

SPACE

PRODUCT & APPLICATIONS GUIDE



cinch

CONNECTIVITY SOLUTIONS

a bel group

belfuse.com/cinch

ABOUT CINCH CONNECTIVITY SOLUTIONS

For over 100 years, Cinch Connectivity Solutions has manufactured high quality and reliable high performance connectors and cable assemblies. Cinch is recognized as a world class connectivity supplier of RF, fiber optic, hybrid, microwave components, circular, d-subminiatures, modular rectangular, electronic enclosures and cable assemblies. Cinch provides innovative solutions to the military, commercial aerospace, networking, telecommunication, test and measurement, oil and gas and other harsh environment industries. We aim to exceed our customers' expectations and continually offer innovative solutions to the rapidly changing needs of the markets and customers we serve.

Along with our parent company, Bel Fuse Inc., our mission is to provide products and services using established quality standards and to meet our customer expectations. To fulfill this objective, we strive to produce components and assemblies that embody optimum levels of reliability and performance in their design, manufacture, and delivery. Cinch Connectivity Solutions has consistently proven to be a valuable supplier to the foremost companies in its chosen industries by developing cost effective solutions for the challenges of new product development.

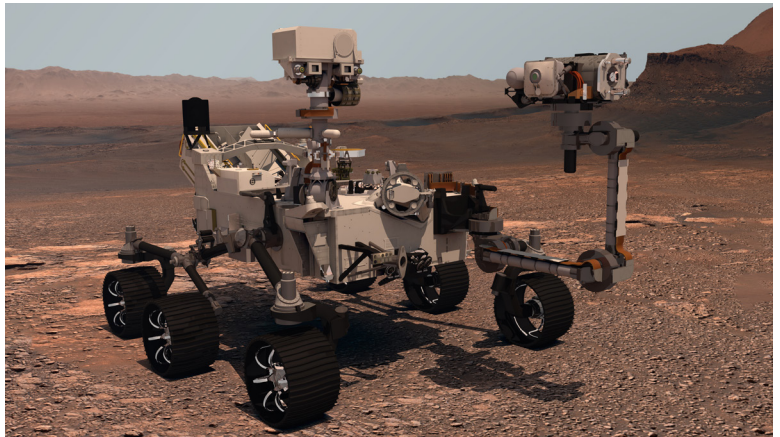
WHY CINCH?

Cinch Connectivity Solutions has been designing and manufacturing products for Space missions for over six decades.

Cinch offers proven space heritage, with extensive flight history over a variety of space missions including the Emirates Mars Mission, Parker Solar Probe, One Web, and a diverse array of NASA approved missions.

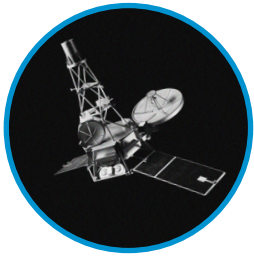
We pride ourselves on delivering failure free, competitive solutions for our customers by utilizing our global team of expert engineering, manufacturing, and sales support to produce data, signal, RF, fiber and combination connectors, cables and assemblies.

Cinch's portfolio boasts product lines with TRL (Technical Readiness Level) 9 connectors and QPS (Qualified Parts for Space) components with extensive internal testing to help design the next generation of solutions for satellites, launchers, and ground systems.



SPACE EXPERTISE & HERITAGE

Cinch Connectivity Solutions has proven space pedigree with a history of missions spanning over six decades, from the Voyager, Mariner and Apollo ventures of the 1970s to embryonic projects with planned launch dates many years from now.



1970

- Mariner Space Probe
- Apollo Missions
- Orbitor 1010 Space Shuttle
- Voyager



2000

- Beagle 2
- Alphasat/Inmarsat 4
- Copernicus Sentinel-1
- Copernicus Sentinel-2
- Inmarsat 5



2020

- Sentinel-3A
- Sentinel-3B
- K425 Earth Observation Radar Satellites
- Nilesat-301
- Exo Mars
- Sentinel-3C
- Sentinel-3D
- Inmarsat 6
- COSMO-SkyMed

APPLICATIONS

SATELLITES - GEO / MEO

- Communications
- Meteorology
- Navigation
- Radio/TV Networks
- Broadband

SATELLITES - LEO

- Earth Observation
- Communications
- Military Reconnaissance
- Surveillance
- Telecom
- Space Telescopes
- Earth sensing
- Space Cubes
- Navigation Systems

LAUNCHERS

- Attitude Correction Module
- Central Units / Communication
- Command Memory Boxes
- Sensors

GROUND SYSTEMS

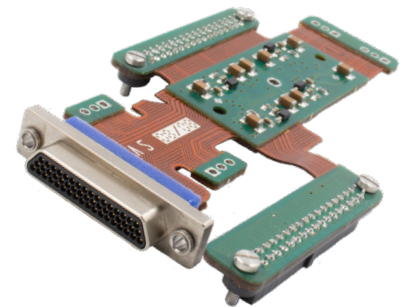
- Docking Systems
- Ground Stations
- Communications
- Mars Rovers
- Mobility

SATELLITES - GEO / MEO

Cinch Connectivity Solutions offers a wide range of space qualified products for the primary GEO/MEO satellite functions - meteorology, navigation, and broadband communication. Our CIN:APSE®, Midwest Microwave, Trompeter and custom lines adhere to the strict specifications required for space flight, including Outgassing ASTM E595 (NASA) 1.0% TMP & 0.1% CVCM. Through highly controlled and qualified manufacturing and testing procedures, we provide high reliability, high performance products to lead the exploration of tomorrow.



Trompeter Space Rated connectors



A Cinch Custom Assembly

PRODUCTS

CIN::APSE®

- FPGA sockets and compression hardware
- Board to board jumpers for mezzaine, coplanar and right angle layouts



- Space rated RF connectors
- Space rated RF plugs, jacks and accessories
- MIL-STD-1553B:
 - Twinax
 - Feed throughs
 - Terminations



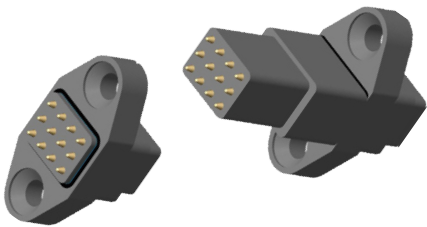
- QPS Attenuators
- QPS Terminations
- Screening level C
- Screening compatible to MIL-DTL-3933 level T

Custom Assemblies

- Custom assembly options for a wide range of functions
- Facilities to accommodate any specified testing
- Experienced engineers working directly with customers to design solutions

SATELLITES - LEO

Cinch's rich history in the aeronautical industry means that we are perfectly positioned for the growing trend towards LEO satellites. With both standard and customized solutions available for RF, Signal and Fiber Optics, our experienced design engineers have the expertise to help you design the right interconnect solution for your application.



CIN::APSE® solderless contact technology



Dura-Con Hermetic connectors

PRODUCTS



CIN::APSE®

Dura-Con™



FIBRECO®

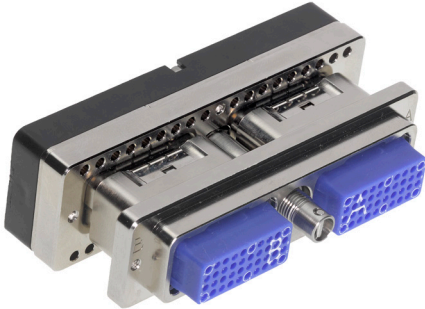
JOHNSON™

Custom Assemblies

- QPS attenuators and terminations
- QPL qualified supplier for M3933 and M39030
- Screening level B
- FGPA sockets and compression hardware
- Board to board jumpers for mezzanine, coplanar and right angle layouts
- M83513 qualified micro-D connectors
- Shielded cable assemblies
- Hermetically sealed micro-D connectors
- Transceivers
- Fiber flex
- EN 4644 modular stacking connectors
- Signal, power, data, RF & fiber configurations
- Coax adapters
- Couplers
- Data connectors
- Space rated connectors and accessories
- MIL-STD-1553B twinax, feed throughs & terminations
- MIL-DTL-83526 expanded beam fiber optic connectors
- RF connectors, adapters and terminations
- RF cable assemblies
- Hardware -tip jack, banana jack, banana plugs
- Custom assembly options for a wide range of functions
- Facilities to accommodate any specified testing
- Experienced engineers working directly with customers to design solutions

LAUNCHERS

Launch is one of the most crucial phases of deploying a satellite. Vehicle launch systems require reliable products that withstand high levels of shock, vibration, and temperature changes. Cinch Connectivity Solutions offers a wide range of robust interconnects which are able to combat the harsh environmental stressors during satellite deployment, through both standard product lines, and bespoke engineering solutions.



C-ENX™ modular rectangular connectors



Midwest Microwave QPS Attenuator

PRODUCTS



Custom Assemblies

- MIL-STD-1553B twinax, feed throughs & terminations
- Coax adapters
- Couplers
- Data connectors
- FGPA sockets and compression hardware
- Board to board jumpers for mezzanine, coplanar and right angle layouts
- EN 4644 modular connectors for power distribution systems
- Rack and panel connectors for LRMs (Line Replaceable Modules)
- Signal, power, data, RF & fiber configurations
- QPS attenuators and terminations
- QPL qualified supplier for M3933 and M39030
- RF connectors, adapters and terminations
- RF cable assemblies
- Hardware - tip jack, banana jack, banana plugs
- M83513 qualified Micro-D connectors
- Shielded cable assemblies
- Hermetically sealed micro-D connectors
- Transceivers
- Fiber flex
- MIL-DTL-83526 expanded beam fiber optic connectors
- Custom assembly options for a wide range of functions
- Facilities to accommodate any specified testing
- Experienced engineers working directly with customers to design solutions

GROUND SYSTEMS

The space industry requires rigorous testing of ground systems to match the performance of the satellites orbiting space. For example, wireless communications systems used to communicate with these satellites must perform in order to receive data correctly. The experienced engineers at Cinch Connectivity Solutions will work with you to design innovative and highly reliable solutions that meet or exceed industry requirements in connectivity.



CIN::APSE assemblies are fully customizable



Johnson 2.92mm to 2.92mm 40 GHz Test Cable Assemblies

PRODUCTS

CIN::APSE®



Custom Assemblies

- FPGA sockets and compression hardware
- Board to board jumpers for mezzanine, coplanar and right angle layouts
- QPS attenuators and terminations
- QPL qualified supplier for M3933 and M39030
- RF connectors, adapters and terminations
- RF cable assemblies
- Hardware - tip jack, banana jack, banana plugs
- Transceivers
- Fiber flex
- EN 4644 modular connectors for power distribution systems
- Rack and panel connectors for LRMs (line replaceable modules)
- Signal, power, data, RF & fiber configurations
- MIL-DTL-83526 expanded beam fiber optic connectors
- M83513 qualified micro-D connectors
- Wired, solder cup and PCB terminations
- Hermetically sealed micro-D connectors
- Coax adapters
- Couplers
- Data connectors
- MIL-STD-1553B twinax, feed throughs & terminations
- Custom assembly options for a wide range of functions
- Facilities to accommodate any specified testing
- Experienced engineers working directly with customers to design solutions



About Cinch Connectivity Solutions

In operation since 1917, Cinch supplies high quality, high performance connectors and cables globally to the Aerospace, Military/Defense, Commercial Transportation, Oil & Gas, High End Computer, and other markets. We provide custom solutions with our creative, hands on engineering and end to end approach.

Our diverse product offerings include: connectors, enclosures and cable assemblies utilizing multiple contact technologies including copper and fiber optics. Our product engineering and development activities employ cutting edge technologies for design and modeling, and our various technologies and expertise enable us to deliver custom solutions and products for our strategic partnerships.



For more information, please contact us:

North America

+1 507.833.8822

ccsorders@us.cinch.com

Asia-Pacific

+86 21 5442 7668

ccs.asia.sales@as.cinch.com

Europe, Middle East

+44 (0) 1245 342060

CinchConnectivity@eu.cinch.com



belfuse.com/cinch

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