



BAND-REJECT DUPLEXERS

MIN. FREQ. SPACING: 300 KHz

POWER: TO 350 WATTS

WP-637

WP-638

144-174 MHz



WP-637



WP-638

THESE BAND-REJECT TYPE DUPLEXERS are designed for use in duplex systems when the transmit and receive frequencies are close spaced. Temperature compensated, these models provide rated performance while handling transmitter powers up to 350 watts. The duplexers are also suitable for combining two transmitters or two simplex systems into a common antenna system. Optional items include a weather-resistant steel cabinet, and a duplexer installation kit for interconnecting the duplexer to the Tx and Rx chassis with double shielded coaxial cable.

MODEL WP-637 is designed for use with duplex stations operating in the 144-174 MHz band when the separation between transmit and receive frequencies is 0.5 MHz or more. It consists of six high Q, quarter-wave coaxial cavities interconnected in a band-reject duplexer configuration with double shielded coaxial cable. Duplex response curves on the back illustrate the typical insertion loss and isolation provided by the duplexer when operated at minimum frequency separation. As the separation becomes greater, the isolation remains the same but the insertion loss at the desired frequencies will be less. Model WP-204 weather-resistant steel cabinet is available as an optional item.

MODEL WP-638 is similar to the above model but, for improved isolation, includes four cavity filters in each section of the duplexer. Because of its greater isolation, this model is generally suitable for use with most duplex stations when the separation between transmit and receive frequencies is 0.3 MHz or more. It is commonly used at greater frequency spacing (0.5, 0.6 MHz) when the particular duplex station in use requires greater isolation than that provided by the six cavity model. Duplex response curves on the back illustrate the typical insertion loss

and isolation provided by the duplexer when operated at 0.5 MHz frequency separation. As the separation is decreased, the isolation will remain the same but the insertion loss at the duplex frequencies will be greater. Model WP-205 weather-resistant steel cabinet is available as an optional item.

CONSTRUCTION: To assure top performance and long life, quality materials are used throughout the duplexer. Cavity end plates and outer conductor are made of chromated aluminum; coupling loops are made of copper; both sections of cavity center conductor are made of silver plated copper. Galvanic corrosion is minimized by the use of similar materials or by passivating the dissimilar materials in contact.

FREQUENCY STABILITY of the duplexer is excellent. Since the resonant frequency of each cavity is determined by the length of the cavity center conductor, a threaded rod of "Invar" - a metal with nearly zero coefficient of expansion - is used to control the center conductor length. The duplexer will remain tuned over an extremely wide temperature range.

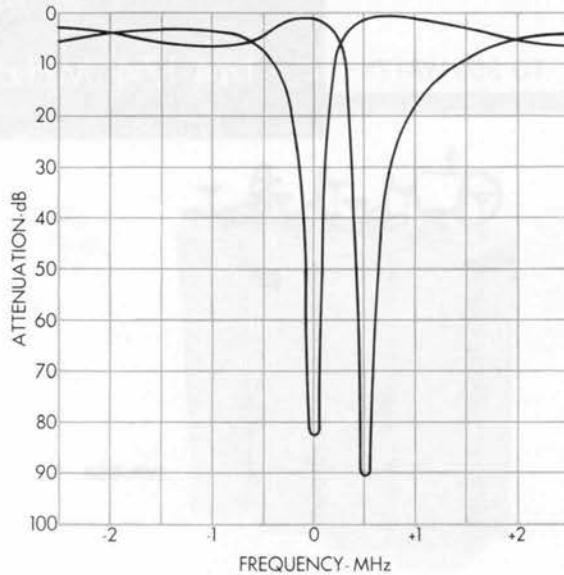
TUNING: The duplexer is factory tuned to the exact Tx and Rx frequencies prior to shipment from the factory and no further field adjustment is normally required. If desired, the duplexer can be field-tuned to new frequencies if appropriate measuring equipment is available.

INSTALLATION: The duplexer can be mounted in any position but is normally mounted vertically, with the tuning rods up. Double-shielded coaxial cable (RG-9, RG-142) must be used to interconnect these duplexers to the transmitter and receiver chassis if maximum isolation is to be maintained. A suitable duplexer installation kit (No. 30090) is available as an optional item.

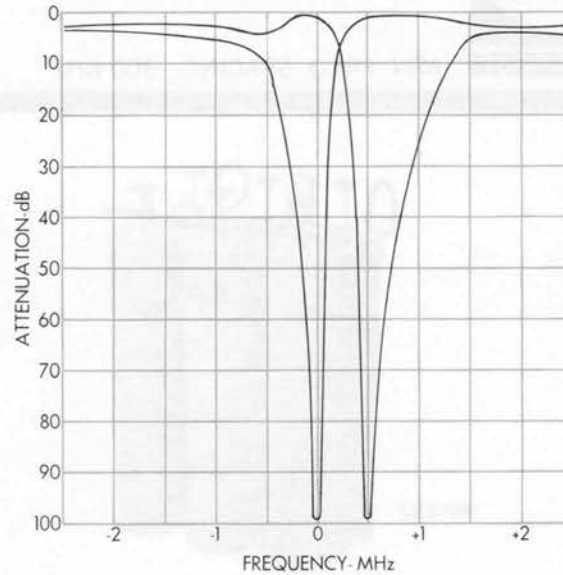
WACOM PRODUCTS, INC.

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TYPICAL DUPLEX RESPONSE CURVES



Model WP-637



Model WP-638

ELECTRICAL DATA

	Model WP-637	Model WP-638
Tuning Range	144-174 MHz	144-174 MHz
Minimum Frequency Separation	0.5 MHz or more	0.3 MHz or more
Maximum Power Input (continuous duty)	350 watts	350 watts
Insertion Loss (Tx and Rx)		
at 0.3 MHz separation	Not Applicable	2.2 dB
at 0.5 MHz separation	1.2 dB	1.2 dB
at 0.6 MHz separation	0.8 dB	1.0 dB
Isolation (Tx to Rx)		
at Tx frequency	80 dB	95 dB
at Rx frequency	80 dB	95 dB
Maximum VSWR (Ref. 50 ohms)	1.5 to 1	1.5 to 1
Temperature Range	-30°C to +60°C	-30°C to +60°C
Number of Cavity Filters	6	8

MECHANICAL DATA

	Model WP-637	Model WP-638
Duplexer Dimensions (D x W x H)		
with tuning rods fully extended	13" x 19" x 29"	13" x 25" x 29"
Connector Terminations (Tx, Rx, Ant)	UHF Female	UHF Female
Finish	Gray enamel	Gray enamel
Net Weight	38 lbs.	52 lbs.
Shipping Weight	45 lbs.	64 lbs.
Optional Weather Resistant Cabinet	WP-204	WP-205
Dimensions, cabinet, (D x W x H)	14" x 19 1/4" x 30"	14" x 25 1/2" x 30"
Net weight (cabinet only)	50 lbs.	67 lbs.
Shipping Weight (cabinet only)	75 lbs.	90 lbs.

ORDERING INFORMATION

Model WP-637 Duplexer with Tx on _____ MHz and Rx on _____ MHz
Model WP-638 Duplexer with Tx on _____ MHz and Rx on _____ MHz
Model WP-204 Optional Weather Resistant Cabinet for WP-637
Model WP-205 Optional Weather Resistant Cabinet for WP-638

When ordering
 specify exact
 Tx and Rx
 frequency.

