

SARBAR G2

Hand-Held Imaging Radar



SARBAR couples fast, electronic antenna scanning with on-board, real-time signal processing to provide live, streaming, radar-image video

- Immediate evaluation of a target in real-time
- Factory calibration eliminates need for calibration in the field
- Accurate target orientation using laser alignment
- Full portable, and can be set up in minutes
- Available with battery pack for completely autonomous operation
- Easy to use, learn, and operate

SARBAR G2 is a sophisticated, second-generation, real-aperture radar system capable of generating high-resolution, two dimensional, spotlight radar images at a rate of up to 10 images per second in real time with a noise floor below -70 dBsm.

Portable

Use the SARBAR G2 to look under, over, or into targets. The SARBAR G2 is based on an X-Band FMCW radar using a novel array of antenna elements to form a large scan width without moving the antenna. The hand-held device provides very high RCS-sensitivity with an image noise floor of less than -70 dBsm, while generating zonal images of a target at close range with continuous, live image updates.

The array configuration incorporates separate transmit and receive elements to provide the best isolation between the transmit and receive paths.

Fast

SARBAR G2 routes the signal for each FMCW waveform through a unique switching pattern that completes a scan of the entire aperture in less than 80 ms. This scheme is equivalent to a single antenna operating as a synthetic aperture radar (SAR) at a rate that exceeds ten SAR sweeps per second.



SARBAR G2 SPECIFICATIONS

Measurement Capabilities

Sensitivity:	< -70 dBsm/resolution cell size (high-sensitivity mode)	Dynamic Range:	> 55 dB
Update Rate:	8 images/second (high-speed mode)	Waveform:	FMCW chirp with simultaneous cross-range sampling
Down Range Resolution	Approximately 1 inch [25 mm]	Cross Range Resolution:	Approximately 2 inches [50 m]
Unambiguous Down-range Interval:	662 feet [200 m] (high-sensitivity mode)	Unambiguous Cross Range Interval	8 feet [2.4 m]
Image Display Zone	4 x 4 feet [1.2 x 2.4 m]		

RF Performance

Frequency Range:	8 to 14 GHz	Chirp Rate:	20 ms
Transmit Power:	10 dBm	Source:	YIG-tuned oscillator
Receive Bandwidth:	2 MHz (16-bit sampling A/D)	Receive Noise Floor	-70 dBm

Collection Computer

Processor:	PowerPC, 400 MHz	Data Storage/Transfer	SCSI hard-disk drive, Ethernet, RS-232
Display Output:	NTSC or PAL		

Electrical/Physical

Power Requirements:	12 VDC nominal or 100 to 240 VAC 50/60 Hz, 100 W	Battery Life:	2 hours
Display:	6.4-inch [160 mm] TFT LCD, optional video goggles	Controls:	Switches for sensitivity, dynamic range, collection mode, freeze mode, and calibration
Handheld Dimensions:	28 W x 12 H x 16 D inches [711 W x 305 H x 406 D mm]	Handheld Weight:	29 lbs [13 kg]
Backpack Dimensions:	11 W x 6 H x 13 D inches [240 W x 152 H x 330 D mm]	Backpack Weight:	20 lbs [9 kg]

