

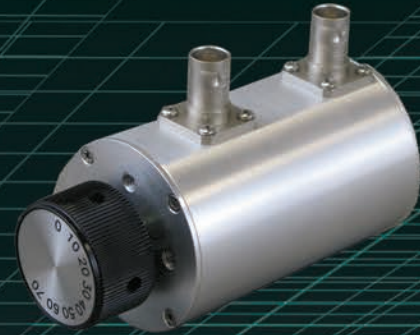
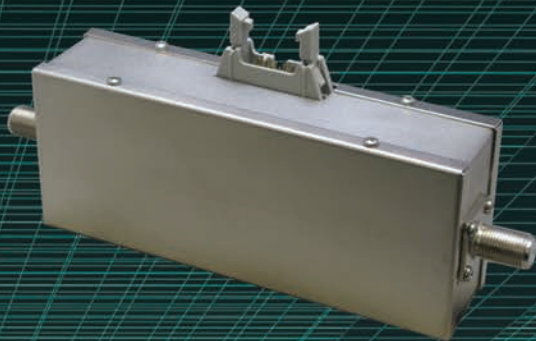
JFW INDUSTRIES

317-887-1340

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www.jfwindustries.com

75 OHM
COMPONENTS



PROGRAMMABLE ATTENUATORS
MANUALLY VARIABLE ATTENUATORS
FIXED ATTENUATORS
TERMINATIONS
RF SWITCHES
POWER DIVIDERS AND COMBINERS
TEST ACCESSORIES





50 Ohm Components Brochure

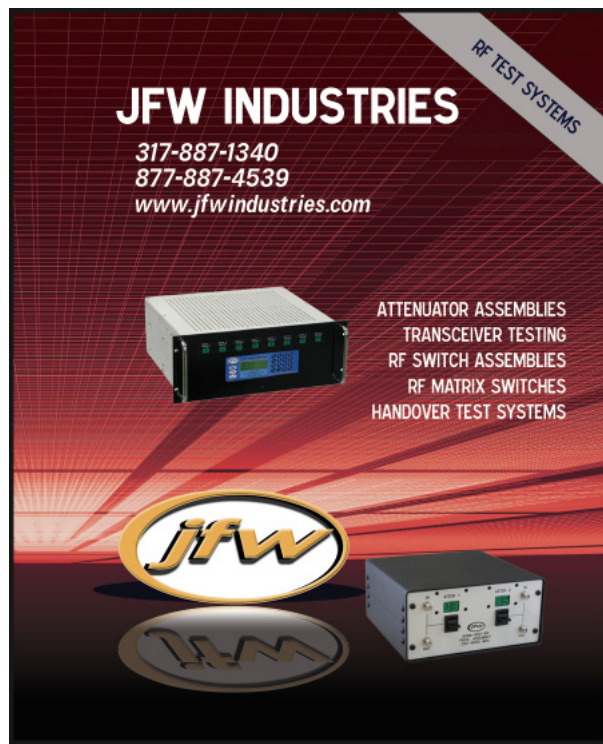
Available now to download from our website, this brochure covers JFW's standard 50 Ohm components, which includes:

- Programmable Attenuators
- Manually Variable Attenuators
- Fixed Attenuators
- Terminations
- RF Switches
- Power Dividers and Combiners
- Test Accessories

Test Systems Brochure

Contains information on JFW's standard and custom RF test boxes, including:

- Matrix Switches
- Handover Test Systems
- Programmable Attenuator Assemblies
- Transceiver Test Systems
- Switch Assemblies
- Custom RF Assemblies



www.jfwindustries.com

JFW's Quality Policy

“JFW is committed to anticipating and exceeding customer’s requirements and expectations through cost-competitive, quality products and services that are delivered on time and through continual improvements to our quality management system.”

JFW's Standard Terms and Conditions

JFW Industries, Inc. has standard terms of Net 30 days with approved credit.

Alternate methods of payment include MASTERCARD,
American Express, VISA, COD or ADVANCE PAYMENT.

International Payment Terms are ADVANCE PAYMENT or
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Any other payment terms must be negotiated in advance.

Shipping terms are FOB JFW Ind for Domestic Customers and
FCA JFW Ind for International Customers.

**ALL SHIPPING CHARGES will be PREPAID and ADDED TO THE INVOICE or
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JFW INDUSTRIES WARRANTY

JFW PRODUCTS ARE WARRANTED AGAINST DEFECTS IN WORKMANSHIP AND MATERIAL UNDER NORMAL USE AND SERVICE AS FOLLOWS: (2) TWO YEARS FROM DATE OF SHIPMENT FOR ALL FIXED AND SOLID STATE PRODUCTS. (1) ONE YEAR FROM DATE OF SHIPMENT FOR ALL MECHANICAL AND ELECTRO-MECHANICAL PRODUCTS. JFW INDUSTRIES' ONLY OBLIGATION UNDER THIS WARRANTY IS TO REPAIR OR REPLACE, AT ITS FACTORY, ANY JFW PRODUCT OR PART THEREOF THAT IS RETURNED TO JFW INDUSTRIES BY THE ORIGINAL PURCHASER WITHIN THE WARRANTY PERIOD.

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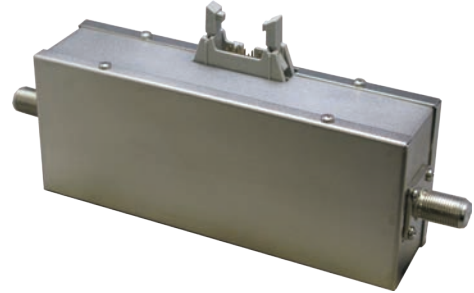
**Catalog 19
Printed 07-2016**

Programmable Attenuators

Solid-State Models

- Power handling up to +20 dBm
- Long lifetime solid-state design
- Frequencies up to 2200 MHz
- Various connectors available (F, 75 Ω BNC, 75 Ω N)

Featured Models* See website for complete specifications and drawings.		
Model	Range	Frequency
75P-124	0-63 x 1 dB	5-1000 MHz
75P-141	0-63 x 1 dB	900-2150 MHz
75P-193	0-63 x 1 dB	5-2150 MHz
75P-153	0-63.5 x 0.5 dB	20-1000 MHz
75P-173	0-127 x 1 dB	450-2150 MHz



Relay Models

- 0.5 Watt power handling typical
- Low distortion
- Frequencies up to 2150 MHz
- Various connectors available (F, 75 Ω BNC, 75 Ω N)

Featured Models* See website for complete specifications and drawings.		
Model	Range	Frequency
75P-163	0-63.75 x 0.25 dB	DC-1000 MHz
75P-201	0-95.5 x 0.5 dB	DC-1218 MHz
75P-200	0-63 x 1 dB	DC-2150 MHz
75P-199	0-95 x 1 dB	DC-2150 MHz
75P-033	0-127 x 1 dB	DC-1000 MHz



Programmable Attenuator Systems

- Contact the factory for a quote on your custom configuration.
- Can include various components in addition to attenuators.
- Ethernet, RS-232 or GPIB control available.

Featured Models* See website for complete specifications and drawings.		
Model	Description	Frequency
75PA-076	2 attenuators, low profile benchtop	DC-2150 MHz
75PA-079	2 attenuators, 19" rack	DC-1000 MHz
75PA-053	2 attenuators, 19" rack	450-2150 MHz
75PA-066	4 attenuators, 19" rack	450-2150 MHz



*Visit our website for an expanded list of models.

www.jfwindustries.com/programmables

Manually Variable Attenuators

- 1 Watt power handling typical
- Available in 0.1 dB, 1 dB and 10 dB steps
- Various connectors available (F, 75 Ω BNC, 75 Ω N)

Rotors (single shaft)

Featured Models* See website for complete specifications and drawings.		
Model	Range	Frequency
75R-057	0-1 x 0.1 dB	DC-1000 MHz
75R-056	0-10 x 1 dB	DC-1000 MHz
75R-050	0-10 x 1 dB	DC-2200 MHz
75R-055	0-70 x 10 dB	DC-1000 MHz
75R-089	0-60 x 10 dB	DC-2200 MHz



Rotors (dual shaft)

Featured Models* See website for complete specifications and drawings.		
Model	Range	Frequency
75DR-028	0-11 x 0.1 dB	DC-1218 MHz
75DR-009	0-70 x 1 dB	DC-1000 MHz
75DR-029	0-80 x 1 dB	DC-1218 MHz
75DR-026	0-50 x 1 dB	DC-1500 MHz
75DR-021	0-30 x 1 dB	DC-2100 MHz



Benchtop, Panel mounted

- Custom designs in-line w/ catalog pricing
- Benchtop box and panel mounting available for any JFW rotor

Featured Models* See website for complete specifications and drawings.		
Model	Description	Frequency
75BR-036	0-70.75 x 0.25 dB, benchtop box	DC-1218 MHz
75BR-023	0-70 x 1 dB, benchtop box	DC-2150 MHz
75PM-028	(Up to 8) 75DR-021, 19" rack	DC-2100 MHz
75PM-030	(Up to 8) 75DR-029, 19" rack	DC-1218 MHz



*Visit our website for an expanded list of models.

www.jfwindustries.com/rotors

Fixed Attenuators & Terminations

Fixed Attenuators

- See website for complete listing of fixed attenuators.

Featured Models* See website for complete specifications and drawings.			
Model	Frequency	Power	Connector
75F	DC-500 MHz	1 W	BNC
75F	DC-1000 MHz	1 W	F, N or TNC
75FP-XXX-2G	DC-2000 MHz	1 W	BNC, F, N or TNC
75FP-XXX-3G	DC-3000 MHz	0.5 W	F or N



Fixed Attenuators (DC-Passing)

- Custom units also available.
- Up to 50V and 4A DC passing.

Featured Models* See website for complete specifications and drawings.			
Model	Frequency	Power / DC Current	Connector
75FFB	950-2150 MHz	1 W / 2 A	BNC or F
75FFD	450-2000 MHz	1 W / 4 A	BNC or F



Terminations

- See website for complete listing of terminations.

Featured Models* See website for complete specifications and drawings.			
Model	Frequency	Power	Connector
75T-001	DC-1000 MHz	1 W	BNC male
75T-019	DC-2150 MHz	1 W	F male thread-on
75T-041	DC-3000 MHz	2 W	N male or female
75T-052	DC-3000 MHz	1 W	F male push-on
75T-055	DC-3000 MHz	2 W	BNC male



*Visit our website for an expanded list of models.

www.jfwindustries.com/fixed
www.jfwindustries.com/term

RF Switches

Solid-State Switches

- All models listed are self-terminating (reflective also available).
- Typical power handling +20 dBm.
- Long lifetime solid-state design.
- Typical switching speed in the microseconds.

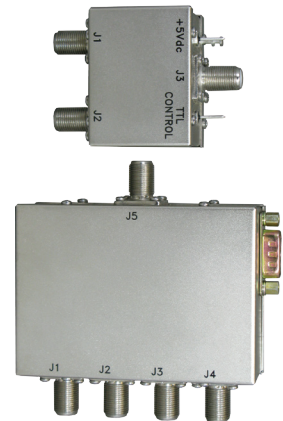
Featured Models* See website for complete specifications and drawings.				
Model	Type	Frequency	Max IL	Min Isolation
75S-365	1P2T	5-2150 MHz	2.5 dB	70 dB
75S-366	1P4T	5-2150 MHz	2.5 dB	70 dB
75S-371	1P8T	5-2150 MHz	3.5 dB	60 dB
75S-264	1P16T	20-1000 MHz	2.0 dB	55 dB



Relay Switches

- All models listed are self-terminating (reflective also available).
- Typical power handling +20 dBm.
- 10 milliseconds typical switching speed.

Featured Models* See website for complete specifications and drawings.				
Model	Type	Frequency	Max IL	Min Isolation
75S-348	1P1T Normally Open	DC-2150 MHz	0.75 dB	50 dB
75S-111	1P2T Failsafe	DC-2150 MHz	1.0 dB	45 dB
75S-285	1P3T Normally Open	DC-2000 MHz	2.0 dB	80 dB
75S-306	1P4T Normally Open	DC-2150 MHz	0.8 dB	50 dB
75S-221	1P8T Failsafe	DC-2150 MHz	2.0 dB	50 dB
75S-303	1P16T Failsafe	DC-2150 MHz	1.5 dB	50 dB



RF Switch Assemblies

- Contact the factory for a quote on your custom configuration.
- Can include various components in addition to switches.
- Ethernet, RS-232 or GPIB control available.

Featured Models* See website for complete specifications and drawings.		
Model	Description	Frequency
75SA-058	1P16T, 1U 19" rack	20-1000 MHz
75SA-082	(4) 1P2T, low profile benchtop	DC-2150 MHz



*Visit our website for an expanded list of models.

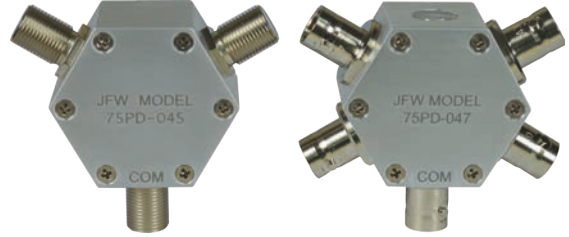
www.jfwindustries.com/switch

Power Dividers

Resistive Power Dividers

- Available with BNC, F or N connectors (male or female)

Featured Models* See website for complete specifications and drawings.				
Model	Type	Frequency	Power	IL
75PD-001	2-way	DC-1000 MHz	1W	6 dB
75PD-045	2-way	DC-2200 MHz	2W	6 dB
75PD-046	3-way	DC-2000 MHz	2W	9.5 dB
75PD-047	4-way	DC-2000 MHz	2W	12 dB
75PD-165	4-way	DC-3000 MHz	1W	12 dB
75PD-048	5-way	DC-2000 MHz	2W	14 dB



Reactive Power Dividers

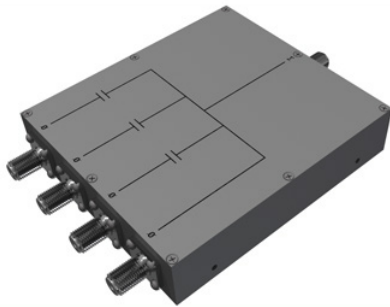
- Available with BNC, F or N female connectors
- 5 Watts average power handling when used as a divider
- 20 dB isolation typical

Featured Models* See website for complete specifications and drawings.		
Model	Type	Frequency
75PD-074	2-way	800-2400 MHz
75PD-072	4-way	800-2400 MHz
75PD-075	8-way	950-2150 MHz



DC-Blocked Power Dividers

- Power dividers with some or all ports DC-Blocked also available
- Contact the factory with your specific requirement



*Visit our website for an expanded list of models.

www.jfwindustries.com/divider

Test Accessories

Impedance Matching

57Z series	57ZT series	57ZTT series
Typical Specifications		
Resistive Matching Pad	Toroidal Matching Transformer	Microstrip Matching Transformer
Frequency coverage from DC up to 3 GHz	Low Frequency 0.5-1000 MHz	Frequencies starting @ 300 MHz Up to 3 GHz
5.7 dB Insertion Loss	<1 dB Insertion Loss	<1 dB Insertion Loss
1W average	1W average	20W average



Resistive Coupler

- Couples signal in both directions (no directivity)
- Minimum coupling value of 20 dB

Featured Models* See website for complete specifications and drawings.		
Model	Frequency	Power
75C-048-20	DC-1000 MHz	0.5 W
75C-049-20	DC-2150 MHz	0.5 W



RF Detectors

- Converts an RF signal into a DC voltage

Featured Models* See website for complete specifications and drawings.		
Model	Frequency	Max Power
75D-009	1-1000 MHz	+20 dBm
75D-010	1-2200 MHz	+20 dBm



DC Blocks

- Blocks DC voltage while passing RF signal

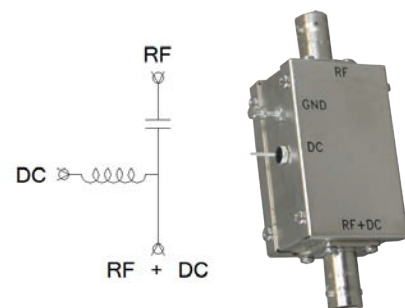
Featured Models* See website for complete specifications and drawings.		
Model	Frequency	Breakdown Voltage
75DB-001	1-2500 MHz	100V
75DB-013	0.1-3000 MHz	50V



Bias Taps

- Used to add or remove DC voltage from a coaxial cable

Featured Models* See website for complete specifications and drawings.			
Model	Frequency	DC Voltage	DC Current
75BT-007	100-1750 MHz	200V	2A
75BT-024	950-2150 MHz	100V	1A
75BT-025	5-2150 MHz	100V	1A



Engineering Reference Guide

Effect of VSWR on Transmitted Power

VSWR	Return Loss (dB)	Trans. Loss (dB)	Volt Refl. Coeff.	Power Trans. (%)	Power Refl. (%)
1.01	46.1	.000	.01	99.9	.0
1.02	40.1	.000	.01	99.9	.0
1.03	36.6	.001	.02	99.9	.0
1.04	34.2	.002	.02	99.9	.0
1.05	32.3	.003	.02	99.9	.1
1.06	30.7	.004	.03	99.9	.1
1.07	29.4	.005	.03	99.9	.1
1.08	28.3	.006	.04	99.9	.1
1.09	27.3	.008	.04	99.8	.2
1.10	26.4	.010	.05	99.8	.2
1.15	23.1	.021	.07	99.5	.5
1.20	20.8	.036	.09	99.2	.8
1.25	19.1	.054	.11	98.8	1.2
1.30	17.7	.075	.13	98.3	1.7
1.40	15.6	.122	.17	97.2	2.8
1.50	14.0	.177	.20	96.0	4.0
1.60	12.7	.238	.23	94.7	5.3
1.70	11.7	.302	.26	93.3	6.7
1.80	10.9	.370	.29	91.8	8.2
1.90	10.2	.440	.31	90.4	9.6
2.00	9.5	.512	.33	88.9	11.1
2.50	7.4	.881	.43	81.6	18.4
3.00	6.0	1.249	.50	75.0	25.0
3.50	5.1	1.603	.56	69.1	30.9
4.00	4.4	1.938	.60	64.0	36.0
4.50	3.9	2.255	.64	59.5	40.5
5.00	3.5	2.553	.67	55.6	44.4
5.50	3.2	2.834	.69	52.1	47.9
6.00	2.9	3.100	.71	49.0	51.0
6.50	2.7	3.351	.73	46.2	53.8
7.00	2.5	3.590	.75	43.7	56.2
7.50	2.3	3.817	.76	41.5	58.5
8.00	2.2	4.033	.78	39.5	60.5
8.50	2.1	4.240	.79	37.7	62.3
9.00	1.9	4.437	.80	36.0	64.0
9.50	1.8	4.626	.81	34.5	65.5
10.00	1.7	4.807	.82	33.1	66.9
11.00	1.6	5.149	.83	30.6	69.4
12.00	1.5	5.466	.85	28.4	71.6
13.00	1.3	5.762	.86	26.5	73.5
14.00	1.2	6.042	.87	24.9	75.1
15.00	1.2	6.301	.88	23.4	76.6
16.00	1.1	6.547	.88	22.1	77.9
17.00	1.0	6.780	.89	21.0	79.0
18.00	1.0	7.002	.89	19.9	80.1
19.00	.9	7.212	.90	19.0	81.0
20.00	.9	7.413	.90	18.1	81.9
25.00	.7	8.299	.92	14.8	85.2
30.00	.6	9.035	.94	12.5	87.5

Power Conversion Table

dBm	mW	dBmV in 75 Ohms
-30	0.0010	18.75
-29	0.0013	19.75
-28	0.0016	20.75
-27	0.0020	21.75
-26	0.0025	22.75
-25	0.0032	23.75
-24	0.0040	24.75
-23	0.0050	25.75
-22	0.0063	26.75
-21	0.0079	27.75
-20	0.010	28.75
-19	0.013	29.75
-18	0.016	30.75
-17	0.020	31.75
-16	0.025	32.75
-15	0.032	33.75
-14	0.040	34.75
-13	0.050	35.75
-12	0.063	36.75
-11	0.079	37.75
-10	0.10	38.75
-9	0.13	39.75
-8	0.16	40.75
-7	0.20	41.75
-6	0.25	42.75
-5	0.32	43.75
-4	0.40	44.75
-3	0.50	45.75
-2	0.63	46.75
-1	0.79	47.75
0	1.00	48.75
1	1.26	49.75
2	1.58	50.75
3	2.00	51.75
4	2.51	52.75
5	3.16	53.75
6	3.98	54.75
7	5.01	55.75
8	6.31	56.75
9	7.94	57.75
10	10.0	58.75
11	12.6	59.75
12	15.8	60.75
13	20.0	61.75
14	25.1	62.75
15	31.6	63.75
16	39.8	64.75
17	50.1	65.75
18	63.1	66.75
19	79.4	67.75
20	100.0	68.75

New 75 Ohm Products from JFW Industries

Configurable 19" rack rotary attenuator panels

New panels can support up to 4 rotors in a 1RU panel, or up to 8 rotors in a 2RU panel. Available with empty spots for future expansion. Supports nearly any of JFW's 50 Ohm or 75 Ohm rotary attenuators. See website for specific models, or send us your custom requirement today.

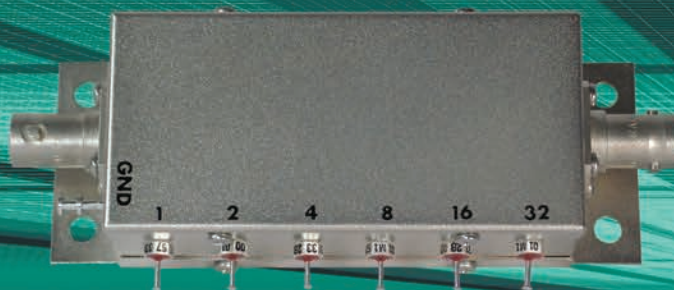
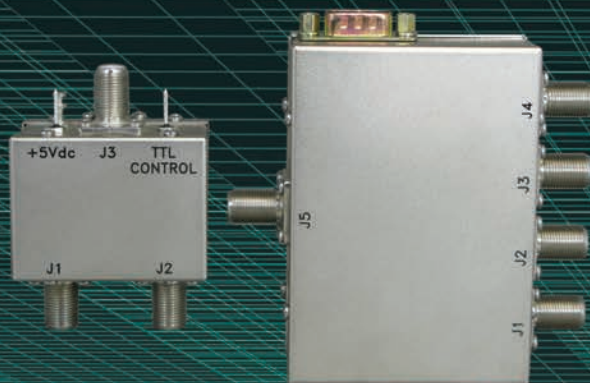
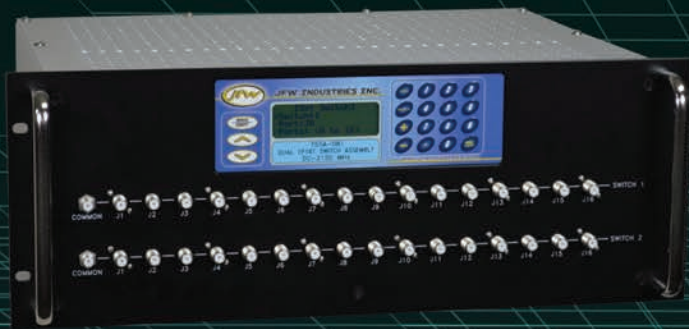


Ethernet Controlled Attenuator / Switch Test System

The 75PA-050 combines five solid-state programmable attenuators and six electro-mechanical switches in a single 19" rack chassis. Covering a frequency range of 600-2000 MHz, this unit features remote control via an Ethernet or RS-232 interface, with front panel LED's that allow you to see the state of each component with a simple glance.



Not exactly what you are looking for? Contact the factory with your specific requirement. JFW does not charge an NRE (Non-Recurring Engineering) for new designs.



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