

High resilience pipeline protection

Pinpointing the location of
intrusion and interference
on high risk oil, gas,
chemical or water pipelines



Protecting buried pipelines and their contents against damage and theft.

FFT Aura™ LR detects and locates intrusions and Third Party Interference (TPI) on buried pipelines in real-time, before pipeline damage occurs.

It uses a standard fiber optic cable as the sensor and can often use an existing SCADA cable for significant cost savings.

FFT Aura LR can detect drilling, cutting or digging activity along the entire pipeline, and locate this to within ten meters.

FFT Aura LR can also be used for network physical security. Connecting FFT Aura to a dark fiber inside a fiber optic cable provides high sensitivity detection of data tapping and cable interference.

FFT world leaders in fiber optic intrusion detection

www.fftsecurity.com



**FUTURE FIBRE
TECHNOLOGIES**

FFT Aura LR is sensitive enough to protect critical buried pipelines that demand a hardened intrusion detection solution.

It sets the standard for detection sensitivity and resilience.

The simple installation, reliability and maintenance free operation delivers a low Total Cost of Ownership (TCO).

Key Benefits

- » Simple installation and virtually maintenance free operation delivers a cost effective yet flexible pipeline protection solution without compromising on performance.
- » Detect digging activities and vehicle movements occurring above the pipeline—before the pipeline itself is reached or damaged.
- » Know the exact location to dispatch your security and maintenance staff to, as FFT Aura LR can pinpoint the precise location of events to within ten meters (30 feet) or better.
- » One controller protects up to 40km (25 miles) of pipeline. With a controller at each end, the system will continue to keep working normally, even if the sensing cable is damaged or cut.
- » Effectively interface to other FFT products, to more than 40 security, video and access control management systems, and to a wide range of third party devices via FFT CAMS™.
- » Peace of mind with FFT's two year warranty backed by a global network of offices providing support in more than 55 countries.
- » Flexible sensor cable routing and positioning.

FFT Aura LR – Resilient fiber optic pipeline protection

About FFT

With more than 1,000 intrusion detection systems located around the world, including 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.

FFT is the world leader in fiber optic intrusion detection systems and development of fiber optic sensing technologies for perimeter intrusion detection, network protection, and buried pipeline monitoring for third party interference.

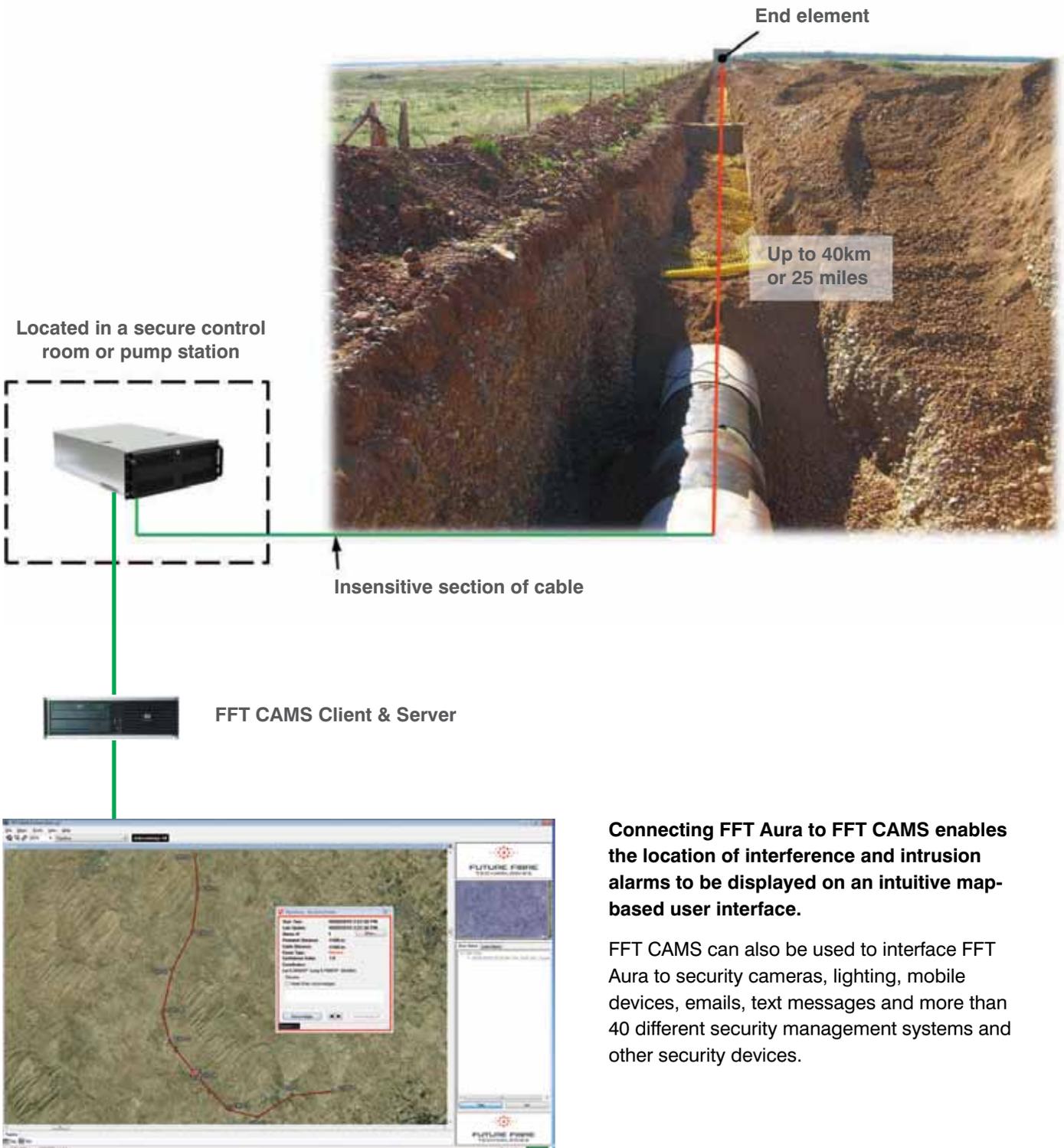
How FFT Aura LR Works

This highly sensitive distributed acoustic sensing system sends a pulse of laser light along a single mode fiber optic sensor cable then monitors the light reflected back for any variations.

It is capable of detecting even the smallest vibration, movement, or pressure acting on the earth surrounding the pipeline that the sensor cable is buried in.

Event analysis is used to identify different events within the detected signal, differentiating between potential intrusions and background noise, removing those nuisance events while retaining legitimate intrusion information.

Simple installation for buried pipeline protection against third party interference (TPI)



Connecting FFT Aura to FFT CAMS enables the location of interference and intrusion alarms to be displayed on an intuitive map-based user interface.

FFT CAMS can also be used to interface FFT Aura to security cameras, lighting, mobile devices, emails, text messages and more than 40 different security management systems and other security devices.



- Provides valuable real-time warning of TPI activities
- A single system protects up to 40km (25 miles)
- Locates intrusions to within 10m (30ft)
- No electronics or power in the field – intrinsically safe
- Sensor cable cut resilience
- Two year warranty



FFT Aura LR Specifications

Fiber Optic Sensor	Approved commercial direct burial single mode fiber optic sensor cable. Only one dark fiber is required (two fibers for optional bi-direction redundancy). FFT Aura™ LR will continue to work up to the point of a sensor cable cut, or when configured bi-directionally, the sensor cable will continue to work to both sides of the cut point, providing full single cut protection.
Sensing Configuration	Distributed sensor with 1500 measurement points per km and a maximum fiber length of 40km or 25 miles per controller. The controller is installed remotely from the pipeline to be protected.
Location Accuracy	Within ten meters (30 feet) or better anywhere along the sensor cable on FFT approved installations.
Detection With Buried Cable	Depending on the installation quality and soil conditions, the system will provide detection of foot traffic up to five meters (15ft), vehicle traffic up to 15 meters (50ft) and machinery up to 20 meters (65ft) from the sensor cable.
Operating Temperature Range	FFT sensor cables: -30°C to +70°C (-22°F to +160°F) Rack mount controller: +5°C to +40°C (+41°F to +104°F)
Controller Dimensions/Weight	177mm H x 482mm W x 457mm D (7.0”H x 19.0”W x 18.0”D) 19” rack mounted, 4U high, weight 24kg (53lbs)
Electrical Specifications	Input voltage 115-230V AC, 50/60Hz, 300 watts typical consumption, 450 watts maximum. Note: All field installed components are passive and require no power, communications or electronics in the field.
System Interface	Interface (via TCP/IP and FFT CAMS) to more than 40 security, video and access control management systems and to a wide range of devices including security cameras, lighting, PLCs, SNMP, email and text messaging.
Warranty	Comprehensive two year warranty with ongoing warranty extension program available for the life of the product.

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Note: Specifications are subject to change without notice. For further technical information, please refer to your local FFT sales office.