

 **USB**
MMi CONNECTORS
FROM HARWIN SOLUTION

Fast, Reliable, Protected - USB

USB

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HIGH-SPEED PERFORMANCE WITH RUGGED FLEXIBILITY

Reliable connectivity in a compact footprint, Harwin's USB range offer robust, high-performance connector compliant with USB 2.0, 3.2 and 4.0 standard, ensuring superior signal integrity and mechanical durability in demanding environments.

Engineered for top-tier reliability, Harwin's USB connectors include both plug and receptable options with versatile range of orientations – ideal for edge-mount, top-mount, and side-entry configurations. With mating durability of up to 10,000 cycles and support for 5A current at 30V DC, they are purpose-built for high-speed data and power application.

FEATURES:

- Compliant with USB2.0, USB3.2 (20Gbps) and USB4.0 (40Gbps) Standard
- Fully Shrouded and available in waterproof (IPX8) options
- Compact 0.5mm pitch with up to 24-pin count
- Gold Finish contacts for enhanced conductivity and longevity
- Tape and reel packaging for automated assembly

APPLICATION

- Consumer Electronics
- Medical diagnostic and handheld devices
- Industrial sensors and data acquisitions systems
- Automotive infotainment and control modules

SPECIFICATION

MATERIALS	ELECTRICAL	MECHANICAL	ENVIRONMENTAL
Housings: High Temperature Thermoplastic, UL94V-0	Current Rating: 5A Max (VBUS) 1.25A for VCONN Pin 0.25A for Other Pin	Durability: 10,000 mating cycle	Operating Temperature: -40°C to +85°C
Contact: Copper Alloy	Working Voltage: 30V DC/AC	Mating Force: 5N ~ 20N	Vibration: Random Vibration 20~500Hz
Contact Finish: Gold on Contact area, Tin on termination	Contact Resistance: 40mΩ Max (Initial), 50mΩ Max (After Test)	Unmating Force: 80N ~ 20N (Initial) 6N ~ 20N (After Test)	Waterproof Option: IPX8 available on Selected Models
Shell: Stainless Steel, Nickel Finish	Data Rate: Up to 40Gb/s (USB4.0)	Pitch: 0.5mm (0.2")	Humidity: 90% RH for 96 Hours
Rubber for Waterproof: SI, Color: Black	Insulation Resistance: 100MΩ Min	Available Pin Count: 12 or 24 (Type C)	Compliance: RoHS, REACH, CMRT

Offering Option:

MOUNTING OPTION:

- Top Mount – Surface-mount receptacles soldered directly onto PCB surface.
- Board Mount (Offset) – A specialized style plug with an offset profile for tight enclosure application.
- Side Entry Upright (Flag Type) – Vertical-style receptacle offering edge-facing connectivity.



WATERPROOF (IPX8 RATED)

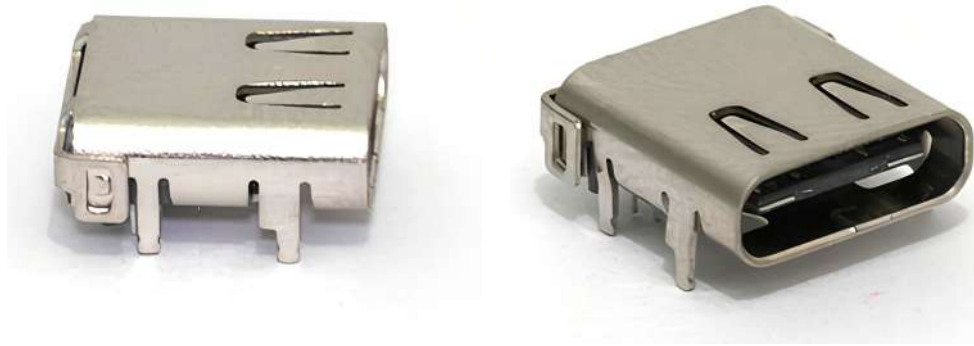
Engineered with sealed housing and over-mold protection for wet, dry or high-humidity environments, Suitable for outdoor electronics, medical wearables, or marine systems



Offering Option:

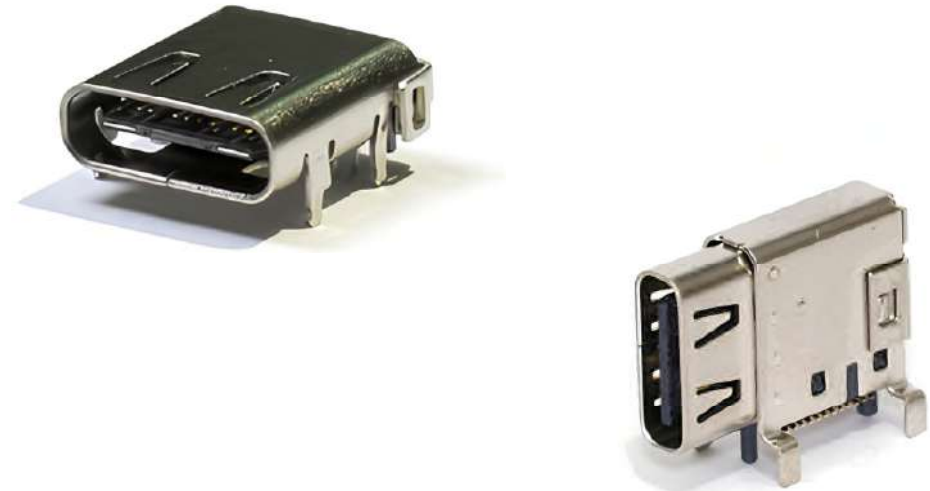
PROTOCOL VERSION:

- USB 4.0 (40 Gbit/s) – Design for ultra high-speed applications requiring fast data transfer and high-powered delivery.
- USB 3.2 (20 Gbit/s) – Balanced Option offering fast data transmission and wide compatibility.



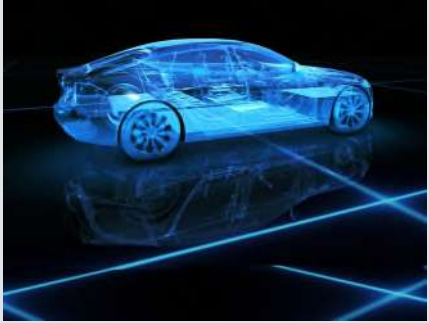
CONNECTOR GENDER

- Plug – Typically found on cables or board mounted application where the connector is inserted into a mating receptacles. Harwin's board-mounted male plugs offer mechanical robustness and precision mating.
- Receptacle – Receives the plug. These are design with polarization, full shrouding, and optional IPX8 sealing for durability and ease assembly on PCBS.



Application

Automotive



- Driver assistance / ADAS systems
- eBike power & diagnostics
- In-vehicle infotainment center stacks
- Dashboard firmware

Home Appliances



- Smart home hub & Appliance control panels
- Charging Ports
- Firmware Update interface

MedTech



- Electronics Inhalers
- Glucose meters
- Portable diagnostics and imaging units
- Patient Monitoring equipment

Wearable



- Smart Watches
- Headset / Headphones
- VR Set

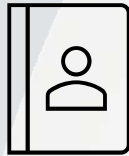
Telecommunication



- ISDN diagnostic equipment
- Base Station maintenance tool
- Field-use USB-C data collection

HARWIN

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