

Rugged Optical Components

Founded in 2006

High-Precision Manufacturing

Rugged Test Systems & Capabilities

One of the Fastest Growing Ohio Avionics Companies

Chemical & System Level Engineering

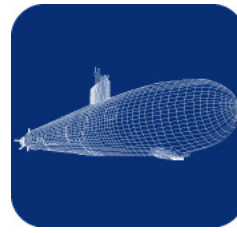
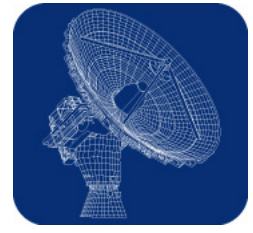
Electrical Communication Engineering

Mechanical Design Engineering

Optical Communication Engineering

ATEX Certified

AS9100:D/ISO 9001: 2015



# COTSWORKS®

Enabling Optical Networking & Sensing at Speeds Over Mach 1!

## OUR COMPANY

COTSWORKS, Inc. designs and manufactures rugged optical components and subsystems to operate in harsh environments. Products are utilized worldwide in commercial and military aerospace, military tactical, oil and gas, and other industrial markets.

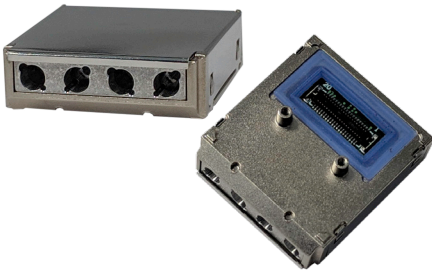
Founded in 2006, the company is headquartered in Cleveland, OH supporting the Americas and Asia while COTSWORKS GmbH, located in Fulda Germany, supporting Europe and the Middle East.

Over 100,000 mission critical rugged opto-electronic and interconnect products are produced each year in our state-of-the-art manufacturing facility. The company maintains a quality program with ISO 9100:2015 + AS9100:D Certification and ATEX-compliance.

# Opto-Electronic

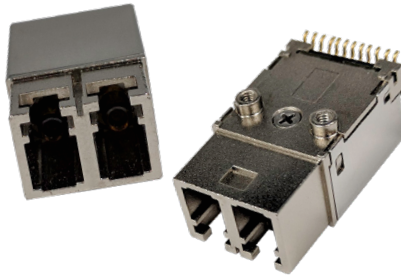
All transceivers operate at industrial temperature as outlined for MIL-STD-883 or MIL-STD-810-type environments. COTSWORKS' Transceivers offer a variety of interfaces enabling pluggable, surface mount, or thru-hole solder attach. Optical interfaces include industry standard LC, COTSWORKS' Unique ruggedized metal LC, ARINC 801, or pigtails. Standard or unique components are used to meet shock, vibration, temperature, mechanical force, or custom environmental profiles.

## RCP™



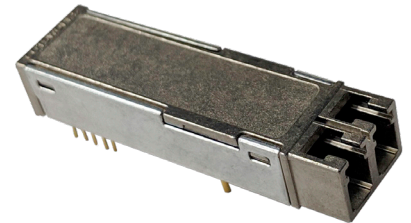
- 1–10Gbps on MM fiber
- E/O pluggable transceiver
- Recessed electrical conn
- Board screw mount
- DDMI available for B-I-T

## RJ



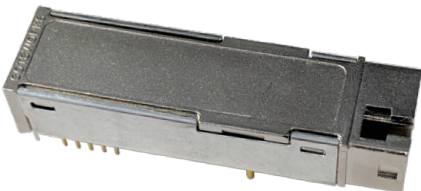
- 1–10Gbps on MM fiber
- SM/CWDM
- Operates w/ LED, VCSEL, FP or DFB lasers
- Surface mount leads
- Board screw mount
- DDMI available for B-I-T

## SFF



- 1– 4Gbps on MM or SM fiber
- Ruggedized industry standard form factor.
- Thru-hole connection to PCB
- Case design helps w/ EMI & thermal performance
- DDMI available for B-I-T

## SFB



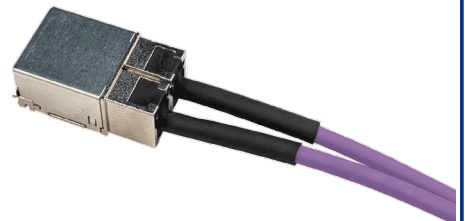
- 1– 4Gbps, Bi-directional on MM or SM fiber
- Ruggedized industry standard form factor.
- Thru-hole connection to PCB
- Case designed for EMI & thermal performance
- DDMI available for B-I-T

## LAC™



- 1–10Gbps, MM or SM fiber
- Electrical conn. pluggable
- Surface mount
- Min. PCB footprint
- Standard optical interface
- Excellent thermal mgmt
- Simplex or duplex

## HYBRID



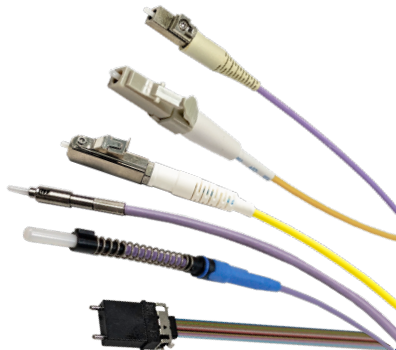
- Mounted transceiver(s) on rigid or rigid-flex daughter cards and interposer pcb's
- Pigtailed fiber cables into optical transceivers
- Full CCA and loop-back testing

# Interconnect

Terminated, rugged fiber cables, with Military or Commercial Aerospace grade termini and connectors are made to meet and exceed industry certifications including robust supply chain and manufacturing traceability.

## TERMINI

- LC-T
- LC-R
- LC
- ARINC 801/POF
- M29504: 4/5, 14/15, 20
- SC
- Jewel
- Elio®
- C-Beam
- FC
- ST
- EB16
- MT



## CONNECTORS

- 38999
- Micro 38999
- EN4165
- EPX™
- ARINC 600
- TFOCA
- M28876
- M83526
- MPO



# Cable Assemblies

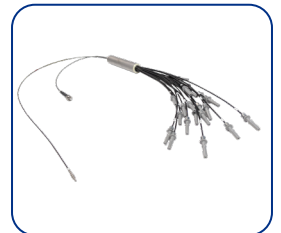
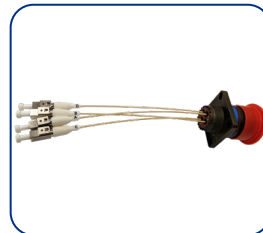
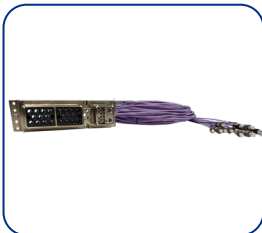
COTSWORKS manufactures fiber optic cable assemblies using the highest quality materials and processes available. Our facility includes manufacturing and test equipment including automated polishers, programmable curing ovens, interferometers, video microscopes with Pass/Fail software, and high-resolution OTDRs with accuracy to 40 microns and without dead zone. All cabling, connectors, termini, and accessories go through incoming inspection, manufacturing and assembly, and final testing following standard industry procedures, specifications and customer requirements. An optical test report with video microscope images and interferometer data is available on request.

## Features:

- Simplex and multi-channel fiber optic cables: OM1, 2, 3, 4, TOS1, 2, POF
- MIL/AERO connectors: D38999, M28876, GPRB/EPXB, EN4165, Micro 38999, TFOCA, D-sub
- MIL/AERO termini: M29504/4, /5, /14, /15, ARINC 801, EN4531, Jewel, Expanded Beam
- Commercial connectors: LC, SC, FC, ST, SMA
- COTWORKS' LC-R, LC-801, and TAO termini/connectors
- Superior insertion loss and return loss performance
- 100% Endface quality and 100% interferometer measurements



- Gore
- LinkBright/LinkBright+
- Tensolite™
- OFS™
- OCC
- Draka
- Nexans™



# Test Equipment

COTSWORKS delivers portable and modular test and networking solutions. Proud partners with Kingfisher and Luciol, we provide a wide range of testing equipment to make inspection, testing and certifying fiber optics easier.

## Optical Testing Equipment

### LIGHTNING STICK™

Small package, all metal case, maximizes portability and enhances access to fiber or copper connections. The lightning stick is a rugged, secure, lightweight, and portable, ethernet converter and test device.

#### Portable/Modular Ethernet Converter/Test

- 100Base & 1000Base-X
- 10/100/1000 Base-T copper port speeds
- Pluggable/embedded fiber and copper cable diagnostics
- Industry standard USB for data and power



### VFL-SFP™

SFP with pushbutton control or software control to detect breaks in fiber cables when used with any standard MSA or SFP port, ethernet switches, servers or COTSWORKS Lightning Stick.

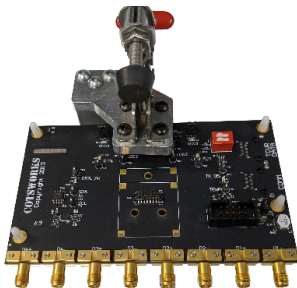
#### Visual Fault Locator Small Form-Factor Pluggable

- 650 nm LED transmitter
- Pushbutton control or software control
- Detects breaks in fiber cables
- LC connector
- Operational in any standard (MSA) SFP port, ethernet switches, servers and Lightning Sticks

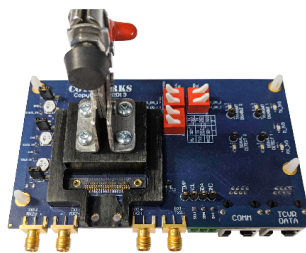


## Test Boards

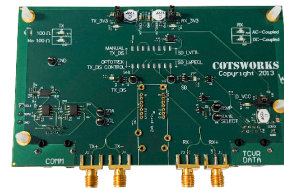
This electrical interface board is ideal for testing all features of the COTSWORKS transceivers.



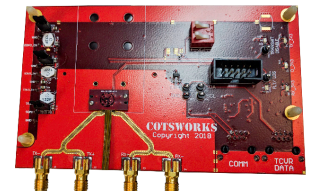
**RCP-SX-DX**



**RJ-5G/10G**



**SFF/SFB**



**LAC-10G**

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