

# THE FIRST STEP IN SMARTER SEWER MAINTENANCE



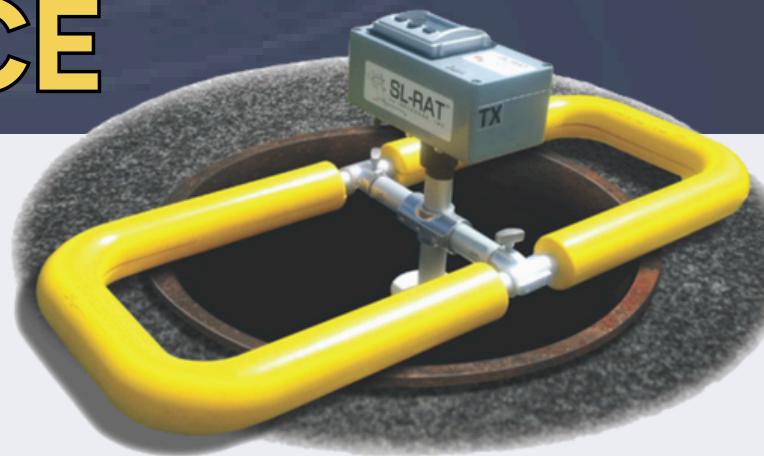
## OVER 500 MILLION FEET INSPECTED

**Portable** - Weighs under 20lbs

**Low Cost** - 10-20x cheaper than CCTV

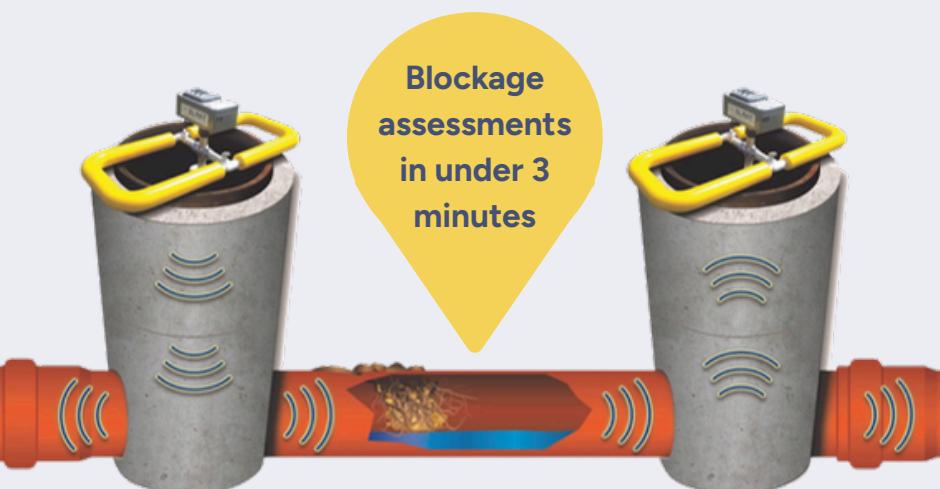
**Safe** - No flow contact or confined space entry

**Fast** - Inspect over 10,000 ft/day with a 2 person crew



The Sewer Line Rapid Assessment Tool, or SL-RAT®, is a highly portable, field assessment tool used to detect blockages in gravity sewer lines. The SL-RAT is composed of two components. The transmitter (TX) sends a series of tones through the pipe while the receiver (RX) listens for the known signal up to 750 feet away on the adjacent manhole. In under 3 minutes, the SL-RAT will give the operator a real time assessment of the pipe's flow capacity.

This method is 10x-20x faster and cheaper than traditional inspection methods. Using the SL-RAT, municipalities can target their cleaning operations on assets with known obstructions - reducing unnecessary cleaning and decreasing the risk of sanitary sewer overflows (SSOs) or basement backups. To date, municipalities have tested over 500 million feet of gravity sewer lines using the SL-RAT.



# SL-RAT Specification Sheet

## Receiver (RX)



## Transmitter (TX)



FEATURE	DESCRIPTION	OPERATING CHARACTERISTICS
Dimensions (Travel Mode)	RX 5.5" X 14" X 33" / TX 5.5" X 14" X 33"	Easily folds for compact storage and transport.
Dimensions (Deployed)	RX 24" X 14" X 33" / TX 27" X 14" X 33"	Rugged swing arm with simple design for pivoting.
Weight RX/TX	RX 14 lbs / TX 29 lbs	Light weight design for easy field deployment.
Travel Bag	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.
RX Battery	Custom Heavy Duty Lithium-Ion, 1000+ charge cycles, 10.8V, 5.0Ah, PCB-limited discharge protection, fully enclosed.	> 1 week battery life; fully charges in ~ 4 hours.
TX Battery	Custom Heavy Duty Lithium-Ion, 1000+ charge cycles, 10.8V, 5.0Ah, PCB-limited discharge protection, fully enclosed.	> 2 day battery life; fully charges in ~ 4 hours.
Extended Range Visual Display	122 X 32 pixel graphic display with extended environmental protection.	Able to operate from -20 C to +70 C / -4°F to 158°F.
Speaker	Efficient marine grade heavy duty speaker with high fidelity across a broad sound spectrum.	Rugged. Field proven. Reliable.
Microphone	Harsh environment microphone resists effects of water immersion, mud, sand and salt encrustation.	Rugged, Field proven design. Reliable with excellent acoustic performance.
Construction	Constructed using 6061-Aluminum, 301 Stainless, and a composite resin control box.	Provides strength and durability in a light weight package.
Device Memory	RX unit stores up to 500 measurements for download to PC via USB.	Stores > 3 days measurements.
Electronics	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.
Water & Environmental Resistance	Electronics are fully isolated within gasketed enclosures. The speaker is protected within a 6061-Aluminum housing.	Reduced downtime and repair.
Cleanability	Durable surfaces can be cleaned with industrial wipes, alcohol, or other standard cleaning agents.	Economically maintain crew hygiene and health safety.
Communication /Data Syncing	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.
GPS Enabled	Uses the latest generation energy-efficient and accurate 10Hz "map-grade" GPS chipset found in many high quality mobile consumer devices. GNSS, GLONASS, and GALILEO compatible.	Enables data registration to a nominal +/- 15 feet accuracy level, GPS synched time stamping, and straightforward crew productivity measurement.