

TRU™ (Tree Radar Unit) System

Data Collection



Tablet



Radar Control Unit

Radar Antenna



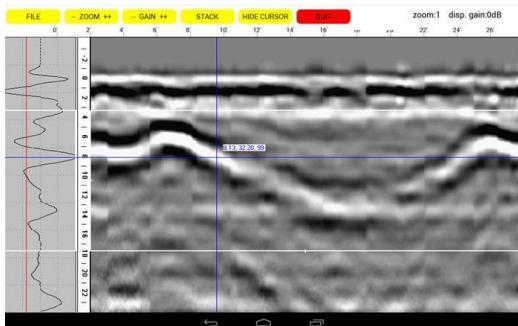
Scanning Cart



Trunk Inspection



Roots Inspection



Trunk scan
significant decay (hollow)



Roots scan
high root density and uniformly distributed

TRU™ (Tree Radar Unit) System

RCU: Radar Control Unit



Function	Interface/Controller of GPR antennas for non-invasive inspections
Antennas	GSSI 400 MHz, 900 MHz, 1600 MHz, 2000 MHz; 100KHz or 50KHz trigger rate; transmit and receive trigger fully independent to accommodate antenna offsets
Connectivity	WiFi, USB, Bluetooth
A/D	Raw data 16-bits, +/-10V or +/-5V, software selectable; on-board summing 1 – 256 samples for 24-bit per sample data; on-board averaging; 16-bit or 24-bit data transfer
Triggers	Software, survey wheel increment, marker, free running, combinations
Survey Wheel	Quadrature encoder input, x1/x2/x4 mode, 24-bit counter, direction select, trigger on increment, 16-bit
Marker	Marker button input
Power	6.125W (approx)
Battery	17 hours, continuous run
Enclosure	9.75in (247mm) x 9.75in (247mm) x 2.25in (57mm); 5 lbs (2.3kg)
Manufacturer	TreeRadar, Inc. (USA)
Compliance	FCC, CE, Canada ICES-003

TRU™ (Tree Radar Unit) System

Software: Data Collection and Review



Tablet	Android, 10.5in (267mm), HD 2560x1600 or better, 5-7 battery hours or better
Data Collection	Bscan (distance), Bscan (time), Point
Software Interaction	Operator interaction by tap & swipe (no typing)
Real-Time Waveform	Always active (no timing out) during setup and each of the three data collection modes, waveforms continually averaged in hardware (currently using average of 2), stacking (if desired) is done in Viewer program, waveform updated via pulse-on-position in real-time Bscan mode
Display Gain	Variable
Range	Set by user via real-time waveform display using zoom in/out control
Gain Profile	Auto GP at any desired location, up to 10 gain points automatically selected depending upon range, manual intervention by inspector to modify any GP
Data Resolution	16-bits
Sampling Rate	Approximately 20x antenna frequency: 400-9GHz, 900-18Ghz, 1600-36GHz
Scan Mode	Distance or time increments with menu of choices
Waveform Size	Dependent upon range setting but padded to 512 points for compatibility with RADAN analysis software
Inspection Resolution	Distance increment choice of inspector
File Structure	DZT compatible with RADAN (GSSI) and TreeWinPRO (TreeRadar), data saved in raw form with gain profile used in data collection saved in header block
Playback	Via separate off-line Viewer program with gain profile applied in playback screen; zoom in/out; stacking; cross-hairs for X,Y coordinates display; RF waveform shown for each location of cross-hairs; cross-hairs navigation by touching screen and dragging (with finger) to any location on Bscan
Data transfer to PC	Tablet appears as a mobile device (i.e., a thumb drive) permitting data transfer via copy/paste