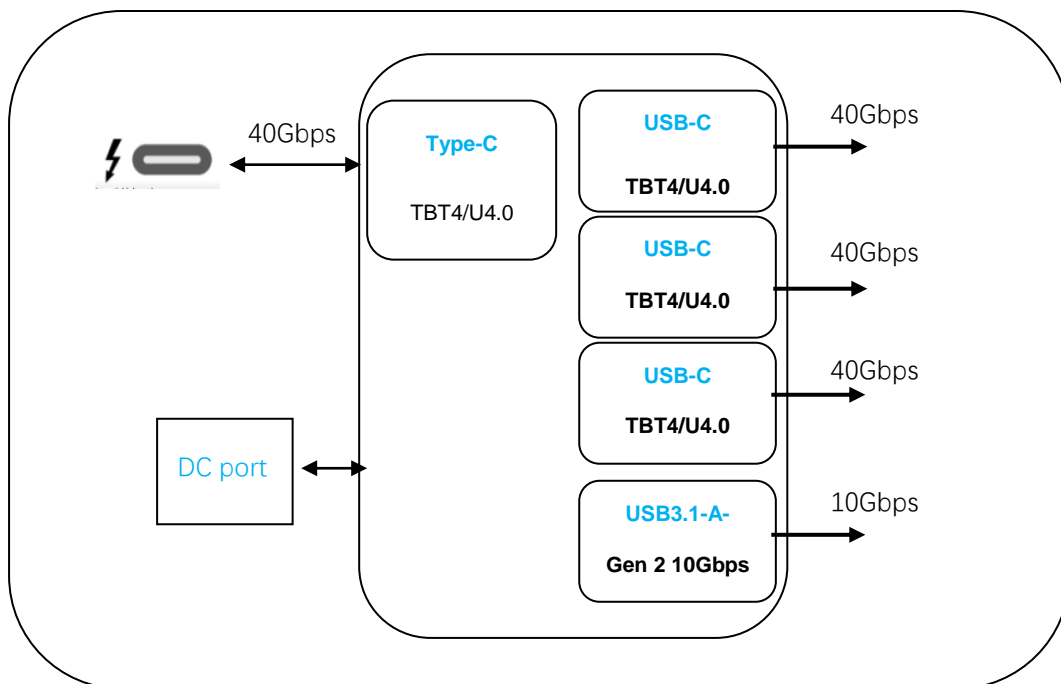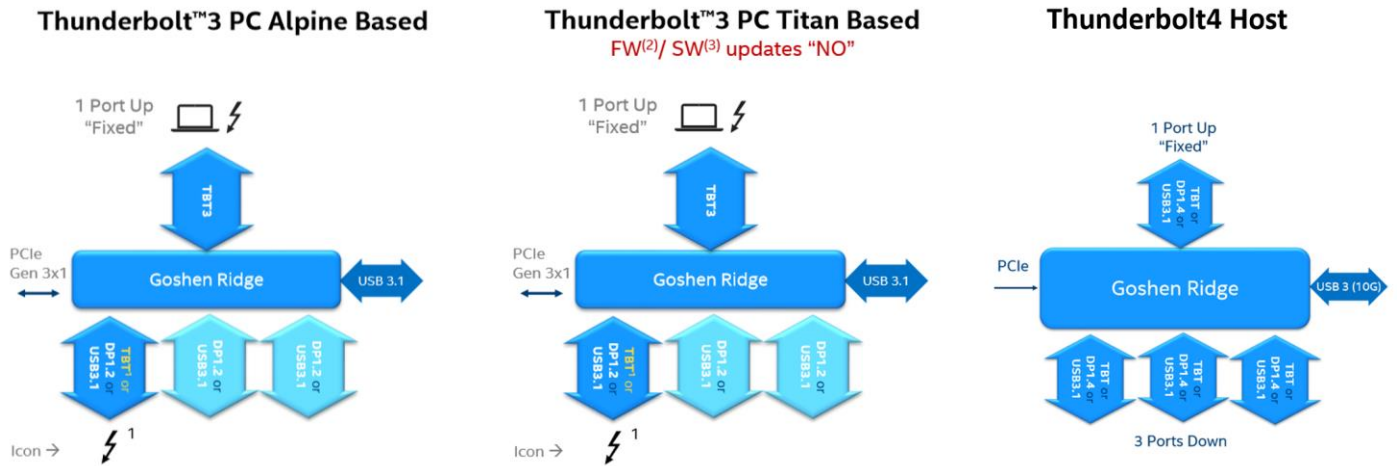# GC-B03 Thunderbolt ™4 / USB4.0 HUB Spec

OVERVIEW

Thunderbolt™ is a high-speed protocol that can dynamically adjust data and video bandwidth depending on the accessory and/or application. It is now the basis of the USB4 protocol specification.Thunderbolt™4 and USB 4 products will use the same underlying protocol specification to improve compatibility for USB-C based products.

FEATURES& BLOCK DIAGRAM

➤ Thunderbolt™ 4 port (UFP) for connection to computer – port is 'fixed' as UFP.

➤ Three Thunderbolt™ 4 ports (DFP) for connection to accessories.

➤ Supports Thunderbolt™, USB4, USB3 (10Gbs), Native DP, USB3/DP on all ports.

➤ x1 USB3 (10Gbs) side port.

➤ Compatible with Thunderbolt™ 4, USB4, USB3/DP PCs and Thunderbolt™3 Macs.

➤ The Upstream Port support TBT4/USB4.0/TBT3, Compatibly the WIN10, macOS 11(Big Sur) and Latest OS.

➤ The Upstream Port is TBT4/USB4.0, a maximum of 8K@30Hz can be output through a single downstream Type-C port, and a maximum of 4K@60Hz can be output through two downstream Type-C ports at the same time. USB-A supports 10Gbps,5V1A.

➤ The Upstream Port is TBT3, the downstream Type-C supports one channel TBT/USB4.0 signal, and the rest port supports DP or USB signal.

➤ The Upstream Port is USB, and the Downstream Port are all corresponding USB signals.

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Thunderbolt™3 PC Alpine Based

Thunderbolt™3 PC Titan Based
FW(2)/ SW(3) updates "NO"

Thunderbolt4 Host

Note： AR Host need update the FW to support Thunderbolt4 device.
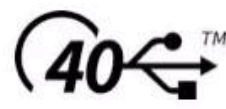
CONTROLLER LIST

- Thunderbolt™ 4 / USB4.0 Port

- Utilizes JHL8440

- Thunderbolt™ 4 / USB4.0 Host Connection

- Designed for Bus Powered Devices

- Provides >15Watt. Devices

- 85Watt.Upstream

- Utilizes C YPD5235/CY7C65219 for PD solution

POWER BUDGET TABLE

Controller	Power(W)
Type-C*3	14.25W(4.75V@3A)*3
USB-A*1	5W(5V @1A)*1
Total Consume	50.40W+85W(for UFP)

APPLICATIONS TO CONSIDER

Category	Design
Type-C	Support Vought 5v Max 3A with 40Gbps
USB-A	Support USB3.1 Gen2 for 10Ghbps, and Vought 5V 1A

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