



# Cable Avoidance

Taken from GDSP's 'Spotlight on Safety' – July 2015

- UK Zero Harm Events Calendar Q2
- May 2016

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## Key Focus Areas:

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- To ensure all teams are issued with all the correct attachments with the CAT and Genny and that these are all calibrated and in date
- To ensure when carrying out a CAT and Genny scan of the work area prior to excavating, all the following methods are used:
  - Power
  - Radio
  - Genny on induction and direct connection
  - Avoidance (CAT4 only)
  - Strike Alert
  - Small Diameter Cable Location (CAT 4)



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# Cat and Genny Attachments

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- Signal Clamp
- Live Plug Connector
- Direct Connection Cables
- Earth Spike
- Magnet
- Spare Batteries



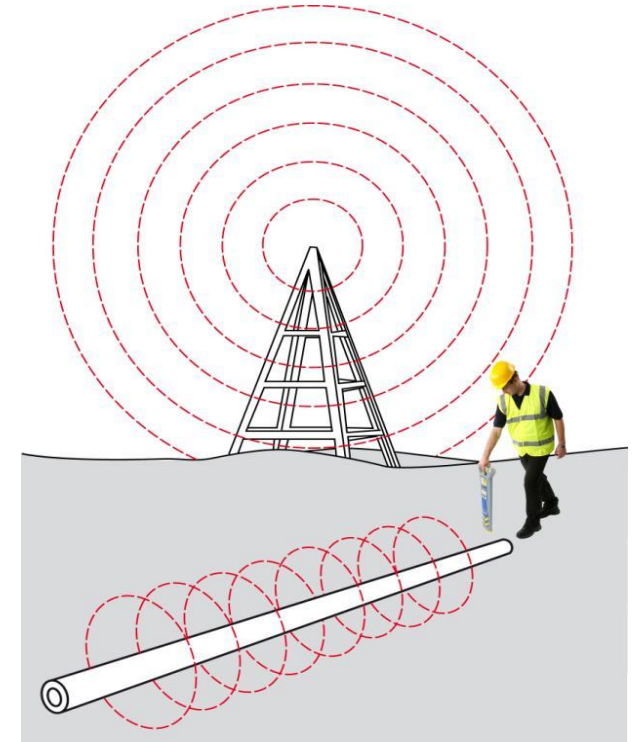
# Power Mode:

- Power Mode detects signals originating from power transmission networks.
- These signals may be found on any pipe or cable, not just power cables.
- Some power cables DO NOT radiate detectable power signals.



# Radio Mode:

- Radio Mode detects radio signals originating from distant radio transmitters as they travel along underground pipes and cables.



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# Active Locating:

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- Active locate is when you use CAT receiver and Genny



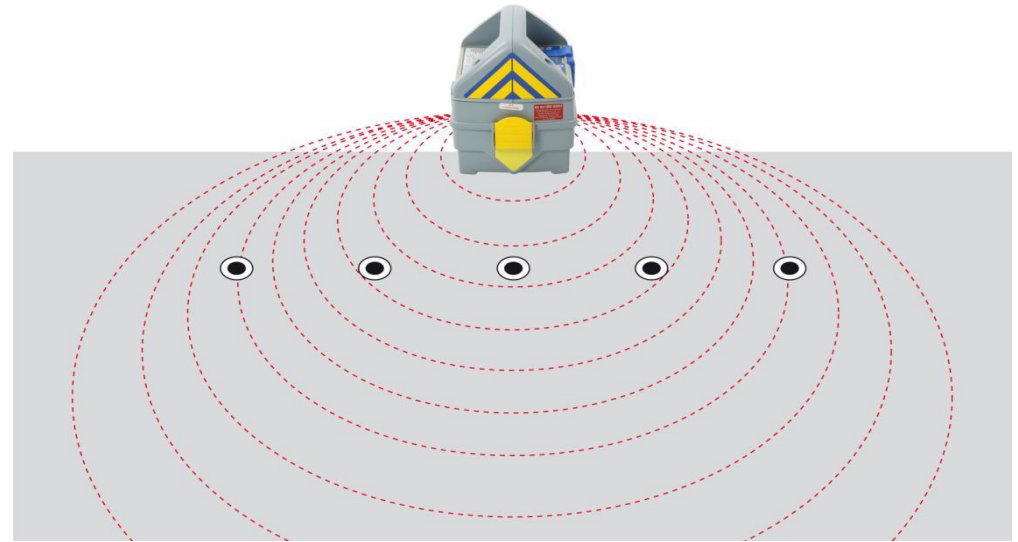


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# Induction Mode:

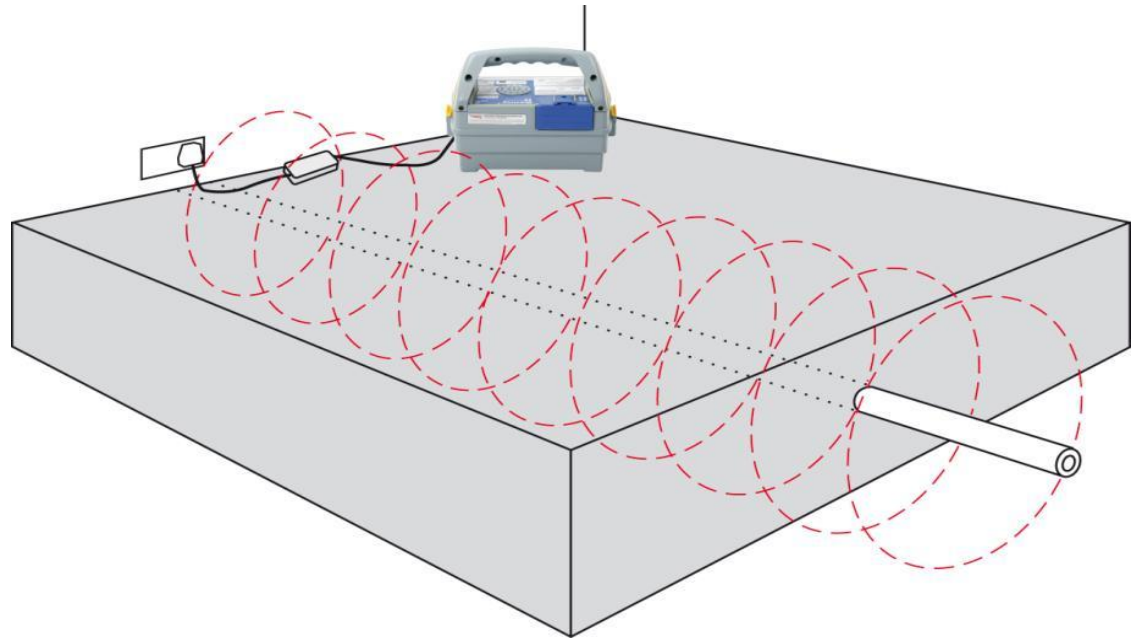
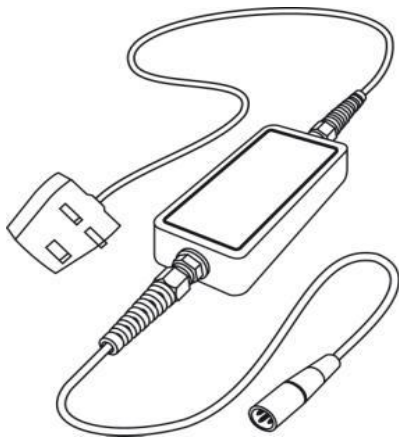
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- Induction mode induces Genny signal onto buried services



# Live Plug Connection:

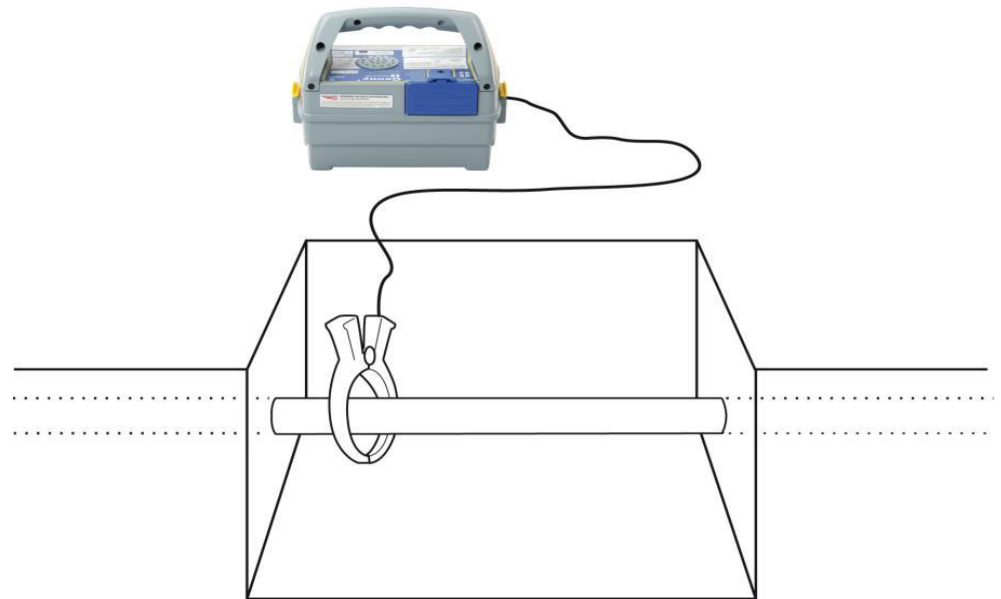
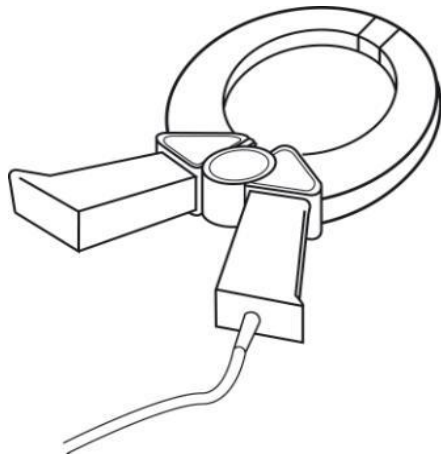
- The plug connector injects the Genny signal directly into a live mains socket and enables the incoming supply cable to be located





# Signal Clamp Connection:

- The signal clamp applies the Genny signal without the need for an earth connection



# Direct Connection:

- Single ended connection
- Connect Leads to metallic object
- With crocodile clip or magnet to induce a signal.



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# Avoidance Mode (CAT 4):

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- Scans in all three modes
  - Power
  - Radio
  - Genny
- An initial sweep using Avoidance Mode is recommended, followed by detailed scans using the other modes.

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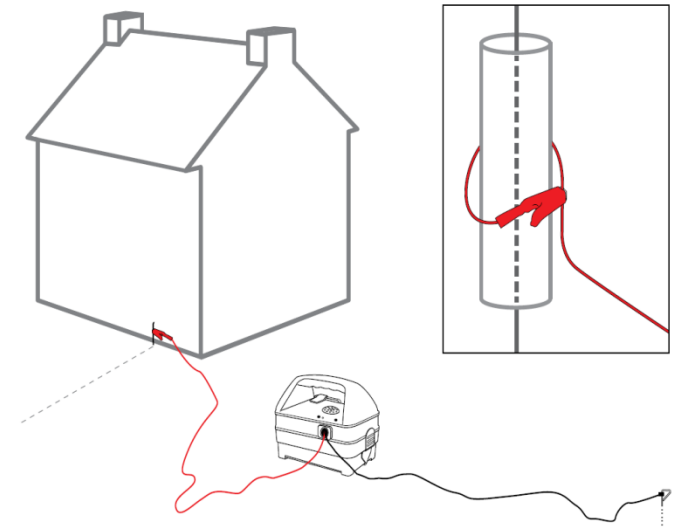
## Strike Alert:

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- Warns the operator of shallow pipes and cables.
- When a shallow cable or pipe is detected in Power, Genny or Avoidance Mode, Strike Alert flashes asterix and sounds a distinctive warbling audio tone.
- Strike Alert is not activated when tracing Radio signals.

## Small diameter cable location (Cat 4 Only):

- Clip the red lead directly on the cable insulation.
- Or wrap the red lead around and clip it back onto itself.
- Small diameter frequency is a different audio tone to the standard Genny signal
- No change of tone on connection



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# Lets Talk:

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Q1. In power mode will the C.A.T' look for electric signals from cables?

**True or False**

A1. **False** - (They look for magnetic fields)



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# Lets Talk:

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Q2. Will the C.A.T find all metallic conductors in power mode?

**True or False**

A1. **False** - (For balanced cables, pot ended cables, cables with no current e.g. street lights). These will require Radio and Genny modes.

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# Lets Talk:

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Q3. Will a C.A.T allow you to locate cables?

**True or False**

A1. **False** – (They give an induction). Trial holes locate.