RIS HI-PAVE GPR

STANLAY™

The RIS Hi Pave is a vehicle borne GPR system based on horn antenna for pavement thickness & condition assessment of road, highway & runway conditions at high speed.

RIS HI Pave featured is in association with **IDS Italy.**

Application :

High speed multichannel radar system for Road Assessment Surveys :

- Pavement thickness Measurement.
- Surface, base and sub-base road course assessment.
- Detection of cavities, voids and delamination.
- Location of cracks.
- Detection of wet areas.
- Airport runway condition assessment.

Benefits :

RIS Hi-Pave provides a continuous and complete scan of road and airport runway conditions at unsurpassed speed. The system comes with different configuration, from the entry level 1 antenna system up to the 4 antenna multi-frequency array.
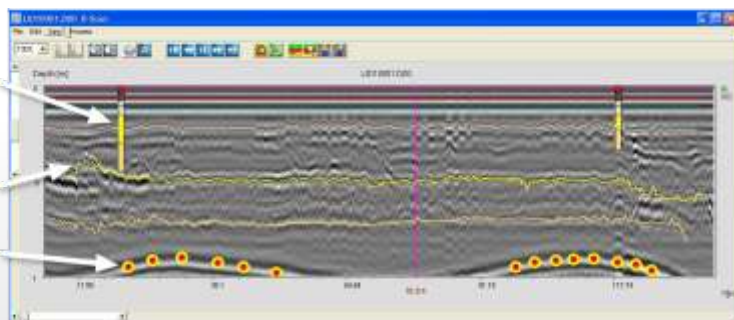
RIS Hi-Pave is targeted at multiple uses:

- Verification tests of new road construction (checking the pavement, grade, sub grades as built conditions vs specifications).
- Periodical monitoring of road & runway conditions for preventive maintenance.
- Semi Automatic Road layer sub-surface detection tools, easy to use with minimum survey & processing time.
- High speed acquisition upto 260 Km/hr with single antennae & 10 cms data sampling or 130km/hr with dual antennae configuration.

Number of control units (DAD MCh FastWave)	DATA DENSITY @ 125 Km/h, 512 sample		
	HR 1 (1 Horn)	HR 2 (1 Horn + 1 TR 400/900)	HR 4 (2 Horn + 2 TR 400/900)
1	5 cm (1 Data channel)	10 cm (2 Data channels)	10 cm (4 Data channels)
2	NA	5 cm (2 Data channels)	5 cm (4 Data channels)

Software Features :

RIS Hi-Pave is offered with the GRED 3D post processing software. It's also compatible with Roadscanner's RoadDoctor software.

The GRED 3D software allows semi automatic post processing of data allowing result generation with minimum human intervention allowing high accuracy results.

Color test

Stratigraphic layers

Cavities

GRED HD: subsurface layer extraction

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Configurations Options :

■ DAD **! CABLE !** **■ TR DUAL-F 400/900** **■ HORN**

DUAL FREQUENCY
TR 400/900

Tr600

Dual Frequency 400/900 FW

HORN1000 or 2000

RIS Hi-Pave HR1 :
The Single-antenna. entry level configuration for road and runway pavement evaluation.
- 1 DAD FastWave control unit.
- 1 HR2000 antenna (2 Ghz horn) for road survey or 1 HR 1000 antenna (1GHz horn) for runway survey.

RIS Hi-Pave HT2 :
The double antenna configuration for complete road and runway evaluation (pavement, grade, subgrade).
- 1 DAD FastWave control unit.
- 1 HR2000 antenna (2 GHz horn) for road pavement survey or 1 HR 1000 antenna (1GHz horn) for runway survey.
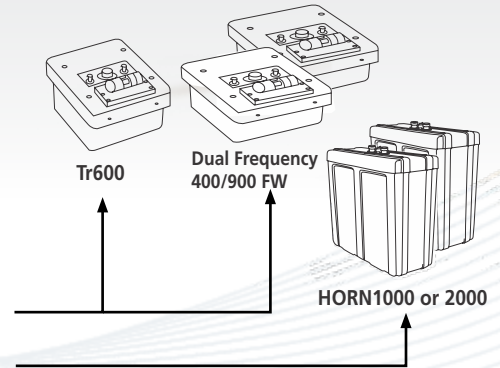- 1 TR400/900 antenna (400/900 MHz)for grade and subgrade evaluations.

Ris Hi-Pave HT4:
The four-antenna configuration horn 1000 & 2000 for complete and wide road and runway evaluation.
- 1 DAD FastWave control unit.
- 1 HR 2000 antenna (2GHz horn) for runway survey
- 1 HR 1000 antenna (1GHz horn) for runway survey.
- 1 TR400/900 antenna (400/900 MHZ) for grade and subgrade evaluations.

RIS Hi-Pave is a modular system which can be tailored to meet different requirements. The basic RIS Hi-Pave configuration consists of a single 1GHz or 2GHz horn antenna and a DAD FastWave radar control unit. A 400/900 MHz dual frequency antenna can be added to this to provide a complete road or runway evaluation, including grade and subgrade evaluations as well as the pavement. The number of antennas can be doubled to provide a wider survey path and hence require fewer scans to be performed and the system can also be used with a second control unit to provide a denser sampling rate to allow more accurate scans or scans to be performed at a higher speed.

TECHNICAL SPECIFICATION :

Data Logger	Panasonic CF-19 (or alternatively any user's Window PC with Ethernet LAN interface)
Radar Control Group	• Standard configuration : 1 x DAD MCh FastWave
	• Fast configuration : 2 x DAD MCh FastWave + Synchro Unit
Number of channels	From 2 to 8
Antenna Frequency	• Air Launched antenna : HR1000 (1000 MHz)
	• Air Launched antenna : HR2000 (2000 MHZ)
	• Dipole Dual Frequency Antenna, TR 400/900 Dual Frequency
Scan Rate (@512 Sample/Scan)	724 scans/sec. @ 1 antenna
Scan Interval	10 scans/m
Antenna Dimensions (L x W x H)	Air launched antenna, 53 X 23 X 50 cm
	Dipole antenna : 38 X 43 cms
Positioning	Metric wheel and/or GPS interface
Collection Speed	up to 250 Km/h
Videocamera	Synchronized radar and video data (optional)
Environment	IP65

SOFTWARE SPECIFICATION :

Processing Software	GRED 3D includes :
	• 3D view (B-scan and C-scan)
	• Layers analysis and view
	• Manual or automatic layer tracking
	• Core insertion
	• GPS positioning from any NMEA CGA output
	• CAM view
	• Automatic and Manual data processing
	• Iso-surface map
	• Graphic comments and parameters
	• Color scale/palette
	• Propagation velocity estimation
	• Data Processing with all the basic filters
Output Data	Excel, ASCII, HDF5, jpg, bmp