



VHF Cavity Duplexers 30-250 MHz



28-37-02A

A Duplexer is a 3-port device most commonly used to allow a transmitter and receiver, operating on different frequencies, to share a common antenna while operating simultaneously. The filters that make up the duplexer isolate the transmitter from the receiver by filtering out transmitter noise sidebands and protecting the receiver from transmitter carrier overload. The amount of isolation required is dependent on TX to RX frequency spacing. TX RX Systems offers a wide variety of Duplexer options to suit your application, including Vari-notch, Bandpass, and notch type circuits. The TX RX Vari-notch design provides a pseudo-bandpass characteristic that is ideal for closely spaced VHF frequencies, combining low loss advantages of notch filters with the broad isolation and selective pass characteristics of bandpass filters. For system requirements that go beyond our standard models, contact TX RX Systems for a customized design.

FEATURES

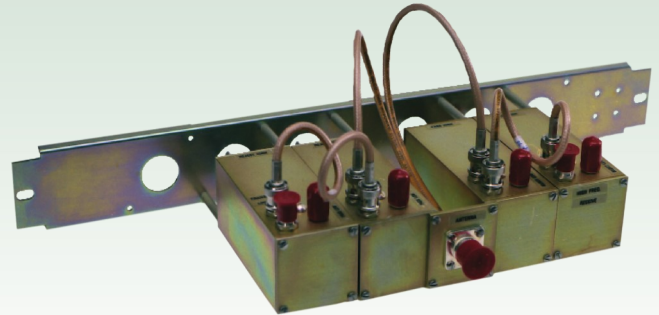
- ▶ Simplifies overall system by reducing down to one antenna, saving tower space while providing the necessary isolation between TX & RX frequencies
- ▶ A wide variety of duplexers to suit your needs: Vari-notch (pseudo-bandpass), bandpass, and notch type circuit options
- ▶ Circuit style (Vari-notch, bandpass, Series Notch) can be easily changed by ordering the appropriate conversion assemblies for future changes in site requirements
- ▶ Systems are built with our rugged, high quality cavities: welded construction, silver-plated loops, Alballoy-plated integrated loop plates and connectors, a unique fingerstock-free high conductivity silver-plated tuning probe, and hardened aluminum outer conductor
- ▶ 4" (102 mm) diameter, 6.625" (168 mm) diameter, and 2" (51mm) square cavity options
- ▶ Long-term product dependability and customer support
- ▶ Convenient and space efficient standard 19" rack mounting on most models, with options on some for 19" cross rack mounting, 24" rack mounting, or cabinet mounting

TX RX Systems Inc.

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GENERAL SPECIFICATIONS

Frequency Range Options	30-40 MHz
	38-50 MHz
	132-150 MHz
	144-174 MHz
	215-250 MHz
Cavity Type	Quarterwave
Cavity Size Options	2" (51mm) square
	4" (102 mm) diameter
	6.625" (168 mm) diameter
Temperature Range	Cylindrical cavities: -40°C to +80°C
	2" Square Cavities: -40°C to +60°C
Characteristic Impedance	50 Ohms
VSWR (all ports)	1.3:1 max



38-36-01A
38-37-01A



28-37-02G



28-36-11E
28-37-11E

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Electrical Specifications

Frequency Range (MHz)	Model Number	Minimum Frequency Separation (MHz)	Power Rating (W)	Circuit Type	Isolation* (dB)		Insertion Loss (dB)*
					Per Chan	Bet. Chan	
30-40	28-13-01F	0.3	400	Vari-notch (pseudo-bandpass)	90	50	1.5
38-50	28-14-01F	0.3	400	Vari-notch (pseudo-bandpass)	90	50	1.5
132-150	TX High 38-36-01A	4.5	100	Pseudo-bandpass (non-Vari-notch)	70	20	0.9
	TX High 30-36-01A	3.0	100	Pseudo-bandpass/notch (non-Vari-notch)	100	N/A	1.4/1.5
	TX Low 30-36-02A	3.0	100	Pseudo-bandpass/notch (non-Vari-notch)	100	N/A	1.4/1.5
	74-36-02A	3.0	400	2-channel T-pass	57	80	1.35
	30-36-03A	1.5	100	Pseudo-bandpass/notch (non-Vari-notch)	80/90	N/A	1.4/2.2
	30-36-04A	1.5	100	Pseudo-bandpass/notch (non-Vari-notch)	80/90	N/A	1.4/2.2
	28-36-02A	0.5	400	Vari-notch (pseudo-bandpass)	85	50	1.5
	28-36-11E	0.3	400	Vari-notch (pseudo-bandpass)	100	50	2.2
144-174	TX High 38-37-01A	4.5	100	Pseudo-bandpass (non-Vari-notch)	70	20	0.9
	TX High 30-37-01A	3.0	100	Pseudo-bandpass/notch (non-Vari-notch)	100	N/A	1.4/1.5
	TX Low 30-37-02A	3.0	100	Pseudo-bandpass/notch (non-Vari-notch)	100	N/A	1.4/1.5
	28-37-07A	3.0	400	Vari-notch (pseudo-bandpass)	85	30	0.7
	28-37-07C	3.0	400	Vari-notch (pseudo-bandpass)	85	30	0.7
	74-37-02A	3.0	400	2-channel T-pass	57	80	1.35
	TX High 30-37-03A	1.5	100	Pseudo-bandpass/notch (non-Vari-notch)	80/90	N/A	1.4/2.2
	TX Low 30-37-04A	1.5	100	Pseudo-bandpass/notch (non-Vari-notch)	80/90	N/A	1.4/2.2
	28-37-06A	1.0	125	Vari-notch (pseudo-bandpass)	75	35	1.2
	28-37-06C	1.0	125	Vari-notch (pseudo-bandpass)	75	35	1.2
	28-37-04A	0.5	125	Vari-notch (pseudo-bandpass)	65	30	1.8
	28-37-04C	0.5	125	Vari-notch (pseudo-bandpass)	65	30	1.8
	28-37-02A	0.5	400	Vari-notch (pseudo-bandpass)	85	50	1.5
	28-37-02A-DIN	0.5	400	Vari-notch (pseudo-bandpass)	85	50	1.5
	28-37-02A-U**	0.5	400	Vari-notch (pseudo-bandpass)	85	50	1.5
	28-37-02G	0.5	400	Vari-notch (pseudo-bandpass)	85	50	1.5
	28-37-11E	0.3	400	Vari-notch (pseudo-bandpass)	100	50	2.2
215-250	28-52-02A	1.6	250	Vari-notch (pseudo-bandpass)	90	55	1.2

* Specifications for asymmetrical duplexers: Isolation—noise suppression/carrier suppression. Insertion Loss—TX insertion loss/RX insertion loss

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Mechanical Specifications

Frequency Range (MHz)	Model Number	Cavities		Type of Mount	Dimensions (HWD)	TX & RX Ports	Antenna Port	Shipping Weight
		No.	Size					
30-40	28-13-01F	4	6.625" (168mm) diameter	Wall Mount	132" x 19" x 15" (3353 x 483 x 381 mm)	N	N	250 lbs (113.4 kg)
38-50	28-14-01F	4	6.625" (168mm) diameter	Wall Mount	101" x 19" x 15" (2565 x 483 x 381 mm)	N	N	260 lbs (117.9 kg)
132-250	TX High 38-36-01A	4	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	10 lbs (4.5 kg)
	TX High 30-36-01A	6	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	14 lbs (6.4 kg)
	TX Low 30-36-02A	6	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	14 lbs (6.4 kg)
	74-36-02A	4	6.625" (168mm) diameter	Standard 19" rack mount	35" x 19" x ± 7.5 " (838 x 483 x 191 mm)	N	N	50 lbs (22.7 kg)
	30-36-03A	6	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	14 lbs (6.4 kg)
	30-36-04A	6	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	14 lbs (6.4 kg)
	28-36-02A	4	6.625" (168mm) diameter	Standard 19" rack mount	35" x 19" x ± 7.5 " (838 x 483 x 191 mm)	N	N	50 lbs (22.7 kg)
	28-36-11E	6	6.625" (168mm) diameter	24" rack mount	35" x 24" x ± 7.5 " (838 x 610 x 191 mm)	N	N	75 lbs (34.0 kg)
144-174	TX High 38-37-01A	4	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	10 lbs (4.5 kg)
	TX High 30-37-01A	6	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	14 lbs (6.4 kg)
	TX Low 30-37-02A	6	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	14 lbs (6.4 kg)
	28-37-07A	4	4" (102 mm) diameter	Standard 19" rack mount	5.25" x 19" x $+4.5/-15.5$ " (133 x 483 x $+114/-394$ mm)	N	N	22 lbs (10.0 kg)
	28-37-07C	4	4" (102 mm) diameter	19" Cross rack mount	9.5" x 19" x 10.5" (241 x 483 x 267 mm)	N	N	24 lbs (10.9 kg)
	74-37-02A	4	6.625" (168mm) diameter	Standard 19" rack mount	35" x 19" x ± 7.5 " (838 x 483 x 191 mm)	N	N	50 lbs (22.7 kg)
	TX High 30-37-03A	6	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	14 lbs (6.4 kg)
	TX Low 30-37-04A	6	2" (51mm) square	Standard 19" rack mount	5.25" x 19" x 7.25" (133 x 483 x 184 mm)	BNC	N	14 lbs (6.4 kg)
	28-37-06A	4	4" (102 mm) diameter	Standard 19" rack mount	5.25" x 19" x $+4.5/-15.5$ " (133 x 483 x $+114/-394$ mm)	N	N	22 lbs (10.0 kg)
	28-37-06C	4	4" (102 mm) diameter	19" Cross rack mount	9.5" x 19" x 10.5" (241 x 483 x 267 mm)	N	N	24 lbs (10.9 kg)
	28-37-04A	4	4" (102 mm) diameter	Standard 19" rack mount	5.25" x 19" x $+4.5/-15.5$ " (133 x 483 x $+114/-394$ mm)	N	N	22 lbs (10.0 kg)
	28-37-04C	4	4" (102 mm) diameter	19" Cross rack mount	9.5" x 19" x 10.5" (241 x 483 x 267 mm)	N	N	24 lbs (10.9 kg)
	28-37-02A	4	6.625" (168mm) diameter	Standard 19" rack mount	35" x 19" x ± 7.5 " (838 x 483 x 191 mm)	N	N	50 lbs (22.7 kg)
	28-37-02A-DIN	4	6.625" (168mm) diameter	Standard 19" rack mount	35" x 19" x ± 7.5 " (838 x 483 x 191 mm)	N	7/16 DIN	50 lbs (22.7 kg)
	28-37-02A-U*	4	6.625" (168mm) diameter	Standard 19" rack mount	35" x 19" x ± 7.5 " (838 x 483 x 191 mm)	N	N	50 lbs (22.7 kg)
	28-37-02G	4	6.625" (168mm) diameter	Cabinet mount	40" x 22" x 17.250" (1016 x 559 x 438 mm)	N	N	305 lbs (138 kg)
	28-37-11E	6	6.625" (168mm) diameter	24" rack mount	35" x 24" x ± 7.5 " (838 x 610 x 191 mm)	N	N	75 lbs (34.0 kg)
215-250	28-52-02A	4	4" (102 mm) diameter	Standard 19" rack mount	5.25" x 19" x $+3/-15$ " (133 x 483 x $+76/-381$ mm)	N	N	19 lbs (8.6 kg)

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