

IRIS Digital Radar Control Unit Shown with Model 30AGC Horn Antenna

Description:

The Penetradar Integrated Radar Inspection System (*IRIS*) is an automated radar based system designed for non-destructive inspection of highway and bridge deck pavement, solving the problem of radar data interpretation and ease of use. The *IRIS* consists of a digital GPR control unit and real-time data acquisition/processing system with high intensity 15 Inch SVGA data display, touch screen control and large internal hard disk storage. The *IRIS* combines GPR hardware and software into an integrated and highly automated, turn-key inspection system that requires little knowledge of radar signal interpretation to operate effectively.

Designed for use at speeds up to 60 MPH (100KM/H) the *IRIS* "sees" through asphalt and concrete pavement, and bridge deck structures, automatically acquiring, displaying and storing digitized radar data for subsequent analysis.

The *IRIS* digital GPR control unit was designed to operate with all of Penetradar antennas and IRIS software. Standard features of the IRIS include DMI input for distance tagging, three USB data ports for data download and connection of peripherals, GPS port and IRIS Software for Windows.

IRIS - Integrated Radar Inspection System

Features:

- ◆ Complete Integrated Radar Inspection System - Includes GPR, Data Acquisition/Processing Computer and Software
- ◆ Installed with up to 4 antennas
- ◆ Built-in high intensity 15 inch SVGA Display, touch screen control and internal hard disk data storage
- ◆ Rugged Design for High Speed Vehicular Installation
- ◆ Digital GPR Control Unit with Interchangeable Antenna and Transceiver Units
- ◆ Rack Mounted Version Available

Applications:

- ◆ Pavement, Bridge Decks, Airport Runways and Tunnels

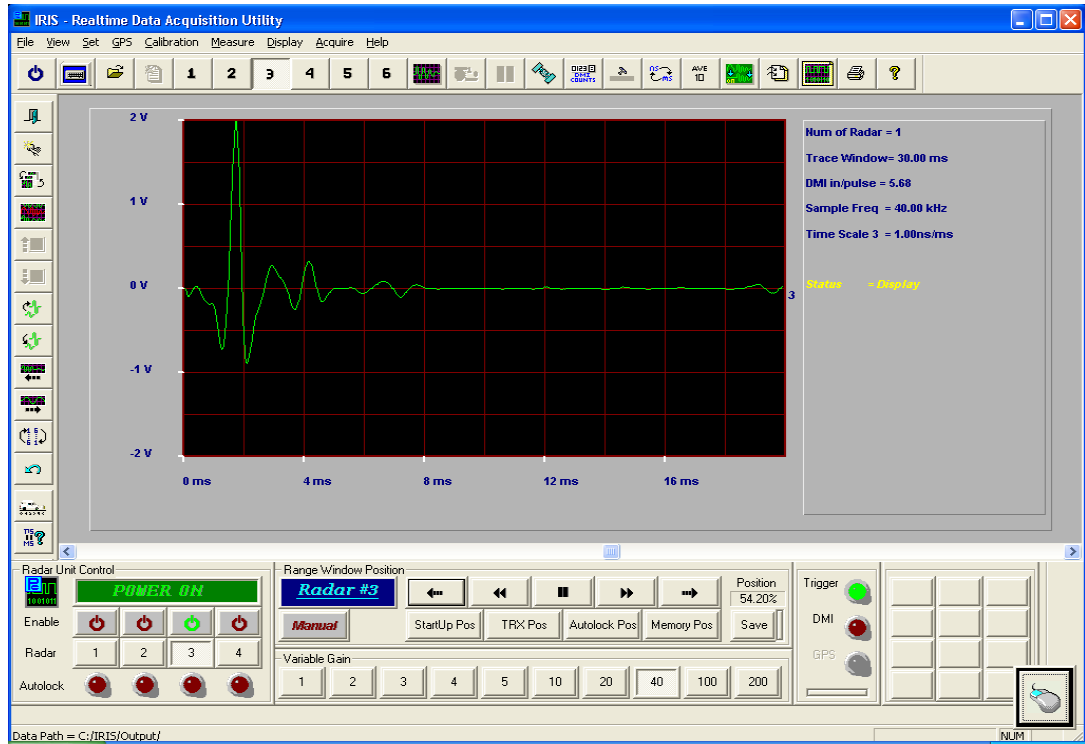


IRIS ANTENNAS



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IRIS VIRTUAL CONTROL PANEL

Operation:

IRIS GPR data are acquired by the onboard data acquisition subsystem and stored on the internal hard drive. Up to 6 channels can be acquired and displayed on the high intensity TFT LCD screen and analyzed on the IRIS console or transferred via USB to archival storage or download to an office PC.

The IRIS virtual control panel facilitates user setup and operation of radar system, acquisition parameters and signal display, with convenient touch screen operation. The IRIS accommodates direct connection to an external keyboard, mouse and other Windows based USB peripheral devices. Several optional components are available, including external power sources, DMI device (for distance measurement), GPS receiver and antenna mounting structure (for vehicle use).

The IRIS was developed for high speed, multiple antenna operation and is typically installed in a highway vehicle. Contact us for more information.

Standards:

The IRIS conforms to the following standards for bridge deck and highway pavement evaluation:

- AASHTO TP36
- ASTM D6087-03/05/07
- ASTM D4748-87/95
- SHRP C101

IRIS System Specifications:

System Configuration: IRIS-1, IRIS-2, IRIS-3, IRIS-4

1-4 antennas standard, either contacting or non-contacting, (up to 6 antennas - optional). Uses Model 30AGC, 60AGC, 301B, 401B, 501B, 1001B, 2001B

Power Requirements:

Input Power: 110/220VAC 60/50Hz @ 1.8/0.9A, or 12VDC @20A,max

Radar Video Fully coherent, bipolar, +/- 10 volts max, 3 kHz bandwidth.

Video Output Gain Selection: Hardware gain of 1, 2, 3, 4, 5, 10, 20, 40,100,200 over direct receiver output. Software gain +46dB

Dimensions/Weight: PS-IRM12 (Instrument Case)

20.5inch (52cm)w x 12.75 inch (32cm)h x 19.5inch (49.5cm)d

58 lb (26kg), Rack configuration also available: PS-IRM12R

Input/Output:

Radar Video Out, Radar Sync Trigger Out, GPS Port, Power Input, DMI Input, (3) USB Ports

CPU: Processor - 2.4GHz Core CPU, 1GB Ram, 250GB Internal HD

Data Acquisition Subsystem: 12/16bit, 500kHz

Display & Touchscreen

15 in Color TFT 1024x768 resolution, resistive touchscreen, standard

Ordering Information:

A typical IRIS configuration includes:

- Digital Radar Control Unit
- IRIS Software
- Antenna(s)
- Antenna Mounting Structure(s)
- Distance Measurement Instrument (DMI)
- 25ft (7.7m) antenna cable(s)

Model IRIS-(*) - (XXXX - YY), (XXXX - YY) . . .

(*) is the number of antennas

(XXXX) corresponds to antenna model

(YY) corresponds to transmit pulse width, i.e. 1.0ns, 2.0ns, 3.0ns