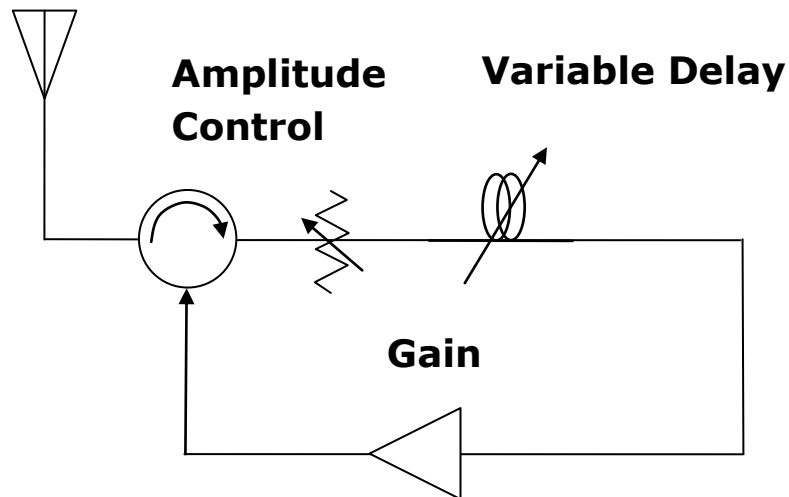


Eastern OptX Series 8000 Remote Radar Target Repeater



Receive / Re-Transmit Antenna



Series 8000 Repeater

"We Bring The Test Range To Your Test Bench!"

Eastern OptX, Inc.

710 E. Main Street • Moorestown, NJ 08057 • 877 870 6789 • 856-231-9022 (fax)

www.eastern-optx.com, sales@eastern-optx.com

DS-0010 REV-

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Eastern OptX Series 8000

Remote Radar Target Repeater (Part Number)

Description

The Eastern OptX Series 8000 Radar Target Repeater is a portable, variable delay and propagation loss system designed for radar testing and alignment. The repeater may be remotely programmed in the field for dynamic operation. When connected to a user specified antenna the repeater can provide delays of up to 500 usec with a fixed delay, multiple discrete delays, or a progressive variable delay with amplitude control (see page 6). The Series 8000 features ultra wide bandwidth, low loss, high isolation, low noise figure, and high dynamic range.

Technology

Eastern OptX fiber-optic technology overcomes the shortcomings of conventional schemes such as acoustic, digital, and coaxial transmission line delays including:

- Quantization Errors
- Triple Transit Time
- Dispersion

Features

- Easy, reliable operation
- Available for L, S, C, X and Ku radar bands (0.1 to 18 GHz)
- Stable and repeatable performance

Radar Applications Including:

- Alignment
- Development Testing
- Calibration
- Qualification Testing
- Multipath and Clutter Simulation



Reliability

- > 140,000 hours of operation in field environments
- Systems in continuous operation for more than 4 years

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Remote Radar Target Repeater (Specifications)

Parameter	Specification	Notes
Delay Accuracy	1 %	Optional 0.1%
Delay Repeatability	0.01%	At constant Temperature
VSWR	2 : 1	Maximum
Spurious Free Dynamic Range	100 dB/Hz ^{2/3}	Minimum
1 dB Input Compression	-15 dBm	Minimum
Noise Figure	25 dB	Maximum (Lower NF optional)
Input/Output Impedance	50 Ω	Nominal
Dimensions	19" Rack Per EIA-310-D	2U—5U, 18" - 22" depending on design

Available Options

Feature	Options / Description
Frequency Range	Octave Bandwidths from 0.1 to 18 (GHz)
Number of Delays	1 to 8 (See System Detail Worksheet)
Delay Values	0.1 to 500 μsec
Delay Configuration	Discrete (Individually, selectable cells), or Progressive. (2 ⁿ possible combinations of user selectable cells (See Page 5))
Remote Control	Ethernet, TTL, USB, GPIB, None
Front Panel Control	Rotary Switch, LCD Touch Screen, Keypad, Toggle, None
RF connector	Type N or SMA (Jack (F)), Other connector types available.
Bypass	Yes / No. (Zero Delay Position)
Amplitude Control	Manual (Rotary Attenuator) and programmable amplitude control, 0—120 dB. Fixed attenuator option is available.
External Delay	Yes / No . (Optical ports provided for user connected, external fiber optic delay line)
Power Meter	Yes / No. (Built-in, average RF power meter)
Switching Speed	< 10 ms, < 10 μs (Remote control delay switching speed)
Power Option	120 VAC (60 Hz) or 230 VAC (50 Hz), 12 VDC, 24 VDC

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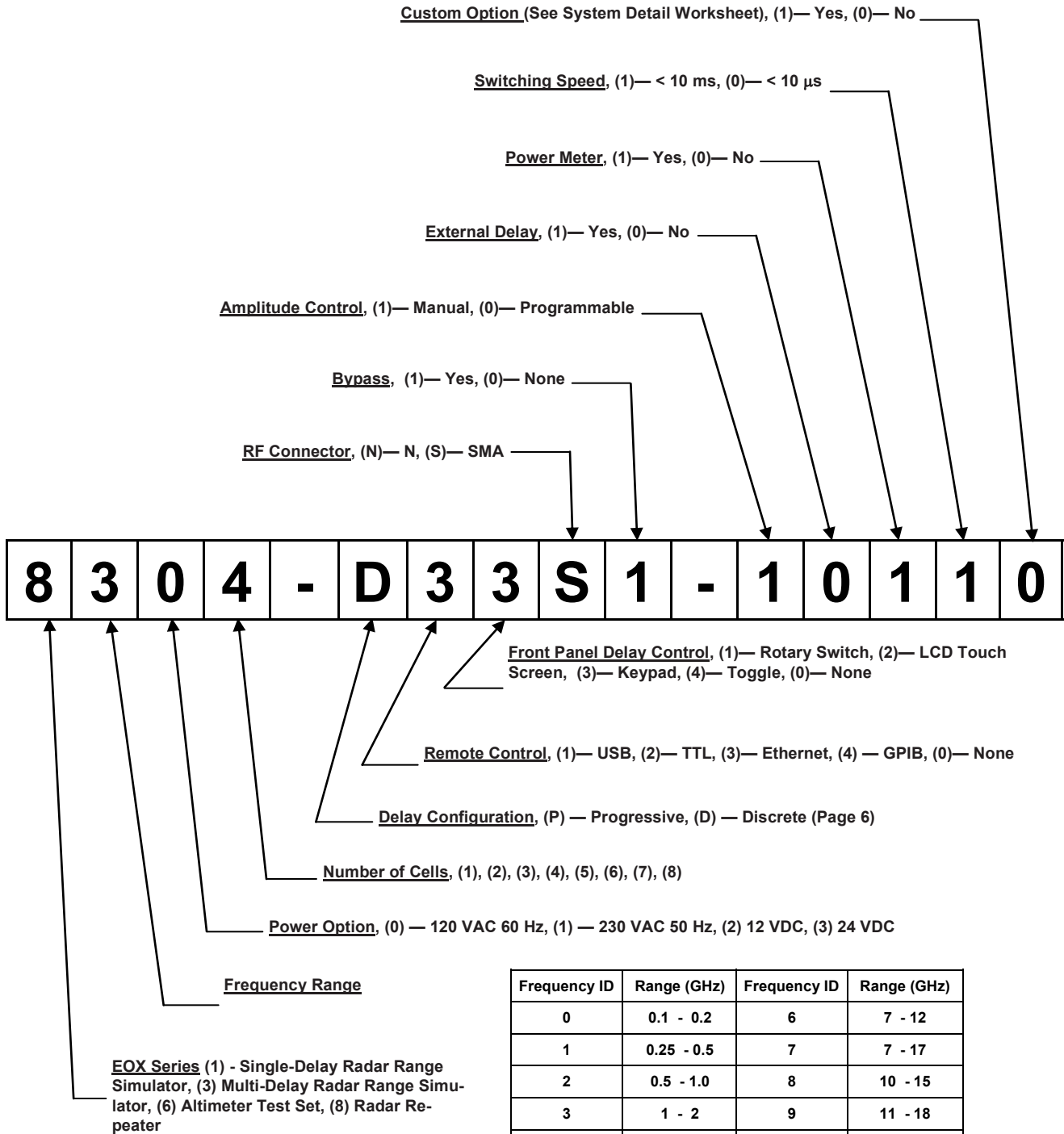
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Remote Radar Target Repeater (Part Number)



Frequency ID	Range (GHz)	Frequency ID	Range (GHz)
0	0.1 - 0.2	6	7 - 12
1	0.25 - 0.5	7	7 - 17
2	0.5 - 1.0	8	10 - 15
3	1 - 2	9	11 - 18
4	2 - 4	10	Other
5	4 - 8		

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Remote Radar Target Repeater (Part Number)

System Detail Worksheet

Feature	Description
Delay	Enter the desired total delay for each cell (µsec)
Delay 1	
Delay 2	
Delay 3	
Delay 4	
Delay 5	
Delay 6	
Delay 7	
Delay 8	
Typical Custom Options: <ul style="list-style-type: none"> • Travel Case • Amplifier/Attenuator Specifications • Phase Inverter • Phase Modulator • Multi-path Simulator • Frequency Counter 	

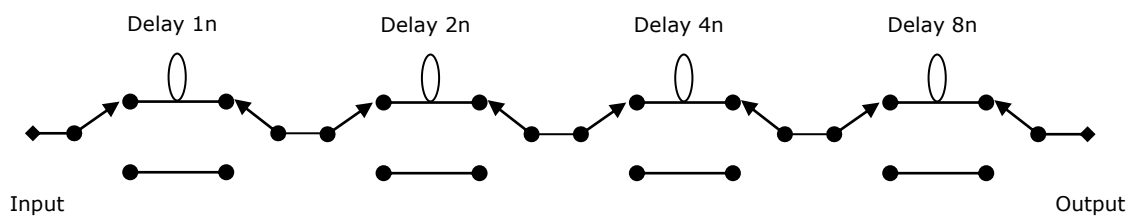
Part Number

				-							-					
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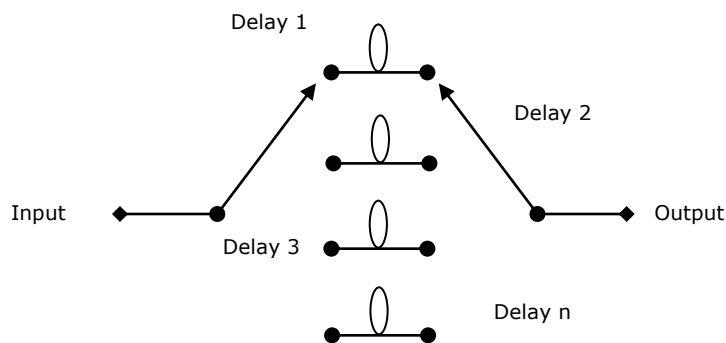


Eastern OptX Series 8000 Remote Radar Target Repeater

Delay Configuration



Progressive Delay Configuration



Discrete Delay Configuration

Progressive:

- Best solution for equally spaced delay step sizes
- Numerous possible delay combinations (Binary: 1, 2, 4, 8 etc.)
- More delays in a smaller package

Discret:

- Best solution for few delays or unequal delay steps sizes.
- One to eight delays typical
- Better than 0.1% accuracy possible.

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