CXL2 DXL2 SGA2 SGV2
PIPE & CABLE
LOCATION EQUIPMENT
HIGHER PERFORMANCE
GREATER SAFETY

C.SCOPE

NEW C.SCOPE CXL2 / DXL2 CABLE AVOIDANCE TOOLS AND SGA2 / SGV2 SIGNAL GENERATORS

The new CXL2 and DXL2 Cable Avoidance Tools and SGA2 and SGV2 Signal Generators 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 C.Scope product range. 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 XL2 Cable Avoidance Tools are driven by powerful Digital Signal Processor Technology. Advanced software programming enables the new products to provide outstanding detection performance even when locating in the most difficult areas. The XL2 Cable Avoidance Tools deliver improved signal detection sensitivity and better noise rejection so that they are now capable of detecting the smallest of signals, even in areas of high service density and electrical noise. The addition of the new simultaneous 33+131kHz frequency will assist in the detection of smaller buried cables such as telecoms, sheathed fibreoptics and streetlighting spurs.

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 SGA2/SGV2 Signal Generators with the CXL2/DXL2 maximises the full performance capabilities of the new Cable Avoidance Tools. The class leading One Watt adjustable Power Output delivered by the SGA2/SGV2 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.

These new products offer a significant step forward in the quest to reduce the day-to-day risk of cable strikes.

C.SCOPE CXL2 / DXL2 OVERVIEW

- Power Mode.
- Radio Mode.
- Generator Mode.
  - Simultaneous 33+131kHz Signal detection improves utility detection.
- *All* Scan Mode.
- Accurate Depth Indication (DXL2 only)
- 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.
- No Periodic Calibration required.
- Three year Warranty.

C.SCOPE SGA2 / SGV2 OVERVIEW

- One Watt adjustable Power Output.
- New 33+131kHz simultaneous Signal Output.
- Pulsed or Continuous Output Signal.
- Three Signal Application Techniques.
  - Direct Connection.
  - Wraparound.
  - Induction.
- High resolution Liquid Crystal Display (SGV2 only)
- Accessory Tray.
- No Periodic Calibration required.
- Three year Warranty.

C.SCOPE CXL2 / DXL2
CABLE AVOIDANCE TOOLS

LCD with automatic backlight.

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

On / Off Trigger.

Sensitivty Adjustment Control.

Control Panel:
- Depth Measurement Button (DXL2 only).

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 SGA2 and SGV2
ONE WATT SIGNAL GENERATOR

LCD clear digital display (SGV2 only)
indicating:
- Functions selected
- Power level
- Battery condition
- Connection quality.

Control Panel:
- On / Off
- Output Power Adjustment
- 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 CXL2 and DXL2
FEATURES

FOUR DETECTION MODES
The CXL2 and DXL2 have 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.

GENERATOR mode is used to detect the 33+131kHz signal applied to a pipe or cable by a SGA2 or SGV2 Signal Generator. The combination of the high frequency 131kHz signal with the 33kHz signal enables small diameter cables to be located more easily. The Generator 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.

ALLSCAN 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 Generator modes and is invaluable as a 'final check' before excavation work begins.

Depth Measurement (DXL2 only)
When used with an SGA2 or SGV2 Signal Generator, the depth of buried pipes, cables and Sondes can be indicated at the push of a button.

Dynamic Swing Sensor
The CXL2 and DXL2 will sound a single tone to alert the operator that the Cable Avoidance Tool is being swung excessively when in use.

Automatic Daily Self Test (ADST)
The CXL2 and DXL2 have comprehensive self test circuitry. ADST fully examines the Cable Avoidance Tool, 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 CXL2 and DXL2 are available with or without Data Logging. The Data Logging versions will automatically record how and when the Cable Avoidance Tool 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 Cable Avoidance Tool passed Self Tests, which modes have been used, when, and for how long.

Data Log Transfer via USB
Data from the Data Logging versions of the CXL2 and DXL2 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 CXL2 and DXL2 have an additional option of **Bluetooth™**. C.Scope's free to download RELAY App, uses the **Bluetooth™** connection to wirelessly transfer data logs from the Cable Avoidance Tool 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 via **Bluetooth™**

The CXL2 and DXL2 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 Cable Avoidance Tools use. The data can be utilised to show if the Cable Avoidance Tool has been used correctly, to assess actual operator behaviour and to identify any potential training requirements.

LCD clear digital display

The CXL2 and DXL2 have 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 (DXL2 only), signal strength and battery condition. It also displays the Automatic Daily Self Test results.

Fingertip controls

The CXL2 and DXL2'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 CXL2 and DXL2 feature a data connection socket for transferring data to a PC using the C.Scope *XL2 Edition PC Toolkit*.

Robust & durable construction

The CXL2 and DXL2's twin wall construction is robust and durable. It also provides IP65 standard protection against dust and water ingress.

Calibration

The CXL2 and DXL2 do not require periodic re-calibration, helping to significantly reduce running costs and downtime.

System Validation Certification

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

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 CXL2 and DXL2 have a three year Warranty.

C.SCOPE SGA2 and SGV2 FEATURES

C.Scope SGA2 / SGV2 Signal Generators are vital pieces of equipment used with C.Scope Cable Avoidance Tools that significantly improve operator safety and enable better location of pipes and cables even in challenging environments. The NEW 33kHz+131kHz combined signal further increases the number of buried services that can be energised and detected.

SIGNAL APPLICATION TECHNIQUES

The SGA2 / SGV2 offers three alternative ways to apply a Signal Generator 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 Signal Generator to induce a detectable and traceable signal to previously unknown, undetected or inaccessible underground metal pipes or cables.

Power

The SGA2 / SGV2 has a One Watt Power Output to provide long distance tracing. The SGV2 has a four position power level adjustment. The SGA2 can be toggled between a high & low setting. So that the user can control how much power to use and when.

Loudspeaker

The SG2 / SGV2 have 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 SGA2 / SGV2 offer 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 SGV2 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 and battery condition.

Accessory Tray

The SGA2/SGV2 Signal Generator 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 SGA2 / SGV2's twin wall construction is robust and durable. It also provides IP65 standard protection against dust and water ingress.

Calibration

The SGA2 and SGV2 do not require periodic re-calibration, helping to significantly reduce running costs and downtime.

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 SGA2 and SGV2 have a three year Warranty.

ACCESSORIES

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

SIGNAL CLAMP
Operators can apply the SGA2 / SGV2 signal effectively to any cable by using the Signal Clamp. It is an extremely practical way to allow individual cables to be traced even when amongst other cables.

SIGNAL INJECTOR
The SGA2 / SGV2 signal can be applied to an electrical cable, quickly and safely, by using a standard wall socket as the point of connection with the C.Scope Signal Injector.

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 and lightest 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. Available in 20 metre or 50 metre lengths.

GENERAL PURPOSE SONDE
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.

DUCT SONDE
The C.Scope Duct Sonde is built and shaped specifically for use in cable ducts that are already filled with cables.

FUNCTION CHECKER
The unique C.Scope Function Checker is a simple-to-use piece of test equipment that enables anyone to thoroughly check the functionality of C.Scope Pipe and Cable Locators, Cable Avoidance Tools, Signal Generators and Transmitters confirming that they are still fit for use.

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, the C.Scope CS880 has been designed specifically for the exacting requirements of the utility industry and the ground working contractor.

Signal Clamp

Signal Injector

Plastic Pipe Tracer

General Purpose Sonde

Duct Sonde

Function Checker

CS 880
Metal Cover Locator

TECHNICAL SPECIFICATIONS

CXL2 / DXL2 TECHNICAL SPECIFICATION

CABLE AVOIDANCE TOOL FEATURES	CXL2	CXL2-DL	CXL2-DLB	DXL2	DXL2-DL	DXL2-DLB
Power Mode	●	●	●	●	●	●
Radio Mode	●	●	●	●	●	●
Generator Mode (33+131kHz)	●	●	●	●	●	●
All Scan Mode	●	●	●	●	●	●
Depth Measurement	-	-	-	●	●	●
Automatic Noise Rejection	●	●	●	●	●	●
Dynamic Swing Sensor	●	●	●	●	●	●
No Periodic Calibration*	●	●	●	●	●	●
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)	8 x AA (LR6)	8 x AA (LR6)	8 x AA (LR6)
IP65	●	●	●	●	●	●

* No Periodic Calibration. The CXL2 / DXL2 do not require periodic calibration. If you have any questions regarding service and maintenance, contact C.Scope or your nearest C.Scope Authorised Service Centre.

** Three Year warranty. Conditions apply.

*** Batteries. The CXL2 / DXL2 use 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.

CABLE AVOIDANCE TOOL PERFORMANCE	FREQUENCY	SENSITIVITY @ 1m depth	DETECTION DEPTH (max)
Power	50-400Hz	5mA	3m
Radio	10kHz-30kHz	25µA	2m
Generator	33+131kHz	5µA	5m
All Scan	50Hz-33kHz	100µA	3m
Sonde	33kHz	-	7m

SGA2 / SGV2 TECHNICAL SPECIFICATION

SIGNAL GENERATOR FEATURES	SGA2	SGV2
Max Power Output	One Watt	One Watt
No. of Adjustable Power Output Levels	2	4
Generator Frequencies 33+131kHz	●	●
Pulsed / Continuous Output Signal	●	●
Signal Connection Modes	●	●
- Direct Connection	●	●
- Wraparound	●	●
- Induction	●	●
Display (LCD)	-	●
Accessory Tray*	●	●
No Periodic Calibration**	●	●
Three Year Warranty***	●	●
Batteries****	4 x D (LR20)	4 x D (LR20)
IP65	●	●

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

** **No Periodic Calibration.** The SGA2 and SGV2 do not require periodic calibration. If you have any questions regarding service and maintenance, contact C.Scope or your nearest C.Scope Authorised Service Centre.

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

**** **Batteries.** The SGA2 and SGV2 use 4 x D LR20 Alkaline or NiMH rechargeable batteries housed in a secure battery compartment.
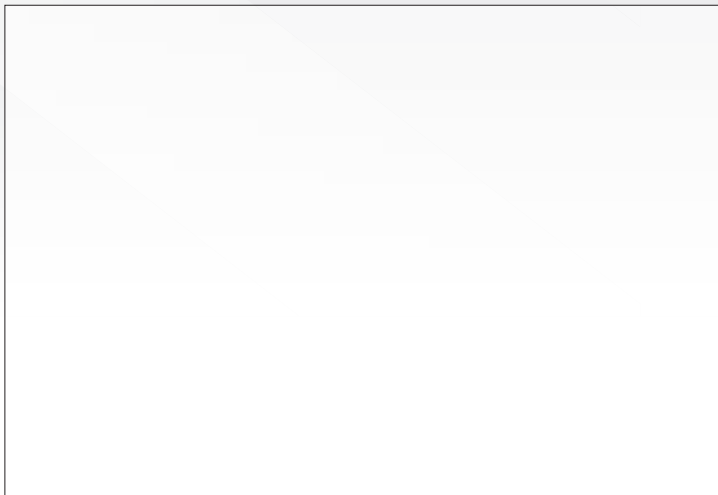
CXL2 DXL2 SGA2 SGV2
PIPE & CABLE
LOCATION EQUIPMENT

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All C.SCOPE products are manufactured
under a quality system accredited to ISO9001:2008

ISO 9001

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