

Road Evaluation Antenna Solutions

GSSI offers several horn antennas for the RoadScan system. Each antenna option is designed to meet your specific needs for road structure assessment with data collection at highway speeds. All of our air-launched horn antennas are positioned at a safe working height, approximately 18 inches from the road surface. They also have a unique calibration technique that fully compensates for any antenna movement during data collection.

2 GHz Horn Antennas

Model 4105

The 4105 is a conventional horn antenna, offering depths of up to 2½ feet (0-.75 meters) for near surface road inspections. Because of its 2 GHz center frequency, the 4105 can measure the first layer as thin as 1 inch.

Model 4105NR

The 4105NR antenna employs patented interference reduction technology that improves noise immunity from common broadcast interference sources found in urban environments.

This new technology uses advanced hardware and signal processing techniques that allow high-speed GPR data collection in noisy environments that were previously difficult for unshielded horn antennas and low-speed ground coupled antennas. The result is the ability to collect high fidelity data even when operating in close proximity to strong broadcast transmitting towers.

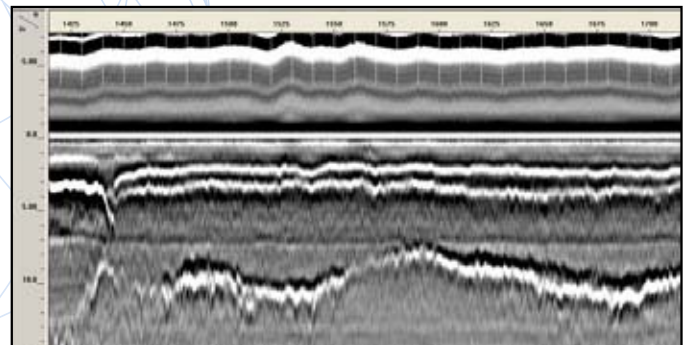
1 GHz Horn Antenna

Model 4108

The 1 GHz, Model 4108 antenna can penetrate to a depth of 3 feet (0.9 meters), making it ideally suited for the highway and bridge deck evaluations. The 1.0 GHz center frequency offers users the ability to measure the first layer as thin as 2 inches thick.

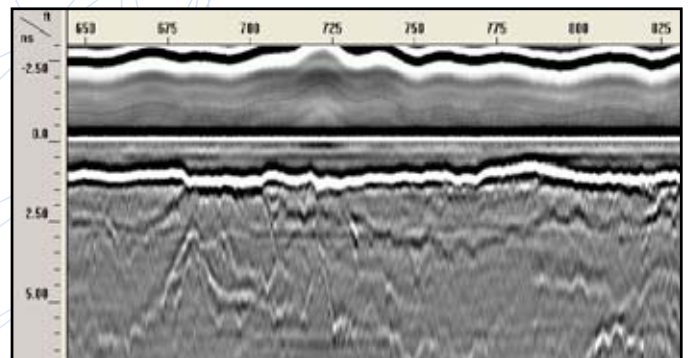


2 GHz - 4105



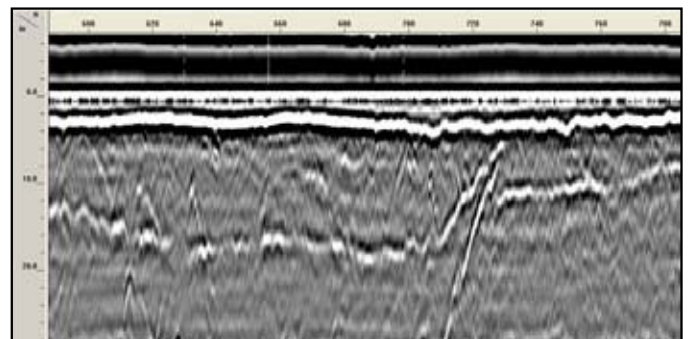
Pavment data showing two thin lifts of asphalt and a shallow base layer.

2 GHz - 4105NR



Pavment data showing road structure and bottom of asphalt layer.

1 GHz



Pavment data showing a shallow asphalt layer and a deeper base layer.



Software Solutions: Road Structure Assessment

RADAN Software

RADAN™ is GSSI's post-processing software. With its modular design, this program allows users to select the processing functions that best suit their needs.

RADAN is Windows™ based, providing a familiar and easy-to-use environment for all levels of experience.

Road Structure Module

RADAN's Road Structure Assessment Module provides powerful features for processing GSSI's air-launched horn antennas used for collecting pavement data at highway speeds. Features include:

Automatic Velocity Calculation

- GSSI's air-launched antenna calibration technique automatically recalculates the pavement velocity at each individual scan location! This is critical, because changes in pavement type and density are a significant source of error when relying on sporadic core data for calibration.
- No calibration cores are required! Collecting core data is expensive, and calibration using cores requires new core data each time the pavement type or density changes.

Able to Measure Thin Lifts

- The high frequency 2 GHz horn antenna can measure layers as thin as 1 inch.

Easy Data Processing

- GSSI's innovative processing tool EZ Tracker provides a simple point-and-click visual method of identifying all pavement layers. The result is a generic ASCII file compatible with almost any database or other program.

GPS Integration

- GSSI's external data logger accepts data from any GPS producing a NMEA GGA output.
- Pavement layer information is available as a Google Earth™ .kml file.

Generic ASCII Output Files

- Permits simple integration with spreadsheets, pavement management databases and other programs.



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