



Amphenol

Enabling the
Electronics Revolution

High Speed Cable Solutions for Autonomous Driving
Amphenol Interconnect and Sensor System(AISS)
Amphenol AssembleTech(AST)

November 9, 2021

Amphenol AssembleTech (AST)

Xiamen, China / Houston, USA / Ho Chi Minh, Vietnam



AST Xiamen, China



AST Houston, USA

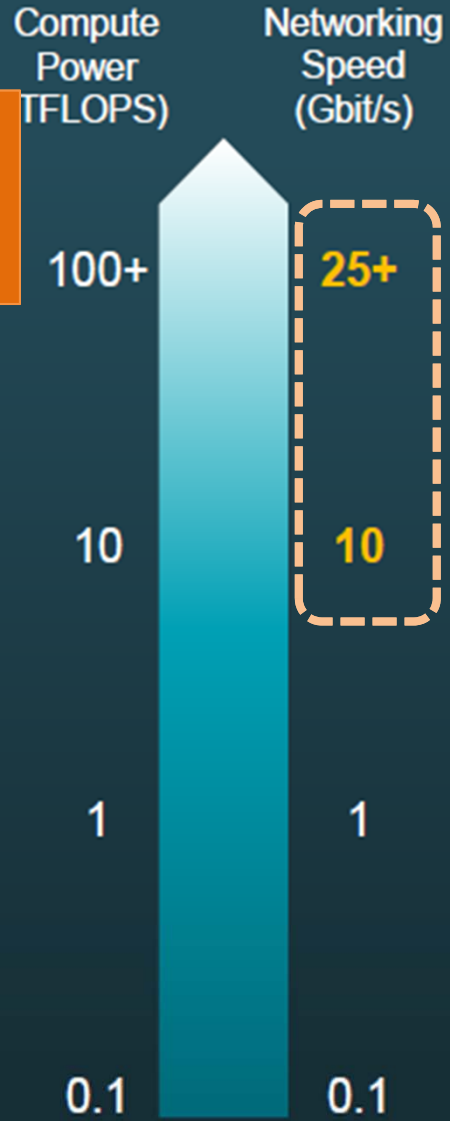
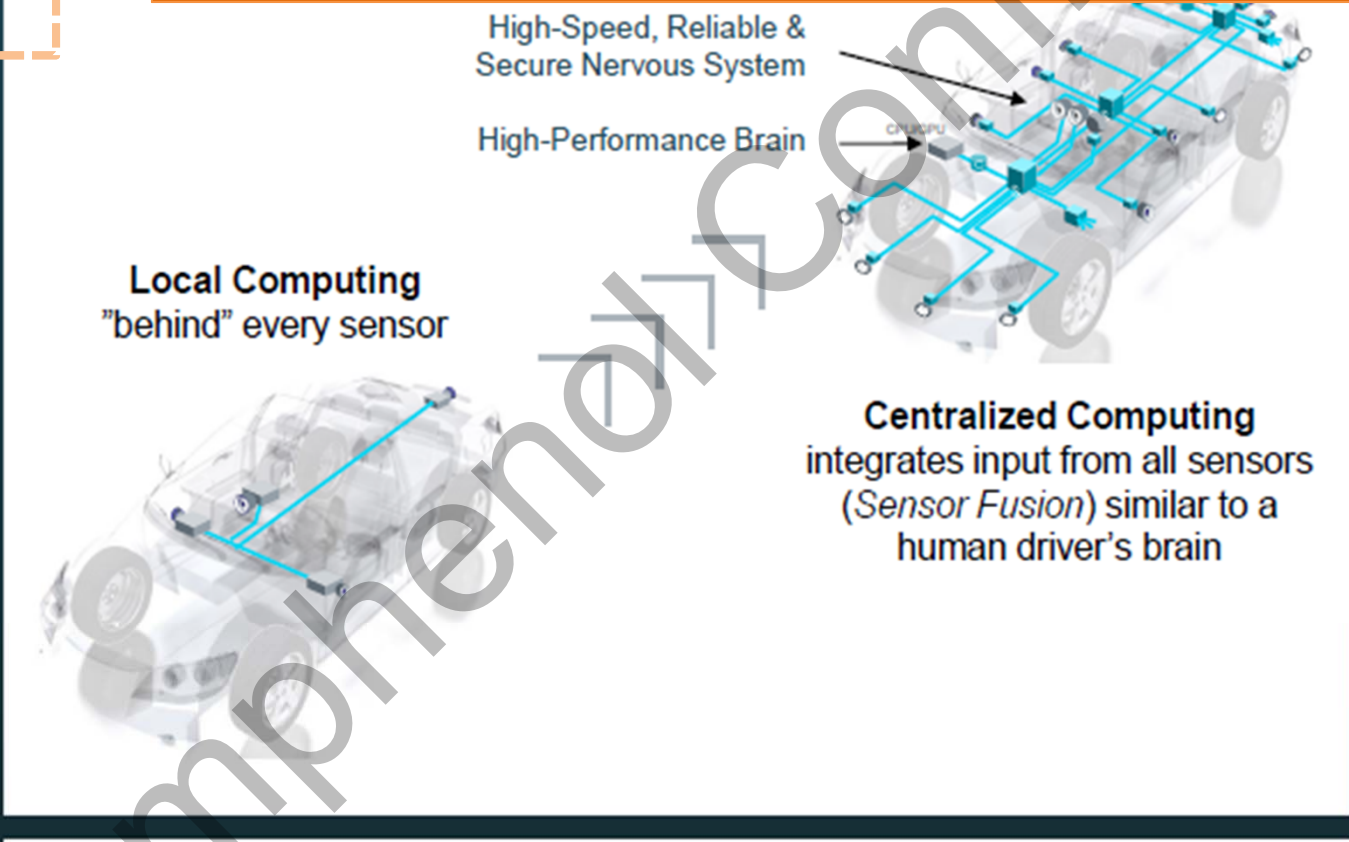


AST Ho Chi Minh, Vietnam

Product Roadmap for Autonomous Driving Level

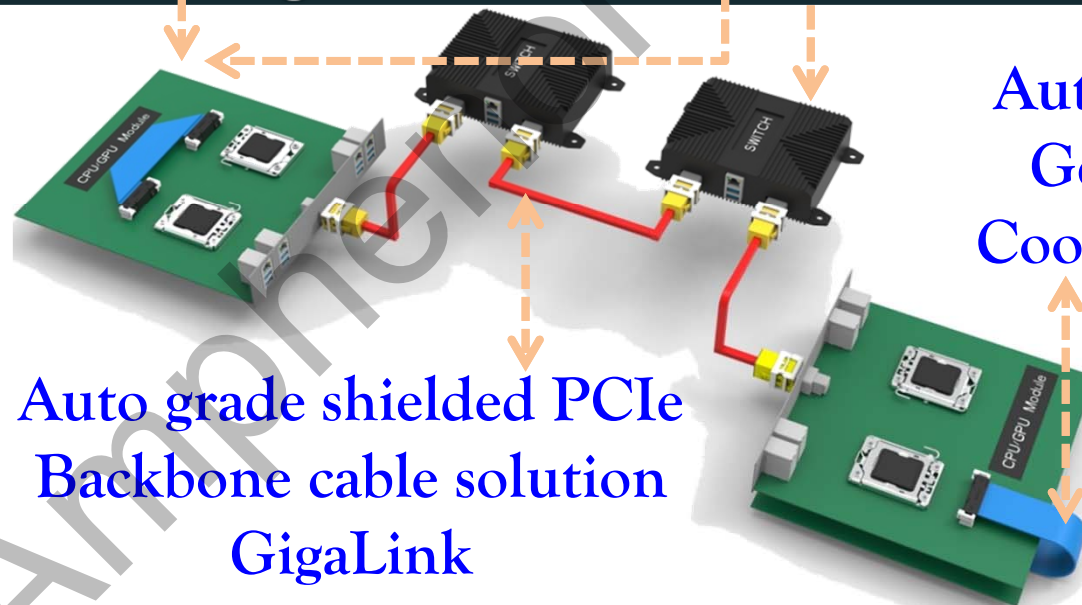
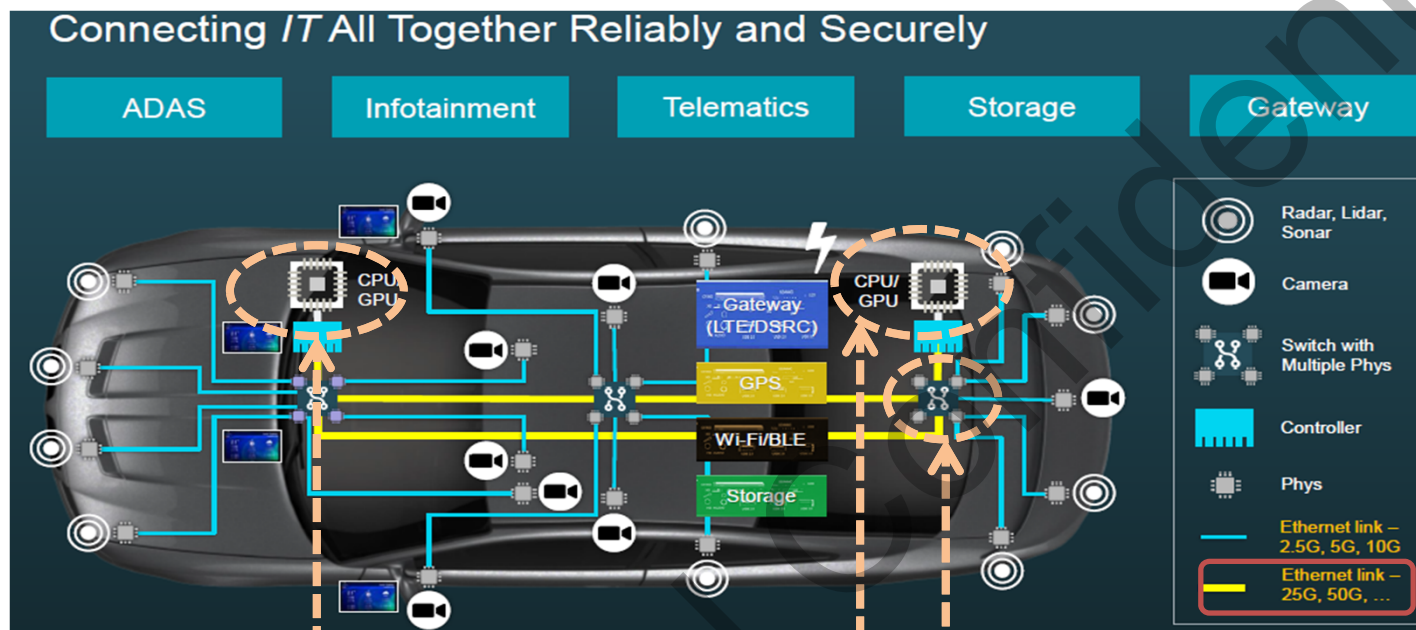
The Path Towards Full Autonomy

CooLink2.0 supports PCIe Gen5 for L5 application
 CooLink1.0 supports PCIe Gen4 for L3~4 application
 GigaLink supports PCIe Gen4 for L4~5



2010 - 2015 2015 - 2020 2020 - 2025

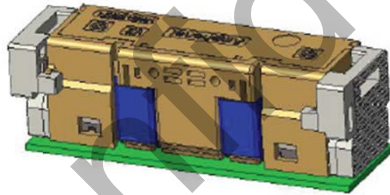
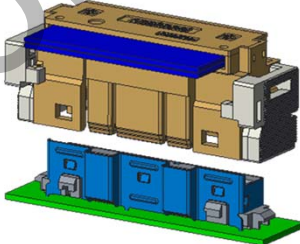
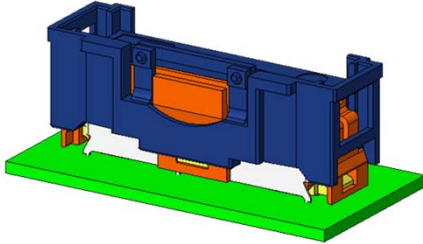
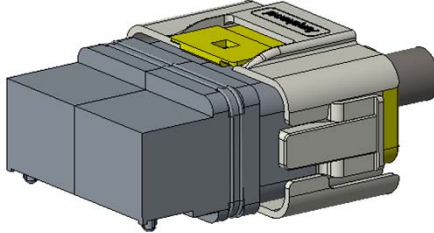
Architecture for Autonomous Driving System



Auto grade PCIe Gen4,
Gen5 cable solutions
CooLink1.0/CooLink2.0

Auto grade shielded PCIe
Backbone cable solution
GigaLink

Product Roadmap for Data Rates

Series	Product	Oriental	Picture	Data Rate
Internal Connection	CooLink1.0	VT board connector with R/A plug		Proposed PCIe Gen4 standard
	Reversed CooLink1.0	V/T board connector with reversed R/A plug		Proposed PCIe Gen4 standard
	CooLink2.0	VT board connector with R/A plug		Proposed PCIe Gen5 Standard
External Connection	GigaLink1.0	RA board connector with STR plug		Proposed PCIe Gen5 standard and TC9 Ethernet

Ultraport-Coolink1.0

CooLink1.0

CooLink1.0 is a high speed connector and cable solution that can meet USCAR2 and GMW3191, SI performance supports proposed PCIe Gen4 standard, CPA and double lock design is available for CooLink1.0.

SI

- Supports proposed PCIe Gen4 standard

Mechanical

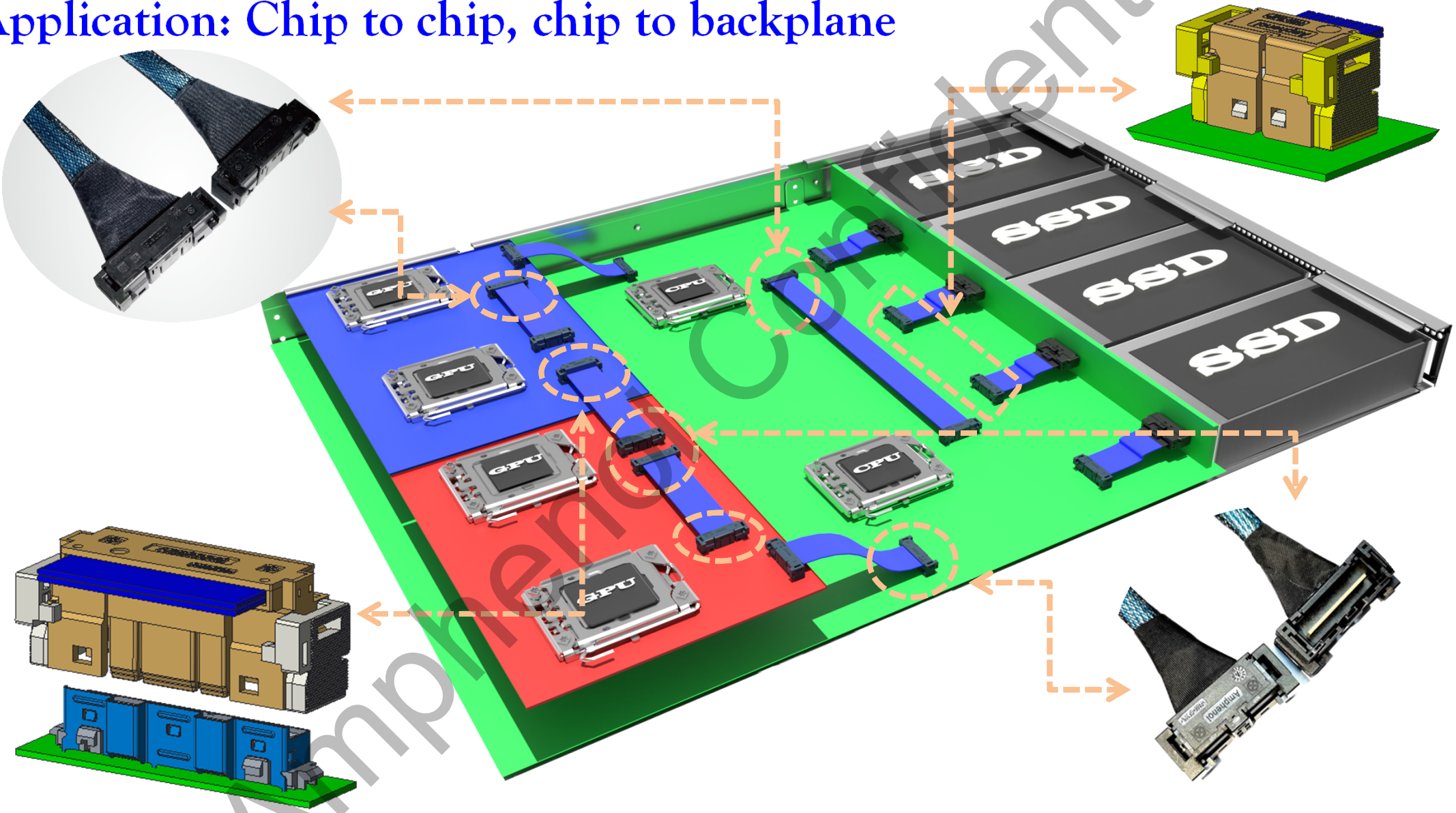
- Robuster, CPA and double lock feature

Application

- Supports chip to chip, chip to backplane

Coolink 1.0

Application: Chip to chip, chip to backplane



Benefits of application

High
Speed

Supports proposed PCIe Gen4 standard

Specification

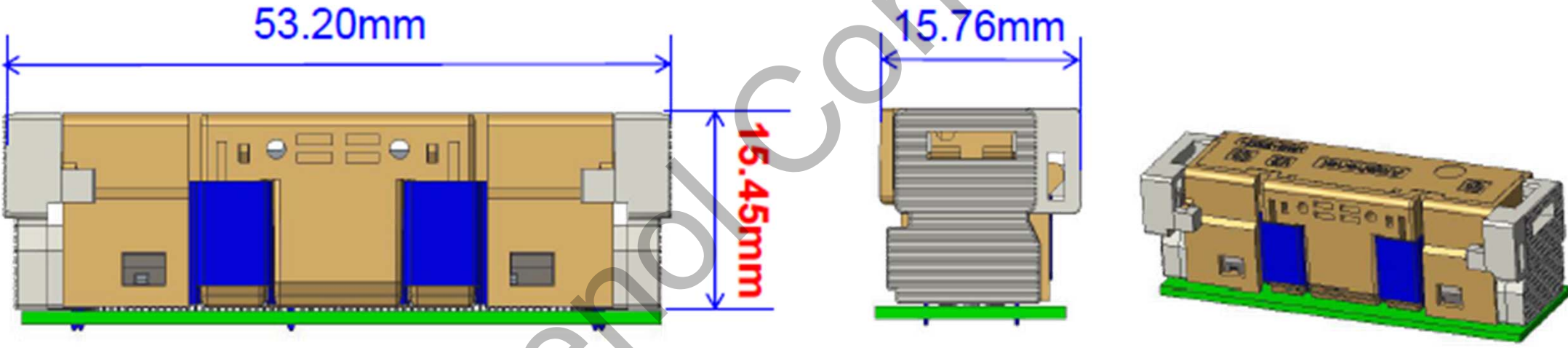
Compliance with USCAR2 and GMW3191

PIN
Count

50p, 74p,124p is available, support V/T receptacle and R/A plug

Coolink1.0

Mechanical: Small size with high density channel



20X high speed channels

Benefits of Mechanical

Mating
height

Low mating height 15.4mm for 124pin solution

Robust

Robuster, CPA and Guide PIN feature

Latch

Double lock with primary latch and secondary latch

Benefits of SI

IL

Typical IL -3.8dB @ 8GHz (360mm)

Crosstalk

Typical NEXT is -50dB, FEXT is -45dB

Impedance

Supports 85ohm

Configuration matrix

Channels	8X	12X	20X
Pin no.	50pin	74pin	124pin
Status	Right angle plug and vertical receptacle available	Right angle plug and vertical receptacle available	Right angle plug and vertical receptacle available
Cable Plug	RCSL50F003-AT	RCSL74F002-AT	RCSLC4F001-AT
Receptacle	GA90003050111HR	GA9000307411HR	GA9000312411HR

Extremeport-Coolink2.0

CooLink2.0

CooLink2.0 is a high speed connector and cable solution that can meet USCAR2 and GMW3191, SI performance supports proposed PCIe Gen5 standard, CPA and double lock design is available for CooLink2.0.

SI

- Supports proposed PCIe Gen5 standard

Mechanical

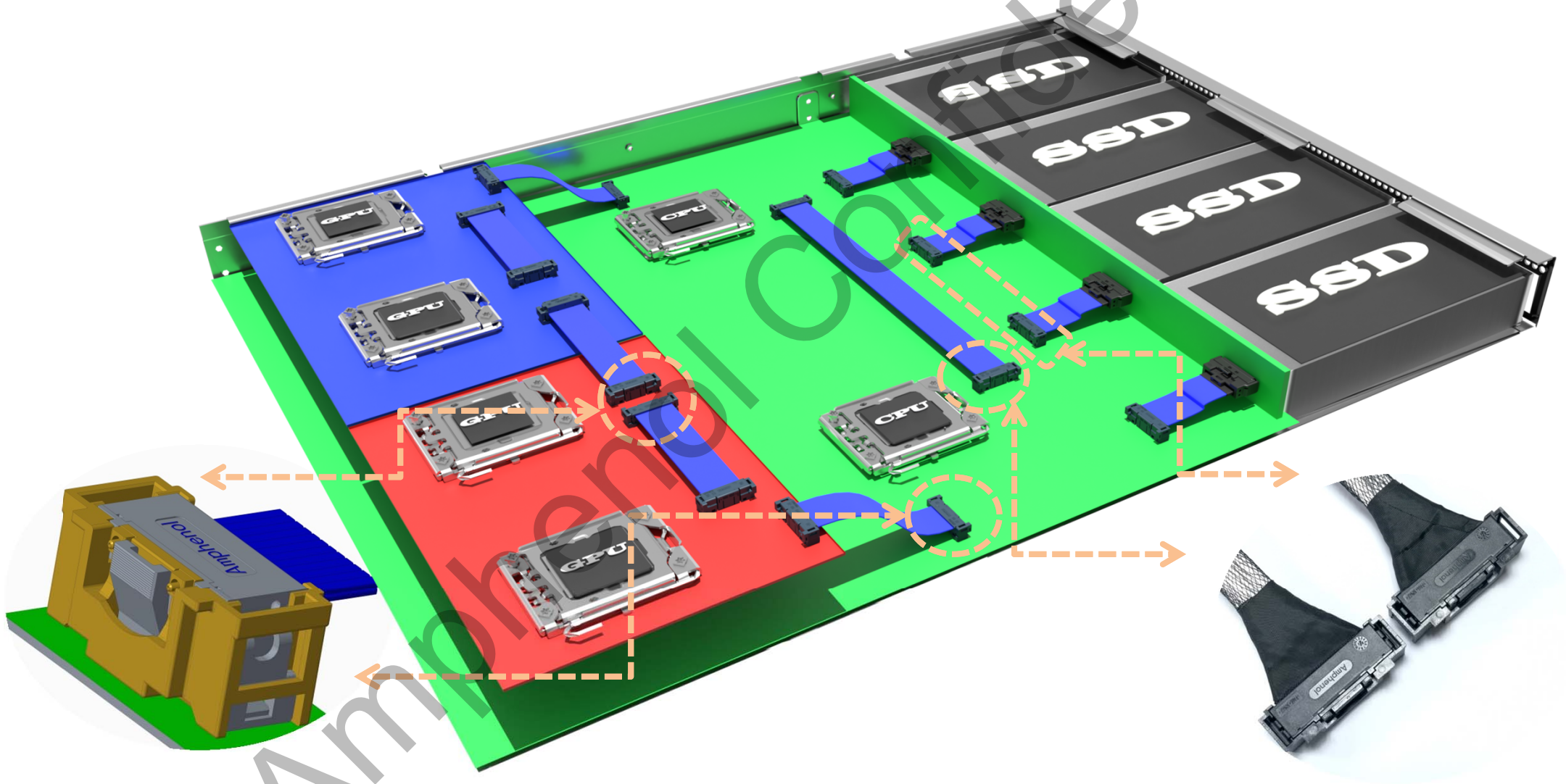
- Robuster, CPA and double lock feature

Application

- Supports chip to chip, chip to backplane

Coolink2.0

Application: Chip to chip, chip to backplane



Coolink2.0

Benefits of application

**High
Speed**

Supports proposed PCIe Gen5 standard

Specification

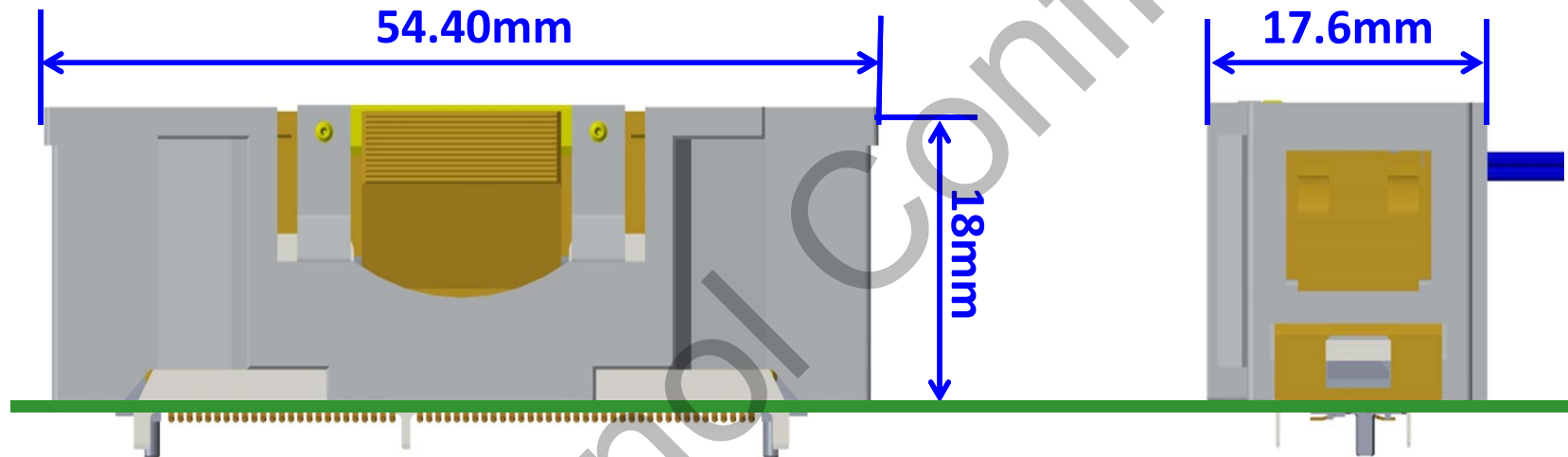
Compliance with USCAR2 and GMW3191

**PIN
Count**

124p is available, support V/T receptacle and R/A plug

CoolLink2.0

Mechanical: Small size with high density channel



20X plug mating with vertical receptacle

Coolink2.0

Benefits of Mechanical

Mating
height

Low mating height 18mm for 124pin solution

Robust

Robuster, CPA and Guide PIN feature

Latch

Double lock with primary latch and secondary latch

Coolink2.0

Benefits of SI

IL

Typical IL -4.0dB @ 16GHz (300mm)

Crosstalk

Typical NEXT is -52dB, FEXT is -42dB

Impedance

Supports 85ohm

Coolink2.0

Configuration matrix

Channels	8X+S(12X)	16X+S(20X)
Pin number	74pin	124pin
Status	TBD	Right angle plug and V/T receptacle are available
Cable Plug	NA	RCGLC4F001-AT
Receptacle	NA	GAG011243101AHR

Ultraport-Gigalink

GigaLink

GigaLink is a fully shielded high speed connector and cable solution that can meet USCAR2, SI performance supports proposed PCIe Gen4 standard, CPA and double lock design is available for GigaLink.

SI

- Supports proposed PCIe Gen4 standard

Mechanical

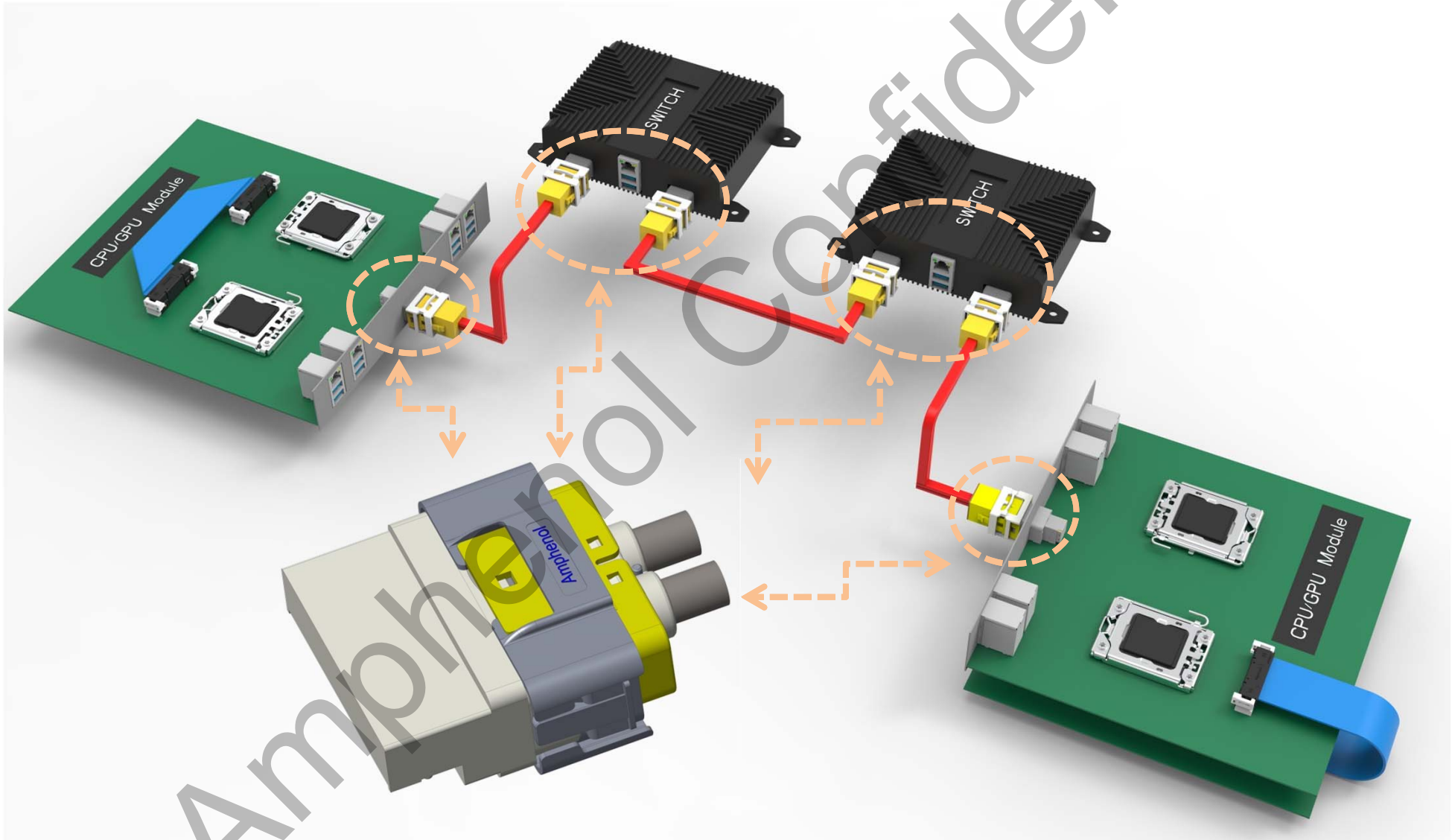
- Robuster, CPA and double lock feature

Application

- Supports high performance ECU connection

GigaLink

Application: Supports high performance ECU connection



Benefits of application

High Speed

Supports proposed PCIe Gen4 standard
Scalable to support PCIe Gen5

Specification

Compliance with USCAR2

PIN Count

68pin design concept, R/A receptacle and STR plug

Configuration matrix

Channels	8X+SB
Pin number	68pin
Status	Mechanical design and SI simulation
Cable Plug	Straight
Receptacle	Right angle

Thank You

Contact window for more information



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