

Radar Jamming Pod Trainer

581949 (9608-10)

FESTO

LabVolt Series

Datasheet



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General Description

The Radar Jamming Pod Trainer is a Self-Screening Jammer (SSJ) target in a compact enclosure. It is designed to be placed on the Target Positioning System to electronically attack the Radar Training System by masking the target echo signal with noise or causing either range or angle deception. The Radar Jamming Pod Trainer mainly consists of an RF signal source, a variable attenuator, transmitting and receiving horn antennas, a signal repeater, an amplitude modulator, and a remote controller.

The RF signal source is a Voltage-Controlled Oscillator (VCO) whose frequency range is approximately twice that of the Radar Training System. The VCO frequency can be adjusted to perform radar jamming using spot noise. The VCO can also be modulated in frequency, either internally or externally, to produce barrage noise jamming. The variable attenuator decreases the VCO signal level before it is sent to the transmitting horn antenna. This allows the amount of noise introduced in the victim radar (i.e., the Radar) to be adjusted. The maximum transmitted power is low, thereby providing safe operation in a laboratory environment.

The receiving horn antenna intercepts the pulse signal transmitted by the Radar. The repeater, which consists of an amplifier and a programmable delay line, amplifies and delays the intercepted signal. By transmitting this signal back to the radar and gradually increasing the delay, the range gate in the radar tracking system can be captured and pulled away from the target echo, thereby producing range deception. This technique is usually referred to as Range Gate Pull Off (RGPO).

The amplitude modulator consists of an electronic RF switch which can be controlled either internally or externally. It is used to modulate the amplitude of the VCO output signal or repeated signal (on-off modulation). The amplitude modulator allows implementation of AM noise jamming and asynchronous inverse gain jamming. It also allows blinking jamming when a second transmitting horn antenna is connected to an auxiliary RF output on the Radar Jamming Pod Trainer. These three jamming techniques are used to cause angle deception in the radar tracking system.

The remote controller is used to operate the Radar Jamming Pod Trainer. Communication between the remote controller and the Radar Jamming Pod Trainer is through an infra-red link. Buttons and an LCD display on the remote controller provide access to the various functions of the Radar Jamming Pod Trainer.

The Radar Jamming Pod Trainer can be tilted 90° to perform cross-polarization jamming, another technique used to cause angle deception in the radar tracking system. It can also be used with accessories to demonstrate other jamming techniques such as sidelobe jamming, formation jamming, and jammer illuminated chaff (JAF), as well as the fundamentals of stealth technology.

The Radar Jamming Pod Trainer operates from unregulated DC voltages. A cable allows the Radar Jamming Pod Trainer to be connected to a standard unregulated DC power bus (available on the Power Supply / Antenna Motor Driver and the Power Supply).

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

Specifications

Parameter	Value
Frequency Range	8 to 12 GHz
Output Power	-30 to +10 dBm, adjustable in 1 dB steps
Internal Frequency Modulation	
Waveform	Selectable, 980-Hz synthesized triangular wave or 30-kbps pseudo-random bit sequence
Deviation	Selectable, 50 MHz, 1, 2, 3, and 4 GHz
Frequency Modulation Input	
Voltage Range	-10 to +10 V (to cover 8 to 12 GHz)
Modulating Frequency Range	DC to 130 kHz
Impedance	10 kΩ

Parameter	Value
Internal Amplitude Modulation	
Type	On-Off
Frequency	Selectable, 0.25, 0.5, 1, 2, 3, 4, 5, 140, 141, 142, 143, 144, 145, 146, 147, and 148 Hz
Amplitude Modulation Input (on-off modulation)	
Level	TTL
Delay Time / Transition Time	150 ns / 50 ns
Auxiliary RF Output	
Frequency Range	8 to 12 GHz
Output Power	-30 to +10 dBm, adjustable in 1 dB steps
Impedance	50 Ω
Signal Repeater (Programmable Delay Line)	
Maximum Input Power	+10 dBm
Range of Delay	2.66 to 5.60 ns (40 to 84.2 cm), adjustable in 7 steps of 0.42 ns (6.3 cm)
RGPO Walk-Off Time	Selectable, 0.8, 1.6, 4.0, and 8.0 s
Physical Characteristics	
Dimensions (H x W x D)	150 x 170 x 440 mm (5.9 x 6.7 x 17.3 in)
Net Weight	3.4 kg (7.5 lb)

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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