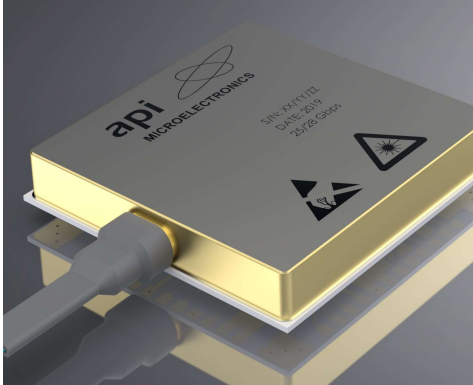




## High Speed Micro Optical Transceiver for Critical Applications in Harsh Environments

### Features

- 4 channel Transmit & 4 channel Receive @ 850nm Multi-mode.
- Hermetic package to MIL STD 883
- Wide operating temperature range -50°C to +100°C for enhanced reliability.
- Low to high speed secure data communications over multi-mode fibre (20Mbps to 10Gbps)
- Stable performance (<1dB Tx optical output) across the full operating temperature range
- Protocol agnostic giving flexibility to system design
- AC coupled electrical interface
- Ultra low power consumption (100mW/channel @+3.3V)
- Radiation Tolerant Circuitry for harsh environments.



### Applications

The APITech OPTO-FIRE™ incorporates and improves critical data communication systems for Space, Military and Commercial Aerospace, Land and Sea vehicles. Opportunities also exist within harsh environments such as Oil & Gas, Renewable Energy and Mining for reliable data transfer in permanent installations.

### Technical Specifications

Parameter	Typical Performance	Units
Optical Wavelength	850	nm
Transmit average optical power (per chl)	-3	dBm
Transmit average optical power stability (per chl)	±0.5	dB
Transmit optical extinction ratio (per chl)	6.5	dB
Transmit eye mask margin at 2GbFC (per chl)	45	%
Transmit eye mask margin at 8GbFB (per chl)	20	%
Transmit total jitter generation at 2GbFC (per chl)	90	pS
Transmit deterministic total jitter generation at 2GbFC (per chl)	20	pS
Receiver sensitivity 2GbFC (per chl)	-18	dBm
Receiver sensitivity 10.3GbFC (per chl)	-13	dBm
Receiver overload (per chl at 3dB optical output)	Error Free	
Receiver data out total jitter generation (per chl)	< 100	pS
Receiver data out deterministic jitter generation	< 20	pS
Power supply current	≈100	mA

### Mechanical & Environmental Specifications

Weight (gm)	<12 gms
Size (mm)	25 x 25 x 6.9
Connectors	MT ferrule
Fibre	12 Chl Multimode Ribbon Fibre
Fibre assembly length	Customer specific
Operating Temperature	-50°C to +100°C
Junction temp	+15 degC
Storage Temperature	-40°C to +125°C

Notes:  
1. Optional Notes

**Product is manufactured and qualified in accordance with MIL PRF 38534 Class E (mix of both class H&K) / MIL STD 883**

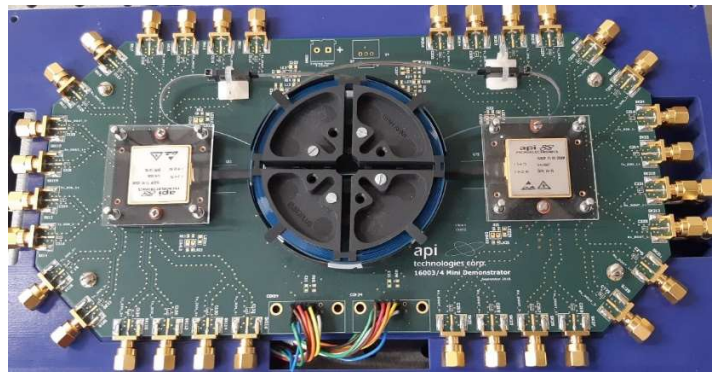
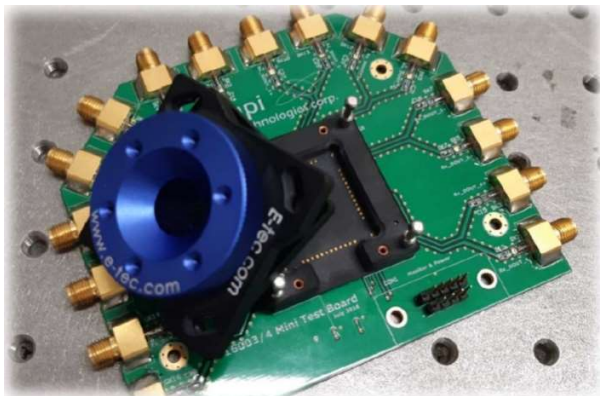


## Product Summary

APITech OPTO-FIRE™ Micro Optical Transceivers for Harsh Environments provide a uniquely flexible core to design and integrate into communication systems & media converter style solutions where data transfer reliability is critical. By working with the engineering teams at APITech it is possible to enhance systems and develop microelectronic packages aligned to users individual specifications which are robust and future proof. This enables APITech to deliver:-

- Products and services that are factory configured and require minimal external circuitry and control systems.
- A device that has been designed and manufactured in the UK in accordance with MIL PRF-38534 Class H&K.

Evaluation and test boards are available, so please contact API Technologies for further information.



Product Evaluation Boards

## Design Capabilities

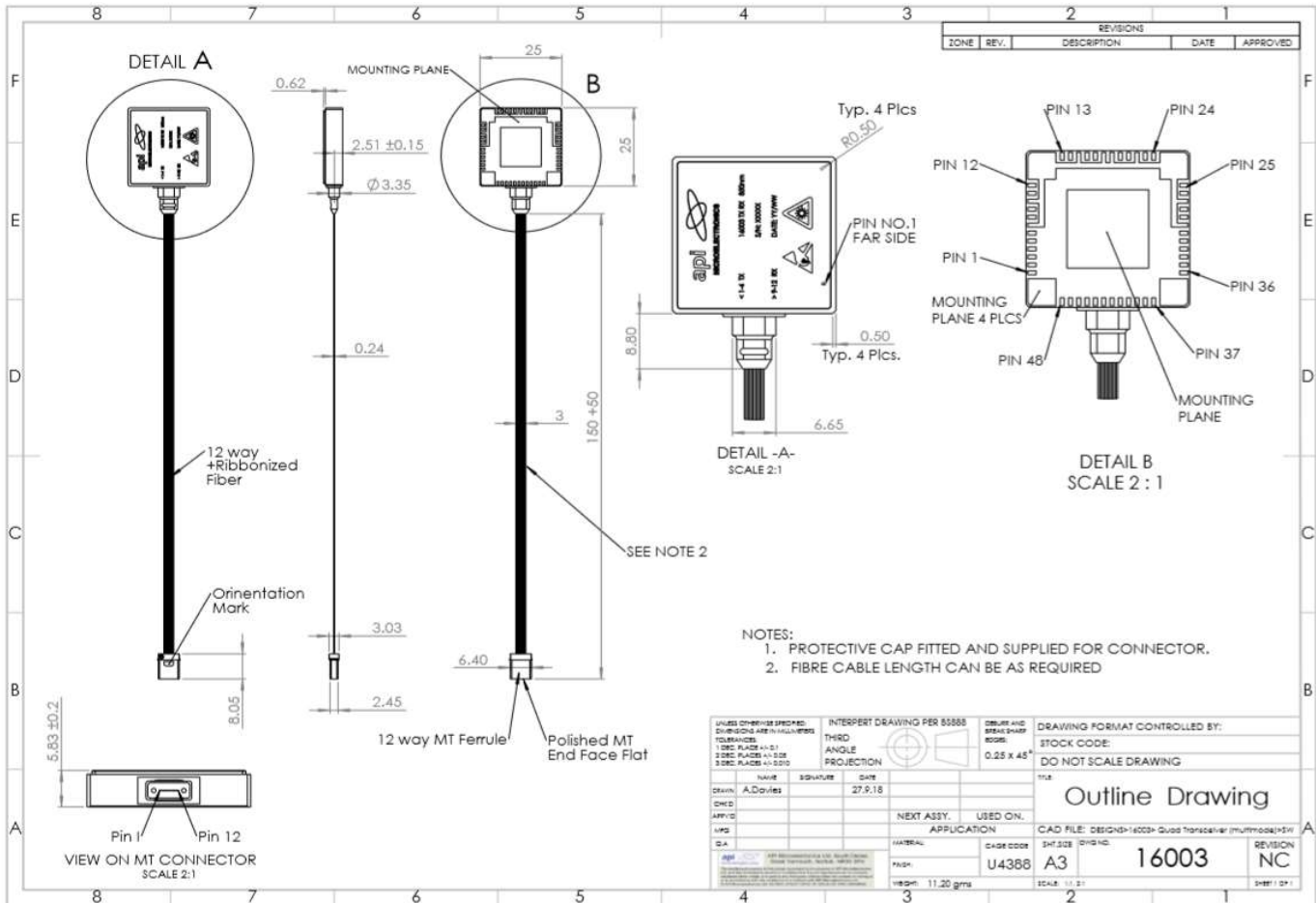
apitech product design capabilities include laser beam profiling, optical coupling and alignment (active scan and passive) solutions, optical test systems and product design verification. APITech can also provide RF/Microwave and optical design & simulation, hermetic hybrid sealed packaging and chip & wire clean room assembly. API Technologies' is a respected leader in High Temperature electronics packaging in Military, Commercial Aerospace and the Oil & Gas industry sectors.

## Test Capabilities

apitech dedicated and independent Test House is DLA and UKAS accredited and carries out testing in accordance with MIL-STD-883 and MIL-STD-202. It is continuously developing capabilities and test methods in response to customer requirements.



## Outline Drawing



## Product order codes

Product Code	Description
16003	Quad Channel Transceiver
16003-EVAL 1	Single Evaluation Kit
16003-EVAL 2	Link Evaluation kit