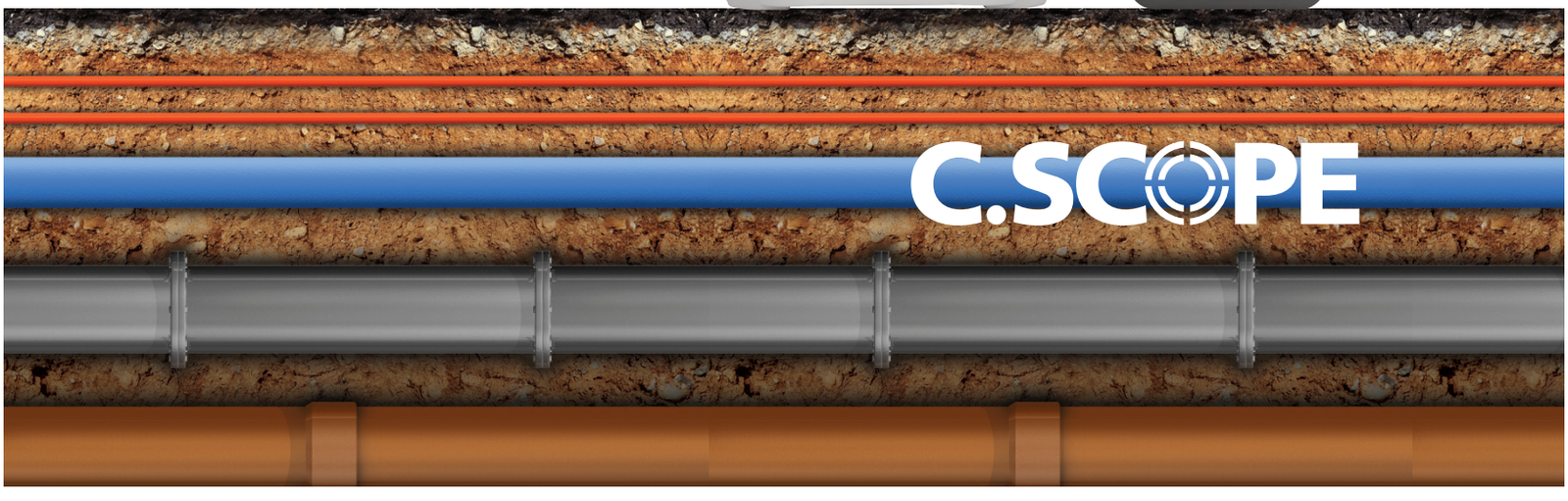
MXL2 MXT2
MULTI FREQUENCY PRECISION PIPE & CABLE LOCATION EQUIPMENT





NEW C.SCOPE MXL2 AND MXT2 PRECISION PIPE AND CABLE LOCATION EQUIPMENT

The new MXL2 and MXT2 from C.Scope have been designed to set a new benchmark in excavating safety as well as still delivering all the advantages and familiar operating practices associated with the original MXL and MXT. The new products are loaded with new features which enable operators to find more buried utilities by delivering improved levels of performance and helping to reduce the effects of human error.

The MXL2 Pipe and Cable Locator is driven by powerful Digital Signal Processor Technology. Advanced software programming enables the MXL2 to attain performance levels previously associated with high end pipe and cable surveying instruments. The MXL2 delivers improved signal detection sensitivity and better noise rejection so the Locator is now capable of detecting and tracing the smallest of signals, even in areas of high service density and electrical noise.

The multi frequency MXL2 also benefits from the addition of the new simultaneous 33+131kHz detection signal which enables a broader range of utilities including smaller buried pipes and cables such as telecoms, sheathed fibreoptics and streetlighting spurs to be detected.

Human error can be a contributory factor associated with cable strikes. To address this issue, intelligent features such as an Automatic Daily Self Test function and a dynamic Swing Sensor help ensure that the best working practices are adhered to and are being applied on-site. The Data Logging option can also provide an invaluable insight into working practices and help to identify key training requirements.

Using the MXT2 Transmitter with the MXL2 Locator maximises the full performance capabilities of the new Locator. The MXT's class leading One Watt 4-level adjustable Power Output makes it possible to apply a detectable signal onto deeper and harder to detect pipes and cables for complex locate tasks.

A full range of C.Scope accessories are also available to provide the most effective solutions to all of your pipe and cable locating requirements.

The NEW MXL2 and MXT2 are higher performance products designed to detect, trace and identify specific buried pipes and cables quickly, reliably and accurately.



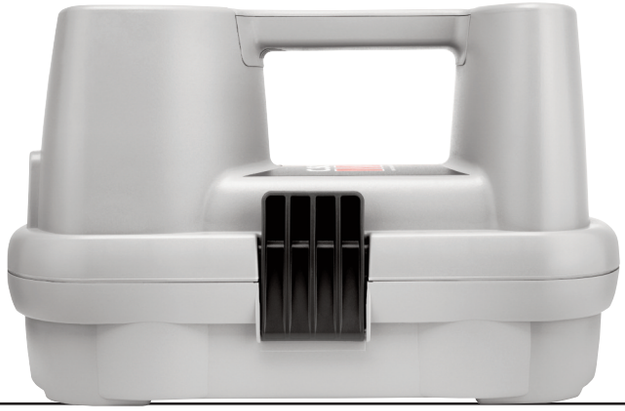
C.SCOPE MXL2 OVERVIEW

- Power Mode.
- Radio Mode.
- Transmitter Mode.
  - Simultaneous 33+131kHz Signal detection for utility avoidance
  - 8kHz Signal detection for tracing over longer distances
  - Ultra low 512/640Hz Signal detection for specialist tracing.
- *All* Scan Mode.
- Accurate Depth Indication.
- Signal Current Measurement.
- Automatic Noise Rejection.
- Dynamic Swing Sensor.
- Automatic Daily Self Test.
- Optional Data Logging of all Locator activity.
- Optional Bluetooth™ for high accuracy GPS.
- High resolution Liquid Crystal Display.
- Three year Warranty.



C.SCOPE MXT2 OVERVIEW

- One Watt 4-level adjustable Power Output.
- Three Signal Outputs
  - New simultaneous 33+131kHz Signal.
  - 8kHz Signal.
  - 512/640Hz Signal.
- Pulsed or Continuous Output Signal.
- Three Signal Application Techniques.
  - Direct Connection.
  - Wraparound.
  - Induction.
- High resolution Liquid Crystal Display.
- Accessory Tray.
- Three year Warranty.



C.SCOPE MXL2
MULTI FREQUENCY
PRECISION PIPE & CABLE LOCATOR

LCD with automatic backlight.



Mode Selection Switch
- Power - Radio - Transmitter - *All* Scan.

On / Off Trigger.

Sensitivity Adjustment Control.

Control Panel:
- Depth Measurement Button
- Frequency Selection
- Signal Current Measurement.

LCD backlit digital display.

Detachable Loudspeaker

Impact Resistant Twin Wall construction

Impact Resistant Replaceable Wear Foot



Fingertip controls



Detachable Loudspeaker



Battery compartment including USB socket



Designed with space to also carry a spare battery pack.

C.SCOPE MXT2

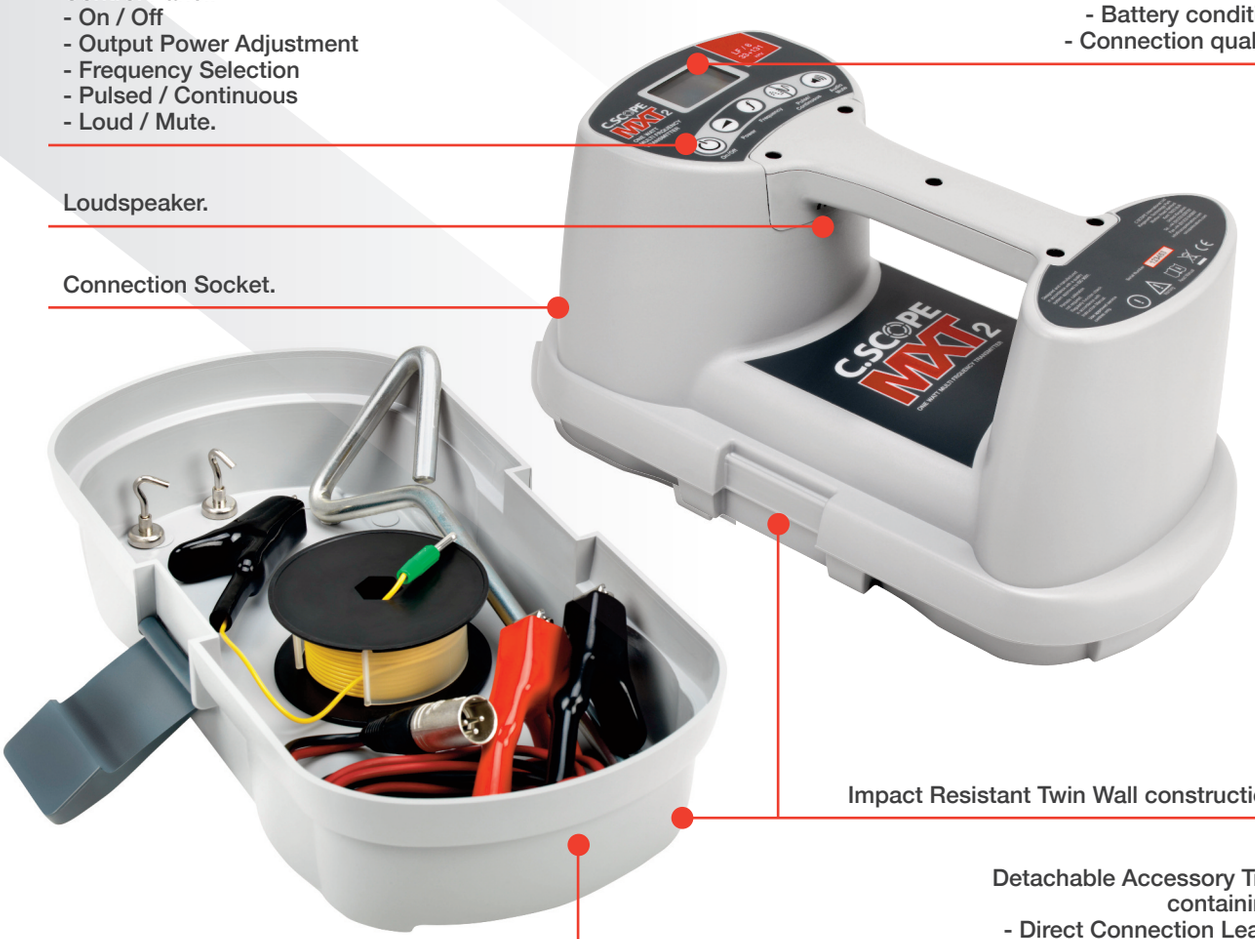
ONE WATT MULTI FREQUENCY TRANSMITTER

LCD clear digital display indicating:
- Functions selected
- Power level
- Battery condition
- Connection quality.

Control Panel:
- On / Off
- Output Power Adjustment
- Frequency Selection
- Pulsed / Continuous
- Loud / Mute.

Loudspeaker.

Connection Socket.



Impact Resistant Twin Wall construction.

Detachable Accessory Tray containing:
- Direct Connection Leads
- Earth Stake
- Connection Magnets
- 10m Auxiliary Earth Lead
- Instruction Manual.

Designed with space to also carry a Signal Clamp or other accessories.

C.SCOPE MXL2
FEATURES

FOUR DETECTION MODES

The MXL2 has four detection modes to select from. Each mode provides specific advantages.

POWER mode identifies buried electricity cables by detecting the mains frequency signal travelling along the cable itself, when current is being drawn.

RADIO mode detects re-radiated 'radio' type signals that are often present on metal pipes and cables.

TRANSMITTER mode is used to detect the signal applied to a metal pipe or cable by a C.Scope MXT2 Transmitter. The ability to select from a simultaneous 33kHz+131kHz signal as well as 8kHz and 512/640Hz signals gives the operator more versatility to detect and trace utilities. This mode is also used for detecting the signal from a C.Scope Sonde or Plastic Pipe Tracer when tracing in non metallic pipes such as sewers, drains or cable ducts.

***ALL* SCAN** mode detects ALL frequencies of signal from the lowest of the Power signals right up to and including 33kHz. This mode can detect unusual signals appearing in the frequency gaps between conventional Power, Radio and Transmitter modes and is invaluable as a 'final check' before excavation work begins.

Depth Measurement

When used with an MXT2 Transmitter, the depth of buried pipes, cables and Sondes can be indicated at the push of a button.

Signal Current Measurement

A further development from Depth Measurement. The MXL2 can monitor the true strength of the MXT2 Transmitter signal applied to a buried service irrespective of its depth. This is ideal for identifying the layout of a pipe or cable network.

Dynamic Swing Sensor

The MXL2 will sound a single tone to alert the operator if it is being swung excessively when in use.

Automatic Daily Self Test (ADST)

The MXL2 has comprehensive self test circuitry. ADST fully examines the Locator, including the receiving aerials every day when it is first switched on. This gives the operator confidence that the equipment is working to its optimum before it is used. The test result is recorded and can be printed out as a System Validation Certficate when required.

Data Logging

The MXL2 Precision Pipe and Cable Locator is available with or without Data Logging. The Data Logging version will automatically record how and when the Locator is being used. Over 12 months of data (in normal use) can be stored before being overwritten. A full audit trail is kept of all locating activity so that it is possible to see when the Locator passed Self Tests, which Modes have been used, when, and for how long.

Data Transfer via USB

Data from the Data Logging versions of the MXL2 can be transferred at any time to a PC for analysis via the data connection socket in the battery compartment.

Data Log Transfer via **Bluetooth**™

The Data Logging MXL2 has the additional option of **Bluetooth**™. C.Scope's free to download RELAY App, uses the **Bluetooth**™ connection to wirelessly transfer data-logs from the Locator to smartphones and tablets and then email them to a PC for analysis. This provides a very practical method of instantly transferring data from the Locator while still on-site.

GPS Mapping

The MXL2 with Datalogging and **Bluetooth**™ can also be connected live to accurate GPS survey/ mapping equipment allowing the accurate depth (z) of an underground pipe or cable to be linked to the x and y co-ordinates. This application enables 'single pass' mapping surveys.

Data Log analysis

C.Scope's FREE to download *XL2 Edition PC Toolkit* allows manipulation of the stored data-logs into charts and graphs that illustrate all aspects of the use of the MXL2 Locator. The data can be utilised to show if the Locator has been used correctly, to assess actual operator behaviour and to identify any potential training requirements.

LCD clear digital display
The MXL2 has a large, clear and easy-to-read backlit LCD mounted behind a tough protective polycarbonate lens. The display indicates detection mode, signal peak level, depth, signal strength and battery condition. It also displays the Automatic Daily Self Test results.

Fingertip controls
The MXL2's ergonomic controls offer easy singlehanded sensitivity adjustments and mode selection.

Detachable Loudspeaker
The Loudspeaker can be easily detached for use in noisy work environments.

Data connection
The MXL2 features a data connection socket for transferring data to a PC using the C.Scope *XL2 Edition PC Toolkit*.

Robust & durable construction
The MXL2's twin wall construction is robust and durable. It also provides IP65 standard of protection against dust and water ingress.

System Validation Certification
The C.Scope *XL2 Edition PC Toolkit* allows owners to print a System Validation Certificate by connecting the MXL2 to a PC via USB. The results are generated from the ADST results that are stored on the Locator.

Annual Calibration Certification
C.Scope has a network of authorised Service Centres that are able to issue third-party Function Check and Calibration Certification.
For more information go to
www.cscopelocators.co.uk/service

Service
A complete 'covers off' service and maintenance package is available from C.Scope Authorised Service Centres.
For more information go to
www.cscopelocators.co.uk/service

Warranty
The MXL2 has a three year Warranty.



C.SCOPE MXT2 FEATURES

The MXT2 Transmitter is a multi frequency, high power Transmitter that is especially useful for the utility technician. Operating via either Direct Connection or Induction, and with three signal frequencies to choose from, including a simultaneous 33+131kHz, the MXT2 facilitates more versatile distance tracing than previously possible.

SIGNAL APPLICATION TECHNIQUES

The MXT2 offers three alternative ways to apply a Transmitter signal:

DIRECT CONNECTION

Direct Connection allows specific pipes or cables to be individually traced, identified and their depths measured. The use of Signal Clamps, Signal Injectors and Direct Connection leads make this mode the most effective method for pinpointing pipes and cables.

WRAPAROUND

If it is difficult or inconvenient to use Direct Connection, then the Wraparound technique can be utilised to successfully energise a street or car park lighting cable.

INDUCTION

Induction allows the Transmitter to induce a detectable and traceable signal to previously unknown, undetected or inaccessible underground metal pipes or cables.

Power

The MXT2 Transmitter has a 4-level adjustable One Watt Power Output to provide longer distance tracing.

Loudspeaker

The MXT2 has a clear audible signal output to indicate when it is in operation. There is also the facility to mute the audio if required.

Pulsed or Continuous Signal Output

The MXT2 offers the choice of a Pulsed or Continuous signal output enabling operators to switch to the Pulsed Mode in high interference situations and keep on tracing.

LCD clear digital display

The MXT2 has a large, clear and easy-to-read backlit LCD mounted behind a tough protective polycarbonate lens. The display indicates clear information about the functions selected, the power level being used, the battery condition and the quality of connection achieved.

Accessory Tray

The MXT2 Transmitter has a large detachable accessory tray as its base. It can house not only the standard accessories (Direct Connection Leads, Earth Stake, Connection Magnets, 10m Auxiliary Earth Lead) and the Instruction Manual but also many of the optional extras such as Signal Clamps, Sondes and Signal Injectors.



Robust & durable construction

The MXT2's twin wall construction is robust and durable. It also provides IP65 standard of protection against dust and water ingress.

Service

A complete 'covers off' service and maintenance package is available for those customers who require it from C.Scope Authorised Service Centres.
For more information go to www.cscopelocators.co.uk/service

Warranty

The MXT2 has a three year Warranty.

ACCESSORIES

C.Scope has an extensive range of accessories to suit all pipe and cable locating requirements.

SIGNAL CLAMP
A Signal Clamp is a safe and straightforward way to apply the Generator/Transmitter signal to a cable or small pipe to enable precision tracing of this service.

SIGNAL INJECTOR
The Signal Injector is an accessory that allows the Signal Generator signal to be safely applied to an electrical system via a conventional 3-pin power socket.

PLASTIC PIPE TRACERS
The unique C.Scope Plastic Pipe Tracers are designed specifically to allow small diameter, non-metallic pipes to be traced. Developed as a result of requests from the British gas industry the C.Scope Plastic Pipe Tracers are the smallest diameter product on the market and can be successfully inserted into pipes when nothing else fits. Their unique construction gives unparalleled reliability and yet allows both line tracing AND the all important end tracing using the remarkable Sonde technology housed at the very tip of the Tracers. Available in 20 metre or 50 metre lengths.

FLEXIBLE TRACER
The Flexible Tracer is highly effective at locating and tracing the route of small diameter, non-metallic ducts, pipes, sewers and drains.

GENERAL PURPOSE SONDES (8kHz and 33kHz)
The market leading Sonde allows the route of non-metallic pipes such as sewers, drains and large plastic gas and water mains to be traced. Ideal for finding the position of blockages in pipes and powerful enough to be detectable at 7 metres depth. Available in 8kHz and 33kHz.

METAL PIPE SONDE
To address the problems of detecting the position of a blockage or other relevant feature within a metal pipe, the C.Scope Metal Pipe Sonde is specially designed with a low frequency signal output that is capable of being transmitted through the metal pipe walls to the surface.

DUCT SONDE
The C.Scope 33kHz Duct Sonde is a transmitter used to trace the direction of small and congested ducts or conduits.

CS880 METAL COVER LOCATOR
The CS880 Metal Cover Locator is a purpose-built solution for the problem of finding lost or hidden metal objects in the ground. Most commonly used for detecting buried manhole covers, valve covers, hydrant covers or cable pit covers.

CS 880
Metal Cover
Locator



Signal Clamp



Signal Injector



Plastic
Pipe
Tracer



Flexible
Tracer



Sondes



Duct
Sonde



TECHNICAL SPECIFICATIONS

MXL2 TECHNICAL SPECIFICATION

LOCATOR FEATURES	MXL2	MXL2-DL	MXL2-DLB
Power Mode	●	●	●
Radio Mode	●	●	●
Transmitter Mode	●	●	●
- 33+131kHz	●	●	●
- 8kHz	●	●	●
- 512 / 640 Hz	●	●	●
All Scan Mode	●	●	●
Depth Measurement	●	●	●
Signal Current Measurement	●	●	●
Automatic Noise Rejection	●	●	●
Dynamic Swing Sensor	●	●	●
Automatic Daily Self Test	●	●	●
Data Logging	–	●	●
Data Transfer via USB	–	●	●
Data Transfer via **Bluetooth**™	–	–	●
GPS via **Bluetooth**™	–	–	●
Display (LCD)	●	●	●
Three Year Warranty*	●	●	●
Batteries**	8 x AA (LR6)	8 x AA (LR6)	8 x AA (LR6)
IP65	●	●	●

* **Three Year warranty**. Conditions apply.

** **Batteries.** The MXL2 uses 8 x AA LR6 Alkaline or NiMH Rechargeable batteries sealed in a secure, fitted battery compartment. The battery pack will typically provide approximately 40 hours of service depending on use. The battery compartment also houses a spare battery holder.

LOCATOR PERFORMANCE	FREQUENCY	SENSITIVITY @ 1m depth	DETECTION DEPTH (max)
Power	50-400Hz	5mA	3m
Radio	10kHz-30kHz	25µA	2m
Transmitter	33+131kHz	5µA	5m
	8kHz	100µA	5m
	512 / 640Hz	500µA	5m
All Scan	50Hz-33kHz	100µA	3m
Sonde	33kHz	–	7m
	8kHz	–	7m
	512 / 640Hz	–	7m

MXT2 TECHNICAL SPECIFICATION

TRANSMITTER FEATURES	MXT2
One Watt Power	4 LEVEL
Transmitter Frequencies	●
- 33+131kHz	●
- 8kHz	●
- 512 / 640Hz	●
Pulsed / Continuous Output Signal	●
Signal Connection Modes	●
- Direct Connection	●
- Wraparound	●
- Induction	●
Display (LCD)	●
Accessory Tray*	●
Three Year Warranty**	●
Batteries***	4 x D (LR20)
IP65	●

* Accessory Tray
includes Direct Connection Lead, Auxiliary 10m Earth Lead, Connection Magnets, Earth Stake and Instruction Manual.

** Three Year warranty. Conditions apply.

*** Batteries.
The MXT2 uses 4 x D LR20 Alkaline or NiMH Rechargeable batteries housed in a secure battery compartment.

C.SCOPE

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Cable Locators & Survey