

## Multichannel Programmable Attenuator Models 8320, 8321 & 8331

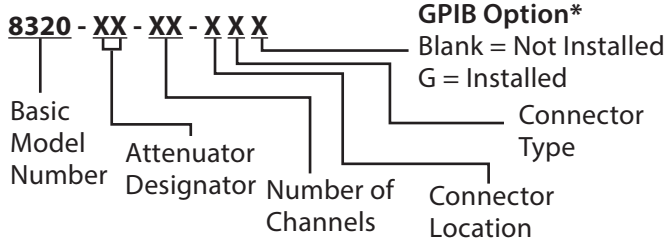
Ethernet, USB, Serial & GPIB\* Control Modes

up to 40GHz  
 **RoHS**

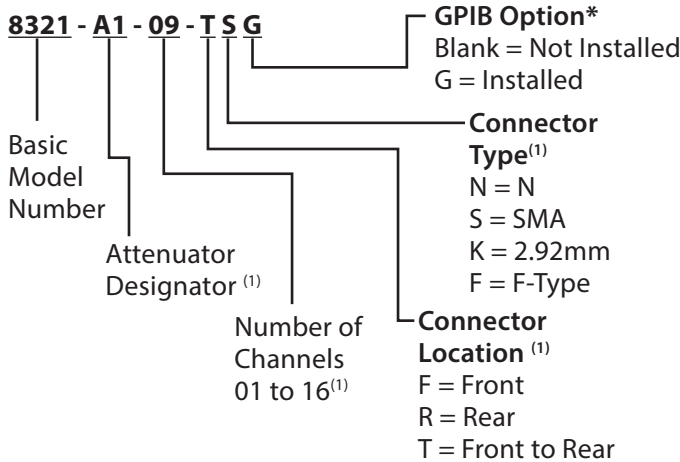
Spectrum Control's Model 8320, 8321, and 8331 Series Programmable Attenuator Units represent a new streamlined approach in programmable attenuation for bench test and subsystem applications. 8320 series provide up to 4 independent channels of attenuation housed in half rack enclosures for benchtop use. 8321/8331 series are multi-channel configurations of independent attenuation housed in 19 inch enclosures and can be configured for up to 16 attenuation channels. The 8321 series includes local front panel control and can be equipped with GPIB\* control. All model series can be configured for front, rear or through connector options.

**Note - Spectrum Control also provides custom subsystems where a variety of test configurations can be incorporated within a single unit. Contact us with your specialized needs.**

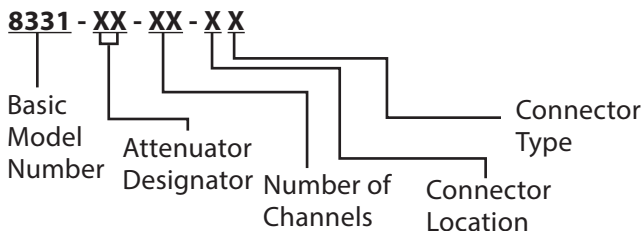
### Part Number Structure



**Benchtop Unit  
(Model 8320 Series)**



**19" Rack with Front-panel control  
(Model 8321 Series)**



**Standard 19" Rack Unit  
(Model 8331 Series)**

<sup>(1)</sup> Check Table for Attenuator designator, Maximum number of channels, Connector locations and Connector type. \*GPIB option not recommended for new designs

# Multichannel Programmable Attenuator Models 8320, 8321 & 8331

*Ethernet, USB, Serial & GPIB\* Control Modes*

## Control Software Included

Spectrum Control's LabView Control Software can also be used in the operation of this series of Multichannel Programmable Attenuator. The control software will allow the user to set up, control, and perform test and measurements over standard communication interfaces such as Ethernet, USB, Serial, and GPIB\*.

## Additional Specifications

<b>AC Voltage</b>	100 – 240 V. 50/60 Hz
<b>AC Power</b>	30 Watt Max (8320) 100 Watt Max (8321/8331)
<b>Operating Temperature</b>	0° C to +50° C
<b>Storage Temperature</b>	-40° C to +75° C
<b>Humidity</b>	20-90% (Non-Condensing)
<b>Operating Altitude</b>	10,000 ft.
<b>Non- operating Altitude</b>	40,000 ft.
<b>Control Connectors</b>	<ul style="list-style-type: none"> <li>• 9-PIN D (Male)</li> <li>• Mini-B USB</li> <li>• Standard RJ45</li> </ul>
<b>CE &amp; UL Compliant</b>	MET E113609 Complies with UL61010-1 CSA C22.2 N0. 61010-1, CE CAN ICES-3 (B)
<b>Test Data</b>	Test data available upon request

***\*GPIB option not recommended for new designs***

# Multichannel Programmable Attenuator Models 8320, 8321 & 8331

Attenuator Choices: Electromechanical <sup>(1)</sup>													
Frequency Range	Attenuator Designation	Model	Attenuation Range (dB)	Step Size (dB)	Connector Options				Max. # of Attenuators/ Channels Per Unit				
					N	S (SMA)	K (2.92mm)	F	8320 T(front to rear)	8320 F(front) or R(ear)	8321/8331 T(front to rear)	8321/8331 F(front) or R(ear)	
DC-3 GHz	A	1	<a href="#">3205-1E</a>	70	10	X	X	X		4	2	12	8
		2	<a href="#">3205-2E</a>	55	5	X	X	X		4	2	12	8
		3	<a href="#">3205-3E</a>	1.5	0.1	X	X	X		4	2	12	8
		4	<a href="#">3201-1E</a>	31	1	X	X	X		4	2	12	8
		5	<a href="#">3206-1E</a>	63	1	X	X	X		4	2	12	8
		6	<a href="#">3200-1E</a>	127	1	X	X	X		4	2	12	8
		7	<a href="#">3200-2E</a>	63.75	0.25	X	X	X		4	2	12	8
		8	<a href="#">3209-1E</a>	64.5	0.1	X	X	X		4	2	12	8
		9	<a href="#">3209-2E</a>	83.1	0.1	X	X	X		4	2	12	8
DC-6 GHz	B	1	<a href="#">3404-31</a>	31	1	X	X	X		4	2	12	8
		2	<a href="#">3404-55</a>	55	5	X	X	X		4	2	12	8
		3	<a href="#">3404-70</a>	70	10	X	X	X		4	2	12	8
		4	<a href="#">3406-55</a>	55	1	X	X	X		4	2	12	8
		5	<a href="#">3408-55.75</a>	55.75	0.25	X	X	X		4	2	12	8
		6	<a href="#">3408-103</a>	103	1	X	X	X		4	2	12	8
		7	<a href="#">3409-127</a>	127	1	X	X	X		4	2	12	8
DC-18 GHz	C	1	<a href="#">150T-70</a>	70	10	X	X	X		1	2	10	8
		2	<a href="#">150T-15</a>	15	1	X	X	X		2	2	10	8
		3	<a href="#">150T-75</a>	75	5	X	X	X		2	2	10	8
		4	<a href="#">150T-110</a>	110	10	X	X	X		2	2	10	8
		5	<a href="#">150T-31</a>	31	1	X	X	X		2	2	10	8
		6	<a href="#">150T-62</a>	62	2	X	X	X		2	2	10	8
		7	<a href="#">150T-15 &amp; 150T-110</a>	125	1	X	X	X		1	1	5	5
DC-26.5 GHz	D	1	<a href="#">152AT-70</a>	70	10		X	X		2	2	10	8
		2	<a href="#">152T-15</a>	15	1		X	X		2	2	10	8
		3	<a href="#">152T-75</a>	75	5		X	X		2	2	10	8
		4	<a href="#">152T-90</a>	90	10		X	X		2	2	10	8
		5	<a href="#">152T-90 &amp; 152T-15</a>	105	1		X	X		1	1	5	5
DC-3 GHz (75Ω)	F	1	<a href="#">3456-63</a>	63	1				X	4	2	12	8

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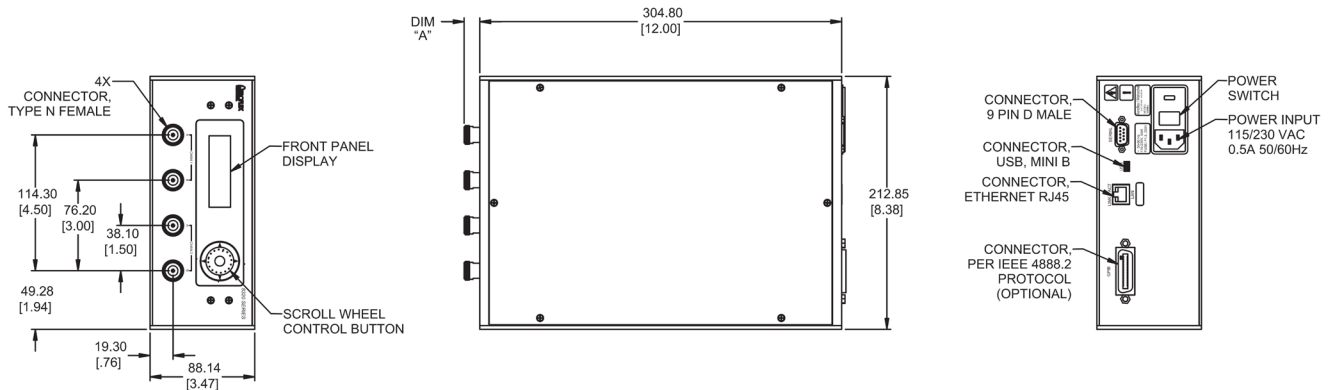
Attenuator Choices: Solid State													
Frequency Range	Attenuator Designation	Model	Attenuation Range (dB)	Step Size (dB)	Connector Options				Max. # of Attenuators/ Channels Per Unit				
					N	S (SMA)	K (2.92mm)	F	8320 T(front to rear)	8320 F(front) or R(ear)	8321/8331 T(front to rear)	8321/8331 F(front) or R(ear)	
0.3 to 6000 MHz	M	4	<a href="#">4205A-31.5</a>	31.75	0.25	X	X	X		4	2	16	8
		5	<a href="#">4205A-63.5</a>	63.75	0.25	X	X	X		4	2	16	8
		6	<a href="#">4205A-95.5</a>	95.75	0.25	X	X	X		4	2	16	8
		7	<a href="#">4205A-127</a>	127.75	0.25	X	X	X		4	2	16	8
0.3 to 8000 MHz		10	<a href="#">4205B-95.5</a>	95.5	0.25	X	X	X		4	2	16	8
0.1 to 18 GHz	P	1	<a href="#">4209-18-31.5</a>	31.5	0.5	X	X	X		4	2	12	8
		2	<a href="#">4209-18-63</a>	63	0.5	X	X	X		4	2	12	8
0.1 to 30 GHz		4	<a href="#">4209-30-31.5</a>	31.5	0.5			X		4	2	12	8
		5	<a href="#">4209-30-63</a>	63	0.5			X		4	2	12	8
0.1 to 40 GHz		7	<a href="#">4209-40-31.5</a>	31.5	0.5			X		4	2	12	8
		8	<a href="#">4209-40-63</a>	63	0.5			X		4	2	12	8
0.035 to 3 GHz (75Ω)	N	1	<a href="#">4204-95.5</a>	95.5	0.5				X	4	2	12	8

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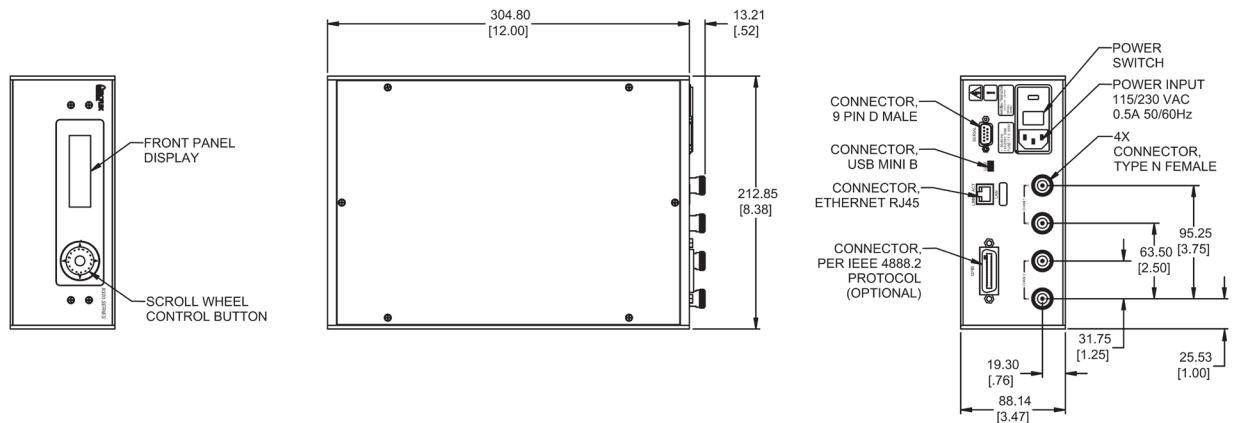
## Physical Dimensions

### Model 8320 Series

FRONT OPTION:



REAR OPTION:



### Notes:

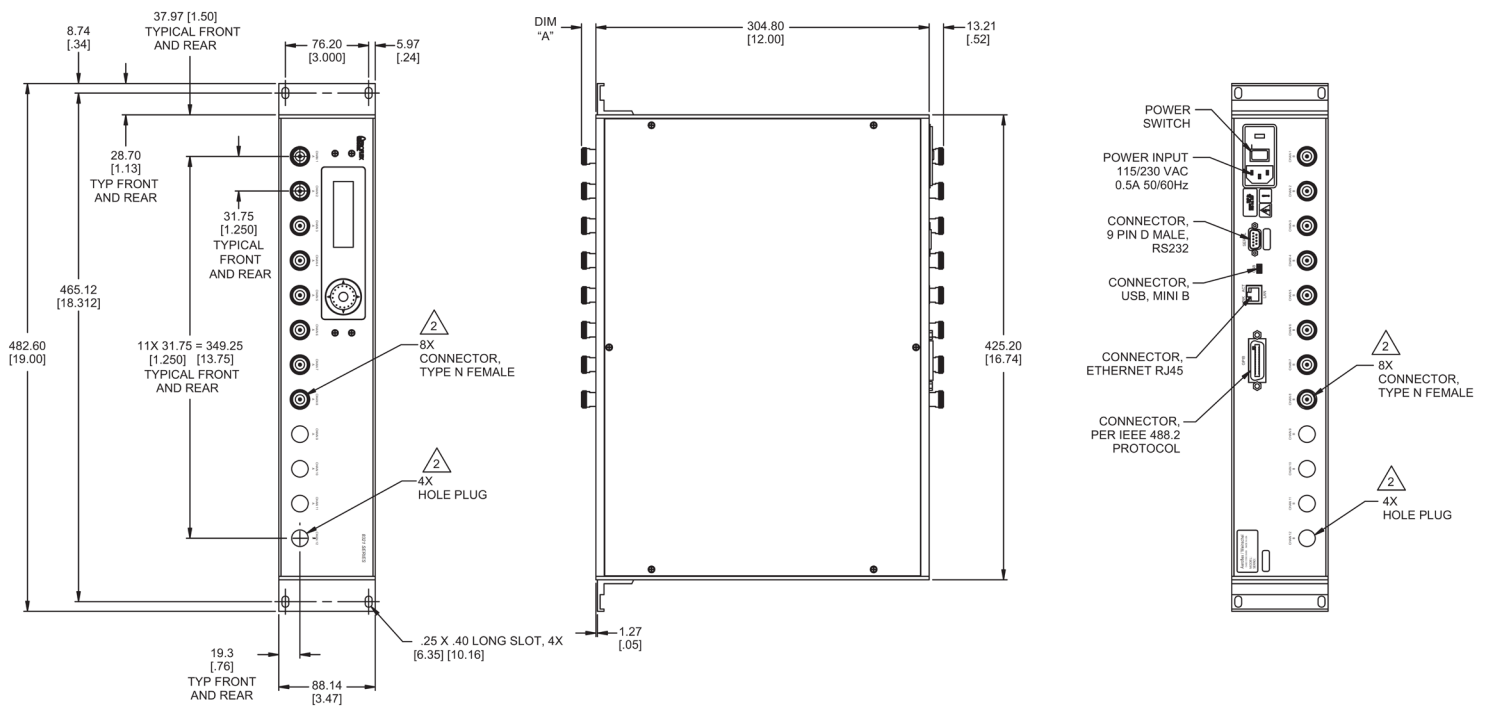
1. All dimensions are given in mm (inches).
2. Connectors and hole plugs are installed as required and determined by number of channels in unit. 2 channel unit shown.
3. Connector location (Front/Rear) may vary depending on model ordered.

# Multichannel Programmable Attenuator Models 8320, 8321 & 8331

## Physical Dimensions

### Model 8321 Series

Standard 19 in Rack Unit up to 16 channels



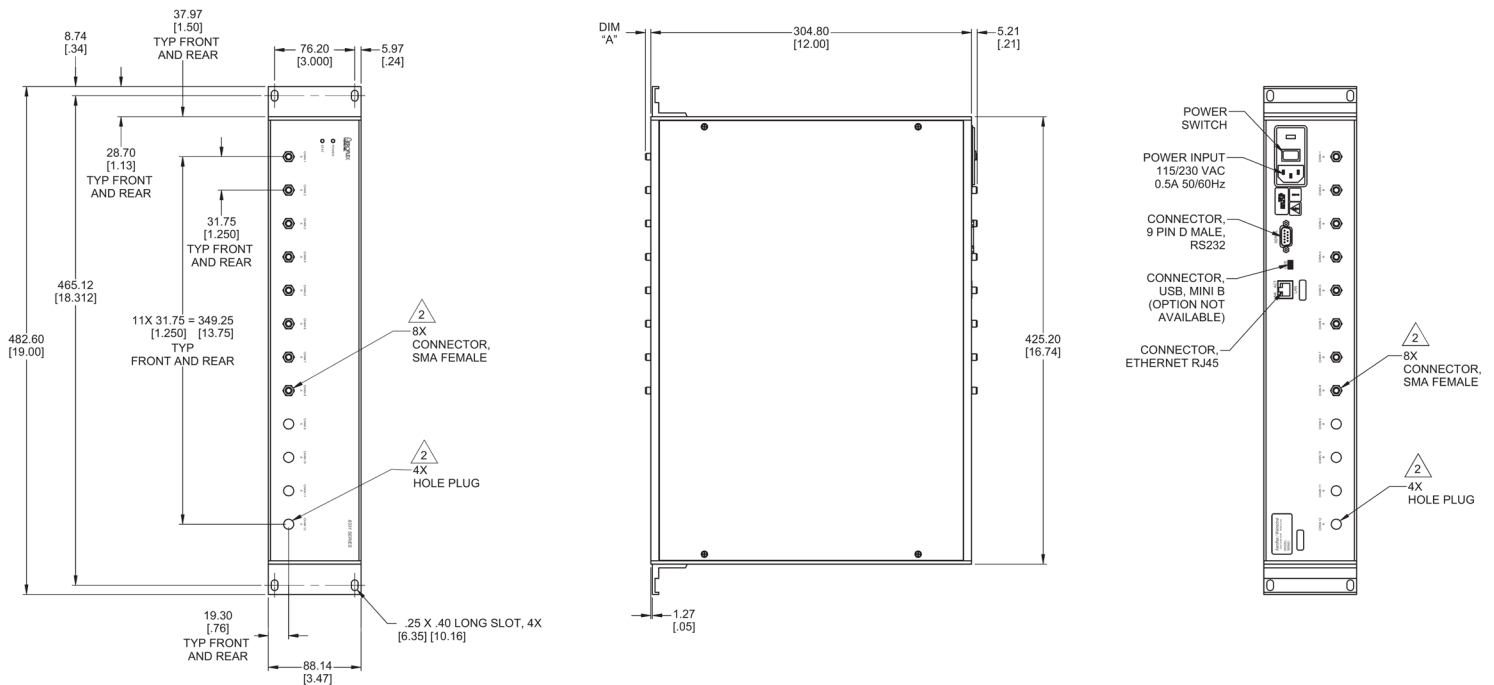
### Notes:

1. All dimensions are given in mm (inches).
2. Connectors and hole plugs are installed as required and determined by number of channels in unit. 8 channel unit shown.
3. Connector location (Front/Rear) may vary depending on model ordered.

# Multichannel Programmable Attenuator Models 8320, 8321 & 8331

Ethernet, USB, Serial & GPIB Control Modes

## Physical Dimensions Model 8331 Series



### Notes:

1. All dimensions are given in mm (inches).
2. Connectors and hole plugs are installed as required and determined by number of channel in unit. 8 channel unit shown.
3. Connector location (Front/Rear) may vary depending on model ordered.