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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



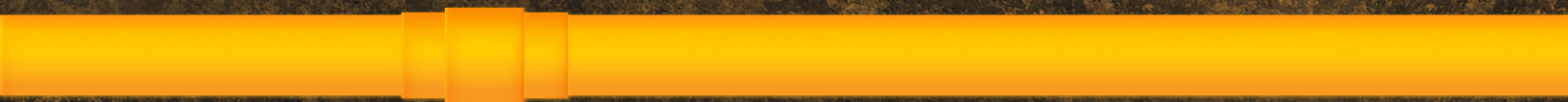
**3M** Science.  
Applied to Life.™



# 3M™ Locating and Marking System

Identify underground assets quickly and accurately

**CAUTION** GAS LINE BURIED BELOW  **CAUTION** GAS LINE BURIED BELOW  **CAUTION** GAS LINE BURIED BELOW  **CAUTION** GAS LINE BURIED BELOW



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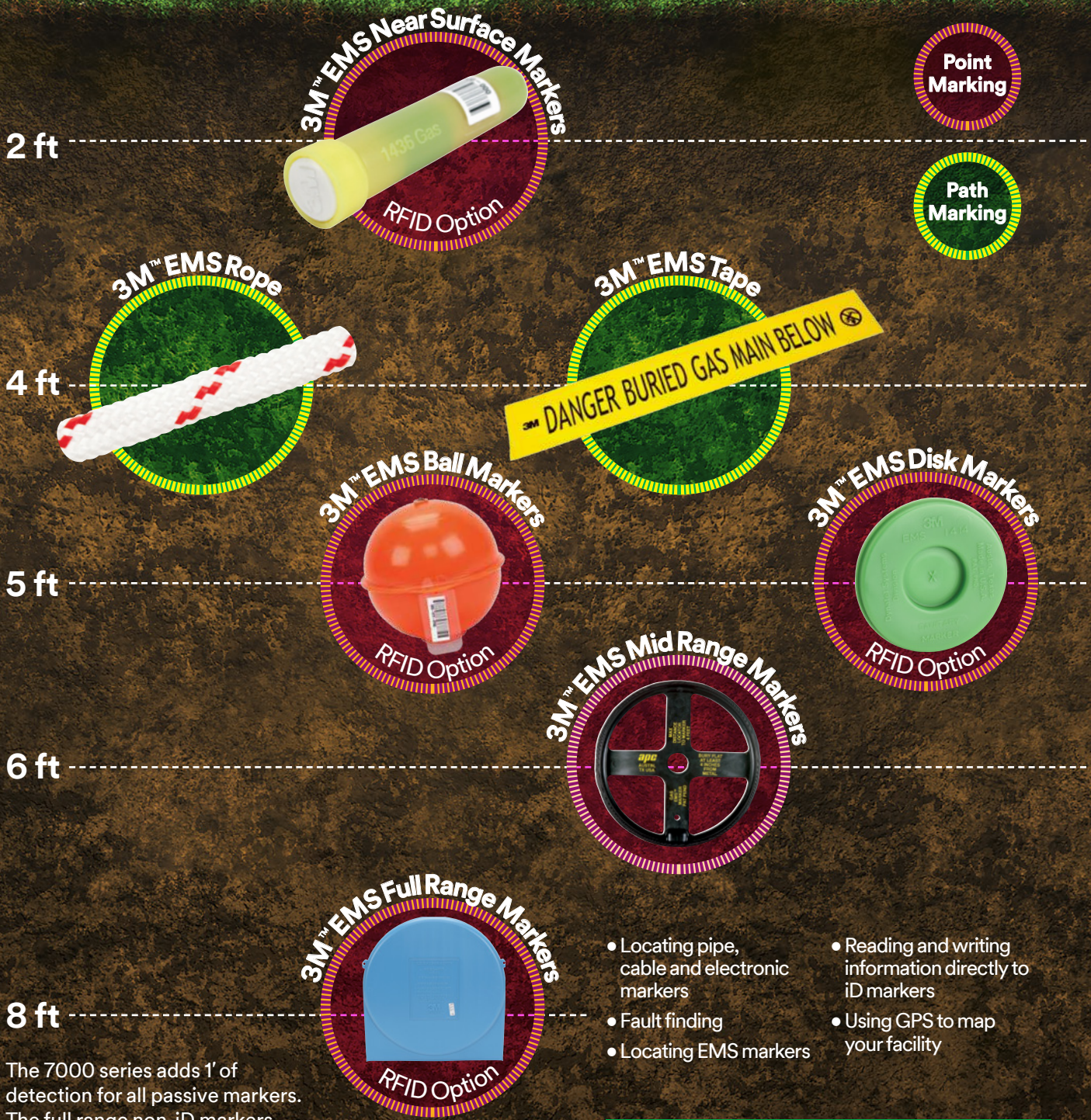
# Taking a revolutionary path forward

Stress-free management and maintenance of underground assets takes tools you can depend on. 3M's innovative suite of integrated locating and marking solutions is engineered to help afford you piece of mind as you get ready to take on your toughest challenges.



# A complete solution for construction and maintenance

The full line of 3M locators and markers helps to quickly and accurately identify underground assets. Designed as fully-featured kits with all-in-one capabilities, you will be ready for a wide range of jobs.



The 7000 series adds 1' of detection for all passive markers. The full range non-iD markers can be detected up to 9'.

- Locating pipe, cable and electronic markers
- Fault finding
- Locating EMS markers
- Reading and writing information directly to iD markers
- Using GPS to map your facility

No matter the task, these precision tools can help you find the exact path and estimated depth of your underground assets.



# 3M™ EMS Path Marking Tape and Rope

## A new approach to path marking

Our latest innovation, 3M™ EMS Path Marking Tape and Rope, is virtually a maintenance-free solution for marking and locating the path of underground plastic pipes and conduits that helps eliminate the problems and costs associated with tracer wire and test stations.

3M EMS marking tapes and ropes are embedded with markers that are activated using a 3M™ Dynatel™ Locators 7000 Series. Their intrinsic benefits save time and money.

- They can be installed near or above buried assets
- They are easy to follow, creating a detectable path above ground
- For use in open trench and HDD (Horizontal Directional Drilling) applications
- They do not require batteries and there is no need to hook up an external transmitter or spend time searching for access points
- The markers work independently, so even if a section of path marking tape/rope is cut or removed, the other markers on the tape/rope will continue to provide an accurate location
- They come in 5 frequencies, creating a unique identification for each utility type

	Depth	Roll Length	Marker Spacing	Telephone	Power	Water	Wastewater	Gas
Tape	up to 4 ft	400 m	8 ft	7611XR	7612XR	7613XR	7614XR	7615XR
	up to 3 ft	400 m	12 ft	7611	7612	7613	7614	7615
Rope	up to 4 ft	300m	8 ft	7701-HTS	7702-HTS	7703-HTS	7704-HTS	7705-HTS
	up to 4 ft	300m	8 ft	7701-R	-	-	-	-

HTS = High Tensile Strength

XR = Extended Range

R = In-Conduit



# 3M™ Point Marking

## Marking points of interest

Unlike surface features, maps and other methods of recording position, the 3M™ Marker is a constant point of reference you can depend on.

3M markers:

- Operate in all soil types; under asphalt; cement; and wet or dry soil
- Are color-coded to APWA standards
- Provide easy positive identification with each utility having its own frequency

3M™ iD Markers can be customized to include customer-specific information such as:

- Facility data
- Material type and size
- Type of application
- Placement date

All of this information can be accessed in the field through a 3M iD model locator, but also uploaded and used with your GIS system.

Model	Detection/Read Range	Type	Telephone	Power	CATV	General Purpose	Water	Wastewater	Gas
3M™ EMS Near Surface Marker	3 ft	EMS	1432	1433	–	–	1434	1435	1436
	2 ft	iD	1432-XR/iD	1433-XR/iD	1437-XR/iD	1438-XR/iD	1434-XR/iD	1435-XR/iD	1436-XR/iD
3M™ EMS Ball Marker	6 ft	EMS	1401-XR	1402-XR	1407-XR	1408-XR	1403-XR	1404-XR	1405-XR
	5 ft	iD	1421-XR/iD	1422-XR/iD	1427-XR/iD	1428-XR/iD	1423-XR/iD	1424-XR/iD	1425-XR/iD
3M™ EMS Mini-Marker	6 ft	EMS	1255	1256	–	–	1257	1258	1259
3M™ EMS Full Range Marker	9 ft	EMS	1250	1251	–	–	1252	1253	1254
	8 ft	iD	1250-XR/iD	1251-XR/iD	–	1248-XR/iD	1252-XR/iD	1253-XR/iD	1254-XR/iD
3M™ EMS Disk Marker	5 ft	EMS	1411-XR	1412-XR	1417-XR	1418-XR	1413-XR	1414-XR	1415-XR
	5 ft	iD	1411-XR/iD	1412-XR/iD	–	1418-XR/iD	1413-XR/iD	1414-XR/iD	1415-XR/iD



**3M™ EMS Near Surface Marker**  
Ideal for marking at shallow depths of 2–3'



**3M™ EMS Ball Marker**  
Self leveling feature, suited for depths of 5–6'



**3M™ EMS Mini-Marker**  
Designed for maintaining a stable position after placement at depths of 6'



**3M™ EMS Full Range Marker**  
Suited for deep applications of up to 8–9'



**3M™ EMS Disk Marker**  
Ideal for marking at shallow depths of 3–5'



# 3M™ Dynatel™ Pipe/Cable/EMS Locator 7500 Series

Cable/Pipe/Marker and EMS Tape Locators 7550-iD

Cable/Pipe/Fault/Marker and EMS Tape Locators 7573-iD

For powerful precision locating, choose Dynatel locators 7500 series. These locators combine advanced digital processing and simple interfaces to help you quickly locate 3M™ EMS Path Marking Tape/Rope as well as existing electronic markers (balls, near-surface, full range, etc.).

As with all 3M Dynatel Cable/Pipe Locators, the 7500 series provides accurate pipe, cable, or sonde depth measurements, giving a digital readout in feet and inches, or centimeters (user-selectable). All Dynatel locators 7500 series and fault finders are also compatible with select GPS/GIS field mapping instruments for real time mapping of electronic markers or pipe and cable facilities. The locators are easy to use, featuring a simple menu-driven interface that lets you select audio sounds and enable or disable receiver frequencies depending on your needs.

- 6 active frequencies for direct connect and transmitter output options in 3, 5 or 12 watts
- 4 induction frequencies with maximum allowed output power
- Trace view mapping display
- Push button depth to all underground markers (passive and iD)
- Receiver rechargeable battery kit
- All frequency mode in direct connect (4 simultaneously)
- Automatic impedance matching
- Ohm meter with high voltage detection
- Rugged, industrial temperature range
- 240VAC output protection
- Reads and writes to 3M iD Markers



# 3M™ Dynatel™ Marker/EMS Tape Locator 7420

- Locate all frequencies of 3M EMS Path Marking Tape/Rope
- Detects industry standard electronic markers frequencies
- 3M iD marker read and write capability
- Locate EMS tape/rope and be alerted to electronic marker of same frequency
- Marker maximum read range up to 9 ft. (2.4m) depth
- GPS communication capability for GIS mapping of pipe/cable path and electronic markers
- Push button depth estimation for 3M passive iD markers and EMS Tape
- Light weight with excellent balance and ergonomics
- Large backlit, high-resolution graphic display
- Rechargeable battery kit



3M™ Dynatel™ iD Marker/EMS Tape Locator 7420

# 3M™ Dynatel™ Cable/Pipe Locator 2500 Series

Cable/Pipe Locators 2550

Cable/Pipe and Marker Locators 2550-iD

Cable/Pipe/Fault Locators 2573

Cable/Pipe/Fault and Marker Locators 2573-iD

Offering a broad feature set with advanced digital processing, the Dynatel locators 2500 series combine simple interfaces with precision locating capabilities for six active frequencies. Additionally, the trace view mode presents an intuitive user interface that graphs the position and direction of the utility being located.

## Dynatel Locators 2500 Series

- Trace view mapping: graphic display of the cable direction and position
- Five locating modes: Trace View, Directional Peak, Directional Null, Single (Special) Peak, and Induction Peak
- Six active frequencies: 577, 1k, 8k, 33k, 82k, 200k (133k for Export models)
- All frequency mode in direct connection (four frequencies simultaneously)
- Four induction frequencies: 8k, 33k, 82k, 200k (133k for Export models)
- Transmitter has 3, 5 and 12 Watt (maximum) power output options
- Fault finding option
- Electronic marker locate/read/write and alert mode option
- GPS communication capability for GIS mapping of pipe/cable path and electronic markers







# 3M™ Dynatel™ Cable/Pipe Locators 2250M/2273M Series

## Cable/Pipe Locators 2250M

### Cable/Pipe and Marker Locators 2250M-iD

### Cable/Pipe/Fault Locators 2273M

### Cable/Pipe/Fault and Marker Locators 2273M-iD

For simpler cable and pipe locating, the Dynatel locator M series has an accurate multi-antenna design for various user-selected locating modes such as:

- Directional Peak combines the response from four peak antennas to indicate left/center/right direction to the cable/pipe while the bar graph and numeric display indicate the sharp and accurate dual-peak response
- Induction Peak
- Multi-Directional Null shows null signal response with automatic gain and uses the multiple antenna design to show cable/pipe location and direction on a unique compass-like, high resolution graphic
- Ultra-sensitive Special Peak is used for extreme depths

They come equipped with several built-in features that allow accurate cable and pipe locating.

- Measure cable/pipe or sonde depth
- Measure signal current in the cable or pipe
- Identify cable and cable pairs
- Tone shorts and grounds in aerial cable
- Locate energized power cable
- Four active frequencies: 577, 8k, 33k, 200k (133k for Export models)
- All frequency mode in direct connection (four frequencies simultaneously)
- Three induction frequencies available: 8k, 33k, 200k
- Tone mode 577Hz and 200kHz pulsed at 8Hz
- Transmitter has 3, 5, and 12 Watt (maximum) power output options
- Fault finding option
- Electronic marker locate/read/write and alert mode option.
- GPS communication capability for GIS mapping
- Semi-automatic gain set with manual fine tuning provides maximum flexibility and control
- Unique “expander” function for fast tracking and pinpointing of position



## 3M™ Dynatel™ Marker Locator 1420

- Detects industry standard electronic markers frequencies
- 3M iD marker read/write capability and depth estimation
- Marker maximum read range up to 8 ft. (2.4m) depth
- GPS communication capability for GIS mapping of pipe/cable path and electronic markers
- Light weight with excellent balance and ergonomics
- Large backlit, high-resolution graphic display

# 3M™ Dynatel™ Locators 2200 Series

Cable/Pipe Locator 2250  
Cable/Pipe/Fault Locator 2273

Dynatel locators 2200 series are built specifically to find the path and estimated depth of buried cables and pipes. Dynatel locators 2200 series have four active frequencies:

- Passive frequencies (for power)
- Cathodic protection
- CATV
- Auxiliary frequencies (or long distance locating from remote transmitters)

They also offer toning of aerial cable, direct readout of active duct probe, and cable/pair identification.

Receivers have an “expander” function which differentiates between two conductors carrying the same tone by enhancing the amplitude difference. Both the receiver and the transmitter also feature a self-test that runs each time the unit is turned on.

Other features include:

- Three locating modes: Peak, Null and Differential
- All frequency mode in direct connection (4 frequencies simultaneously)
- Transmitter has 3 and 5 Watt output options
- Ability to find underground faults



3M™ Dynatel™ Locator Features by Model

	7500 Series	2500 Series	2200M Series	2200 Series	7420	1420
Pipe and cable locate	○	○	○	○		
Electronic marker locate/read/write	○	*	*		○	○
EMS marking tape/rope locate	○				○	
Active frequencies	4-6	4-6	4	4		
Passive power	○	○	○	○		
Passive LF	○	○	○	○		
Sonde locating	○	○	○	○		
Fault locate (A-frame)	*	*	*	*		
Transmitter options	3, 5 or 12	3, 5 or 12	3, 5 or 12	3 or 5		
Dyna-coupler size	3" or 4.5"	3" or 4.5"	3"	3"		
Carry bag	○	*	*	*		
3M™ Rechargeable Battery 2200RB	*	*	*	*		
Cigarette lighter adapter cable	Std on 5W & 12W	Std on 5W & 12W	Std on 5W & 12W	Std on 5W		
GPS compatible	○	○	○		○	○

○ Standard feature    \* Optional feature

# Accessories



Product #	Product	Description
1196/C	3M™ 6" (15.2 cm) Dyna-Coupler with pouch	Permits coupling of RF trace tone to large diameter cables, bundle cables, and cables enclosed in accessible non-metallic ducts. For use on cables and conduits with a maximum diameter of 6.9" (17.5 cm).
9012	3M™ Small Clip ¼" (6.4 mm) Direct Connect, 5-foot Transmitter Cable, Telephone	Two lead, 5' (1.5 m) cables used for direct connection to conductor and ground. The 9012 cable has smaller Telco style alligator clips with an insulation piercing needle incorporated.
2892	3M™ Small Clip ¼" (6.4 mm) Direct-Connect Transmitter Cable For All Cable/Fault Locators	Two lead, 10' (3 m) cable used for direct connection to cable and ground.
2876	3M™ Large Clip ⅝" (15.9 mm) Direct-Connect Transmitter Cable For Most Cable/Fault Locators	Two lead, 10' (3 m) cable used for direct connection to cable and ground.
9043	3M™ Ground Extension Cable	Extends ground capability to 12' (3.7 m).
3014	3M™ Earth Contact Frame	Used only when locating sheath (earth return) faults. It indicates direction to the fault and is color coded to correspond with the Receiver's indicator.
9026	3M™ Earth Contact Frame Cable	For use with the 3M Earth Contact Frame 3014 for sheath (earth return) fault location; 4' (1.2 m) in length.
8006	3M™ Ground Rod	For applying ground capability, made of stainless steel.
3229	3M™ ADP 33KHZ Sonde	For use with 3M™ Dynatel™ Cable /Fault/Locators.
7000C	AC Charger	For use with 3M™ Dynatel™ 7000 Series Locators.
2200/7000RB	3M™ Rechargeable Battery	For use with 5W & 12W Transmitters (Non-Spillable).
7000RB	3M™ Rechargeable Battery Pack	For use with 3M™ Dynatel™ 7000 Series Receiver.
3001	3M™ 3" (7.6 cm) Dyna-Coupler	Permits coupling of RF trace tone to cables with a maximum diameter of 3" (7.6 cm).
4001	3M™ 4.5" (11.4 cm) Dyna-Coupler	Permits coupling of RF trace tone to cables with a maximum diameter of 4.5" (11.4 cm).
9011	3M™ Coupler Cable	For use with any Dynatel Transmitter, Receiver, or Coupler: 12' (3.7 m) in length.
4519	3M™ Dynatel™ Locator Coupler Accessory Kit	The Dynatel accessory kit contains a 4001 4.5" (11.4 cm) 3M Dyna-coupler and a 3M Coupler Cable 9011 with a case that can be attached to the transmitter.
3019	3M™ 3" (7.6 cm) Cable Locator Coupler Accessory Kit	The accessory kit contains a 3001 3" (7.6 cm) Dyna-coupler and a Coupler Cable 9011 with a case that can be attached to the transmitter.
2200	3M™ Soft Carrying Bag	3M soft carrying bag for the 2200 series product line (2250, 2273).
2200M /7000	3M™ Soft Carrying Bag	3M soft carrying bag for the 2200M/2500/7000 series locators.
2200RB	3M™ Rechargeable Battery	For use with 3M™ Dynatel™ 5 Watt and 12 Watt Transmitter 2200M Series.

## US

		EMS Marker/Tape/ Rope Enabled	Marker Locate Enabled	Not Marker/Tape/ Rope Enabled	Cable/Pipe Locator	Fault Locate	Electronic Marker Locate	EMS Path Marking Tape and Rope Locate	Transmitter Output	Direct Connect Cable – small clips	Direct Connect Cable – large clips	Coupler Size (inches)	4.5" Coupler & Cable	220ORB Rechargeable Battery	Cigarette Lighter Adapter Cable	Carrying Bag
<b>7573 Series Kits</b>	80-6300-0277-4	7573-ID/U12	x	x	x	x	x	12W		x		4.5	x	x	x	x
	80-6300-0280-8	7573-ID/C12	x	x	x	x	x	12W	x			3			x	x
	80-6300-0276-6	7573-ID/U5	x	x	x	x	x	5W		x		4.5		x	x	x
	80-6300-0279-0	7573-ID/C5	x	x	x	x	x	5W	x			3			x	x
	80-6300-0281-6	7573-ID/5-NA	x	x	x	x	x	5W								
	80-6300-0275-8	7573-ID/U3	x	x	x	x	x	3W		x		4.5				
<b>7550 Series Kits</b>	80-6300-0273-3	7550-ID/U12	x		x	x	x	12W			x	4.5		x	x	x
	80-6300-0272-5	7550-ID/U5	x		x	x	x	5W				4.5		x	x	x
	80-6300-0274-1	7550-ID/5-NA	x		x	x	x	5W								
	80-6300-0271-7	7550-ID/U3	x		x	x	x	3W			x	4.5				x
<b>7420</b>	80-6113-8923-2	7420				x	x									
<b>2573 Series Kits</b>	80-6113-3462-6	2573-ID/C12	x	x	x			12W	x			3			x	
	80-6113-3464-2	2573-ID/U12	x	x	x			12W		x		4.5	x	x	x	x
	80-6113-3458-4	2573-C12	x	x				12W	x			3			x	
	80-6113-3460-0	2573-U12	x	x				12W		x		4.5	x	x	x	x
	80-6113-8779-8	2573-ID/C5-4FREQ	x	x	x			3W	x			3				
	80-6300-0264-2	2573-ID/U3	x	x	x			3W			x	4.5				x
	80-6113-3461-8	2573-ID/C3-4FREQ	x	x	x			3W	x			3			x	
	80-6300-0263-4	2573-U3	x	x				3W			x	4.5				
<b>2550 Series Kits</b>	80-6113-3457-6	2573-C3/4FREQ	x	x				3W	x			3				
	80-6113-3452-7	2550-ID/U12	x		x			12W			x	4.5	x	x	x	x
	80-6113-3450-1	2550-U12	x					12W			x	4.5	x	x	x	x
	80-6300-0262-6	2550-ID/U3	x		x			3W			x	4.5				x
<b>2273M Series Kits</b>	80-6113-3044-2	2273M-ID/UCU12W-RT	x	x	x			12W	x	x		3		x	x	x
	80-6111-4091-6	2273M-ID/UU5W-RT	x	x	x			5W			x	3				
	80-6111-4095-7	2273M-ID/UU3W-RT	x	x	x			3W			x	3				
	80-6111-4090-8	2273M-ID/UC5W-RT	x	x	x			5W	x			3			x	
	80-6111-4094-0	2273M-ID/UC3W-RT	x	x	x			3W	x			3				
	80-6113-2342-1	2273M-ID/CATV	x	x	x			3W	x			3				
	80-6113-3046-7	2273M-UCU12W/RT	x	x				12W	x	x		3		x	x	x
	80-6111-4132-8	2273M-UU5W-RT	x	x				5W			x	3			x	
	80-6111-4136-9	2273M-UU3W-RT	x	x				3W			x	3				
	80-6111-4131-0	2273M-UC5W-RT	x	x				5W	x			3			x	
	80-6111-4135-1	2273M-UC3W-RT	x	x				3W	x			3				
	<b>2250M Series Kits</b>	80-6113-3039-2	2250M-ID/UCU12W-RT	x		x			12W	x	x		3		x	x
80-6111-4140-1		2250M-ID/UU5W-RT	x		x			5W			x	3			x	
80-6111-4144-3		2250M-ID/UU3W-RT	x		x			3W			x	3				
80-6111-4139-3		2250M-ID/UC5W-RT	x		x			5W	x			3			x	
80-6111-4143-5		2250M-ID/UC3W-RT	x		x			3W	x			3				
80-6113-3041-8		2250M-UCU12W/RT	x					12W	x	x		3		x	x	x
80-6111-4148-4		2250M-UU5W-RT	x					5W			x	3			x	
80-6111-4152-6		2250M-UU3W-RT	x					3W			x	3				
80-6111-4147-6		2250M-UC5W-RT	x					5W	x			3			x	
<b>2220M Series Kits</b>	80-6111-4151-8	2250M-UC3W-RT	x					3W	x			3				
	80-6113-3107-7	2220M-CU12W/RT	x					12W	x	x		3		x	x	x
	80-6113-2585-5	2220M-U3W	x					3W			x					x
	80-6113-2681-2	2220M-U3W3-CPLR	x					3W			x	3				x
<b>2273 Series Kits</b>	80-6113-2586-3	2220M-C3W-CPLR	x					3W	x			3				x
	80-6109-9352-1	2273-U5P3/A	x	x				5W			x	3			x	
	80-6109-9353-9	2273-U5T3/A	x	x				5W	x			3			x	
	80-6108-4745-3	2273-U3P3	x	x				3W			x	3				
<b>2250 Series Kits</b>	80-6108-4739-6	2273-U3T3	x	x				3W	x			3				
	80-6108-4727-1	2250-U3P3	x					3W			x	3				
<b>1420</b>	80-6108-4721-4	2250-U3T3	x					3W	x			3				
	80-6111-4087-4	1420				x										

\*All Cable/Pipe locator kits include Receiver, Transmitter, User Manual, Ground Rod, Serial cable and USB/Serial adaptor

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#### Electrical Markets Division

6801 River Place Blvd.  
Austin, TX 78726-9000  
800/200-0265  
Fax 877/601-1305  
www.3M.com/dynatel

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