

# DUPLEXERS

## 132-250 MHz

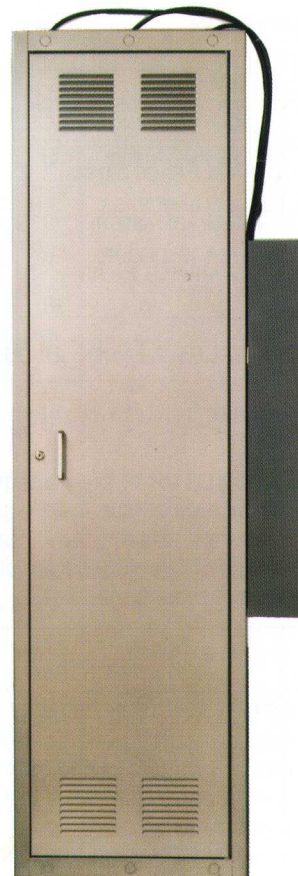
IN RANGES OF:  
 132 - 150 MHz  
 132 - 174 MHz  
 144 - 174 MHz  
 215 - 250 MHz



MODEL 28-38-03A SIDE-OF-CABINET MOUNT



132-174 MHz  
 80 dB ISOLATION AT 0.5 MHz SEPARATION  
 150 WATT POWER RATING  
 MODEL 28-38-03A  
 19" RACK MOUNT



MODEL 28-38-03D  
 DUST COVERED  
 VERSION



MODEL 28-37-02A  
 19" RACK MOUNT



(PATENTED)

144-174 MHz  
 85 dB ISOLATION AT 0.5 MHz SEPARATION  
 400 WATT POWER RATING  
 MODEL 28-37-02A



MODEL 28-37-02G  
 CABINET MOUNT



DUPLEXERS • CAVITY FILTERS • MULTICOUPLER SYSTEMS • SIGNAL BOOSTER SYSTEMS • RF SYSTEM PRODUCTS

TX RX SYSTEMS INC. 8625 INDUSTRIAL PARKWAY, ANGOLA, NY 14006  
 TELEPHONE 716-549-4700 TELEEX 755770 FAX 716-549-4772 (24 HRS.)

## DUPLEXER NOMENCLATURE

FIRST PAIR OF NUMBERS	SECOND PAIR OF NUMBERS	THIRD PAIR OF NUMBERS PLUS LETTER	
CIRCUIT STYLE	FREQUENCY RANGE (MHz)	TWO DIGIT NUMBER	MOUNTING STYLE
26 - : BAND PASS CIRCUIT	- 13 - : 30 - 40	ELECTRICAL SPECIFICATION IDENTIFIER	A : 19" RACK MOUNT
27 - : NOTCH CIRCUIT	- 14 - : 38 - 50		B : 19" REVERSE FLUSH RACK MOUNT
28 - : VARI-NOTCH CIRCUIT (PSEUDO BAND PASS)	- 26 - : 66 - 77		C : 19" CROSS RACK MOUNT
30 - : PSEUDO-BANDPASS/NOTCH (NON - VARI - NOTCH)	- 27 - : 77 - 88		D : DUST COVERED SIDE-OF-CABINET OR WALL MOUNT
33 - : SERIES NOTCH CIRCUIT (TUNABLE PASS BANDS)	- 28 - : 66 - 88		E : 24" RACK MOUNT
38 - : PSEUDO BANDPASS (NON - VARI-NOTCH)	- 29 - : 88 - 108		F : WALL MOUNT
74 - : BAND PASS CIRCUIT (2 - CHANNEL T-PASS)	- 35 - : 108 - 136		G : CABINET MOUNTED
	- 36 - : 132 - 150		H : MOBILE PLATE MOUNTED
	- 37 - : 144 - 174		
	- 38 - : 132 - 174		
	- 41 - : 148 - 174		
	- 52 - : 215 - 250		
	- 65 - : 406 - 430		
	- 66 - : 442 - 450		
	- 69 - : 470 - 512		
	- 70 - : 450 - 470		
	- 71 - : 470 - 490		
	- 72 - : 490 - 512		
	- 88 - : 890 - 960		
	- 89 - : 806 - 866		
	- 97 - : 1215 - 1300		

**EXAMPLE:** A Model **28-36-02A** is a VARI - NOTCH circuit, 132 - 150 MHz range, 19" rack mount Duplexer.

**VARI-NOTCH®**, the trademark for **TX RX SYSTEMS'** pseudo bandpass circuit design, offers the best **cost-to-performance** ratio in its class and is unsurpassed for close-spaced duplexing, combining the low loss and close frequency spacing advantages of notch filters with the broad isolation and selective pass characteristics of bandpass filters. The small geometry and efficiency of this circuit design has also resulted in a variety of space efficient mountings.

**CONSTRUCTION:** Our 4" and 6.625" diameter Duplexer cavities are constructed of hardened aluminum which does not easily dent, as some copper types do, causing detuning. Cavity surfaces are passivated inside and out with a chromate conversion coating (Alodine). A 1/4" thick end cap heliarc'd to the top of the cavity at the critical current point eliminates the problem of noise generated by poor metal to metal contact inherent in constructions using pop rivets. Silver plating the movable brass tuning probes and hardened copper contact fingers avoids erratic tuning, high loss, and degraded selectivity which result in extra time and costs. Our 6.625" diameter Duplexer cavities have both coarse and fine tuning controls as well as calibrated, easily adjustable loops to speed tuning time.

Our 2" square cavities are high Q helical resonators of extruded aluminum.

**SHOULD REQUIREMENTS AT A SITE CHANGE**, the circuit style (Pseudo Bandpass, Bandpass, or Series Notch) of any TX RX SYSTEMS INC. Duplexer built from 6.625" diameter cavities can be easily changed in the field by ordering and installing the appropriate replacement conversion assemblies (loops), thus avoiding obsolescence. Conversion assemblies, along with adaptors, hookup cables, and other hardware are displayed on page 3 of the Duplexer/Filter Price List No. C6457.

**OTHER DUPLEXER BROCHURES** are available for bands **30-88 MHz** (Lit. No. C1014), **406-512 MHz** (Lit. No. C1034), and **806 MHz to 1.3 GHz** (Lit. No. C1044). Also write for Tech-Aid No. 76007 (Lit. No. C3004), "Duplexer Problems and Remedies", Tech-Aid No. 80009 (Lit. No. C3104), Duplexer Response Curves.

**GENERAL SPECIFICATIONS, ELECTRICAL:** TEMPERATURE RANGE: -40° C TO +80° C      IMPEDANCE: 50 Ohms      VSWR: 1.3:1

**NOTE :** THE MODELS ON THIS PAGE CONSTRUCTED OF 2" SQUARE CAVITIES HAVE A TEMPERATURE RANGE OF -40° C TO +60° C.

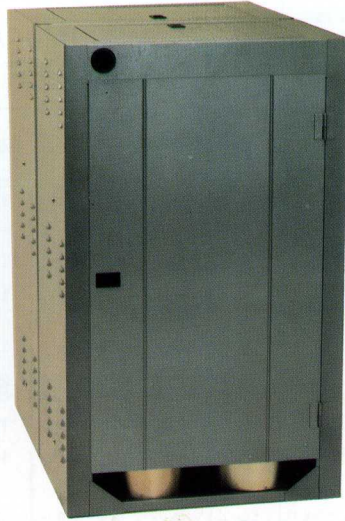
FREQUENCY RANGE MHz (SUB-RANGE)	MODEL NO.	ELECTRICAL					MECHANICAL									
		MIN. FREQ. SEP. MHz	POWER RATING WATTS	ISOLATION dB		INSERTION LOSS dB	CAVITIES		DIMENSIONS					TX AND RX PORTS	ANTENNA PORT	
				PER CHAN.	BET. CHAN.		NO.	SIZE	STYLE	ALT. MODEL NO.	H"	W"	D"		STD.	OPT.
<b>132-150</b>	<b>38-36-01A</b>	<b>4.5</b>	<b>100</b>	<b>70</b>	<b>20</b>	<b>0.9</b>	<b>4</b>	<b>2" SQ.</b>	<b>A</b>	.....	<b>5.25</b>	<b>19</b>	<b>7.25</b>	<b>BNC</b>	<b>N</b>	.....
	TX HIGH 30-36-01A	3.0	100	100	N/A	1.4/1.5	6	2" SQ.	A	.....	5.25	19	7.25	BNC	N	.....
	TX LOW 30-36-02A	3.0	100	100	N/A	1.4/1.5	6	2" SQ.	A	.....	5.25	19	7.25	BNC	N	.....
	74-36-02A	3.0	400	57	80	1.35	4	6.625" DIA.	A G	..... 74-36-02G	33 36.9	19 22	±7.5 14.8	N	N	.....
	TX HIGH 30-36-03A	1.5	100	80/90	N/A	1.4/2.2	6	2" SQ.	A	.....	5.25	19	7.25	BNC	N	.....
	TX LOW 30-36-04A	1.5	100	80/90	N/A	1.4/2.2	6	2" SQ.	A	.....	5.25	19	7.25	BNC	N	.....
	28-36-02A	0.5	400	85	50	1.5	4	6.625" DIA.	A G	..... 28-36-02G	33 36.9	19 22	±7.5 14.8	N	N	.....
	28-36-11E	0.3	400	100	50	2.2	6	6.625" DIA.	E G	..... 28-36-11G	33 36.9	24 22	±7.5 14.8	N	N	.....
<b>132-174</b>	<b>28-38-03A</b>	<b>0.5</b>	<b>150</b>	<b>80</b>	<b>45</b>	<b>1.9</b>	<b>4</b>	<b>4" DIA.</b>	<b>A D</b>	..... 28-38-03D	36 36	19 19.5	5.5 5.38	N	N	.....
<b>144-174</b>	<b>38-37-01A</b>	<b>4.5</b>	<b>100</b>	<b>70</b>	<b>20</b>	<b>0.9</b>	<b>4</b>	<b>2" SQ.</b>	<b>A</b>	.....	<b>5.25</b>	<b>19</b>	<b>7.25</b>	<b>BNC</b>	<b>N</b>	.....
	TX HIGH 30-37-01A	3.0	100	100	N/A	1.4/1.5	6	2" SQ.	A	.....	5.25	19	7.25	BNC	N	.....
	TX LOW 30-37-02A	3.0	100	100	N/A	1.4/1.5	6	2" SQ.	A	.....	5.25	19	7.25	BNC	N	.....
	28-37-07A	3.0	400	85	30	0.7	4	4" DIA.	A C	..... 28-37-07C	5.25 9.5	19 19	+4.5-15.5 10.5	N	N	.....
	74-37-02A	3.0	400	57	80	1.35	4	6.625" DIA.	A G	..... 74-37-02G	33 36.9	19 22	+7.5 14.8	N	N	.....
	TX HIGH 30-37-03A	1.5	100	80/90	N/A	1.4/2.2	6	2" SQ.	A	.....	5.25	19	7.25	BNC	N	.....
	TX LOW 30-37-04A	1.5	100	80/90	N/A	1.4/2.2	6	2" SQ.	A	.....	5.25	19	7.25	BNC	N	.....
	28-37-06A	1.0	125	75	35	1.2	4	4" DIA.	A C	..... 28-37-06C	5.25 9.5	19 19	+4.5-15.5 10.5	N	N	.....
	28-37-04A	0.5	125	65	30	1.8	4	4" DIA.	A C	..... 28-37-04C	5.25 9.5	19 19	+4.5-15.5 10.5	N	N	.....
	<b>28-37-02A</b>	<b>0.5</b>	<b>400</b>	<b>85</b>	<b>50</b>	<b>1.5</b>	<b>4</b>	<b>6.625" DIA.</b>	<b>A G</b>	..... <b>28-37-02G</b>	<b>33 36.9</b>	<b>19 22</b>	<b>±7.5 14.8</b>	<b>N</b>	<b>N</b>	.....
	28-37-11E	0.3	400	100	50	2.2	6	6.625" DIA.	E G	..... 28-37-11G	33 36.9	24 22	+7.5 14.8	N	N	.....
<b>15-250</b>	<b>28-52-02A</b>	<b>1.6</b>	<b>250</b>	<b>90</b>	<b>55</b>	<b>1.2</b>	<b>4</b>	<b>4" DIA.</b>	<b>A</b>	.....	<b>5.25</b>	<b>19</b>	<b>+3-15</b>	<b>N</b>	<b>N</b>	.....

**NOTE :** Specifications for duplexers of unsymmetrical construction or response are listed as follows: ISOLATION - noise suppression/carrier suppression; INSERTION LOSS - TX insertion loss/RX insertion loss.

## MODELS FOR VERY CLOSE SPACINGS

100 dB ISOLATION  
AT 0.3 MHz SEPARATION  
400 WATT POWER RATING

100 dB ISOLATION  
AT 0.240 MHz SEPARATION  
400 WATT POWER RATING



24" RACK MOUNTS  
(CABINET MOUNTS AVAILABLE)  
MODEL NOS.  
28-36-11E  
28-37-11E

CABINET MOUNT  
MODEL NO.  
28-37-08G

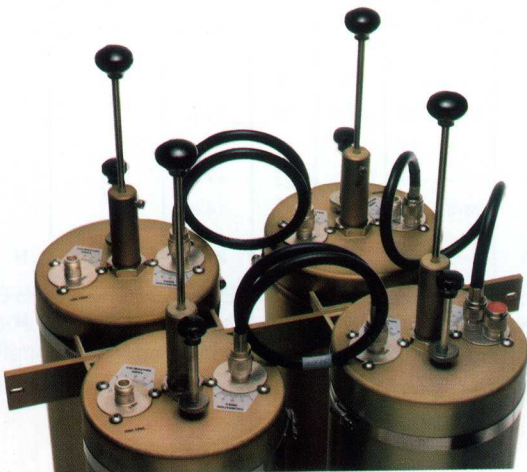
## BANDPASS APPLICATIONS

DUPLEXERS FROM OUR T-PASS EXPANDABLE  
MULTICOUPLER FAMILY

**T-PASS®**  
(PATENTED)

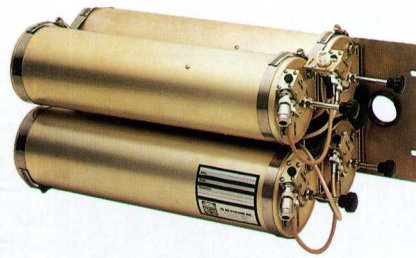
19" RACK MOUNTS  
MODEL NOS.  
74-36-02A  
74-37-02A

CABINET MOUNTS  
MODEL NOS.  
74-36-02G  
74-37-02G



## CLOSE SPACED MODELS FOR LIMITED SPACE OR PORTABLE REPEATER APPLICATIONS

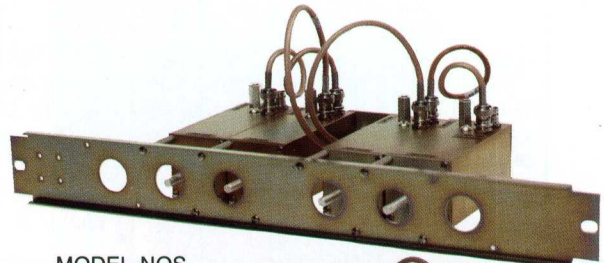
(CROSS MOUNT CAVITIES ARE ALL ON ONE SIDE OF 19" PANEL)



CROSS MOUNTS  
MODEL NOS.  
28-37-04C  
28-37-06C  
28-37-07C

## SMALL SIZED MODELS FOR WIDER SEPARATIONS

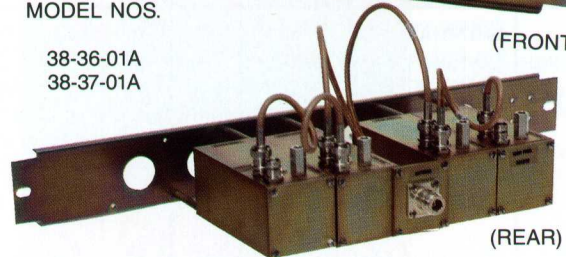
**PSEUDO-BANDPASS**  
19" RACK MOUNTS



MODEL NOS.

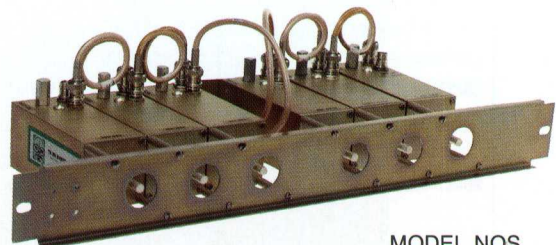
38-36-01A  
38-37-01A

(FRONT)



(REAR)

**PSEUDO-BANDPASS/NOTCH**  
19" RACK MOUNTS



(FRONT)

MODEL NOS.

30-36-01A	30-37-01A
30-36-02A	30-37-02A
30-36-03A	30-37-03A



(REAR)