



# ACOUSTIC SEWER INSPECTION

## SL-RAT™ -The Sewer Line Rapid Assessment Tool

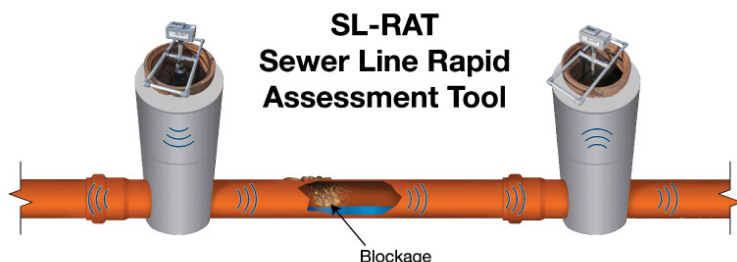


### MILLIONS OF FEET INSPECTED

- Quickly find blockages in your network
- Inspect over 10,000 ft/day
- Low Cost: 1/10<sup>th</sup> – 1/20<sup>th</sup> the cost of CCTV
- Safe: No flow contact/confined space entry
- Highly portable and easy to operate

The Sewer Line Rapid Assessment Tool, or SL-RAT™, is a highly portable onsite assessment tool for quickly detecting blockage conditions in gravity-fed sewers. The SL-RAT's ability to provide a blockage assessment in 3 minutes or less, with no flow contact leads to an operating cost 1/10th to 1/20th that of CCTV. And, more importantly, the SL-RAT now enables wastewater utility operators to economically use a Condition-Based Maintenance strategy to improve SSO performance while using less resources.

The SL-RAT is composed of two components – the Transmitter (TX) and the Receiver (RX). Each SL-RAT device is sold or leased as a pair – with the TX providing the active acoustic transmission through the pipe. Think of the TX as “yelling” down the pipe, and the RX providing the microphone and signal processing capabilities to listen and interpret the received acoustic signal. Think of the RX as the brain “listening” for the blockage and processing the blockage assessment result.



### Transmitter (TX)



### Receiver (RX)



Winner 2012  
WEF Innovative  
Technology  
Award



### For a DEMO contact:

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# SL-RAT SPECIFICATION SHEET

FEATURE	DESCRIPTION	OPERATING CHARACTERISTICS
<b>Dimensions</b> (Travel mode)	<b>RX</b> 5.5" X 14" X 33" <b>TX</b> 5.5" X 14" X 33"	Easily folds for compact storage and transport
<b>Dimensions</b> (Deployed)	<b>RX</b> 24" X 14" X 33" <b>TX</b> 27" X 14" X 33"	Rugged swing arm with simple design for pivoting
<b>Weight RX/TX</b>	<b>RX</b> 11 lbs <b>TX</b> 18 lbs	Light weight design for easy field deployment
<b>Travel Bag</b>	CODE ALPHA - Nylon ripstop rugged custom wheeled duffel in combination with PUR foam/Closed Cell PE travel trays	Provide cushion and device protection in a light weight and easily transportable package.
<b>RX Battery</b>	Custom Heavy Duty Lithium Ion, 1000 charge cycles, 11.1V, 3.6Ah, fully enclosed.	> 1 week battery life; fully charges in ~ 2 hours
<b>TX Battery</b>	Custom Heavy Duty Lithium Ion, 1000 charge cycles, 11.1V, 3.6Ah, fully enclosed.	> 2 day battery life; fully charges in ~ 2 hours
<b>Extended range visual display</b>	122X32 pixel graphic display with extended environmental protection	Able to operate from -20C to +70C
<b>Speaker</b>	Efficient marine grade heavy duty speaker with high fidelity across a broad sound spectrum	Rugged. Field proven. Reliable.
<b>Microphone</b>	Harsh environment microphone resists effects of water immersion, mud, sand and salt encrustation.	Rugged, Field proven design. Reliable with excellent acoustic performance.
<b>Construction</b>	Constructed using 6061-Aluminum, 301 Stainless, and a composite resin control box.	Provides strength and durability in a light weight package
<b>Device memory</b>	RX unit stores up to 200 measurements for download to PC via USB	Stores > 3 days measurements
<b>Electronics</b>	Custom designed for efficient power management and maximum signal processing performance. Manufactured in an ISO:9000 certified state-of-the-art facility	Accurate blockage assessments in real time with long battery life
<b>Water &amp; Environmental Resistance</b>	Electronics are fully isolated within gasketed enclosures. The speaker is protected within a 6061-Aluminum housing	Reduced downtime and repair.
<b>Cleanability</b>	Durable surfaces can be cleaned with industrial wipes, alcohol, or other standard cleaning agents	Economically maintain crew hygiene and health safety
<b>Communication/Data Synching</b>	RX and TX communication and synchronization via standard IEEE RF transceiver modules operating within the 2.4GHz ISM band.	Provides infield operation verification and automation
<b>GPS enabled</b>	Uses the same energy-efficient and accurate 10Hz GPS chipset found in many high-quality mobile consumer devices	Enables more accurate data registration, time stamping, and crew productivity measurement.