



# SIR-30

## Rugged, High-Performance Multi-Channel GPR Data Acquisition System

The SIR-30 is the next generation high performance multi-channel radar control unit. This system can collect up to eight channels of data simultaneously with uncompromised performance.

The SIR-30 offers advanced filters and display capabilities for real-time processing including migration, surface positioning, signal floor tracking and adaptive background removal.

As the basis of a high-speed data collection system, the SIR-30 is ideal for: measuring pavement layer thickness, detection of cavities, airport runway assessment, detection of fouled/clean ballast and utility detection.

### Typical Uses

- Road structure assessment
- Utility designation
- Bridge deck inspection
- Rail bed inspection



### Flexible, Modular Design

- Available in a two, four or eight channel configuration
- Operate the control unit with a laptop computer or as a standalone system
- Compatible with all GSSI antennas

### Integrated System

- Ideal for vehicle-mounted applications, supports AC or DC operation
- Full internal GPS logging capability
- Multiple mounting configurations

### Deliver Results

- High speed GPR data collection—capable of more than 5,792 scans/second, with four channels
- USB, Ethernet and Compact flash ports for system flexibility
- Up to 500 GB data storage



## System

Antenna Support	Compatible with all GSSI antennas
Number of Channels	Records data from 1 to 4 hardware channels simultaneously; two 4 channel systems can be connected to form an 8 channel system
Data Storage	Internal memory: 4 channel 500 GB Internal SSD 2 channel 250 GB Internal SSD GPS data logged internally
Display Modes	Linescan and O-scope. In Linescan display, 256 color bins are used to represent the amplitude and polarity of the signal
Operational Modes	External laptop, standalone with external monitor and keyboard or remote command set

## Data Acquisition

Data Format	RADAN (.dzt)																																				
Scan Rate Examples	Output Data Resolution: 32-bit <table border="1"><thead><tr><th colspan="2">1-4 Channels @ 100 KHz PRF</th><th colspan="2">1-4 Channels @ 800 KHz PRF</th></tr><tr><th>Samples</th><th>Max Rate (scans/Sec)</th><th>Samples</th><th>Max Rate (scans/Sec)</th></tr></thead><tbody><tr><td>256</td><td>326</td><td>256</td><td>1449</td></tr><tr><td>512</td><td>178</td><td>512</td><td>990</td></tr><tr><td>1024</td><td>93</td><td>1024</td><td>606</td></tr><tr><td>2048</td><td>48</td><td>2048</td><td>341</td></tr><tr><td>4096</td><td>24</td><td>4096</td><td>182</td></tr><tr><td>8192</td><td>12</td><td>8192</td><td>94</td></tr><tr><td>16,384</td><td>8</td><td>16,384</td><td>48</td></tr></tbody></table>	1-4 Channels @ 100 KHz PRF		1-4 Channels @ 800 KHz PRF		Samples	Max Rate (scans/Sec)	Samples	Max Rate (scans/Sec)	256	326	256	1449	512	178	512	990	1024	93	1024	606	2048	48	2048	341	4096	24	4096	182	8192	12	8192	94	16,384	8	16,384	48
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Scan Rate Interval	User-selectable																																				
Samples per Scan	256, 512, 1024, 2048, 4096, 8192, 16,384																																				
Operating Modes	Continuous (time) or survey wheel (distance triggered)																																				
Time Range	0-20,000 nanoseconds full scale, user-selectable Gain: manual adjustment from -42 to +126 dB. Number of segments in gain curve is user-selectable from 1 to 8.																																				
Standard Real-Time Filters	Infinite Impulse Response (IIR) - Low and High Pass, vertical and horizontal Finite Impulse Response (FIR) - Low and High Pass, vertical and horizontal																																				
Advanced Real-Time Filters	Migration, Surface Position Tracking, Signal Floor Tracking, Adaptive Background Removal																																				
External Marker	Three different inputs/codes: Antenna, Back panel, Accessory connector																																				
Automatic System Setups	Storage of an unlimited number of system setup files for different survey conditions and/or antenna deployment configurations																																				
Automatic Antenna Recognition	Automatic recognition of Smart Antennas to allow maximum compliant transmit rate																																				

## Languages

English

## Operating

Operating Temperature	-10°C to 50°C external (14°F to 122°F)
Power	260W max (120W typical) at 95-250VAC 50/60Hz or +10VDC to +28VDC
Transmit Rate	Up to 800 KHz (International), US/Canada and CE rates depend on antenna model

## Input/Output

Available Ports	Antenna inputs (2 or 4), Survey wheel, Marker, DC power input, Serial RS232 (GPS port), Sync connector, Accessory connector, HDMI video, Ethernet to PC, 4 USB ports
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Dimensions: 17.7x13x5.1 in (45x33x13cm)  
Weight: 18.5 lbs (8.4 kg)  
Relative Humidity: <95% non-condensing  
Storage Temperature: -40°C to 60°C

Antennas and accessories sold separately.  
FCC, RSS-220 and CE Compliant.



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