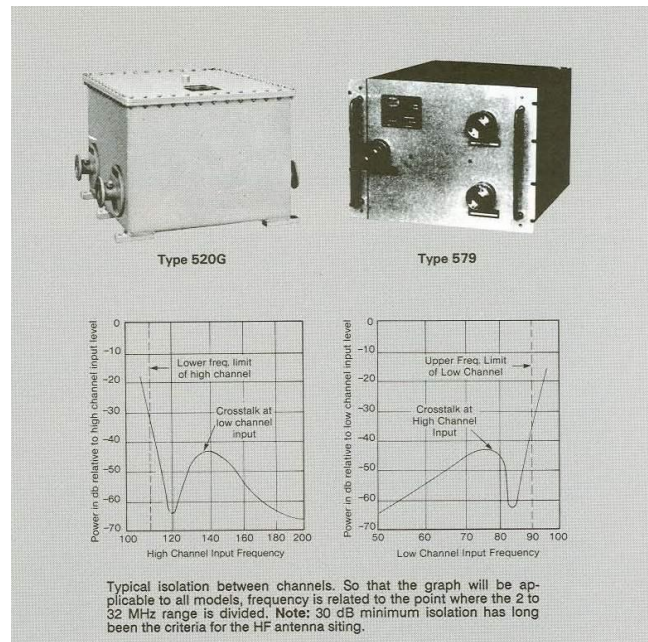


HF Antenna Multicouplers

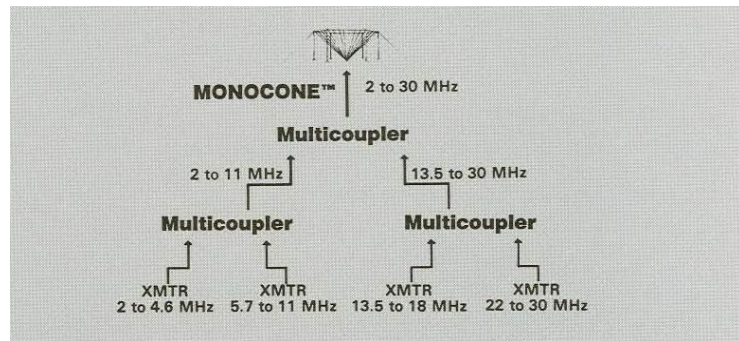
- 2-32 MHz frequency range
- 20 kW average, 40 kW peak power rating
- Natural air convection cooling
- 50 ohm coaxial input impedance
- 1.2:1 maximum insertion VSWR
- 3.0:1 allowable load VSWR
- 97% efficiency
- 30 dB port-to-port isolation (with matched load)
- -40°C to +50°C ambient temperature



General Description

The transmitting multicoupler connects two HF transmitters to a single broadband antenna, allowing each transmitter to operate simultaneously without significant insertion loss. Each transmitter operates as though the other were not in circuit—one performing in the lower portion of the antenna's frequency range and the other in the upper portion. A narrow "guard channel" of unusable frequencies separates the two channels.

A multicoupler consists of two bandpass filters and an output crossover network. Each filter is a network of passive, fixed-tuned elements which are permanently adjusted to pass all frequencies within the particular channel and to reject all frequencies allocated to the opposite channel.



Consequently, the transmitter frequency can be freely shifted within its respective channel without retuning the multicoupler.

Applications

The use of transmitting multicouplers in a communication network makes possible the use of full capability of modern broadband antennas. When receiving stations lie a differing distances within the direction pattern of a single antenna, the use of multicoupler permits simultaneous use of a "long-distance" and a "short-

distance" frequency, accommodating a second HF communication circuit on the antenna. The Model 520F, intended for shipboard applications, is in all respects electrically identical to the Model 520G. For new installations, consideration should be given to use of the Series 3000 SPIRA-CONE antenna which permits transmissions simultaneously on high- and low-angle modes without frequency restriction.

HF Antenna Multicouplers

Multicouplers may be cascaded to permit the use of more than two transmitters with one broadband. Their power ratings may be intermixed to obtain the lowest cost for a system.

Characteristics

Type Number	Power per Channel		Crossover Band*	Std. Connectors	
	Average	Peak		In	Out
579	2.5 kW	5 kW	16.5%	7/8"	7/8"
520G	10.0 kW	20 kW	16.5%	1-5/8"	1-5/8"
557	20 kW	40 kW	16.5%	1-5/8"	3-1/8"

* Upper limit of the lower channel must be at least this percentage below the lower limit of the upper channel.

Ordering Information

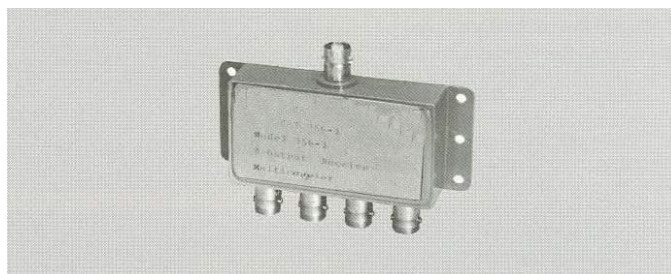
Typical Ranges of Lower and Upper Channels*

2.5 kW			10 kW	20 kW		
Type Nos.	Lower Channel	Upper Channel	Type Nos.	Type Nos.	Lower Channel	Upper Channel
579-21	2.0 to 3.50 MHz	4.20 to 32.0 MHz	520G-1	557-1	2.0 to 3.5 MHz	4.2 to 32.0 MHz
579-54	2.0 to 5.15 MHz	6.20 to 32.0 MHz	520G-7	557-7	2.0 to 4.75 MHz	5.7 to 32.0 MHz
579-71	2.0 to 6.00 MHz	7.20 to 32.0 MHz	520G-10	557-10	2.0 to 5.55 MHz	6.7 to 32.0 MHz
579-91	2.0 to 7.00 MHz	8.40 to 32.0 MHz	520G-6	557-6	2.0 to 7.30 MHz	8.8 to 32.0 MHz
579-113	2.0 to 8.10 MHz	9.75 to 32.0 MHz	520G-2	557-2	2.0 to 8.15 MHz	9.8 to 32.0 MHz
579-141	2.0 to 9.50 MHz	11.40 to 32.0 MHz	520G-9	557-9	2.0 to 9.55 MHz	11.45 to 32.0 MHz
579-150	2.0 to 9.95 MHz	11.95 to 32.0 MHz	520G-8	557-8	2.0 to 11.25 MHz	13.5 to 32.0 MHz
579-187	2.0 to 11.80 MHz	14.15 to 32.0 MHz	520G-3	557-3	2.0 to 12.5 MHz	15.5 to 32.0 MHz
579-231	2.0 to 14.00 MHz	16.80 to 32.0 MHz	520G-11	557-11	2.0 to 12.85 MHz	15.4 to 32.0 MHz
579-314	2.0 to 18.15 MHz	21.75 to 32.0 MHz	520G-5	557-5	2.0 to 13.4 MHz	16.1 to 32.0 MHz
			520G-4	557-4	2.0 to 18.35 MHz	22.0 to 32.0 MHz
			520G-15	557-15	2.0 to 14.1 MHz	16.9 to 32.0 MHz

* Other frequencies are available on special order.

HF Receiving Multicouplers

ASC Signal offers a range of passive multicouplers which simply divide the signal; the resultant 3 dB loss for each split is in no way significant, since the limiting atmospheric noise from the antenna is also reduced.



Characteristics

Frequency range, MHz	2-32 (usable 1.65-32)
Input Impedance	50 ohms unbalanced, input/output
Insertion loss (add 3 dB for each 2-way split)	
Model 356-1	0.5 dB
Model 356-2	0.7 dB
Model 356-3	0.75 dB
Output Isolation	30 dB
Input VSWR	1.3:1 maximum
Phase/Amplitude Balance	1°, 0.1 dB maximum

Ordering Information

Number of Outputs	2.0-32 MHz Freq. Range (1.65-32 Usable)	
	Type No.	
2	356-1	50 ohm
4	356-2	BNC
8	356-3	Connectors