

**Series 5000 Doppler Generators** are moving target generators covering radar frequencies from 1 to 40 GHz

#### Features

- Opening, Closing and Lateral Targets
- 0 to 12000 Hz Doppler Applications

#### Modes

- Free Running
- Synchronous (Triggered from the falling edge of the radar pulse, built in detection, or from external trigger)
- Slew Rate: 100 ms
- Inputs for target speed and direction and radar source speed and direction
- Bands (GHz): 1-2, 2-4, 4-8, 8-12, 12-18

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# Series 5000



Global Provider of Test & Measurement Solutions



## Series 5000 Doppler Generator

Eastern OptX moving target generators covering radar frequencies from 1 to 40 GHz. These compact systems provide target generation with Doppler from 0 to 3 MHz, and allows the user to set target and radar source speeds and directions. Systems may be operated remotely using wireless control with scenario generator features including flight path replication, moving source and targets, and multiple target options. Data may be entered in multiple formats including target and radar speed and direction, start-stop LONG-LAT and speeds, and directly with pre-programmed map placements. All Series 5000 Doppler Generators may be used together with the Eastern OptX Series 3000 delay lines to create both Doppler and step-wise target and source movements. This combination creates a complete moving target replication. Doppler may be synchronized to pulsed radar systems or operated

in free-running mode. When free-running the Series 5000 provides continuous, glitch-free operation. 19-inch rack mount version available.

#### System Features

- Available for L, S, C, X, Ku, and Ka bands (0.5 to 40 GHz)
- 0 to 3 MHz Doppler Shift
- Stable and repeatable performance
- Moving target generation
- Continuous, glitch-free operation
- Radar Pulse Synchronization for improved side-band suppression
- Available as built-in delay line and target generator option in Series 3000 Systems
- Ultra-High Resolution Doppler Frequency Control for improved side-band suppression and target speed selection

# **Series 5000 Doppler Generator**



## Series 5000 Part Configurations

| Part Number | Primary Band (GHz)<br>(35 dB typical side-band suppression) | Broad Band (GHz)<br>(20 dB typical side-band suppression) |
|-------------|-------------------------------------------------------------|-----------------------------------------------------------|
| 5000-1      | 1 to 2                                                      | 0.5 to 2.5                                                |
| 5000-2      | 2 to 4                                                      | 1.5 to 5                                                  |
| 5000-3      | 4 to 8                                                      | 3 to 10                                                   |
| 5000-4      | 8 to 12                                                     | 6 to 14                                                   |
| 5000-5      | 12 to 18                                                    | 6 to 19                                                   |
| 5000-8      | 34 to 38                                                    | 18 to 40                                                  |
| 5000-7      | User Defined                                                |                                                           |

## Series 5000 Specifications

| Parameter              | Specification                                           | Notes                                            |
|------------------------|---------------------------------------------------------|--------------------------------------------------|
| Doppler Range          | 0 to 3 MHz                                              | Other ranges available                           |
| Slew Rate              | 100 ms                                                  | Jump time to any frequency                       |
| Typical RF Loss        | 12 dB                                                   |                                                  |
| Input Return Loss      | 15 dB                                                   | Minimum                                          |
| Target Direction       | Opening, Closing, and Lateral                           | Programmable                                     |
| 1 dB Input Compression | -15 dBm                                                 | Minimum                                          |
| Noise Figure           | 12 dB Typical                                           | Lower NF optional                                |
| Step Size              | 0.5 Hz                                                  | Depending on max frequency                       |
| RF Connector           | SMA (Jack)                                              | Other Types Available                            |
| Dimensions             | 3" x 12" x 14"                                          |                                                  |
| Control                | Windows-based Tablet                                    | Supplied with system<br>(USB PC control capable) |
| Modes                  | Synchronous, free running, phase<br>inverting, blanking | External signal required                         |
| Input/Output Impedance | 50 $\Omega$                                             | Nominal                                          |

