

Synthetic Aperture Radar (SAR) Training System (add-on to the RCS and ISAR Measurement Training System) 8163409 (8097-B0)

FESTO

LabVolt Series

Datasheet



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General Description

The Synthetic-Aperture Radar (SAR) Training System adds on to the RCS and ISAR Measurement Training System to form a synthetic aperture radar that can produce high-resolution images. This system introduces students to the basic principles and operation of synthetic aperture radar (SAR).

* **WARNING:** This equipment is subject to export control. Please contact your sales representative to know if this product can be imported in your region.

The SAR Training System synthesizes a large aperture antenna through motion of a small-aperture (low-directivity) horn antenna. Motion of the horn antenna is achieved using the Target Positioning System included in the Basic Radar Training System and an antenna-motion control module (SAR controller). Target radar echoes produced during a complete antenna scan are sampled and stored in the SAR processor then processed using a range Doppler algorithm to obtain high-resolution SAR images.

The SAR Training System consist of SAR processing and imagery software included in the LVRTS software, a SAR data acquisition interface, the necessary accessories, and a system user guide. Note that RTM from the Radar Processor/Display add-on is required to use this add-on. Reflective scale models of aircraft that can be used with the SAR Training System are optionally available.

List of Equipment

Qty	Description	Model number
1	Synthetic-Aperture Radar (SAR) (User Guide) _____	593946 (54269-E0)
1	SAR Data Acquisition Interface _____	8136301 (9636-00)
1	Accessories for Synthetic Aperture Radar (SAR) _____	8171243 (9688-F0)

Manual

Description	Manual number
Synthetic-Aperture Radar (SAR) (User Guide) _____	593946 (54269-E0)

Table of Contents of the Manual(s)

Synthetic-Aperture Radar (SAR) (User Guide) (593946 (54269-E0))

- 1 Introduction to SAR
- 2 Hardware Setup
- 3 SAR Processor Overview
- 4 System Description
- 5 System Operation
- 6 Processing Examples
- 7 Specifications

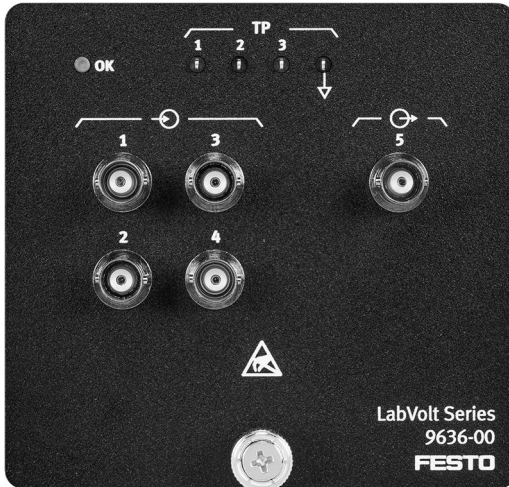
System Specifications

Parameter	Value
Radar Frequency	8 to 10 GHz
Real Aperture Beamwidth	30°
Down (slant) Range Resolution	15 cm
Azimuth Resolution	ff 6.5 cm at 3 m (-3 dB points, Kaiser window applied)
Platform Velocity	ff 9 cm/s
Look Angle	20° to 90°
Squint Angle	0° (side-looking mode)
Maximum Aperture Length	89.7 cm
Range Span	3.6 m and 7.2 m

Parameter	Value
Maximum Processed Area	0.9 m x Range Span in standard mode
Extended Mode	2 m x Range Span
Sensitivity	32 dBsm at 2 m (S/N = 12 dB)
SAR Processing Gain	ff 28 dB

Equipment Description

SAR Data Acquisition Interface 8136301 (9636-00)



The Synthetic-Aperture Radar (SAR) Training System adds on to the RCS and ISAR Measurement Training

System to form a synthetic aperture radar that can produce high-resolution images. This system

introduces students to the basic principles and operation of synthetic aperture radar (SAR).

It includes the SAR Measurement Interface and required accessories: cables and hardware.

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Specifications :

Dimensions 114 X 110 X 209 mm (4.5 X 4.3 X 8.2 in)

Net Weight 0.6 kg (1.4 lb)

Specifications

Parameter	Value
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Accessories for Synthetic Aperture Radar (SAR) 8171243 (9688-F0)



The Accessories for Accessories for Synthetic Aperture Radar (SAR) set contains a two-axis adjustable antenna support and a radiation absorbing material (RAM) panel.

Reflecting the commitment of Festo Didactic to high quality standards in product, design, development, production, installation, and service, our manufacturing and distribution facility has received the ISO 9001 certification.

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