



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

SIR® 30E

www.geophysical.com

The SIR® 30E is the next generation high performance dual-channel radar control unit designed for operation in harsh environments. This system can collect up to two channels of data simultaneously with uncompromised performance.

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

Typical Uses

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

Flexible, Modular Design

- Two channel configuration
- Operate the control unit with a laptop computer or as a standalone system
- Compatible with most GSSI antennas

Integrated System

- Ideal for harsh environments
- Suitable 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 2896 scans/second, with two channels
- USB, Ethernet and Compact flash ports for system flexibility
- Up to 250 GB data storage
- IP-64 rated



“With recent technological advancements, we’ve seen superior data quality in real-time, rather than relying on post-processing in the office. It’s a real advantage when we can make decisions in the field.”

Brad Rister, University of Kentucky Transportation Center

SIR® 30E Specifications

System																																					
Antenna Support	Compatible with most GSSI antennas																																				
Number of Channels	Records data from 1 or 2 hardware channels simultaneously																																				
Data Storage	Internal memory: 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" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">1-2 Channels @ 100 KHz PRF</th> <th colspan="2">1-2 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>	1-2 Channels @ 100 KHz PRF		1-2 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 Interval	User-selectable																																				
Number of Samples per Scan	256, 512, 1024, 2048, 4096, 8192, 16,384																																				
Operating Modes	Continuous (time) or survey wheel (distance triggered)																																				
Time Range	0-25,000 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 40°C external (14°F to 104°F)																																				
Battery	260W max (100W 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 (1 or 2), Survey wheel, Marker, DC power input, Serial RS232 (GPS port), Sync connector, Accessory connector, HDMI video, Ethernet to PC, 3 USB ports, Ethernet to external storage																																				

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
IP-64 Rated

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

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