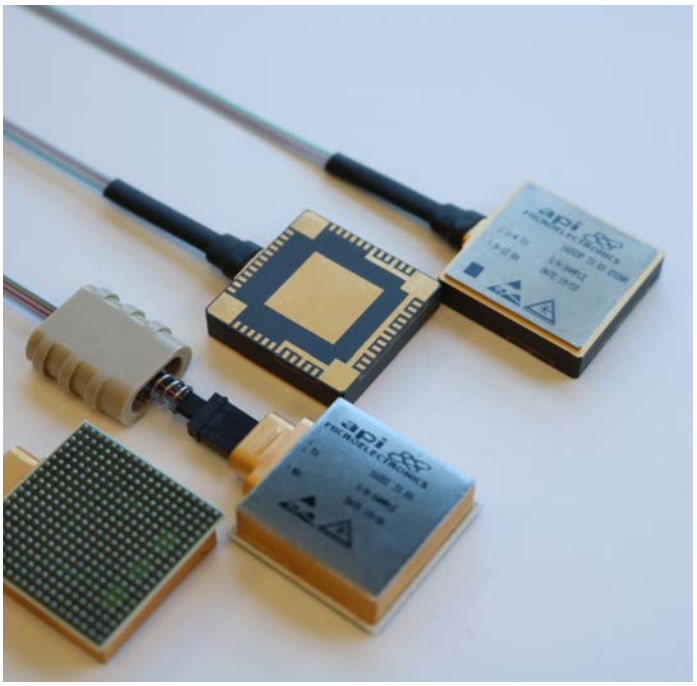
OPTO-FIRE™ MICRO-OPTICAL TRANSCEIVERS FOR HARSH ENVIRONMENTS

apitech

Designed and manufactured in the U.K., the APITech OPTO-FIRE™ micro-optical transceiver improves critical data communication systems in the harshest of environments.

Data Is Moving Fast!

The increase in data rates and reliability of the data means you need to keep up with the newest technology.



Picking The Right Tool For The Challenge

Copper or Fiber, knowing what your program needs are will help you pick the right solution. OPTO-FIRE™ from APITech uses optical fiber which is up to 90% lighter and 70% lower in volume than traditional copper cabling. It can also carry up 10 times the data over much longer distances.

Attenuation Over Distance

Copper vs Fiber

FR4 Backplanes:
5dB/GHz/m
10 Gb/s data rate

20 db loss

Improved Backplane materials:
1dB/GHz/m
50Gb/s data rate

20 db loss

Coax Low Loss dielectric:
0.05 dB/GHz/m
40Gb/s data rate

20 db loss

Multi mode 850nm OM3 Optical fibre
10Gb/s data rate
40Gb/s data rate
100Gb/s data rate

<3 db loss

Multi mode 850nm OM4 Optical fibre
10Gb/s data rate
100Gb/s data rate

<3 db loss

COPPER **OPTICAL FIBRE**

Optical Fiber Advantages

vs Copper Cabling

- INCREASED DATA
- REDUCTION IN WEIGHT
- VOLUME SAVING
- EMC - INSENSITIVE
- INTRINSICALLY SAFE
- INTRINSICALLY SECURE
- INCREASED DISTANCE
- HARSH ENVIRONMENTS

Current State Of The Industry

For many years, copper has been used for cables to transmit power and data due to it being one of the lowest loss transmission mediums and is able to transmit over long distances reliably.

Recently, however, copper has seen its supremacy for data transmission challenged in the shape of fiber optics. APITech are at the forefront of the fiber optic revolution and have solutions that not only capitalise on all the benefits of fiber, but are also able to perform reliably in the harshest of environments.

OPTO-FIRE™ Micro-Optical Transceivers

Overview

Designed and manufactured in the U.K., the APITech OPTO-FIRE™ micro-optical transceiver can be incorporated to improve critical data communication systems in space applications where data transfer reliability is critical.

Optical Fibre is up to 90% lighter and 70% lower in volume than traditional copper cabling. It can also carry up to 10 times the data over much longer distances without the signal reduction associated with copper. Optical Fibre is also non-conductive and insensitive to electromagnetic effects, making it perfect for use in next generation satellite, military and commercial technology.

Competitive Advantage

Designed to address the harsh environment market need for a retrofit solution designed to significantly reduce size and weight requirements in airborne, naval, and renewable energy applications, the OPTO-FIRE™ "optic core" offers a replacement for traditional copper cabling while delivering improved data transfer performance.

Explore The Features

- Single channel core covers data transfer rates from 20Mbps to 10Gbps providing future proof system integration
- -50°C to +100°C expanded operating temperature for enhanced reliability
- Proven error free performance over 1.1km of multimode fibre
- Stable performance (<1dB Tx optical output) across the full operating temperature range
- Protocol agnostic giving flexibility to system design
- Designed and manufactured in the U.K. in accordance with MIL-PRF-38534 Class H & K

Improving Critical Data Transfer In The Harshest Of Environments

Space

Satellite Communications
Launch & Re-entry vehicles

Military

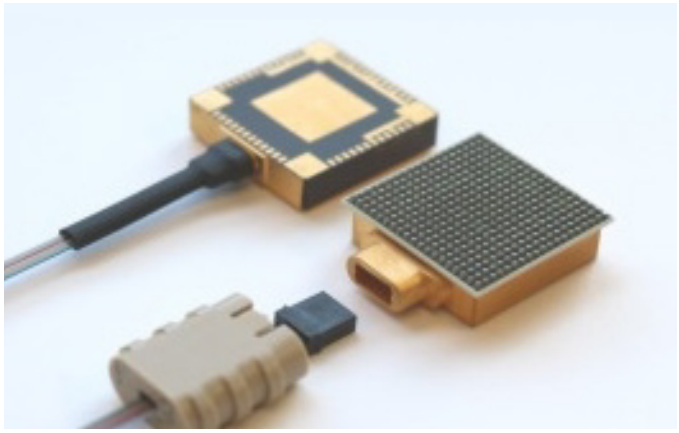
Combat Aircraft Communication Systems
Radar Systems

Commercial

Commercial Aerospace

Oil & Gas

Measurement while Drilling
Logging while Drilling



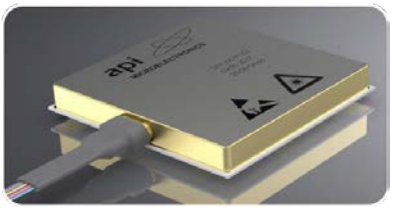
OPTO-FIRE™ Product Portfolio

16001

- 2 multimode 850nm Transmit
- 1 Singlemode 1550nm Receive
- Pluggable Quasi Hermetic product
- Operating temperature of -50˚C to +100˚C
- Low to high speed data rates of 20Mbps to 10Gbps
- Stable performance across the full operating temperature range.
- Protocol agnostic
- Ultra low power consumption (100mW/channel @+3.3V)
- Radiation Tolerant Circuitry

16003

- Quad Multimode optical Transceiver
- Fully Hermetic product
- Operating temperature of -50˚C to +100˚C
- Low to high speed data rates of 20Mbps to 10Gbps
- Stable performance across the full operating temperature range.
- Protocol agnostic
- Ultra low power consumption (100mW/channel @+3.3V)
- Radiation Tolerant Circuitry



16006/7/8

- Quad Multimode optical Transceiver
- 12 Channel Multimode Optical Transmitter
- 12 Channel Multimode Optical Receiver
- Fully Hermetic product
- Customer Configurable (I2C)
- Internal CDR and Equaliser
- Operating temperature of -50˚C to +100˚C
- High speed data rates of 1.25Gbps to 28Gbps
- Stable performance across the full operating temperature range
- Ultra low power consumption 330mW/channel @+3.3V)
- Radiation Tolerant Circuitry

Tested To The Limit

OPTO-FIRE™ is designed and manufactured in the UK in full accordance to MIL-PRF-38534 Class H & K and qualified in a DLA and UKAS certified test house facility.

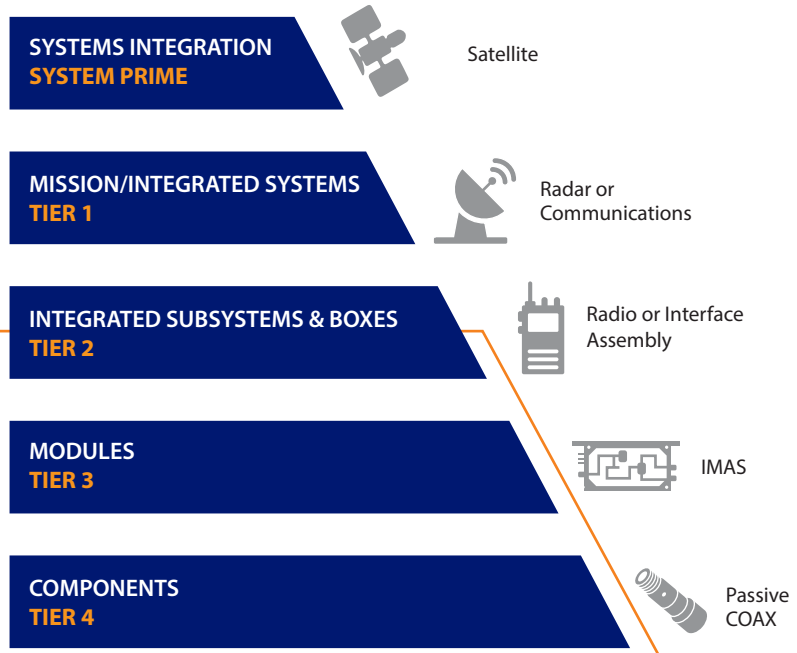
APITech (Great Yarmouth) is the only European facility to hold DLA Laboratory Suitability status for defined MIL-STD-883 test methods

If you need to evaluate the performance of OPTO-FIRE™ in your application, we have evaluation kits to enable lab replication, of either single ended optical performance, or full optical link within system applications. Contact us today for more information

Who We Are

Value-added Integration from Components to Subsystem Solutions

APITech provides rugged, reliable, and efficient subsystems, assemblies, and components for use in the most mission critical defense and military applications, supporting government programs throughout the world. With diverse program experience and preferred supplier status with some of the industry's top premier contractors, our precision-engineered MIL-grade products are ideal for applications where uncompromised reliability and uninterrupted performance is required. APITech is the Electromagnetic Spectrum Innovator at Tier 2.5-4 in the supply chain.



The Electromagnetic Spectrum Innovator

APITech is an innovative designer and manufacturer of high performance systems, subsystems, assemblies and components for technically demanding RF, microwave, millimeterwave, electromagnetic, power, and security applications. A high reliability technology pioneer with over 70 years of heritage, APITech's products are used by global defense, industrial, and commercial customers in applications spanning radar, electronic warfare, unmanned systems, missile defense, harsh environments, space, communications, medical, test and instrumentation, and more.

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