EXPANDABLE MULTICOUPLERS

EXPANDABLE TX OR RX MULTICOUPLERS

The growing demand and the desirability of combining multiple frequencies on a common antenna with ease of expandability, required in many multicoupling systems, has resulted in the development of an expandable multicoupler for such applications.

Each multicoupler unit comprises one or more pass cavities and a single reject cavity, tuned to the same frequency. The reject cavity acts as a switch to maintain the correct impedance match at the junction, so that the wanted frequency channel has an easy path to and from the antenna.

The antenna feedthru line on each unit allows the remaining channel frequencies to pass into the chain, to and from the remaining multicoupler channels. There are no critical length cable to contend with between the multicoupler channels, so additional channels may be easily added in the field. Time "off the air" during channel expansion or frequency changes is therefore minimal.

Depending on the selectivity required and the frequency spacings in the multicoupling chain, our standard series of expandable multicouplers, comprised of a single, dual, or triple bandpass cavity will be sufficient for most applications and offer excellent system performance. The following models, along with their respective performance curves, will help you determine the best possible combination to use in planning your multicoupled system.

Please consult our representative to select the system components best suited to your needs.

EXPANDABLE TX OR RX "W CIRCUIT" MULTICOUPLERS

Due to limited tower sites and lack of antenna space on existing towers, many system planners are faced with adding closer-spaced frequencies into their existing multicoupled sites to offset the high costs of establishing a new tower site.

In many instances, these add-ons may create additional losses or cause system degradation of the existing multicoupling chain. When this happens, a new system is generally designed to accomodate these frequencies and in many cases, many advantages associated with multicoupling are lost due to poor system design. Flexibility and ease of expandability are normally some of the features forfeited.

Since more and more of these situations are occuring, we have developped an expandable "W" Series multicoupler unit, using our unique Dual Notch "W" Circuit. This new generation of multicouplers will allow much closer transmit-to receive frequency multicoupling than the conventional multicoupler, and maintain the flexibility and ease of expandability needed for future site planning.

Depending on the selectivity required and the frequency spacing, the performance curves of these units will be useful to determine the best possible combination to use in re-designing your existing multicoupled system. Other configurations of multicouplers are available to meet specific system requirements. Models using single or dual stage isolators are utilized to combine transmitters with close frequency spacing, particularly in combining multiple paging transmitters on one antenna.

Please consult our representative for additional informations on these products, or to select the system components best suited to your needs.

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Expandable Tx or Rx Multicouplers

MC-1517 • 1527 • 1537

132-174 MHz

This multicoupler series combine a reject cavity with one, two or three bandpass cavities to provide maximum isolation between two or more frequencies on the same antenna, based on interchannel spacing and system requirements.

Features

- Unique loop & harness design
- Tunable over entire range (132-174 MHz) with same harness
- Non critical cable length between channels for minimal «off the air» time during channel expansion and ease of expandability.
- Temperature compensated to assure consistent performance
- Factory adjusted selectivity settings to maximize system performance
- Rotatable loops for other selectivity settings to minimize interference
- Field Tunable
- Various configurations available to meet specific system requirements such as:
- Single or dual stage isolators for close frequency transmitters and/or, one or more «W» circuit cavities to improve isolation at extremely close Tx to Rx frequency separation.

Electrical Specifications		MC-1517	MC-1527	MC-1537
Frequency Range:	MHz		132-174	
Interchannel Spacing:	MHz		See curves	
Insertion Loss:				
Antenna Thruline	dB		0.2	
Equipment to Antenna	dB	0.7,1.2,3.2	1.2,2.2,3.2	1.7 or 3.2
Isolation:	dB		See curves	
VSWR at Resonance:	(max.)		1.5:1	
Power Rating:	watts		400	
Temperature Range:	Deg.		-40 C to +60 C	
Termination:			Type «N» Female	

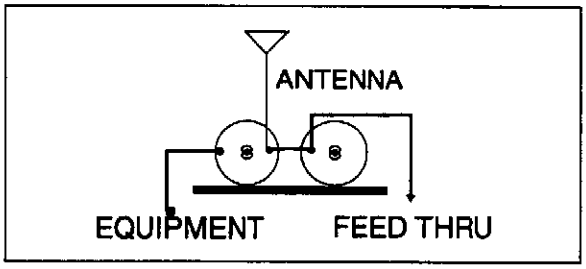
VSWR is referenced to 50 ohms.
Specify frequency and insertion loss when ordering.

Mechanical Specifications		MC-1517	MC-1527	MC-1537
Height:	in. (mm)		32.5 (826)	
Width:	in. (mm)		19 (483)	
Depth:	in. (mm)	7.0 (178)	14 (356)	14 (356)
Weight:	lbs. (kg)	21 (9.5)	31 (14.1)	41 (18.6)

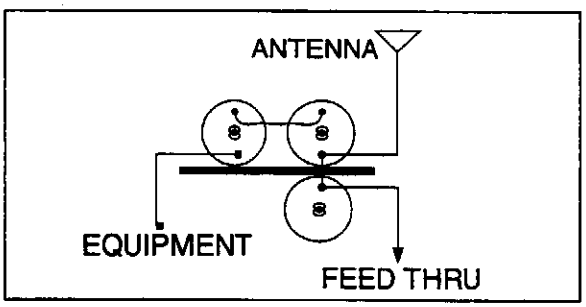
Mounting Information

Multicoupler mounts on 19 in. (483 mm) rack protruding 7 in. (178 mm) forward of rack. Cavities are oriented vertically.

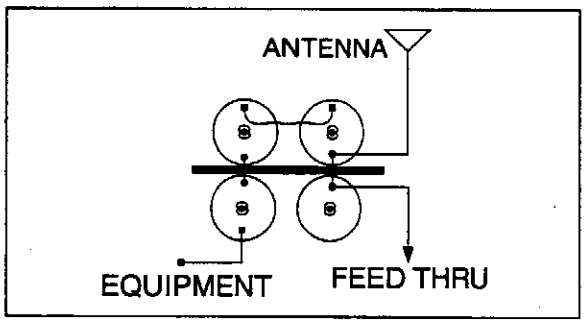
MC-1517



MC-1527



MC-1537



(Performance curves on reverse page)

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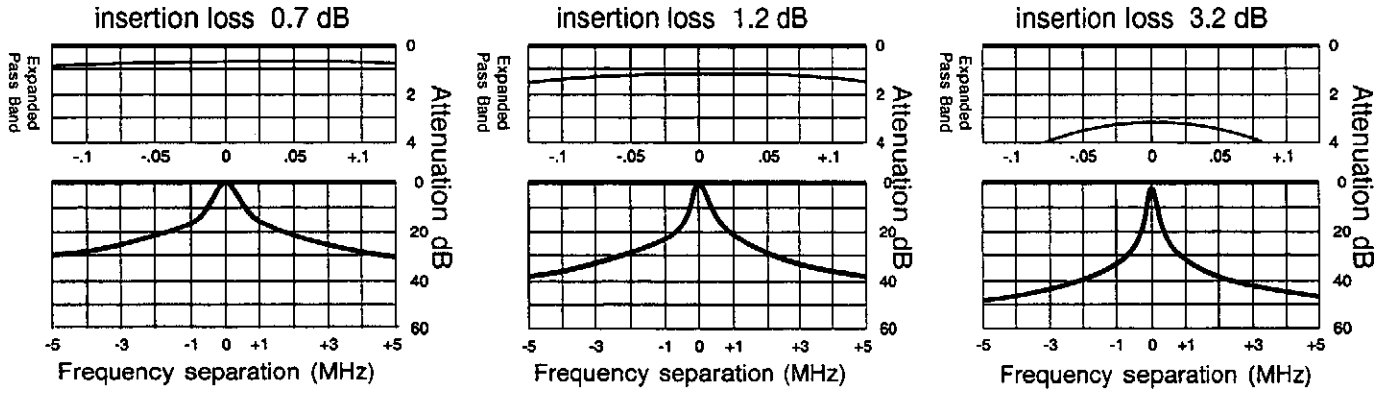
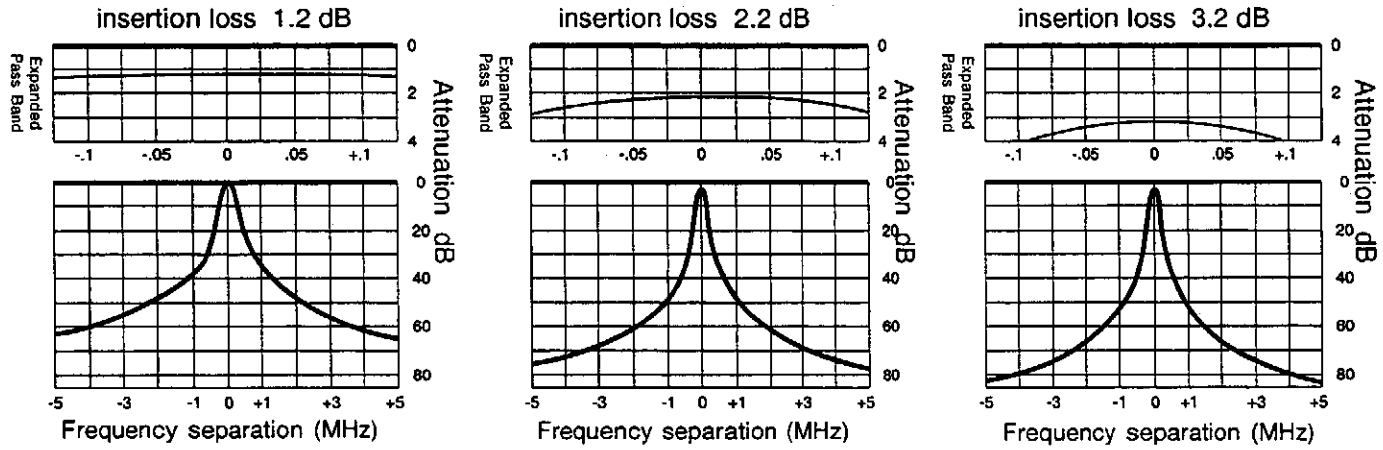
Expandable Tx or Rx Multicouplers
MC-1517 • 1527 • 1537

132-174 MHz

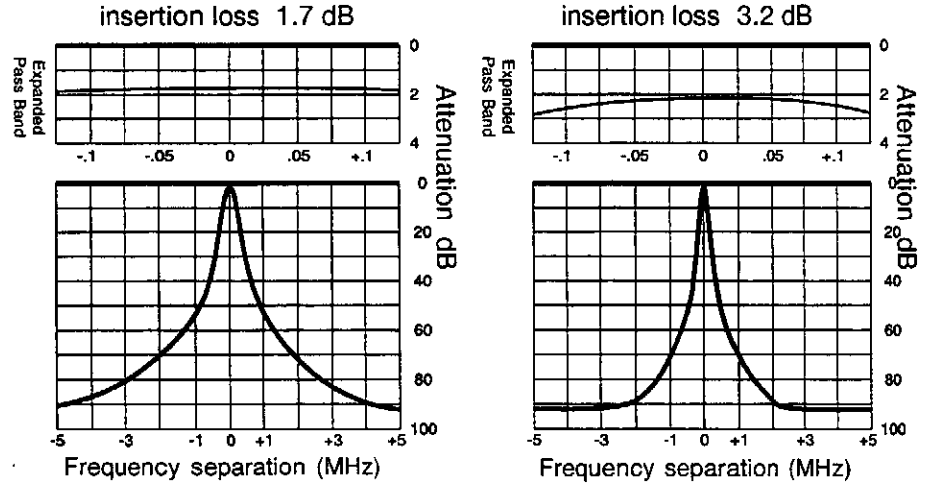
MC-1517



MC-1527



MC-1537



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Expandable Tx or Rx Multicouplers
MC-4517 • 4527 • 4537

406-512 MHz

Features

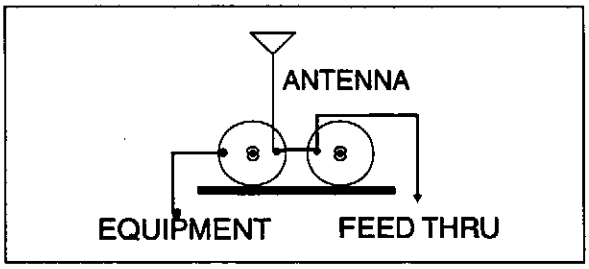
- Unique loop & harness design
- Tunable over entire range (406-512 MHz) with same harness
- Non critical cable length between channels for minimal «off the air» time during channel expansion and ease of expandability.
- Temperature compensated to assure consistent performance
- Factory adjusted selectivity settings to maximize system performance
- Rotatable loops for other selectivity settings to minimize interference
- Field Tunable
- Various configuration available to meet specific system requirements such as:
- Single or dual stage isolators for close frequency transmitters and/or, one or more «W» circuit cavities to improve isolation at extremely close Tx to Rx frequency separation.

This multicoupler series combine a reject cavity with one, two or three bandpass cavities to provide maximum isolation between two or more frequencies on the same antenna, based on interchannel spacing and system requirements.

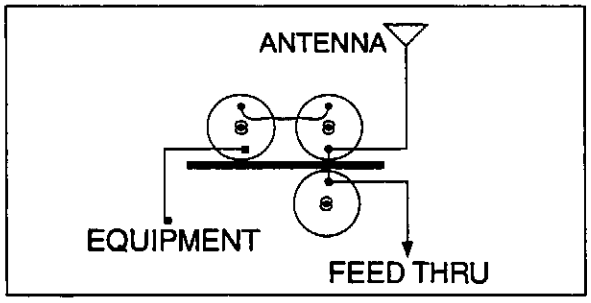
Electrical Specifications		MC-4517	MC-4527	MC-4537
Frequency Range:	MHz		406-512	
Interchannel Spacing:	MHz		See curves	
Insertion Loss:				
Antenna Thruline	dB		0.2	
Equipment to Antenna	dB	0.7,1.2,3.2	1.2,2.2,3.2	1.7 or 3.2
Isolation:	dB		See curves	
VSWR at Resonance:	(max.)		1.5:1	
Power Rating:	watts		300	
Temperature Range:	Deg.		-40 C to +60 C	
Termination:			Type «N» Female	

VSWR is referenced to 50 ohms.
Specify frequency and insertion loss when ordering.

MC-4517



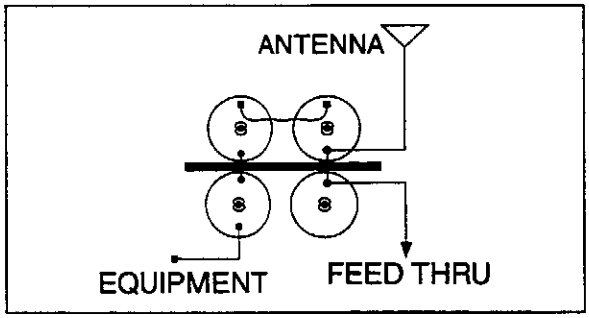
MC-4527



Mechanical Specifications		MC-4517	MC-4527	MC-4537
Height:	in. (mm)		16 (406)	
Width:	in. (mm)		19 (483)	
Depth:	in. (mm)	7.0 (178)	14 (356)	14 (356)
Weight:	lbs. (kg)	13 (5.9)	19 (8.6)	25 (11.4)

Mounting Information
Multicoupler mounts on 19 in. (483 mm) rack protruding 7 in. (178 mm) forward of rack. Cavities are oriented vertically.

MC-4537



(Performance curves on reverse page)

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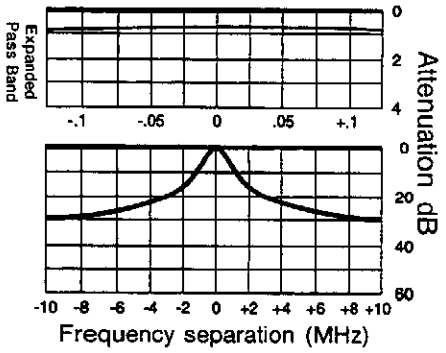
Expandable Tx or Rx Multicouplers
MC-4517 • 4527 • 4537

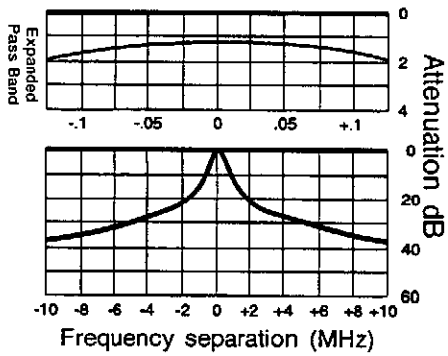
406-512 MHz

MC-4517

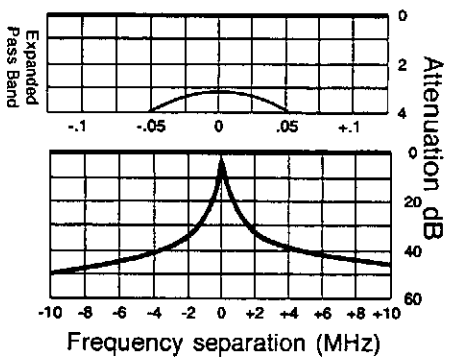
insertion loss 0.7 dB



insertion loss 1.2 dB

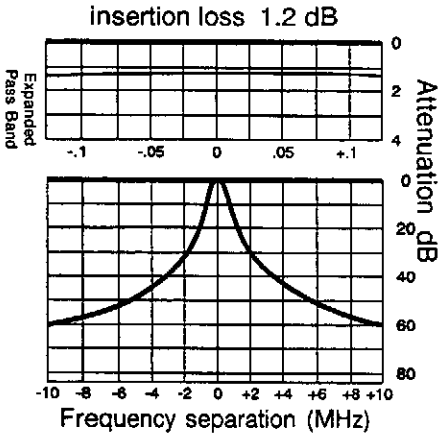


insertion loss 3.2 dB

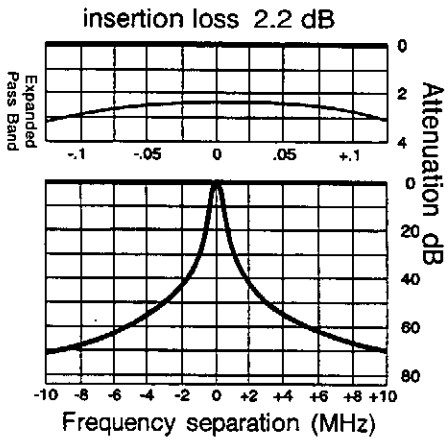


MC-4527

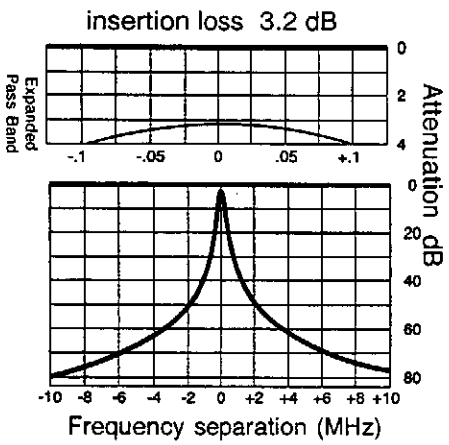
insertion loss 1.2 dB



insertion loss 2.2 dB

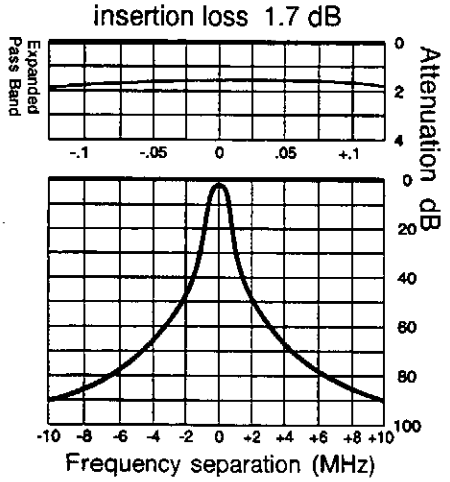


insertion loss 3.2 dB

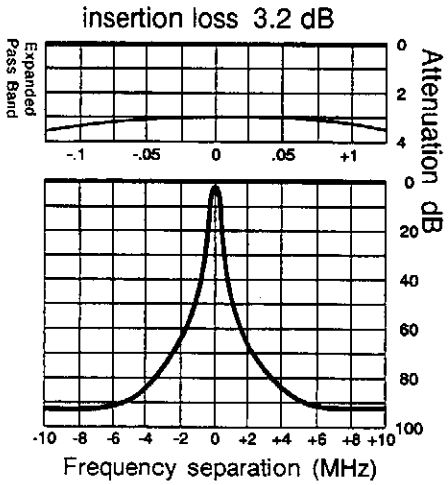


MC-4537

insertion loss 1.7 dB



insertion loss 3.2 dB



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MODULAR SERIES

Compact Expandable Tx or Rx Multicoupler MC-1534

132-174 MHz

This modular 4 cavity multicoupler provides superior isolation at close-space frequencies with minimal insertion loss in a compact design when space is the prime consideration.

Features

- Special circuit configuration and harness design for increased isolation at close-space frequencies
- Tunable over entire range (132-174 MHz) with same harness
- Modular construction - 2 or more units can be grouped in the same rack space which a single conventional multicoupler occupies
- Non critical cable length between channels for minimal «off the air» time during channel expansion and ease of expandability
- Temperature compensated for consistent performance
- Factory adjusted selectivity settings to maximize system performance
- Rotatable loops for other selectivity settings to minimize interference
- Field tunable
- Various configurations available to meet specific system requirements and to improve performance

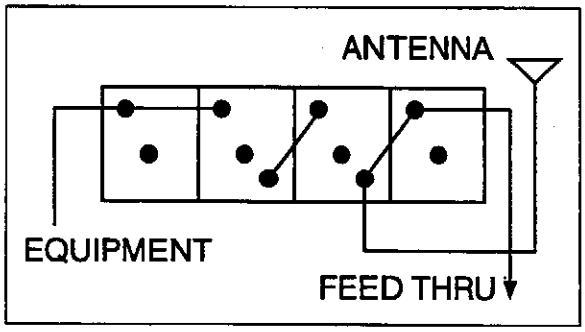
Electrical Specifications		MC-1534
Frequency Range:	MHz	132-174
Interchannel Spacing:	MHz	See curves
Insertion Loss:		
Antenna Thruline	dB	0.2
Equipment to Antenna	dB	1.6 or 3.1
Isolation:	dB	See curves
VSWR at Resonance:	(max.)	1.5:1
Power Rating:	watts	400
Temperature Range:	Deg.	-40 C to +60 C
Termination:		Type «N» Female

VSWR is referenced to 50 ohms.
Specify frequency and insertion loss when ordering.

Mechanical Specifications		MC-1534
Height:	in. (mm)	32.5 (826)
Width:	in. (mm)	19 (483)
Depth:	in. (mm)	5 (127)
Weight:	lbs. (kg)	41 (18.6)

Mounting Information
Multicoupler mounts verticaly on 19 in. (483 mm) rack.

MC-1534



(Performance curves on reverse page)

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MODULAR SERIES

Compact Expandable Tx or Rx Multicoupler MC-1534

132-174 MHz

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Electrical Specifications		MC-1534
Frequency Range:	MHz	132-174
Interchannel Spacing:	MHz	See curves
Insertion Loss:		
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VSWR is referenced to 50 ohms.
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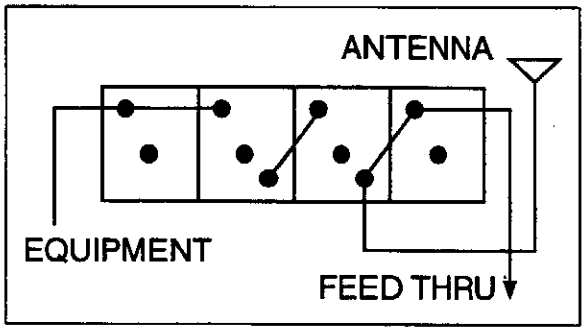
Width:	in. (mm)	19 (483)
Depth:	in. (mm)	5 (127)
Weight:	lbs. (kg)	41 (18.6)

Mounting Information
Multicoupler mounts verticaly on 19 in. (483 mm) rack.

MC-1534



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MODULAR SERIES

Compact Expandable Tx or Rx Multicoupler MC-4534

406-512 MHz

Features

- Special circuit configuration and harness design for increased isolation at close-space frequencies
- Tunable over entire range (406-512 MHz) with same harness
- Modular construction - 2 or more units can be grouped in the same rack space which a single conventional multicoupler occupies
- Non critical cable length between channels for minimal «off the air» time during channel expansion and ease of expandability
- Temperature compensated for consistent performance
- Factory adjusted selectivity settings to maximize system performance
- Rotatable loops for other selectivity setting to minimize interference
- Field tunable
- Various configurations available to meet specific system requirements and to improve performance

This modular 4 cavity multicoupler provides superior isolation at close-space frequencies with minimal insertion loss in a compact design when space is the prime consideration.

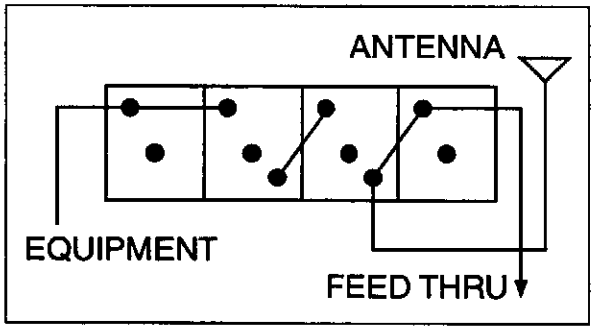
Electrical Specifications		MC-4534
Frequency Range:	MHz	406-512
Interchannel Spacing:	MHz	See curves
Insertion Loss:		
Antenna Thruline	dB	0.2
Equipment to Antenna	dB	2.2 or 3.2
Isolation:	dB	See curves
VSWR at Resonance:	(max.)	1.5:1
Power Rating:	watts	300
Temperature Range:	Deg.	-40 C to +60 C
Termination:		Type «N» Female

VSWR is referenced to 50 ohms.
Specify frequency and insertion loss when ordering.

Mechanical Specifications		MC-4534
Height:	in. (mm)	16 (406)
Width:	in. (mm)	19 (483)
Depth:	in. (mm)	5 (127)
Weight:	lbs. (kg)	25 (11.4)

Mounting Information
Multicoupler may be mounted horizontaly for reduced rack space or verticaly on 19 in. (483 mm) rack.

MC-4534



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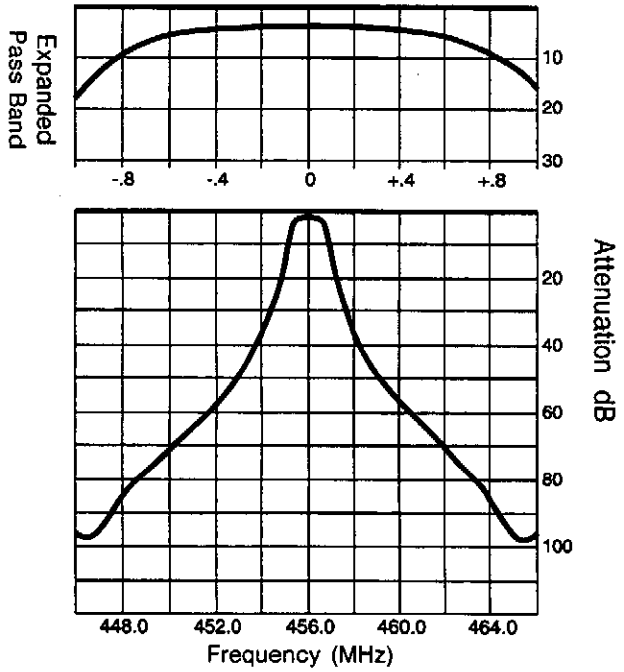
MODULAR SERIES

Compact Expandable Tx or Rx Multicoupler **MC-4534**

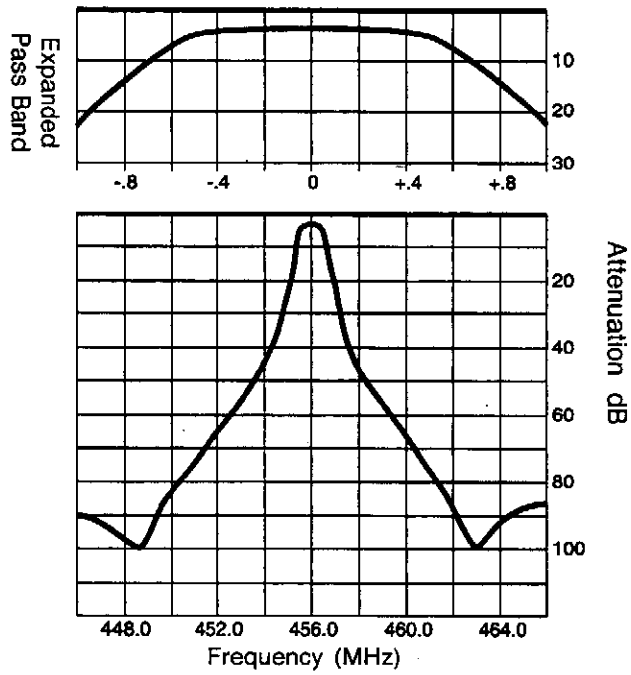
406-512 MHz

MC-4534

insertion loss 1.6 dB



insertion loss 2.2 dB



insertion loss 3.1 dB