



USB / Micro USB 3.0 Connector System Product Presentation

Basics Portfolio



Agenda



- Value Proposition
- Product Overview
- Product Specifications
- Features & Benefits
- Markets & Applications
- Marketing Collateral

USB / Micro USB 3.0 Connector System



Value Proposition

USB 3.0 connector features a new transfer mode SuperSpeed that can transfer data at up to 5Gb/s, which is more than ten times faster than the USB 2.0 standard.

The USB 3.0 connector is backward compatible with USB 2.0 devices and cables.

Micro-USB 3.0 connector is a smaller version of the Mini 2.0 connector. The connector features SuperSpeed, a new transfer mode that enables data transfer rates up to 5Gb/s.

The specification of the Micro-USB 3.0 connector supports the current USB On-The-Go (OTG) supplement and provides total mobile interconnectivity. It enables communications between portable devices without the need for a host computer. It also allows convenient recharging and power supply between computers and electronic devices, thereby replacing the need for adapters and power charges.

USB / Micro USB 3.0 Connector System



Product Overview

FCI offers **USB 3.0** standard Type A and Type B receptacles and cable solutions in single-stacked positions. Additionally, Type A is also available in double-stacked positions. The USB 3.0 connector is available in vertical through-hole, right angle through-hole and upright through-hole options.

Originally designed to meet the standards for connection between computer peripherals to personal computers. The USB 3.0 now provides an alternative to delivering power to portable devices as well as replacing older interfaces such as serial and parallel ports.

FCI's **Micro USB 3.0** connector system includes Type B receptacle in surface mount style, plug and cable solutions. It also supports the current USB On-The-Go (OTG) supplement.

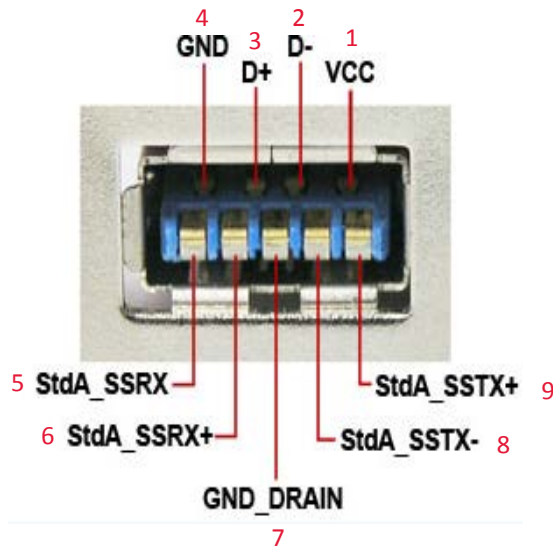
Both USB 3.0 and Micro USB 3.0 connector systems are ideal for applications in consumer, data, communications and industrial markets.

USB / Micro USB 3.0 Connector System

Product Overview – Connection Pinouts

Standard

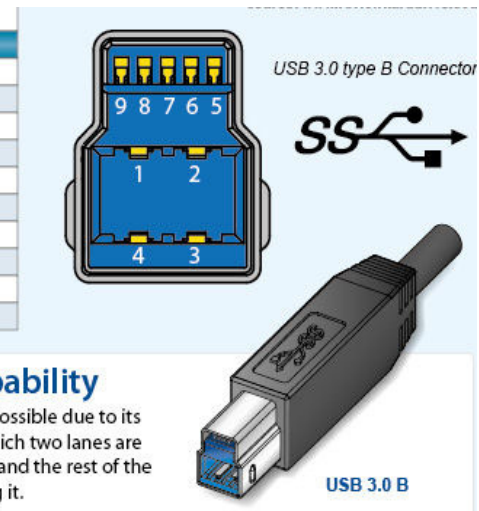
USB 3.0 type A Pinout



USB 3.0 type B Pinout, Cable assembly

USB type B Pinout, Cable Assembly

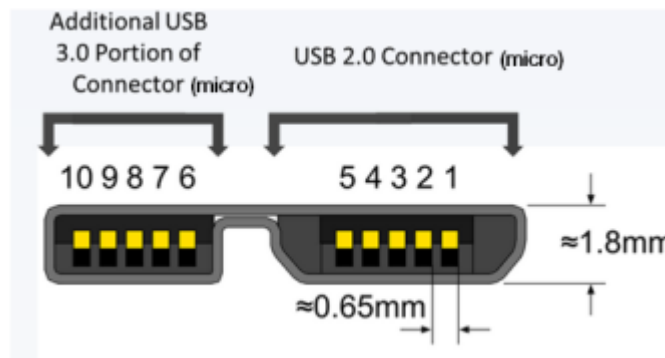
Pin	Signal Name	Description
1	VBUS	Red
2	D-	White
3	D+	Green
4	GND	Black
5	StdA_SSTX-	Blue
6	StdA_SSTX+	Yellow
7	GND_DRAIN	GROUND
8	StdA_SSRX-	Purple
9	StdA_SSRX+	Orange
Shell	Shield	Connector Shell



USB 3.0 transfer capability

The high USB 3.0 speed becomes possible due to its full duplex transfer capability in which two lanes are fully reserved for sending the data and the rest of the two lanes are reserved for receiving it.

Micro



Pin Layout for USB 3.0 Micro-B Connector

USB / Micro USB 3.0 Connector System



USB 2.0 Vs USB 3.0

USB 2.0



USB 3.0



Speed	High Speed or HS, 480 Mbps (Megabits per second)	10 times faster than USB 2.0. Super Speed or SS, 4.8 Gbps (Giga bits per second)
Signaling Method	Polling mechanism i.e can either send or receive data (Half duplex)	Asynchronous mechanism i.e. can send and receive data simultaneously (Full duplex)
Price	For a similar product, the USB 2.0 version is generally less expensive than it's USB 3.0 version.	For a similar product, the USB 3.0 version is generally more expensive than it's USB 2.0 version.
Power Usage	Up to 500 mA	Up to 900 mA. Allows better power efficiency with less power for idle states. Can power more devices from one hub.
Number of wires within the cable	4	9
Standard-A Connectors	Grey in color	Blue in color
Standard-B Connectors	Smaller in size	Extra space for more wires
Max Cable length	5 meters	3 meters

USB / Micro USB 3.0 Connector System



Interoperability

Receptacle	Plugs Accepted
USB 2.0 Standard A	USB 2.0 Standard A or USB 3.0 Standard A
USB 3.0 Standard A	USB 3.0 Standard A or USB 2.0 Standard A
USB 2.0 Standard B	USB 2.0 Standard B
USB 3.0 Standard B	USB 3.0 Standard B or USB 2.0 Standard B
USB 3.0 Powered B	USB 3.0 Powered B, USB 3.0 Standard B, or USB 2.0 Standard B
USB 2.0 Micro-B	USB 2.0 Micro-B
USB 3.0 Micro-B	USB 3.0 Micro-B or USB 2.0 Micro B
USB 3.0 Micro-AB	USB 3.0 Micro-B, USB 3.0 Micro-A, USB 2.0 Micro-B, USB 2.0 Micro-A

USB 3.0 Connector System



Product Specifications

Product Facts

- Meet USB 3.0 specification
- The interface for Super Speed up to 5 Gb/s data rate
- Over 10X performance increase compared to USB 2.0
- Offer A and B type receptacle and cable solution
- Support single and dual stacked
- Available in vertical through hole, right-angle through hole and upright through hole options
- Backward compatible with USB 2.0 connector
- Minimizes user waiting time
- Available in UL94V-0 Flammability
- RoHS compliant

Performance

- Insulation Resistance : 100 M Ω min.
- Voltage Rating : 30Vrms max.
- Current Rating :
 - 1.8A for contact 1 & 4 (USB 3.0 Standard-A & Standard-B/Power-B);
 - 0.25A for all of other contacts
- Dielectric Withstand Voltage : 100 VAC
- Temperature Rise : 30°C max.
- Mating Force : 35N max.
- Unmating Force : 10N min.
- Durability : 1,500 insertion / extraction cycles
- Operating Temperature : -25°C to +85°C

Specifications

- Housing : High temperature thermoplastic
- Plastic cover : High temperature thermoplastic
- Contact : Copper Alloy plated with Gold plating
- Shell : Copper Alloy and Steel

Technical Documents

- Product Spec : GS-12-1273
- Packaging Spec : GS-14-2423

Micro USB 3.0 Connector System



Product Specifications

Product Facts

- Meet USB 3.0 specification
- The interface for Super Speed up to 5 Gb/s data rate
- Over 10X performance increase
- Offer type B receptacle, plug and cable solution
- Available in right-angle, surface mount styles
- Minimizes user waiting time
- Available in UL94V-0 Flammability
- RoHS compliant
- Full metal shielding for EMI / ESD protection
- Support On-The-Go (OTG)
- High flammability rating

Performance

- Insulation Resistance :1000 M Ω min.
- Voltage Rating :30Vrms
- Current Rating :
 - 1.8A for VBUS contact & corresponding GND contact (pin 1 & 5 of USB 3.0 Micro connectors);
 - 0.25 A for all of other contacts
- Dielectric Withstand Voltage :100 VAC
- Mating Force: 35N max.
- Unmating Force :10N min.
- Durability : 10,000 insertion/ extraction cycles at a maximum rate of 200 cycles per hour
- Operating Temperature : -25°C to +85°C

Specifications

- Housing : High temperature thermoplastic
- Plastic cover : High temperature thermoplastic
- Contact : Copper Alloy plated with Gold plating
- Shell : Copper Alloy

Technical Documents

- Product Spec : GS-12-1263
- Packaging Spec : GS-14-2423

USB / Micro USB 3.0 Connector System



Features & Benefits

Features	Benefits
<ul style="list-style-type: none">▪ Meet USB 3.0 specification	<ul style="list-style-type: none">▪ Mating interface follows USB 3.0 specification
<ul style="list-style-type: none">▪ Capable of transferring data up to 5Gb/s	<ul style="list-style-type: none">▪ Minimizes user waiting time
<ul style="list-style-type: none">▪ 10 times increase in performance	<ul style="list-style-type: none">▪ Provides higher speed and efficient power management than USB 2.0
<ul style="list-style-type: none">▪ Similar interface as USB 2.0 Standard A & B connectors, with added pins for SuperSpeed USB signals	<ul style="list-style-type: none">▪ Complete footprint compatibility with USB 2.0
<ul style="list-style-type: none">▪ Full metal shielding	<ul style="list-style-type: none">▪ For EMI / ESD protection
<ul style="list-style-type: none">▪ Supports On-The-Go (OTG)	<ul style="list-style-type: none">▪ Accessible and convenient for users
<ul style="list-style-type: none">▪ Available in vertical through hole, right-angle through hole and upright styles for USB 3.0	<ul style="list-style-type: none">▪ Flexible application in various situations
<ul style="list-style-type: none">▪ Available in cable solution, plug and right-angle SMT receptacle version for Micro USB 3.0	<ul style="list-style-type: none">▪ Flexible application in various situations
<ul style="list-style-type: none">▪ Available in UL94V-0 flammability	<ul style="list-style-type: none">▪ High flammability rating
<ul style="list-style-type: none">▪ RoHS compliance and Lead-free	<ul style="list-style-type: none">▪ Meets environmental, health and safety requirements

USB / Micro USB 3.0 Connector System



Markets & Applications

Consumer

- Set Top Box
- Camcorder
- Smartphone
- Portable Game Station
- Consumer Solid State Drives
- GPS
- LCD TV Panel
- Music Synthesizer

Communication and Industrial

- Switch
- Hub
- Industrial Tablet

Data

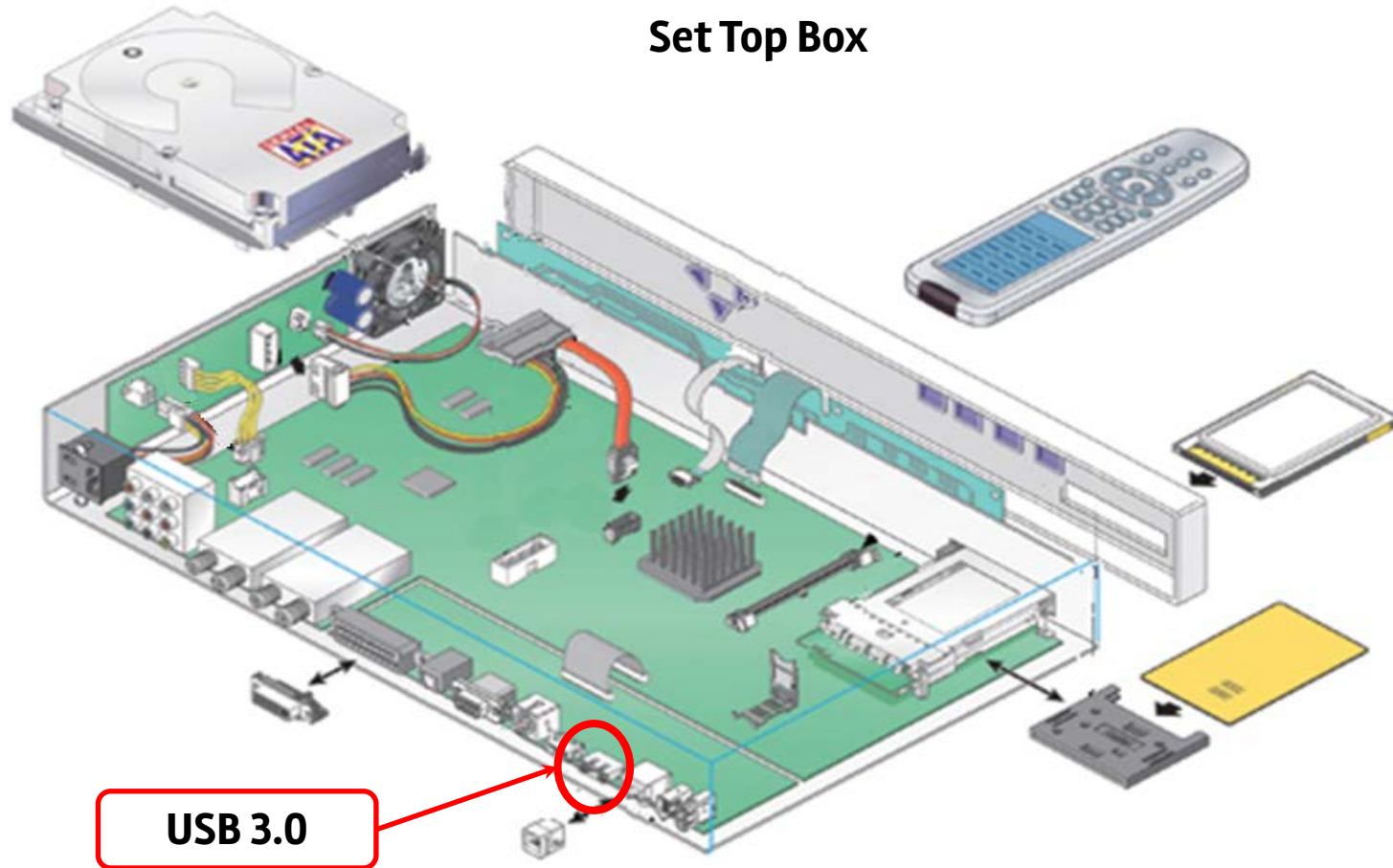
- Desktop Computer and Motherboard
- Notebook
- Memory Card Reader
- RAID Storage



USB / Micro USB 3.0 Connector System



Markets & Applications – Consumer

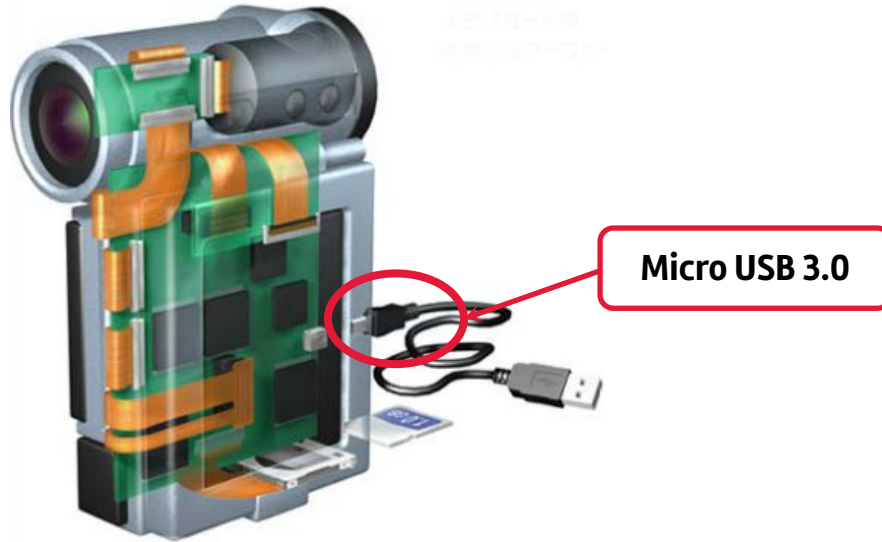


USB / Micro USB 3.0 Connector System



Markets & Applications – Consumer

Camcorder



Smartphone



Portable Game Station



USB / Micro USB 3.0 Connector System



Markets & Applications – Consumer

Consumer Solid State Drives



Micro USB 3.0

GPS



Micro USB 3.0

LCD TV Panel



Micro USB 3.0

Music Synthesizer



Micro USB 3.0

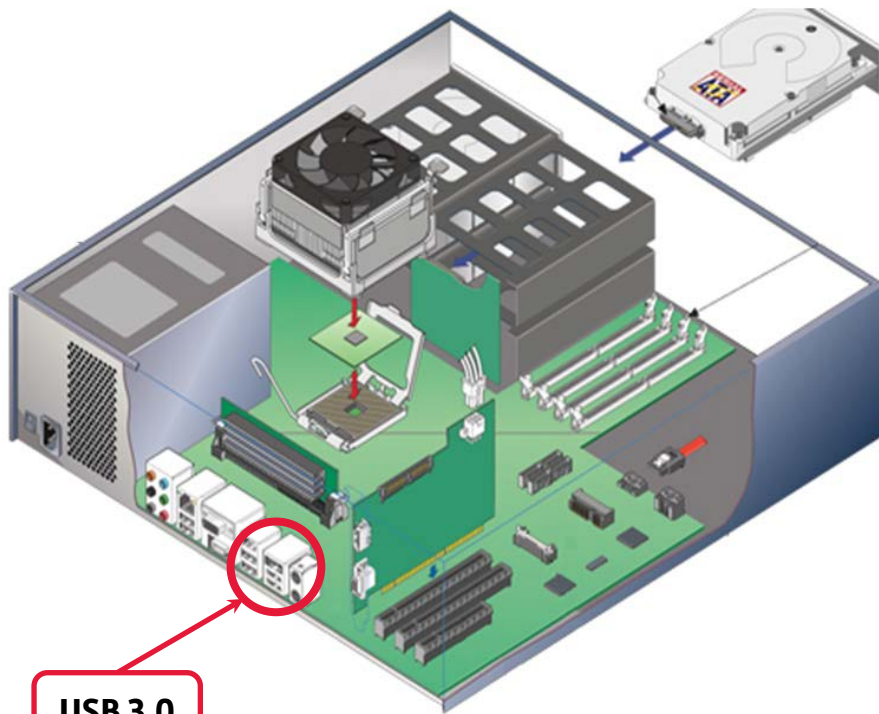
USB / Micro USB 3.0 Connector System



Markets & Applications – Data

Desktop Computer and Motherboard

RAID Storage



USB / Micro USB 3.0 Connector System



Markets & Applications – Data

Memory Card Reader



USB 3.0

Notebook



USB 3.0

USB / Micro USB 3.0 Connector System



Markets & Applications – Communication & Industrial

Switch



Industrial Tablet



Hub



USB 3.0 Connector System








Part Numbers Overview

Product Description	FCI P/N	Photo
USB 3.0 Type A Receptacle Vertical Through Hole Special outer HSG	10132431	
USB 3.0 Type A Receptacle Vertical Through Hole	10132432	
USB 3.0 Type A Receptacle Right Angle Through Hole With top spring	10132425	
USB 3.0 Type A Receptacle Right Angle Through Hole With middle mount	10132427	
USB 3.0 Type A Receptacle Right Angle Through Hole With straight hold-down	10132428	
USB 3.0 Type A Receptacle Right Angle Through Hole With middle mount & SMT metal tab	10132429	
USB 3.0 Type A Receptacle Right Angle Through Hole Double deck (Lower Deck: USB 2.0 ; Upper Deck: USB 3.0)	10132430	
USB 3.0 Type A Receptacle Upright Through Hole	10132411	
USB 3.0 cable assembly, Type A plug to A receptacle	10132951	
USB 3.0 cable assembly, Type A plug to B plug	10132952	

Micro USB 3.0 Connector System



Part Numbers Overview

Product Description	FCI P/N	Photo
Micro USB 3.0 Type B plug	10131526	
Micro USB 3.0 Type B receptacle Right angle Surface mount	10131527	
Micro USB 3.0 Type B receptacle Right angle Surface mount with DIP hold -down(0.7mm)	10131528	
Micro USB 3.0 Type B receptacle Right angle Surface mount with DIP hold -down(1.2mm)	10131530	
Cable assembly, USB 3.0 A plug to Micro USB 3.0 B plug	10131524	

USB / Micro USB 3.0 Connector System



Marketing Collateral

Available at FCI.com:

- [Technical Data Sheet](#)
- [Part Numbers](#)
- [Drawings](#)
- [3D Views](#)



THANK YOU

