RIS Hi-BrigHT

The only dedicated radar solution for bridge deck surveying

Early detection of damage to bridge decks with the RIS Hi-BrigHT array system

IDS GeoRadar: The Leader in Multi-frequency and Multi-channel Ground Penetrating Radar

www.idsgeoradar.com

RIS Hi-BrigHT

RIS Hi-BrigHT is a unique ground penetrating radar (GPR) solution specialized for the early detection of deterioration in concrete bridge decks. Due to its innovative design and sophisticated software tool, RIS Hi-BrigHT revolutionizes GPR bridge inspection, allowing:

- Measurement of pavement, concrete slab and asphalt thickness.
- Location of reinforcement cover depth and thickness.
- Automatic detection of rebars.
- Detection of areas affected by corrosion.
- Location of deck slab and protective concrete damage.
- Delamination detection.

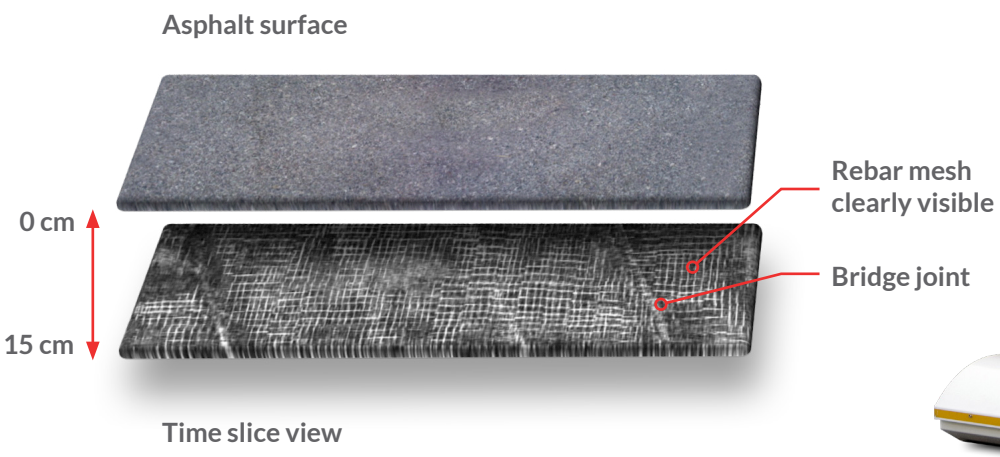
RIS HI-BRIGHT BENEFITS

- **Unique and complete bridge deck evaluation,** able to assess the bridge deck condition without the use of any other devices.
- **Easy interpretation** of data using software specifically designed for bridge analysis.
- **Reduction in blocked traffic** due to a ten times reduction in survey time.
- **More accurate planning** and **reduced bridge restoration** costs.

RIS HI-BRIGHT FEATURES

- **Massive antenna array:** Two rows of eight double polarized 2 GHz antennas provide highly detailed 3D underground tomography.
- **Dual polarization:** Dual polarization increases depth of penetration and quality of the imaging.
- **Fast data collection:** RIS Hi-BrigHT is 1 meter wide and can scan a bridge with passes in a single direction. The time needed to inspect a bridge is reduced by 16 times compared to a single antenna ground penetrating radar.
- **Automatic generated moisture maps:** The post processing software is able to automatically generate a map of the bridge deck's general moisture zone.

RIS Hi-BrigHT: pavement surveying



Time slice view extracted from a 3D subsurface model

RIS Hi-BrigHT hardware

RIS Hi-BrigHT

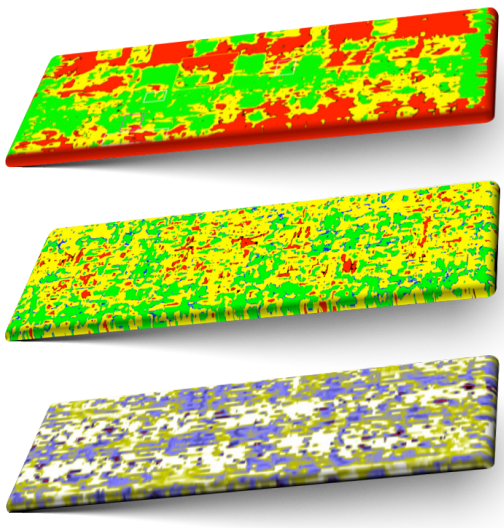
GRED HD BRIDGE

Gred HD Bridge is specifically designed to deliver quick and effective bridge deck assessment tools. The software is able to automatically detect buried rebars, the depth of the asphalt and the concrete slab thickness. It is also possible to export three different types of status map based on proprietary algorithms. The maps are:

Corosion Map
is the amplitude of the detected rebars and it is expressed in Volts

Moisture Map
represents an estimate of the propagation velocity calculated at the rebars interface.

Concrete cover thickness map
identifies the boundary between the asphalt and concrete layers and represents the thickness of the concrete.



SYSTEM SPECIFICATIONS	
OVERALL WEIGHT (PC NOT INCLUDED)	35 kg (77 lbs)
RECOMMENDED LAPTOP	Panasonic CF-19 Tough-Book
MAX. ACQUISTION SPEED (@ STD. SCAN INTERVAL)	6.3 kph (4 mph)
POWER CONSUMPTION	53 W
POSITIONING	Survey wheel and/or GPS- Total station
NUMBER OF CONTROL UNITS	2 DAD MCH FW
SCAN RATE PER CHANNEL: (@512 SAMPLES/SCAN)	175 per channel (1400 per DAD, 8 channels)
SCAN INTERVAL	100 scans/m
POWER SUPPLY:	SLA Battery 12 VDC 24 AH

ANTENNA SPECIFICATIONS	
ENVIRONMENTAL	IP65
ANTENNA FOOTPRINT	91 x 42 cm
NUMBER OF CHANNELS	16
ANTENNAS CENTRAL FREQUENCIES	2 GHz
ANTENNA POLARIZATION	Horizontal (HH) and Vertical (VV)
ANTENNA SPACING	10 cm
CERTIFICATION	EC, FCC, IC

SOFTWARE SPECIFICATIONS	
GRED HD BRIDGE	• Tomographic map view (C-Scan) including radar scan fusion • 3D data visualization • Advanced targeting using radar-scan and tomographic view • CAD, GIS exportation of GPR data and target • Radarscan viewer, filter and advanced filtering macros, multiple radar scan viewer • Layer picking for automatic analysis of sub-layers • GPS and map track viewer including X, Y and Z axis and digital map importation • Video handling (option) • Automatic rebar detection • Damaged area detection • Automatic generation of digital maps (eg moisture, asphalt thickness, rebar status maps) • 3D tomographic view of rebar meshes

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