

DPSIM Doppler Target Generator

0.5 to 40 GHz Doppler Target Generator



40 GHz Doppler Simulator Provides Target Generation for Range Simulation and Test Laboratories

Microwave Photonic Systems, Inc has been a world leader in Radio Frequency (RF), Microwave, and Photonic Subsystems for over 20 years. The introduction of the (DPSIM) Doppler Target Generator product series augments MPS's support of the Radar, Telemetry, Communications and Research market segments.

Specifically, the (DPSIM) Doppler Target Simulator System provides the user a convenient method of generating Doppler shifts onto a reference RF input signal. The Doppler simulator is designed to provide adjustable Doppler shifts from - 4 MHz to + 4 MHz in 0.1 Hz steps.

The low noise, high accuracy internal Doppler source provides stable, repeatable frequency offsets. The unit will accept an external 10 MHz clock for system synchronization.

It is an excellent system addition to all of MPS's Optical Delay Generation (ODG), fixed and variable optical delay lines. The combination of the MPS's DPSIM and ODG delay line solutions provide both time and frequency variations which creates a complete moving target simulation.

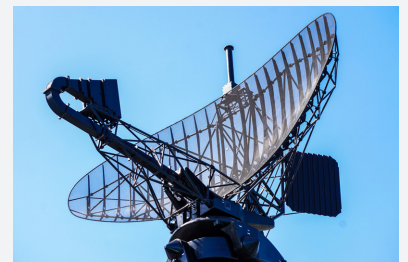
The DPSIM Doppler target simulator is packaged in 1RU chassis and is microprocessor controlled. All simulator functions are addressable via the menu driven, VFD front panel interface or via the Ethernet remote interface.

Applications

- Signal Attributes Generation
- Range Emulation
- Radar Testing and Calibration
- Altimeter Verification
- Laboratory Research & Development

Features

- Doppler Shift Range, +/-4 MHz
- Available from 0.5 to 40 GHz
- Doppler Shift Resolution to 0.1Hz
- User Selectable Doppler Delays
- Low Noise Figure
- High Input 1dB Compression Level
- Low Phase Noise Design
- Front Panel User Interface
- External Synchronization Clock Input
- Remote Ethernet Monitoring and Control
- Secure Firmware Based Solution
- Optional Blanking Control
- 2 Year Limited Warranty



DPSIM Doppler Target Generator

General Specifications

Electrical - RF

Parameter	Min	Typ	Max	Unit	Notes
Frequency Response	0.5		40	GHz	See Part Number Generator
Doppler Range	-5.0		+5.0	MHz	
Doppler Resolution	0.1			Hz	
Doppler Side Band Suppression	-20	-25		dBc	
Input/Output RF Impedance		50		Ohms	
Input/Output Return Loss	-10	-14		dB	
RF Connector Type		2.92 mm (f) female			Others Available
RF Input Level (Peak Pulse or CW)	-2	0	2	dBm	Wide RF Input Level Version Available
RF Gain	-30	0	+20	dB	Depending on Amplifier Options
RF Noise Figure	4	25		dB	Depending on Amplifier Options
Input 1dB Compression Point	-7	+11		dBm	Wide RF Input Version
Input Third Order Compression Point	+3	+25		dBm	Depending on Amplifier Options
External Clock		10		MHz	Optional
Inherent Internal Delay		5	20	ns	
RF Input Power (No Damage)		0	+16.0	dBm	Depending on Amplifier Options

Mechanical and Environmental

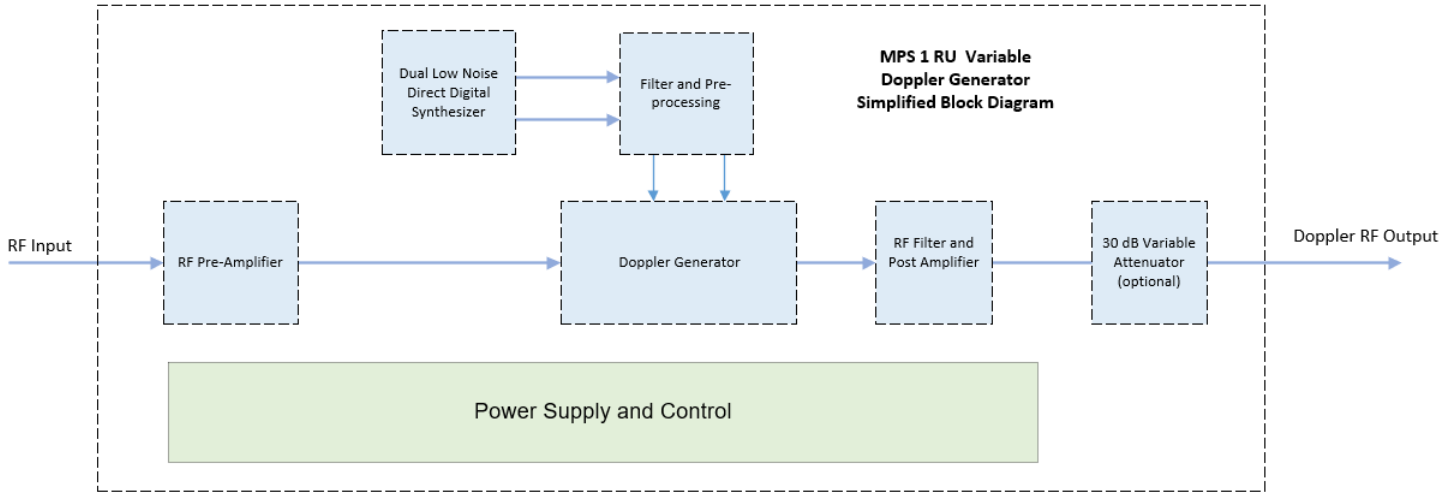
Parameter	Min	Typ	Max	Unit	Notes
Power Supply	85		267	VAC	47 to 60 Hz
Operating Temperature	0		+40	°C	
Storage Temperature	-45		+85	°C	
Operating Humidity			95	%	Non-Condensing
Operating Altitude			50,000	ft	
Dimensions		1RU x 3.7 x 1.26		in	Flange Mount
Local Alarms		LED: Power and BIT Fault, Front Panel			VFD Display. Push Buttons
Remote Alarms		Ethernet, SNMP Commands			

Note (1) : Performance stated at 25C ambient temperature

Note (2) : Specific Performance specifications vary with frequency bands and options. Please contact factory.

DPSIM Doppler Target Generator

Simplified Block Diagram



Part Number Generator

DPSIM | C | IN | F | G | B | CN | CT | AT

Example PN: **DPSIM-00-0-F-00-0-K-1-0**

- Standard Configuration
- +0 dBm RF Input Level
- 16 -32 GHz Frequency Range
- 0 dB Unit Gain
- No Blanking
- 2.92mm RF Connector
- 19" 1RU Chassis
- No RF Output Attenuator

- | | | |
|---|---|--|
| C Configuration
00 = Standard
XX = Custom | IN RF Input
0 = Standard (0dBm)
1 = Wide Input | F Frequency Range
A = 1 GHz to 2 GHz
B = 2 GHz to 4 GHz
D = 4 GHz to 8 GHz
E = 8 GHz to 16 GHz
F = 16 GHz to 32 GHz
G = 32 GHz to 36 GHz
H = 36 GHz to 40 GHz
B8 = 2 GHz to 18 GHz
J = 34 GHz to 38 GHz
K = 0.8 GHz to 2.5 GHz
XX = Customer Specified |
| G Gain
00 = 0 dB
10 = 10 dB Gain
20 = 20 dB Gain
XX = Custom | B Blanking
0 = None
1 = Yes | |
| CN Connector
0 = SMA
K = 2.92mm
V = 1.85mm6 = Special
T = TNC
N = N | CT Case Type
1 = 19" 1RU Chassis | AT Attenuator
0 = None
1 = 30 dB
2 = 60 dB |

