

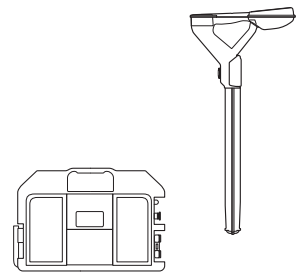
SUBSITE LOCATORS

> 950R/T > 970T > 910R
> EML SYSTEM
> AF2/FT14 > 2150GR



SUBSITE 950R/T AND 970T PIPE AND CABLE LOCATOR SYSTEM

LOCATION, LOCATION, LOCATION. The three modes and 20 frequencies of the 950R/T system help you quickly locate buried telephone, CATV, power, gas and water lines: Active — 950T and 970T transmit via direct line connection, induction clamp or induced broadcast signals; simultaneous 8 and 29 kHz transmission makes an alternate signal available if one is hard to detect, while higher frequencies help locate metallic lines with insulators that weaken or block low frequencies; Passive — 950R detects signals generated by 31 kHz (CATV) and 50/60 Hz power, as well as re-radiated radio frequencies; Beacon — 950R detects signals from optional beacons to locate non-metallic service lines; with the 512 beacon, the 950R locates blockages within cast-iron pipe.



KEY FEATURES

- Lightweight 950R receiver is balanced for easy handling.
- Enhanced backlit LCD offers optimal visibility in low-light conditions.
- 950T and 970T's rugged case and sealed keypad withstand tough weather conditions and provide superior moisture resistance.
- Patented digital signal processing (DSP) offers more effective locating and reduces interference; stable DSP depth readings do not vary with temperature or time, as analog readings do.

950R RECEIVER

Dimensions

Length
Width
Height
Operating Weight

U.S.

12.8 in
5.9 in
27.75 in
4.5 lb

Metric

325 mm
145 mm
705 mm
2 kg

Operation

Operating Temperature Range
Antenna Configurations
Audio Output
Operating Modes

-4° F to 122° F
Single peak, twin peak, null, left/right (line only)
Speaker

-20° C to 50° C

Active Line (standard)
Active Line (optional)
Beacon (locate/depth only)
Passive Line (standard)
Passive Line (optional)
Radio (optional)

512 Hz, 1 kHz, 8 kHz, 29 kHz, 80 kHz, 200 kHz, 33 kHz (EML)
400 Hz, 560 Hz, 815 Hz
512 Hz, 29 kHz, 33 kHz
50 Hz, 60 Hz
50 P power, 60 P power, 31 kHz
Passive locate only, no depth available

Locating Range

Lines
Beacons

15 ft
10 ft

4.6 m
3 m

Depth estimate tolerances**

Active line ± 3%
Active line ± 5%
Active line ± 10%
Passive line ± 10%
Beacon ± 5%

0.2-5 ft
5-10 ft
10 ft and deeper
0.5-10 ft
0.5-10 ft

0.06-1.5 m
1.5-3 m
3 m and deeper
1.5-3 m
1.5-3 m

LCD Backlight

LED (green)

External Ports

RS-232 serial

Batteries

Type
Battery Life
Battery Saver

6 C-cell alkaline
Approximately 50 hours (continuous use at 70° F / 21° C)
Unit shuts off after 5 minutes of inactivity

950T TRANSMITTER

Dimensions

Length
Width
Height
Operating Weight

U.S.

14 in
4.2 in
11 in
7.25 lb

Metric

355 mm
107 mm
280 mm
3.3 kg

Operation

Operating Temperature Range
Maximum Power Output
Operating Modes
Timer

-4° F to 122° F
3 watts
512 Hz, 1 kHz, 8 kHz, 29 kHz, 80 kHz, and dual (8 kHz and 29 kHz)
Unit runs continuously or shuts off after running for selected hour interval (8-hour maximum)

-20° C to 50° C
3 watts

Batteries

Type
Battery Life

8 D-cell alkaline
Approximately 40 hours (continuous use at power level 2)

970T TRANSMITTER

Dimensions

Length
Width
Height
Operating weight

U.S.

14 in
4.2 in
11 in
7.25 lb

Metric

355 mm
107 mm
280 mm
3.3 kg

Operation

Operating temperature range
Maximum power output
Operating modes

-4° F to 122° F
5 watts
512 Hz, 1 kHz, 8 kHz, 29 kHz, 80 kHz, 200 kHz (optional), and dual (8 kHz and 29 kHz)

-20° C to 50° C
5 watts

Timer

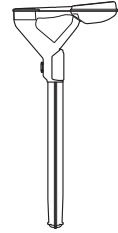
Unit runs continuously or shuts off after running for selected hour interval (8-hour maximum)

Batteries

Type
Battery Life

8 D-cell alkaline
Approximately 80 hours (continuous use at power level 2)

**Locators are calibrated to these tolerances under ideal test field conditions. Actual operating field conditions may have signal distortions or may contain noise sources which result in depth estimates accuracy that is less than specified.



SUBSITE 910R PIPE AND CABLE LOCATOR



MORE CHOICES MEAN BETTER RESULTS. The 910R receiver allows you to select the frequencies that best suit the application, whether you are locating pipe, cable, or non-directional beacons. Built on the same platform as the highly productive 950R, the 910R comes standard with up to four frequencies (see list below right), while additional frequencies may be added for a small fee. Active frequencies can be transmitted by 950T or 970T transmitters, and passive frequencies are used in cable avoidance sweeps or in the location of buried power and CATV lines. No matter what frequency you choose, the 910R gets to the bottom of things.



910R RECEIVER SPECIFICATIONS

Dimensions

	U.S.	Metric
Length	12.8 in	325 mm
Height	27.75 in	705 mm
Width	5.9 in	145 mm
Operating Weight	4.5 lb	2 kg

Operation

Operating Temperature Range	-4° F to 122° F	-20° C to 50° C
Antenna Configurations	Single peak, twin peak, null, left/right (line only)	
Audio Output	Speaker	
Locating Ranges		
Lines	15 ft	4.6 m
Beacons (in cast-iron pipe)	10 ft	3 m
Beacons (in plastic pipe)	15 ft	4.6 m
Maximum Depth Ranges		
Passive line	0.5-10 ft	0.15-3 m
Beacon	0.5-15 ft	0.15-4.6 m
Depth estimate tolerances**		
Active line ± 3%	0.2-5 ft	0.06-1.5 m
Active line ± 5%	5-10 ft	1.5-3 m
Active line ± 10%	10 ft and deeper	3 m and deeper
Passive line ± 10%	0.5-10 ft	1.5-3 m
Beacon ± 5%	0.5-10 ft	1.5-3 m
LCD Backlight	LED (green)	
External Ports	RS-232 serial	

Batteries

Type	6 C-cell alkaline
Battery Life	Approximately 50 hours (continuous use at 70° F / 21° C)
Battery Saver	Unit shuts off after 5 minutes of inactivity

910R FREQUENCY OPTIONS

Active

512 Hz
1 kHz
8 kHz
29 kHz
80 kHz
200 kHz

Power Passive

50 Hz
60 Hz
100 Hz
120 Hz
50 P
60 P

Beacon (non-roll)

512 Hz
29 kHz
33 kHz

LMS

400 Hz
560 Hz
815 Hz

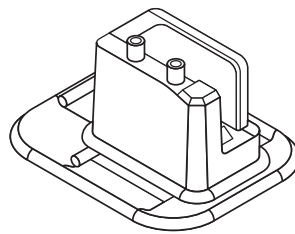
Others

31 kHz CATV Passive
33 kHz EML
Radio Passive
(no depth capability)

**Locators are calibrated to these tolerances under ideal test field conditions. Actual operating field conditions may have signal distortions or may contain noise sources which result in depth estimates accuracy that is less than specified.

SUBSITE ELECTRONIC MARKER LOCATOR

CALL OFF THE SEARCH: the Subsite EML accessory virtually eliminates the search for buried facilities when properly marked with 3M ScotchMark™ Electronic Markers. When buried with the facility, these markers serve as signaling devices. Each marker is color-coded to APWA standards and produces an industry-specific frequency that is pinpointed by the Subsite 910R or 950R locator and EML. With the Subsite EML, your identity problem is over.



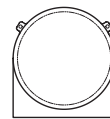
KEY FEATURES

- Easy to use; the locator transmits a signal to the buried facility
- Metallic conductors, fences, AC power lines or other buried utilities
- Electronic Markers can be buried over key facilities
- Marker's passive antenna requires no internal power source
- Water-resistant polyethylene shells withstand mining and drilling

ELECTRONIC MARKERS SPECIFICATIONS

EML Locator Accessory — Locates All 3M Markers

Weight	2.3 lb (1.1 kg)
Shipping Weight	4.0 lb (1.8 kg)
Battery Life	40 hours (typical)
Batteries	6 AA Alkaline
Temperature Range	-4° to 122° F (-20° to 50° C) operating
Storage	-40° to 158° F (-40° to 70° C)

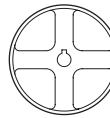


Description

- Full-Range Marker
- Full-Range Marker
- Full-Range Marker
- Full-Range Marker
- Full-Range Marker

Utility

- Telephone
- Power
- Water
- Wastewater
- Gas

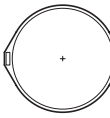


Description

- Mid-Range Marker
- Mid-Range Marker
- Mid-Range Marker
- Mid-Range Marker
- Mid-Range Marker

Utility

- Telephone
- Power
- Water
- Wastewater
- Gas



Description

- 4" Ball Marker
- 4" Ball Marker
- 4" Ball Marker
- 4" Ball Marker
- 4" Ball Marker
- 4" Ball Marker

Utility

- Telephone
- Power
- Water
- Wastewater
- Gas
- CATV



Description

- Near-Surface Marker
- Near-Surface Marker
- Near-Surface Marker
- Near-Surface Marker
- Near-Surface Marker

Utility

- Telephone
- Power
- Water
- Wastewater
- Gas



buried marker, and the marker returns a signal to the EML; location of the marker is indicated by an audible tone from the locator.
 Other utility electronic markers will not affect the locating process.
 Examples such as valve boxes, splices, service stubs, and cable paths during construction or at the time of maintenance.
 Power source.
 Interfering materials, chemicals, and underground temperature extremes.

Range	Color Code	Frequencies
8 ft (2.4 m)	Orange	101.4 kHz
8 ft (2.4 m)	Red	169.8 kHz
8 ft (2.4 m)	Blue	145.7 kHz
8 ft (2.4 m)	Green	121.6 kHz
8 ft (2.4 m)	Yellow	83 kHz

Shipping Weight 1.75 lb (0.08 kg) each, 44 lb (19.9 kg) per case
 Product Size 15" diameter x 1" thick (3810 mm x 250 mm)
 Shipping Quantities 25 per case, 200 per pallet

Range	Color Code	Frequencies
6 ft (1.8 m)	Orange	101.4 kHz
6 ft (1.8 m)	Red	169.8 kHz
6 ft (1.8 m)	Blue	145.7 kHz
6 ft (1.8 m)	Green	121.6 kHz
6 ft (1.8 m)	Yellow	83 kHz

Shipping Weight 5 oz (141.8 g) each, 17 lb (7.7 kg) per case
 Product Size 8.25" diameter x 1.25" thick (2090 mm x 320 mm)
 Shipping Quantities 50 per case, 600 per pallet

Range	Color Code	Frequencies
4 ft (1.2 m)	Orange	101.4 kHz
4 ft (1.2 m)	Red	169.8 kHz
4 ft (1.2 m)	Blue	145.7 kHz
4 ft (1.2 m)	Green	121.6 kHz
4 ft (1.2 m)	Yellow	83 kHz
4 ft (1.2 m)	Black/Orange	77 kHz

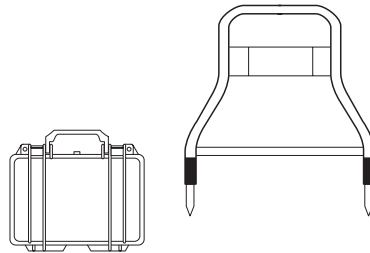
Shipping Weight 1 lb (0.45 kg) each, 25 lb (11.35) kg per case
 Product Size 4" (1020 mm) diameter sphere
 Shipping Quantities 24 per case, 576 per pallet

Range	Color Code	Frequencies
2 ft (0.6 m)	Orange	101.4 kHz
2 ft (0.6 m)	Red	169.8 kHz
2 ft (0.6 m)	Blue	145.7 kHz
2 ft (0.6 m)	Green	121.6 kHz
2 ft (0.6 m)	Yellow	83 kHz

Shipping Weight 0.88 oz (24.9 g) each, 3.75 lb (1.71 kg) per case
 Product Size 3" length x 0.75" diameter (890 mm x 160 mm)
 Shipping Quantities 50 per case (pallet N/A)

SUBSITE AF2/FT14 FAULT LOCATING SYSTEM

YOU'LL FIND PLENTY OF FAULTS with the Subsite AF2 A-frame detector and FT14 fault transmitter system. This sophisticated, extremely accurate system locates secondary faults in direct-buried, unshielded cables to within inches—at streetlight circuits and meter risers; across driveways, sidewalks, and streets; and even under snow or frozen ground. The FT14 places high-voltage, pulsed DC signals on target lines, breaking down corrosive buildup in the process; the AF2 then probes the ground to locate leakages and pinpoint faults. The AF2 features a remote probe extender for locating faults around obstacles. Let the AF2/FT14 system point out your faults.



AF2 A-FRAME DETECTOR SPECIFICATIONS

Battery	Alkaline 9VDC (1)
Sensitivity	Adjustable
Balance (meter centering)	Adjustable
Direction Indicator	Analog meter is intended to show direction to the fault when the detector orientation is correct (red probe toward the transmitter, black probe down the cable path)
Battery Indicator	Indicates battery condition
Remote Probe	On/off, electronically disconnects the red A-frame probe and connects the remote probe

FT14 TRANSMITTER SPECIFICATIONS

Battery	“D” alkaline (6) or external 12VDC source 12VDC @ 24 watts – pulsing 12VDC @ 0.5 watts – normal 12VDC inputs protected with 4-amp panel mount fuse (inside battery compartment)
Battery Indicator	Indicates battery condition
Output Voltage	2300-2500VDC initial, across 10-megaohm load Output pulse rate is one pulse every 3-4 seconds Output pulse duration is typically 200 milliseconds
Fault Impedance Indicator	Gives approximate value to fault
Output Tone	User selectable on/off
Output Light	User selectable on/off

KEY FEATURES

- Unique system that serves a variety of industries, including One-Call contractors, power and communications utility companies, general contractors, and subsurface utility engineering contractors.
- Ruggedly built; designed to withstand heavy use in a wide variety of conditions.
- Corresponding transmitter pulse, sound, and indicator light; improved transmitter battery holders; and faster settle time and less back swing.







SUBSITE 2150GR GROUND PENETRATING RADAR

LOOK OUT BELOW. Here comes the Subsite 2150GR, our most extensive, sophisticated locating system. The 2150GR detects both metallic and non-metallic pipes and cables to depths of up to 19 feet (6 m), depending on soil conditions and antenna selection. With 5.6 mph (9 km/h) survey speed—four times faster than that of competitive models—and digitally controlled radar, the 2150GR provides faster, cleaner images. For municipalities, subsurface utility engineers, school systems, and other organizations with significant infrastructure and outdated utility maps, the 2150GR puts everything in perspective.



2150GR SPECIFICATIONS

System	U.S.	Metric
Languages	English, French, German, Spanish, Italian, Portuguese, Chinese	
Data collection type	Parallel profile lines, perpendicular to the expected orientation of utilities	
Survey path width	19.7 in	500 mm
Recording channels	1	
Transmitting frequency	100 kHz	
Typical antenna frequency	250 or 700 mHz	
Typical collection speed (scans/second)	100	100
Typical collection speed @ 2" (5-cm) sampling interval	5.6 mph	9 km/h
Display mode	Gray scale/color palette	
Zoom	Up to 4X	
Data storage	Onto the laptop hard drive	
Maximum profile length	Virtually unlimited	
Stored data format	Raw data (for further data analysis)	
Setting of GPR propagation velocity (to get accurate evaluation of depth of detected targets)	Ground truth or hyperbola fitting methods	
Reading of pipe position/depth	By a software cursor	
System output	Printable radar map with descriptor of detected utilities	
Diagnostic	Radar and power supply status, excessive speed, data loss	
Radar Power Requirements		
Battery operating time	>10 hours	
Power supply	12V sealed lead acid, 12Ah	
Mechanical/Environmental		
Operating temperature	14° F to 104° F	-10° C to 40° C
Humidity	100% (sealed)	
Weight (without battery)	19.8 lb	9 kg
Length (without handle)	26.7 in	680 mm
Width (without handle)	31.4 in	800 mm
Environmental	IP65	
250 MHz Antenna Performance		
Antenna technology	Ultra-wide band, ground coupled, shielded dipole	
Typical range	0.6-8.2 ft	0.2-2.5 m
Maximum range	0.6-19.7 ft	0.2-6.0 m
700 MHz Antenna Performance		
Antenna technology	Ultra-wide band, ground coupled, shielded dipole	
Typical range	0.32-4.9 ft	0.1-1.5 m
Maximum range	0.32-8.2 ft	0.1-2.5 m

Unless otherwise specified, all figures are for standard equipment only. Specifications are called out according to SAE recommended procedures. Specifications are general and subject to change without notice. If exact measurements are required, equipment should be weighed and measured. Due to selected options, delivered equipment may not necessarily match that described.

KEY FEATURES

- 2150GR provides an accurate survey whether the operator is pushing or pulling it across any surface.
- User-friendly software enables the operator to manually input landmarks such as water hydrants and sewer drains, for more accurate survey maps.
- Digitally controlled radar provides faster survey speed—up to four times faster than competitive models—and better images.
- Earth-engaged antenna provides better contact on uneven terrain and reduces signal loss.
- Data recording and storage capabilities provide on-site data review, post-collection analysis, and proof of work when jobs require it.
- Two interchangeable antenna options to customize the unit for the job conditions.
- Auto-calibrating gain and filter take the guesswork out of setup.
- Folds for easy transport in a standard car trunk.



Subsite® Electronics has the most complete line of pipe and cable locators and the fastest service in the industry. For more information about these products, contact your local Subsite or Ditch Witch® equipment dealer.

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