

## Features

- Provides valuable realtime early warning of TPI activities
- A single system protects up to 40km
- Locate intrusions to 150 metres
- Two year warranty
- No electronics or power in the field
- Intrinsically safe

# High Performance Long Distance Pipeline Protection

## FFT Secure Pipe™ Specifications

<b>Fibre Optic Sensor</b>	Can use existing dark single mode fibres if suitable, or FFT's custom direct burial single mode fibre optic sensor cable Expected life > 25 years
<b>Sensing Configuration</b>	Distributed sensor with up to 40km of pipeline protected per controller Multiple systems can be networked to protect longer pipelines - up to thousands of kilometres
<b>Location Accuracy</b>	Within 150 metres anywhere along the pipeline (or better)
<b>Probability of Detection (POD)</b>	Independently tested to better than 95% due to intelligent signal processing and analysis of disturbances
<b>Nuisance Alarm Rate (NAR)</b>	Less than 3% due to multi-parameter intelligent signal analysis, discarding non-intrusion and environmental events
<b>Operating Temperature Range</b>	FFT Sensor Cables: -40°C to +70°C
<b>Controller Dimensions/Weight</b>	175mm H x 485mm W x 530mm D Weight 24 Kg 19" rack mounted, 4U high
<b>Electrical Specifications</b>	Input voltage 110-240V AC, 50-60Hz, auto ranging, max 2 x 400 watts, redundant supplies Note: All field installed components are passive and require no power, communications, or electronics on the pipeline
<b>System Interface</b>	<ul style="list-style-type: none"> <li>• TCP/IP via FFT's CAMS (Central Alarm Monitoring System) software</li> <li>• Optional dry contacts</li> <li>• Optional software development kit available to interface to a range of security management systems and devices</li> </ul>
<b>Alarm Monitoring</b>	Real-time distributed monitoring - provides an intuitive map-based operator GUI, and interfaces to CCTV systems, MODBUS, email systems, external SMS systems, lighting etc via TCP/IP
<b>Warranty</b>	Comprehensive two year warranty on hardware and software with ongoing warranty extension program available for the life of the product
<b>Seasonal Calibration</b>	No seasonal calibration or adjustments required
<b>Zone Length &amp; Number</b>	Infinitely variable 'Virtual Zones' are created in the FFT CAMS™ software to suit specific site requirements

Pinpointing the location of  
TPI or illegal activities on  
high risk oil, gas, chemical  
or water pipelines



FFT Secure Pipe™ detects and locates intrusions and Third Party Interference anywhere along thousands of kilometres of buried pipeline, in real-time, before actual pipeline damage occurs.

Secure Pipe™ can use existing fibre optic pipeline communications cables as the sensor, dramatically reducing the installation cost and time, yet still pinpoint the location of an intrusion to within 150 metres regardless of the pipeline length.

FFT's ARaD advanced signal processing eliminates nuisance alarms, without compromising the sensitivity of the system.

Only from FFT - The ultimate force in fibre optic intrusion detection

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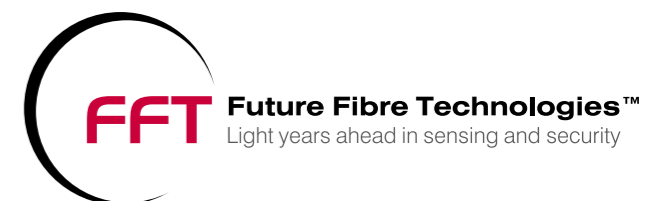
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FFT Secure Pipe™ is the most proven early warning pipeline security monitoring system available, detecting Third Party Interference (TPI), tampering, and illegal tapping attempts to within 150 metres (or better) along buried pipelines from a just few kilometres to thousands of kilometres in length.

The simple installation, reliability and maintenance free operation delivers the lowest Total Cost of Ownership (TCO) of any pipeline TPI detection solution in the market.

## Key Benefits

- ▶ Know the exact location where TPI or interference occurs and where to dispatch security or maintenance staff to ensure a rapid response.
- ▶ Significant up-front cost savings as only one system is required for pipelines up to 40km long. Secure Pipe delivers the lowest \$ per metre.
- ▶ Lowest ongoing Total Cost of Ownership (TCO) as there are no electronics in the field, no power in the field, and it is easy and economical to install or expand. There is no field maintenance, and the fibre optic cable is intrinsically safe.
- ▶ Security staff can have faith in the system as Secure Pipe delivers >95% TPI detection simultaneously with an extremely low Nuisance Alarm Rate due to the intelligent event discrimination and analysis utilised.



## 10 Key Reasons Why You Can Depend On FFT

**Experience** – Well over 100 major site installations around the world

**Independently Tested** – FFT systems consistently deliver what we promise, backed by independent testing

**Stability** – The world's most experienced fibre optic security sensing company, operating since 1994

**Value Proposition** – Secure Pipe delivers outstanding price and performance benefits

**Technology** – FFT's R&D and product development programs ensure you always have the very latest and most powerful technology, and systems are easily updated with the latest algorithms

**Quality** – Certified ISO 9001:2000

**The Right Products** – Designed and developed by FFT specifically for Military & Industrial applications

**No Risk** – All FFT systems come with a two year hardware and software warranty

**Support** – FFT has global support capability

**Availability** – FFT has partners located around the world

FFT Secure Pipe™ is the ultimate fibre optic pipeline intrusion detection and location system

## How It Works

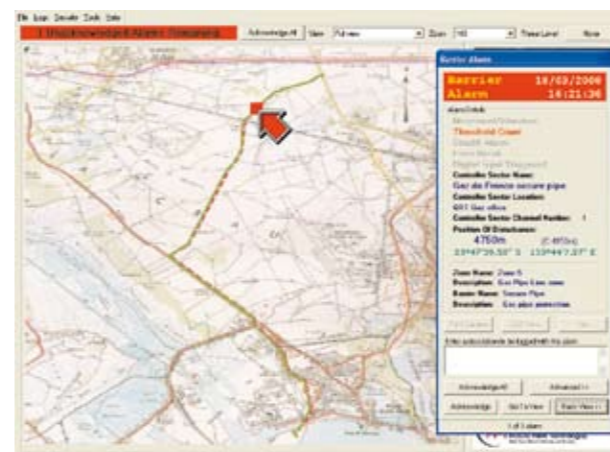
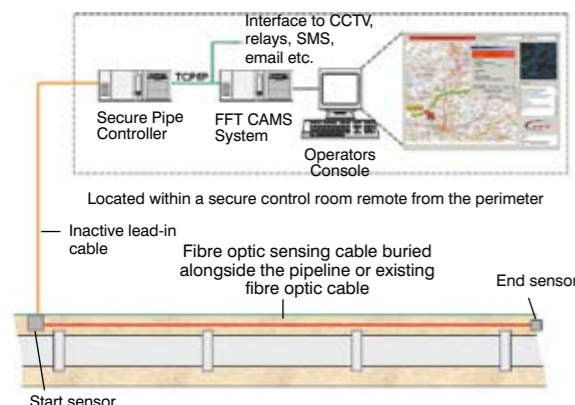
Simple to install and operate, the FFT Secure Pipe™ system delivers truly outstanding levels of detection and location combined with one of the lowest Nuisance Alarm Rates available. It is maintenance free; operating easily and reliably under a wide range of pipeline operational and environmental conditions – day after day, year after year.

At the heart of the system is the intelligence built into the Sensing Controller. A laser beam is transmitted along the fibre optic cable buried next to the pipeline, and the returned signal is automatically monitored and analysed for disturbances.

This same signal is then digitally processed to identify and eliminate environmental nuisance alarms.

Simple and intuitive to use, Secure Pipe™ delivers the precise information your security staff need, combined with the ability to interface and activate CCTV systems, lighting, MODBUS, email, plus a broad range of external devices and systems.

The area or zone where alarms are triggered along with the GPS co-ordinates is instantly displayed onto a sitemap, and the event is automatically logged into a secure database. A signal can then be sent via Ethernet directly to a high level command and control system, CCTV camera system, email, or other external monitoring.



The operator interface is available in a range of languages including English, Arabic, French, Russian, Spanish and Chinese.

## About FFT

With well over 100 major pipe and fence installations in some of the most hostile environments on the planet, FFT has the proven real-world experience to deliver highly reliable yet cost-effective intrusion detection and location solutions.

Future Fibre Technologies' business is totally focused on the security industry, and FFT is a world leader in the design and development of fibre optic sensing technologies for security applications.

FFT holds international patents for these unique technologies that have been developed over many years. Since 1994, FFT has successfully positioned itself to be the technology of choice for large perimeter fence applications, network protection, and buried pipeline monitoring for TPI.