Micro-coax for Signals (***)	45ohm : #36 or smaller	Shielded FPC FPC thickness at contact area 0.25 +0.02 / -0.03 mm	45ohm : #36 or smaller	Shielded/Non-shielded FPC FPC thickness at contact area 0.28 +0.02 / -0.03 mm	45ohm : #44 or smaller
		50ohm : #38 or smaller		50ohm : #38 or smaller		50ohm : #46 or smaller
	Twincoax	#40		#40		-
	Discrete	#32 or smaller		#32 or smaller		#39 or smaller
Contact Point		Top	Top	Top	Top	Top & Bottom
Compatibility		-	VS IIF plug mates to VS II rece. (20849)	VS rece. can be mounted on VS II rece. PCB layout	VSF plug mates to VS rece. (20455)	-
Performance (Reference Only)		USB4 (20 Gbps/lane) PCIe Gen 4 (16GT/s) eDP HBR 3 (8.1 Gbps)	Depends on FPC Impedance Controlled Design	USB4 (20 Gbps/lane) PCIe Gen 4 (16GT/s) eDP HBR 3 (8.1 Gbps)	Depends on FPC Impedance Controlled Design	USB 3.1 Gen 1 (5 Gbps) V-By-One HS 1.4 (4 Gbps) HDMI 1.3 (3.4 Gbps)

Note (*) : Height, Width formula and Depth dimensions are including Lock Cover / Bar. (**) : Cable outer diameters need to be smaller than connector pitch. (***) : 45ohm and 50ohm cable AWG sizes for signals are listed as reference. Other impedance cables can be applied.

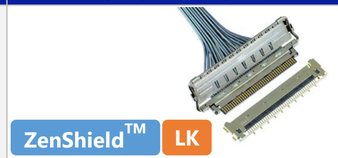
Confidential C

ZenShield™ Full EMI Shield
LK Mechanical Lock

Micro-coaxial connectors - Horizontal mating type / 0.4 mm pitch

(Related series FPC connectors)

Click the photos below to get more detailed product information.

Product name		CABLINE®-CA II	CABLINE®-CA II PLUS	CABLINE®-CA IIF	CABLINE®-CA	CABLINE®-CAF	CABLINE®-CAL
Features		 ZenShield™ LK	ZenShield™ LK	ZenShield™ LK	LK	LK	LK
		High-speed (20+ Gbps)	**High-speed (20+ Gbps)**	**CA IIF plug mates to CA II rece.**	**High-speed (20+ Gbps)**	**CAF plug mates to CA rece.**	**Mating height 0.8 mm max. High-speed (20+ Gbps)**
Plug Assembly P/N		20679	20788	20856	20633	20858	20728
Receptacle P/N		20682	20790	20682	20525	20525	20729
Mating Type		Horizontal	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Wire Pitch (mm)		0.4	0.4	0.4	0.4	0.4	0.4
Board Pitch (mm)		0.4	0.4	0.4	0.4	0.4	0.4
Pin Count	Range	Up to 60	Up to 60	U to 60	Up to 60	Up to 60	Up to 40
	Available	20, 30, 40, 50	60	40	10, 12, 20, 30, 40, 50, 60	60	30, 40
		Please inquire for pin counts not listed or outside of the pin count range.					
Mated Size (mm) (*)	Height	1.1 max. with cover	1.2 max. with cover	1.1 max. with cover	1.0 +/- 0.1	1.0 +/- 0.1	0.7 +/- 0.1
	Width Formula	6.95 + (0.4*?p)	6.95 + (0.4*?p)	6.95 + (0.4*?p)	6.95 + (0.4*?p)	5.75 + (0.4 x ? p)	10 – 20p : 6.85 + (0.4*?p) 22p – 40p : 8.05 + (0.4*?p)
	Depth	6.20	6.70	6.74	5.73	6.055	5.50
Wiping Length (mm)		0.54	0.54	0.48	0.54	0.48	0.40
Reference applicable cable size (AWG#) (**)	Micro-coax for Signals (***)	45ohm : #38 or smaller 50ohm : #40 or smaller	45ohm : #38 or smaller 50ohm : #40 or smaller	Shielded FPC FPC thickness at contact area 0.25 +0.02 / -0.03 mm	45ohm : #38 or smaller 50ohm : #40 or smaller	Shielded FPC FPC thickness at contact area 0.26 +/- 0.02 mm	45ohm : #38 or smaller 50ohm : #40 or smaller
	Twincoax	#40	#40		#40		-
	Discrete	#34 or smaller	#34 or smaller		#34 or smaller		#34 or smaller
Contact Point		Top	Top	Top	Top	Top	Top
Compatibility		-	-	CA IIF plug mates to CA II rece. (20682)	CA rece. can be mounted on CA II & CA II PLUS PCB layout	CAF plug mates to CA rece. (20525)	-
Performance (Reference Only)		USB4 (20 Gbps/lane) PCIe Gen 4 (16GT/s) eDP HBR 3 (8.1 Gbps)	USB4 (20 Gbps/lane) PCIe Gen 4 (16GT/s) eDP HBR 3 (8.1 Gbps)	Depends on FPC Impedance Controlled Design	USB4 (20 Gbps/lane) PCIe Gen 4 (16GT/s) eDP HBR 3 (8.1 Gbps)	Depends on FPC Impedance Controlled Design	USB4 (20 Gbps/lane) PCIe Gen 4 (16GT/s) eDP HBR 3 (8.1 Gbps)

Note (*) : Height, Width formula and Depth dimensions are including Lock Cover / Bar. (**) : Cable outer diameters need to be smaller than connector pitch. (***) : 45ohm and 50ohm cable AWG sizes for signals are listed as reference. Other impedance cables can be applied.

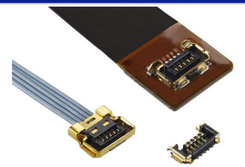
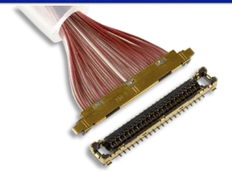
Confidential C

ZenShield™ Full EMI Shield
LK Mechanical Lock

Micro-coaxial connectors - Vertical mating type

(Related series FPC connectors)

Click the photos below to get more detailed product information.

Product name		FPL II	CABLINE®-UM	CABLINE®-SS	CABLINE®-UY	CABLINE®-UA II	CABLINE®-UX II
Features			ZenShield™ LK				
		High retention force	**High-speed (20+ Gbps)**	**High retention force**	**Cable and SMT plug options (*) Small and low height connector**	**Slim plug and small connector**	**Slim plug and small connector**
Plug Assembly P/N		20437	20877	20380	Cable plug : 20857	20496	20531
Receptacle P/N		20439	20879	20374	20854	20498	20533
Mating Type		Right angle vertical	Right angle vertical	Right angle vertical	Right angle vertical	Right angle vertical	Right angle vertical
Wire Pitch (mm)		0.5	0.4	0.4	0.35	0.3	0.25
Board Pitch (mm)		0.5	0.4	0.4	0.35	0.6	0.5
Pin Count	Range	Up to 50	Up to 60	Up to 50	Up to 25	Up to 50	Up to 50
	Available	30, 40, 50	30, 40	10, 14, 20, 30, 32, 35, 40, 50	Cable plug : 5, 10p FPC SMT plug (*) : 5p	26, 32, 40, 50	30, 34, 40, 50
		Please inquire for pin counts not listed or outside of the pin count range.					
Mated Size (mm) (**)	Height	2.2 +/- 0.2	2.2 +/- 0.15	1.65 +/- 0.2	0.76 +/- 0.06	1.27 +/- 0.1	1.04 +/- 0.06
	Width Formula	5.8 + (0.5 * ?p)	5.0 + (0.4 * ?p)	5.8 + (0.4 * ?p)	Cable plug : 2.15 + (0.35 * ?p)	5.0 + (0.3 * ?p)	4.1 + (0.25 * ?p)
	Depth	6.10	5.0	3.00	Cable plug : 3.10	2.90	2.40
Wiping Length (mm)		0.51	0.70	0.30	0.10	0.20	0.20
Reference applicable cable size (AWG#) (***)	Micro-coax for Signals (****)	45ohm : #36 or smaller	45ohm : #38 or smaller	45ohm : #38 or smaller	45ohm : #40 or smaller	45ohm : #42 or smaller	45ohm : #44 or smaller
		50ohm : #38 or smaller	50ohm : #40 or smaller	50ohm : #40 or smaller	50ohm : #42 or smaller	50ohm : #44 or smaller	50ohm : #46 or smaller
	Twincoax	#40	#40	-	-	-	-
	Discrete	#32 or smaller	#34 or smaller	#34 or smaller	#36 or smaller	#39 or smaller	#39 or smaller
Compatibility		-	-	-	-	-	-
Performance (Reference Only)		eDP HBR 2 (5.4 Gbps) USB 3.1 Gen1 (5 Gbps)	USB4 (20 Gbps/lane) PCIe Gen 4 (16GT/s) eDP HBR 3 (8.1 Gbps)	eDP HBR 2 (5.4 Gbps) USB 3.1 Gen1 (5 Gbps)	USB 3.1 Gen 1 (5 Gbps) MIPI® standards	USB 3.1 Gen 1 (5 Gbps) V-By-One HS 1.4 (4 Gbps) HDMI 1.3 (3.4 Gbps)	USB 3.1 Gen 1 (5 Gbps) V-By-One HS 1.4 (4 Gbps) HDMI 1.3 (3.4 Gbps)

Note (*) : CABLINE-UY SMT plug is sold and supplied by the I-PEX licensed manufacturer. (**) : CABLINE-UM : Height, Width formula and Depth dimensions are including Lock Cover. (***) : Cable outer diameters need to be smaller than connector pitch.
(****) : 45Ω and 50Ω cable AWG sizes for signals are listed as reference. Other impedance cables can be applied.

Confidential C

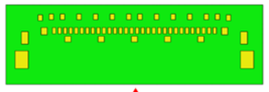
I-PEX VS series and CA series connector map

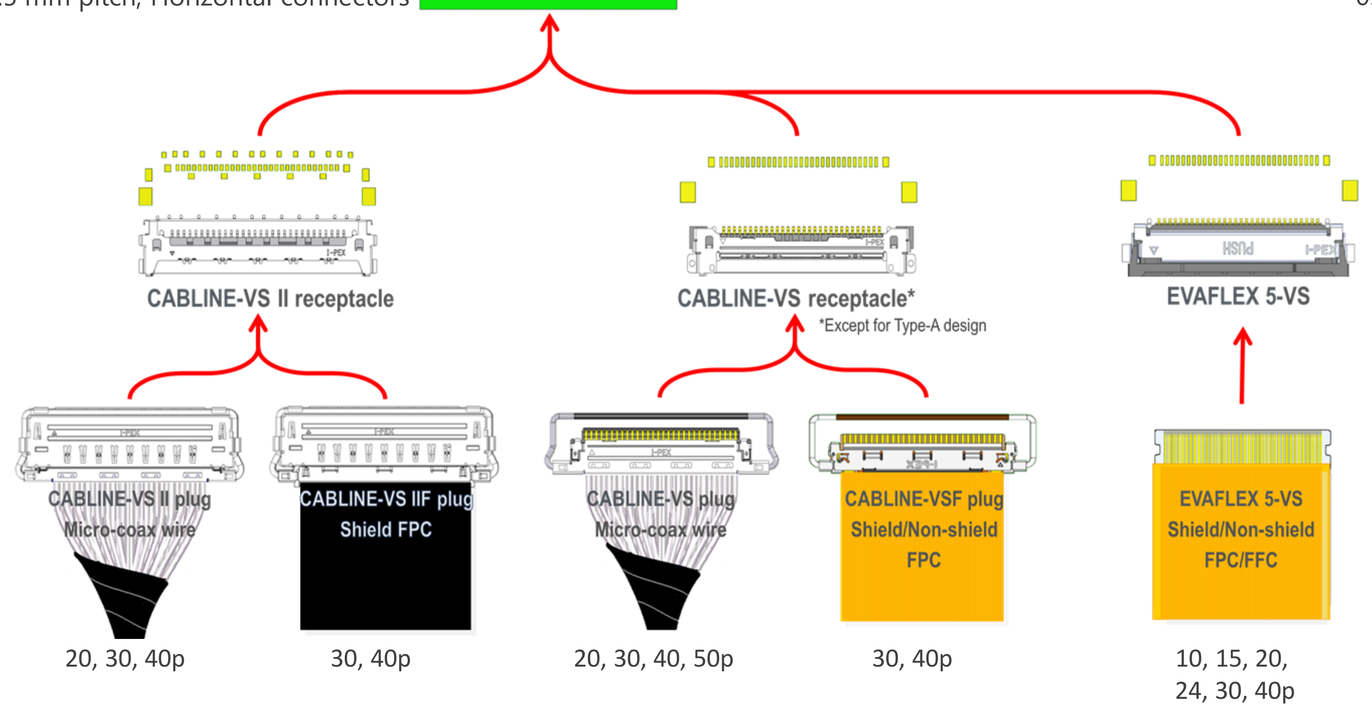
(0.5 mm pitch, Horizontal) (0.4 mm pitch, Horizontal)

CABLINE-VS, VS II receptacles and EVAFLEX 5-VS can be mounted to the same PCB layout.

I-PEX VS series

0.5 mm pitch, Horizontal connectors

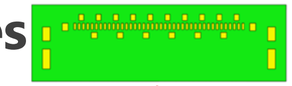


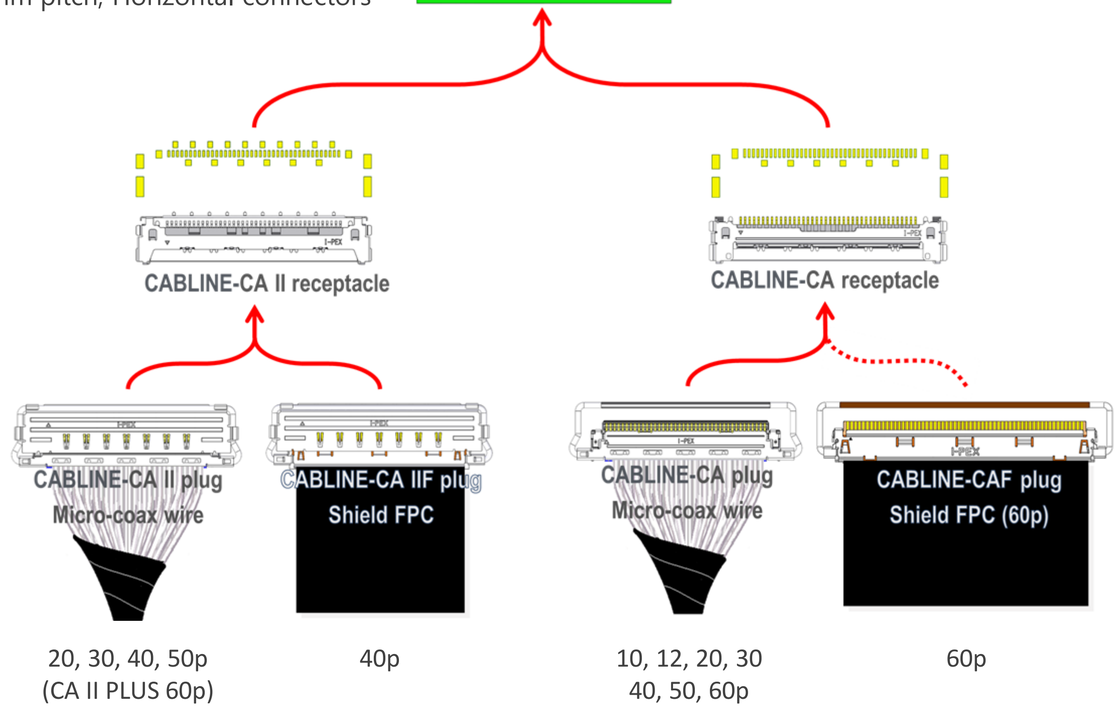


CABLINE-CA and CA II receptacles can be mounted to the same PCB layout.

CABLINE-CA series

0.4 mm pitch, Horizontal connectors



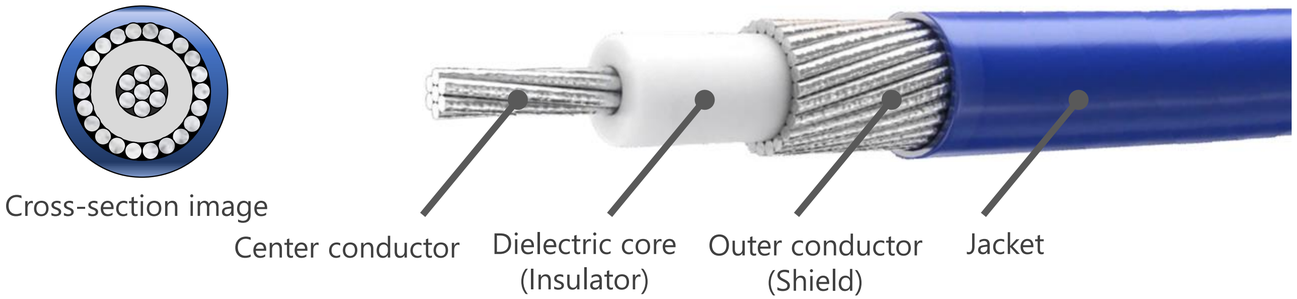


*Please inquire for pin counts not listed above.

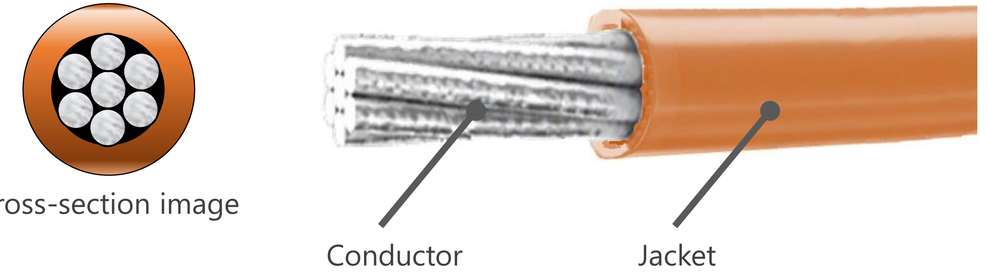
Confidential C

Cable structure

Micro-Coaxial Cable

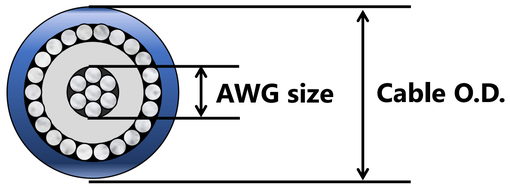


Discrete Cable



Cable size (Reference)

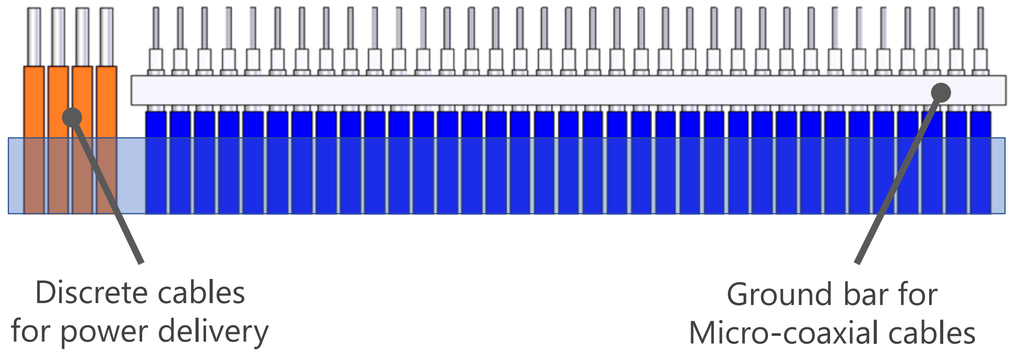
Center conductor : 7-wire stranded type



AWG size	Center Conductor Diameter (mm)	Cable Outer Diameter (O.D.) (mm)	
		Characteristic impedance	
		45Ω	50Ω
#30	0.30	1.04	1.16
#32	0.24	0.82	0.90
#34	0.19	0.67	0.73
#36	0.15	0.49	0.55
#38	0.12	0.39	0.46
#40	0.09	0.33	0.37
#42	0.075	0.29	0.33
#44	0.060	0.24	0.26
#46	0.048	0.22	0.24

* Cable size varies depending on the types of cable.

Cable sub-assembly image

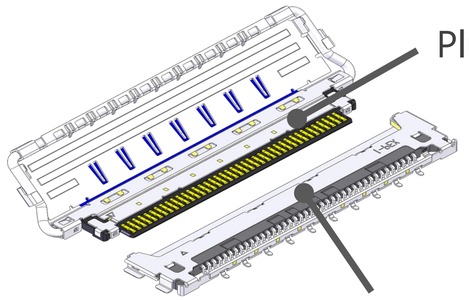


Confidential C

Micro-Coaxial Connector structure

Connector parts

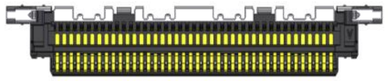
Example: CABLINE-CA II



Plug

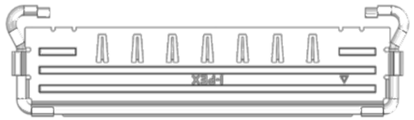
Receptacle

Plug component parts:

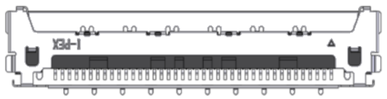


Plug Housing Assembly

Plug Shell-A

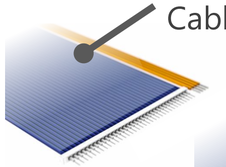


Plug Lock Bar Assembly

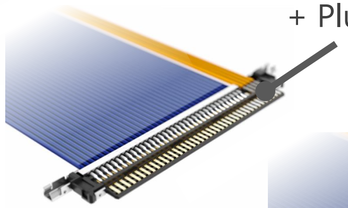


Receptacle

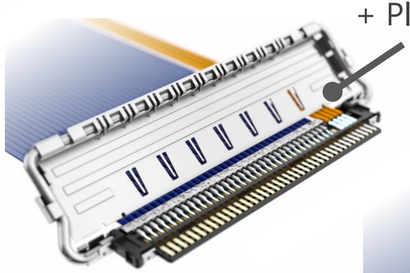
Plug harness assembly process image



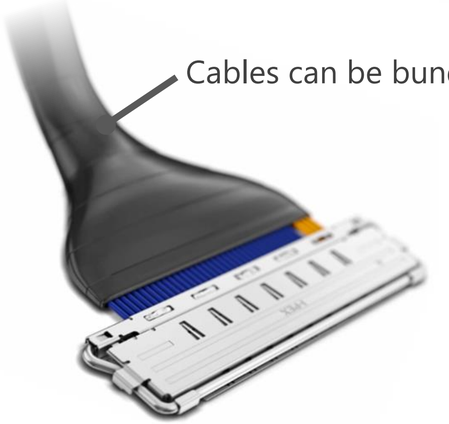
Cable sub-assembly



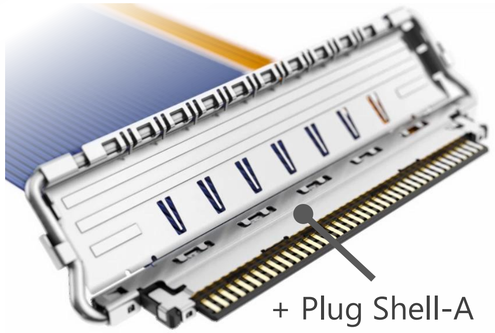
+ Plug Housing Assembly



+ Plug Lock Bar Assembly



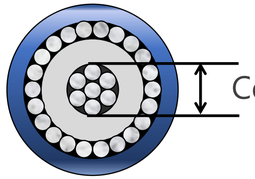
Cables can be bundled



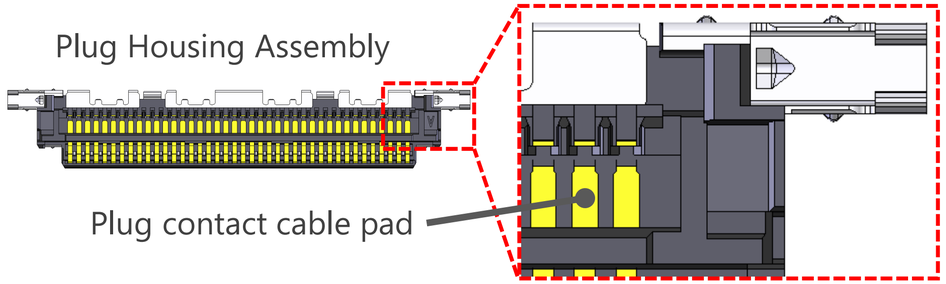
+ Plug Shell-A

Center conductor and plug contact cable pad size image

Micro-Coaxial Cable cross-section image



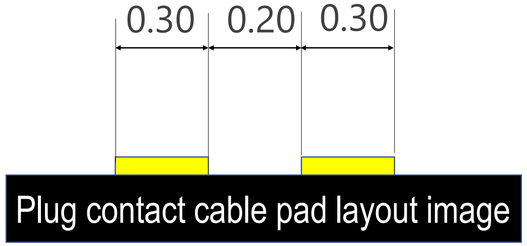
Center conductor dimension

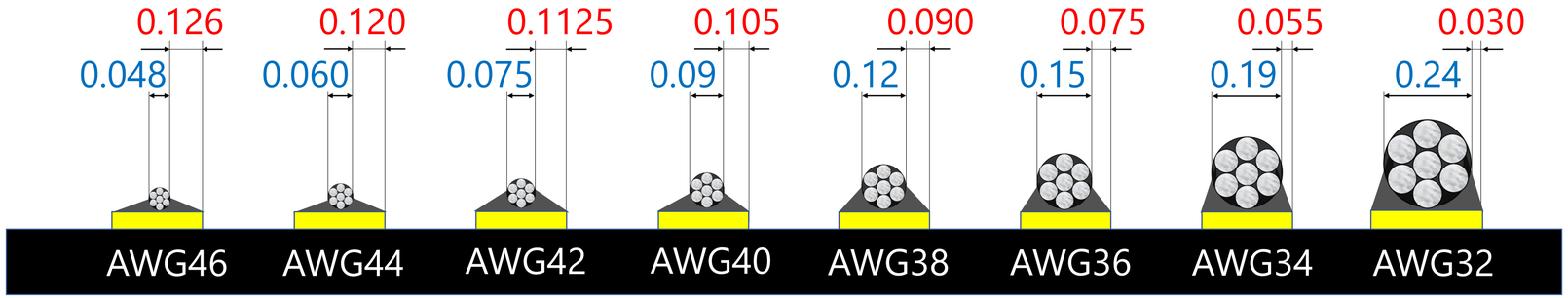


Red color number: Gap of conductor and pad (mm)
Blue color number: Center conductor dimension (mm)

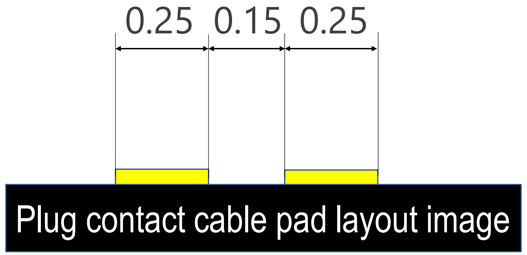
(Reference)

0.5 mm pitch series

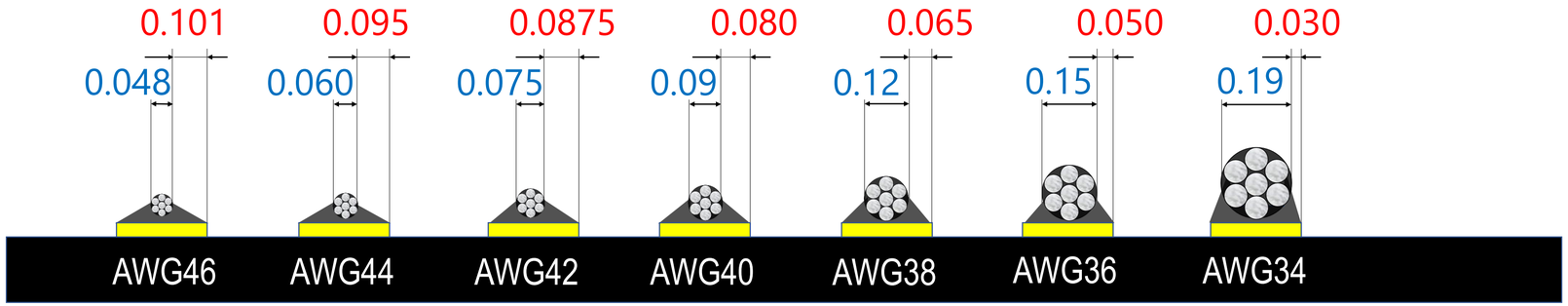




0.4 mm pitch series



(AWG 34 type)



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Appendix : I-PEX Connectors Series

Click icon below to see latest product information

MHF®

High-Frequency Micro RF Connectors

CABLINE® FPL®

High-Speed Micro-Coaxial Connectors

NOVASTACK®

High-Density Board-to-Board Connectors

EVAFLEX® MINIFLEX®

High-Density FFC/FPC Connectors

ISH® IARPB®

High-Power Wire-to-Board Connectors

CUSTOM