

HSAutoLink™
High Speed In-Vehicle Data Bus





HSAutoLink™ Interconnect System (High-Speed In-Vehicle Databus)

Leveraging Molex expertise at producing high-speed cable technology and adapting to needs of the emerging segment of the “Connected Vehicle” (Vehicle to Vehicle communications, Infotainment and Telematics), Molex introduces the HSAutoLink Interconnect System

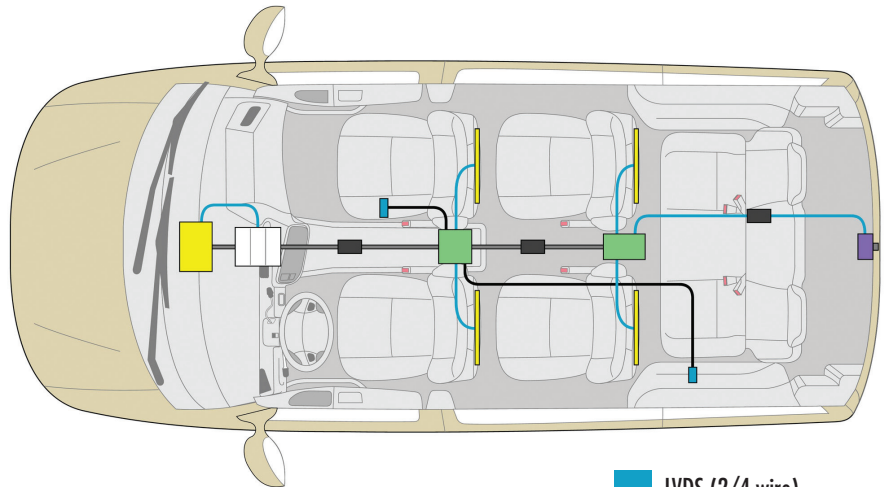
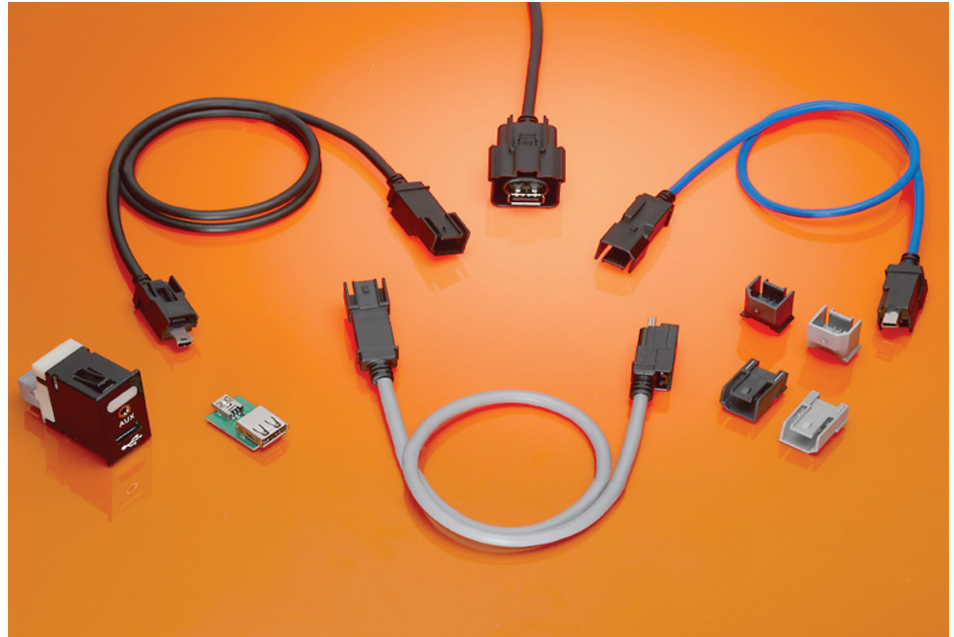
Molex continues its momentum of leveraging and migrating data communication technology to the automotive and transportation industries. HSAutoLink (alternatively referenced as USCAR USB) is the emerging high-speed data bus for vehicles. The data bus encompasses technologies used in other markets such as Universal Serial Bus (USB 2.0), Low Voltage Differential Signaling (LVDS), 1394, FlexRay, eMOST and Ethernet.

Molex has packaged an economical and widely deployed five-pin shielded connection system from the consumer market into a more rugged connector system to meet automakers’ mechanical requirements. The automotive industry-standard interface known as USCAR-30 supports USB 2.0 requirements for OEM system certification. The new, sturdy family of HSAutoLink™ connectors and cables will bring USB and other technologies into the information and entertainment systems in vehicles.

Cable assemblies utilizing the USB Standard A receptacle provide shrouded and latching capabilities for mounting in a vehicle, providing a consumer interface for vehicle passenger use. Following similar design principles, the HSAutoLink™ cabling system is specified to allow for positive latching and connection to a media module within the vehicle. This connection links with the media module allowing a digital-signal conversion to a vehicle’s more traditional-analog signal, enabling the use of devices such as MP3 players, flash drives, portable navigation systems, etc.

Three primary cable configurations (Series 111005, 111014 and 111015), along with the keyed headers right-angle (Series 49616) and vertical (104004), will allow for various packaging options and offer integration engineers the opportunity to more easily design-in Molex’s HSAutoLink™ connector system.

For additional information visit: www.molex.com/product/hsautolink.html.



- LVDS (2/4 wire)
- 1394 Automotive
- USCAR USB



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Features and Benefits

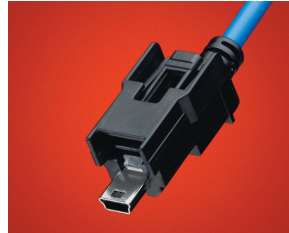
USCAR USB, 1394 Auto and LVDS Cable Assemblies

- Shrouds and latches standard to meet USCAR requirements
- Full-length cable shielding provides superior signal performance and reduced Electro-Magnetic Interference (EMI)
- Standard Molex shielded 5-circuit connector components used providing ease-of-use and simplified assembly process
- USCAR-30 compliant ensures products are qualified and market tested to stand up to the rigorous in-vehicle environment automakers expect

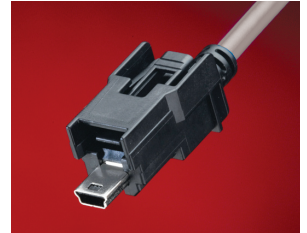
Plugs



USB 2.0



LVDS

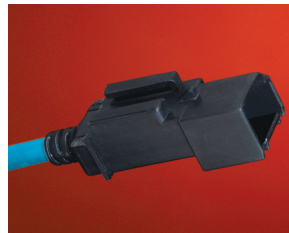


1394 Auto

In-Line Receptacles



USB 2.0



LVDS



1394 Auto

USB Standard A



Shrouded

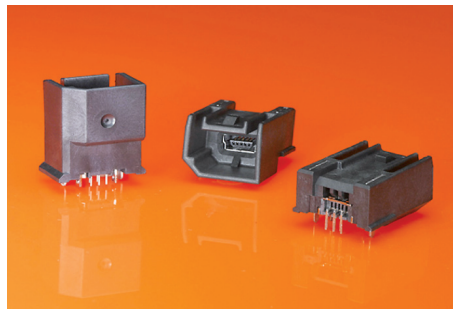


Unshrouded

USCAR USB, IEEE 1394 and LVDS PCB Mount Headers

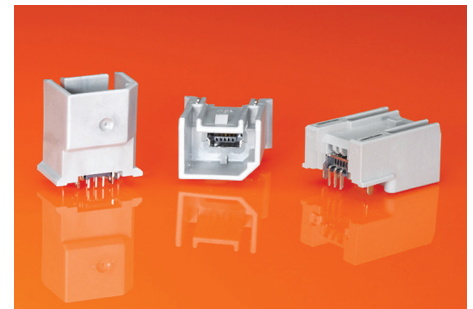
- Rugged assembly with positive latching and assembly guide rails provides a proven interface offering durability exceeding 5,000 cycles
- Preassembled housing and industry standard header meets all USB 2.0 electrical and EMI shielding requirements and is USCAR-30 compliant
- Vacuum pick-and-place capability from packaging offers a high degree of manufacturing ease
- Pre-alignment and solder hold-down posts for shield assembly and main housing body provides robust PCB mount retainment
- Multiple header keying options provides assurance of proper mating with side-by-side parts

Polarization A



Vertical and Right Angle

Polarization B



Vertical and Right Angle

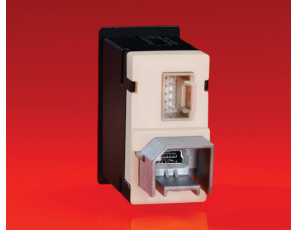


Printed Circuit Assemblies

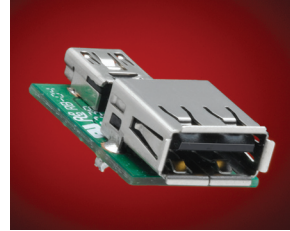
Molex offers a wide range of custom printed circuit board assemblies. With a full range of capability from complete design and manufacturing to higher levels of integration into packaged assemblies such as combined USB/Auxiliary Jack convenience ports.



Customer Convenience Port - Front View



Customer Convenience Port - Rear View



PCB - Front View



PCB Rear View

Auxiliary Ports, Repeater Modules and Accessories

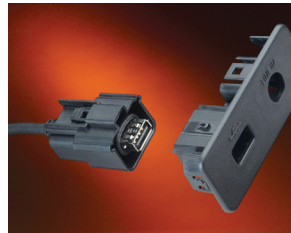
At the highest level of integration, Molex provides design services and manufactured solutions for active repeater modules. These modules are designed to customer defined specifications and provide convenience features such as USB hubs, repeater, auxiliary port, analog audio/video input, and SD card slots. Molex can also provide a simple, low-cost solution for cabled bezel mount convenience ports with USB and Aux Port. Each is provided by Molex technical development teams to meet specific requirements.

Repeater Modules



Right Angle, Polarization A and B

Auxiliary Port Connector



Latching Shroud



Custom Cable Assemblies

In addition to the standard cabled configurations, Molex provides flexible solutions meeting the needs of our customers extreme packaging requirements by offering various cable exit options.



MARKETS AND APPLICATIONS

Markets

- Automotive
- Farm Equipment
- Motorcycle
- All-terrain Vehicles
- Watercraft
- Aircraft

Applications

- Infotainment
- Telematic Devices
- Safety and Collision Avoidance Cameras
- In-Vehicle Applications

ORDERING INFORMATION

Cable length "DIM A" provided as baseline offering. Length to order available by request.



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USCAR USB

Plug-to-Plug Cable Assembly

Order No.	Plug Polarization	Plug Polarization	Length
111014-5000	A	A	0.50m (1.64')
111014-5001		B	
111014-5001	B	A	
111014-5003		B	

USCAR USB Plug-to-USB Standard 'A' Consumer Port Cable Assembly *

Order No.	Plug Polarization	Standard 'A'	Length
111015-0100	A	Latching Shroud	0.50m (1.64')
111015-0101	B		
111015-0200	A	Latching Shroud	1.00m (3.28')
111015-0201	B		
111015-0300	A	Latching Shroud	1.50m (4.92')
111015-0301	B		

* USCAR USB Plug to Standard 'A' Consumer Port cable assemblies alone can not obtain USB-IF 2.0 certification. Molex USCAR cable assemblies are built to USB 2.0 performance requirements and together with customer system modules can be submitted to USB-IF organization for system certification.

Reference the "In-dash Automotive Embedded Host Certification waiver notification" at the USB-IF web site: <http://compliance.usb.org/>

LVDS Cable Assemblies - 2 wire

Plug-to-Plug Cable Assembly

Order No.	Plug Polarization	Plug Polarization	Length
111041-5001	A	A	0.50m (1.64')
111041-5000		B	
111041-5000	B	A	
111041-5002		B	

2-wire LVDS provides 1 differential pair only and no power/gnd lines. See drawings for greater detail.

LVDS Cable Assemblies - 4 wire

Plug-to-Plug Cable Assembly

Order No.	Plug Polarization	Plug Polarization	Length
111019-5001	A	A	0.50m (1.64')
111019-5000		B	
111019-5000	B	A	
111019-5002		B	

4-wire LVDS provides additional power/gnd lines. See drawings for greater detail.

1394 Cable Assemblies

Plug-to-Plug Cable Assembly (TX-RX - Cross Over Cable)

Order No.	Plug Polarization	Plug Polarization	Length
111020-1002	A	A	0.50m (1.64')
111020-1001		B	
111020-1001	B	A	
111020-1003		B	

1394 Copper Automotive Specification (TS2008001) 1394Auto can be obtained by contacting 1394 Trade Association at: <http://www.1394TA.org>

PCB Mount Headers

Order No.	Plug Polarization	PCB Mount
49616-0711	A	Right Angle
49616-0715	B	Right Angle
104004-0501	A	Vertical
104004-0505	B	Vertical

In-Line Receptacle-to-Plug Cable Assembly

Order No.	In-Line Receptacle	Plug Polarization	Length
111005-1010	A	A	0.50m (1.64')
111005-1020		B	
111005-1030	B	A	
111005-1040		B	

In-Line Receptacle-to-Plug Cable Assembly

Order No.	In-Line Receptacle	Plug Polarization	Length
111041-2010	A	A	0.50m (1.64')
111041-2030		B	
111041-2020	B	A	
111041-2040		B	

In-Line Receptacle-to-Plug Cable Assembly

Order No.	In-Line Receptacle	Plug Polarization	Length
111019-2010	A	A	0.50m (1.64')
111019-2030		B	
111019-2020	B	A	
111019-2040		B	

In-Line Receptacle-to-Plug Cable Assembly

Order No.	In-Line Receptacle	Plug Polarization	Length
111020-2001	A	A	0.50m (1.64')
111020-2003		B	
111020-2002	B	A	
111020-2004		B	

molex[®]

www.molex.com/link/hsautolink.html

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