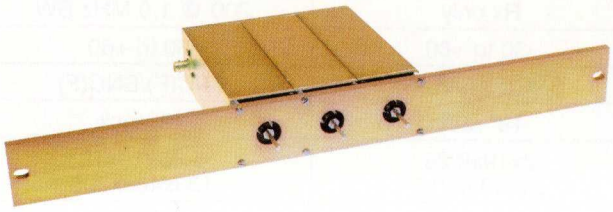
Cavity PRESELECTORS

In Ranges of:
406-512 MHz
406-430 MHz
450-470 MHz



Model 89-67-02A

Model 89-65-01A, 89-70-01A

General Description

Two types of cavity preselectors are offered to meet a broad variety of UHF system applications.

A low-cost, fixed-passband preselector utilizes 2" (51 mm) square cavities which provide excellent selectivity in a small package. It is recommended for applications in which system receive frequencies are within a 1-MHz or narrower passband, and sufficient space isolation exists to satisfy carrier suppression requirements with guardbands of 2 MHz or more.

Two high-performance preselectors utilize 4" (102 mm) cavities to provide excellent selectivity, low insertion loss and power handling capability of up to 200 watts. Customer-specified bandwidths of 0.5 to 2 MHz can be set at the factory. These preselectors are used in receiving system applications which require high skirt selectivity at bandwidths narrower than those available in combline preselectors. They can also be used as post-combiner filters in multichannel, low-power transmitter systems of the type used in telemetry, control and radiotelephone applications.

Compact 2" Preselector

Model **89-67-02A** consists of three iris-coupled, 2-inch square cavities. Its overall size of only 2" H x 19" W x 8.25" D (51 x 483 x 210 mm) makes easy to install in only 2" of vertical rack panel space.

It provides a fixed passband which varies from 0.6 to 1 MHz over a broad tuning range of 406 to 512 MHz, at a maximum VSWR of 1.3:1 and maximum insertion loss of 3 dB at the passband edges. Typical selectivity is greater than 46 dB at frequencies 4 MHz above or below the passband edges.

Due to its excellent selectivity and small size, Model **89-67-02A** is often the optimum choice for dual-antenna UHF multicoupler systems.

High-Performance 4" Preselectors

Models **89-65-01A** (406-430 MHz) and **89-70-01A** (450-470 MHz) utilize four 4-inch bandpass cavities in series. They provide a relatively flat passband, low insertion loss and sharp skirt selectivity. Both models can be adjusted at the factory to produce customer-specified passbands of 0.5 to 2.0 MHz.

Typical selectivity increases as pass bandwidth decreases. With the cavities set for a 0.5 MHz passband, selectivity is greater than 71 dB at frequencies 4.5 MHz above or below the passband edges. Selectivity for a 1-MHz passband is greater than 61 dB at frequencies 4.5 MHz above or below the passband edges.

Models **89-65-01A** and **89-70-01A** can also be used as post-combiner filters which provide large amounts of transmitter noise suppression, without requiring a large installation volume. Maximum total input power is a function of filter bandwidth. It varies from 125 watts when the passband is set to 0.5 MHz, to 250 watts for a 2-MHz passband.

Construction

All TX RX Systems' cavity preselectors are made of corrosion-resistant alodined aluminum alloy. Cavity tuning assemblies are made of silver-plated copper and brass to achieve high performance.

Stainless steel hardware is used to guarantee durability and stable long-term performance. Critical parts are manufactured with numerically-controlled machines to achieve precise mechanical assembly and repeatable performance. Careful attention has been paid to temperature compensation over the range of -30° to +60° C.

To assure quality and performance, each preselector is tuned to customer-specified frequencies and tested with laboratory-quality network analyzers.

RF SYSTEM PRODUCTS: PRESELECTORS, 406-512 MHz

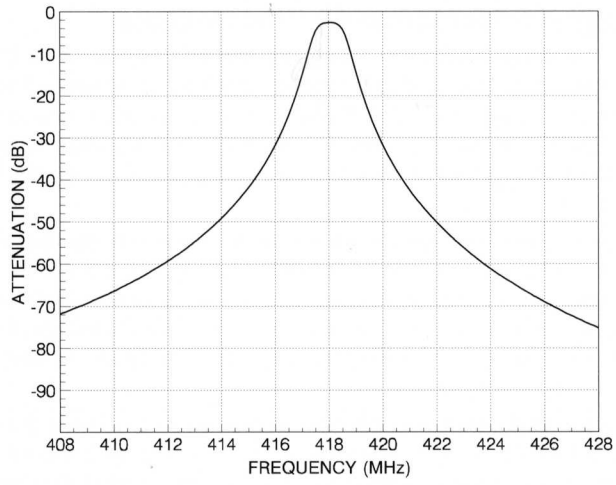
TX RX SYSTEMS INC. 8625 INDUSTRIAL PARKWAY, ANGOLA, NY 14006-9696
TELEPHONE 716-549-4700 FAX 716-549-4772 (24 HRS.)
A MEMBER OF BIRD TECHNOLOGIES GROUP

C1023L91

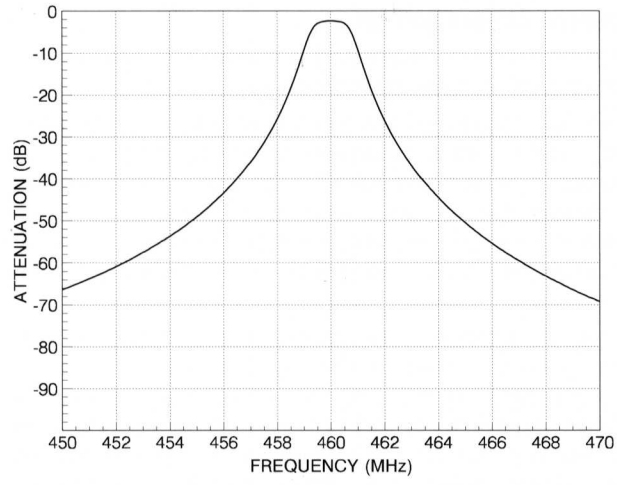
Technical Specifications - Cavity Preselectors	89-67-02A		89-65-01A	89-70-01A
Frequency Range, MHz	406-512		406-430	450-470
Number of Cavities	3 x 2"		4 x 4"	
Pass Bandwidth, MHz	0.6 (Fixed)	1.0 (Fixed)	0.5 to 2.0	
Specification Bandwidth, MHz	0.6	1.0	1.0	
Insertion Loss, dB @ Fo MHz	2.6 @ 418	2.5 @ 460	1.6 @ 1 MHz BW	
Passband Insertion Loss, dB	3.1	3.0	17 (1.3:1)	
Typical Selectivity @ Fo ± 4.5 MHz	>52 dB	>46 dB	>61 dB	
Return Loss, dB (VSWR)	20 (1.22:1)	17 (1.3:1)	17 (1.3:1)	
RF Power, W	Rx only		200 @ 1.0 MHz BW	
Temperature Range, ° C	-30 to +60		-30 to +60	
Connectors, Antenna/Output	BNC(F)/BNC(F)		BNC(F)/BNC(F)	
Mounting	19" rack		19" rack	
Dimensions, HxWxD inches mm	2x19x8.25 51x483x210		5.25x19x12 133x483x305	
Shipping Weight, lb (Kg)	6.0 (2.7)		14.0 (6.3)	

Typical Frequency Response Curves

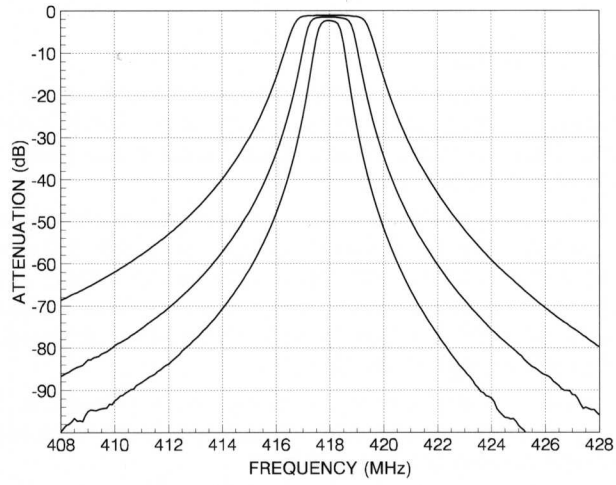
Model 89-67-02A (Fo = 418 MHz)



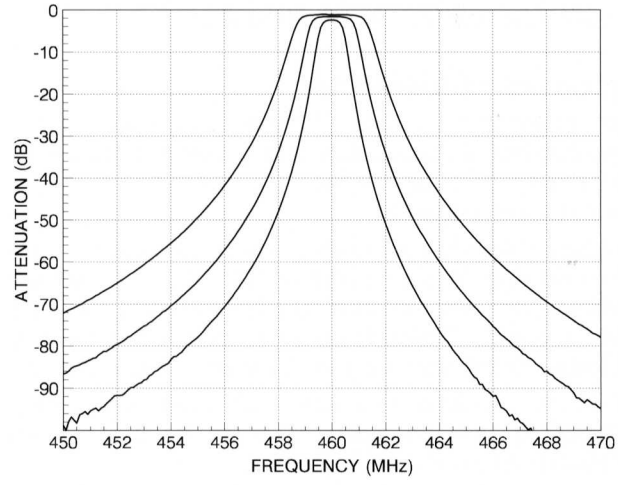
Model 89-67-02A (Fo = 460 MHz)



Model 89-65-01A (Fo = 418 MHz, 0.5 - 2 MHz BW)



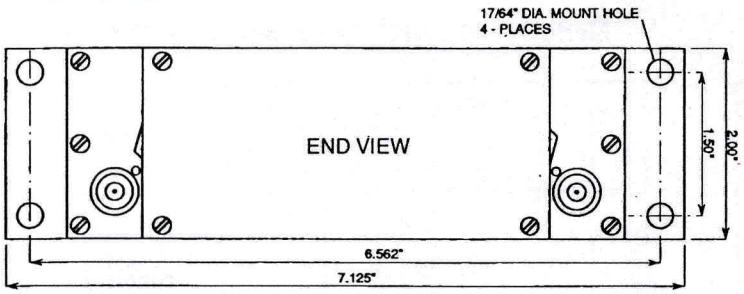
Model 89-70-01A (Fo = 460 MHz, 0.5 - 2 MHz BW)

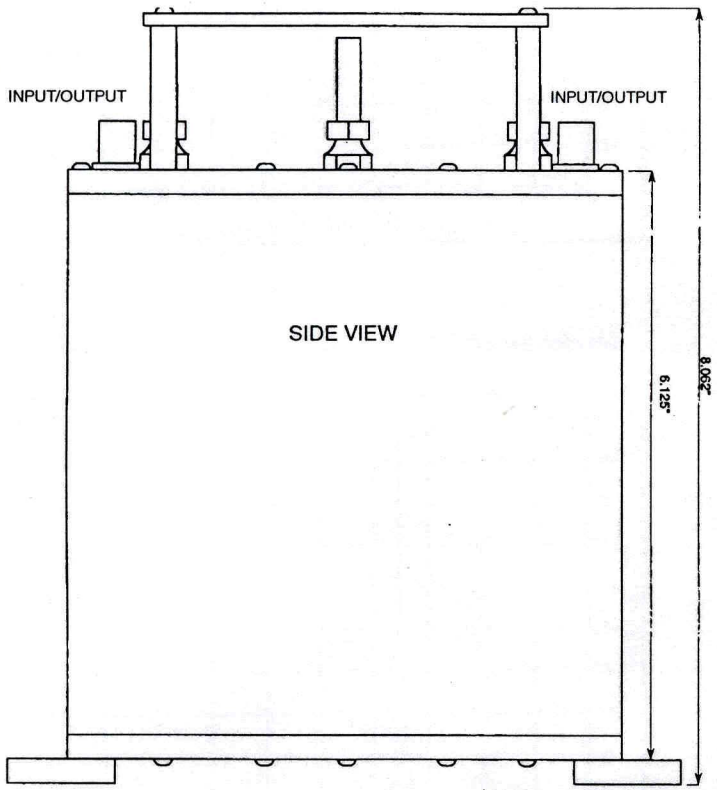


The above frequency response curves are direct plots of data obtained with a Hewlett Packard Model 8752B network analyzer. They represent the performance of randomly-selected production models.

PRESELECTOR FILTER MODEL 89-70-2201K

Specification and Information Sheet





General Description

Model 89-70-2201K uses an iris coupled bandpass filter design and is intended for use as an add-on filter for receivers or receiving systems to prevent or reduce RF interference. This three section filter provides a selective, response curve with an ultimate rejection exceeding -100 dB and is free of spurious responses from 0.3 to 1300 MHz. A complete set of response curves appears on the back of this sheet.

Mechanical Features

This unit features a special protective cover over the three tuning rods to prevent accidental detuning of the filter. Heavy gauge aluminum mounting brackets are provided on the filter base for securely attaching the filter to other equipment. BNC female connectors are provided for input and output connections.

Construction

All TX RX Systems iris coupled preselectors are made of corrosion-resistant alodined aluminum alloy, with silver-plated resonator tuning assemblies and stainless steel hardware to guarantee stable long-term performance.

Critical parts are manufactured with numerically-controlled machines to achieve uniform, repeatable performance from one production run to another.

Technical Specifications	89-70-2201K
Frequency Range, MHz	450-470
Type	RX Iris Coupled
Number of Resonators	3
Pass Bandwidth, MHz	1
Insertion Loss @ Fo, dB	2.5
Maximum Passband Insertion Loss, dB	3.2
Typical Selectivity	See performance curves on back page
Passband Return Loss, dB (VSWR)	15 (1.5:1)
Temperature Range, °C	-30 to +60
Connectors, Antenna/Input	BNC(F)/BNC(F)
Dimensions, HxWxD inches (mm)	8.062 x 7.125 x 2.00 (205 x 181 x 51)
Mounting	4 holes for 1/4" mounting screws or bolts
Net Weight, lb (Kg)	2 (.9)

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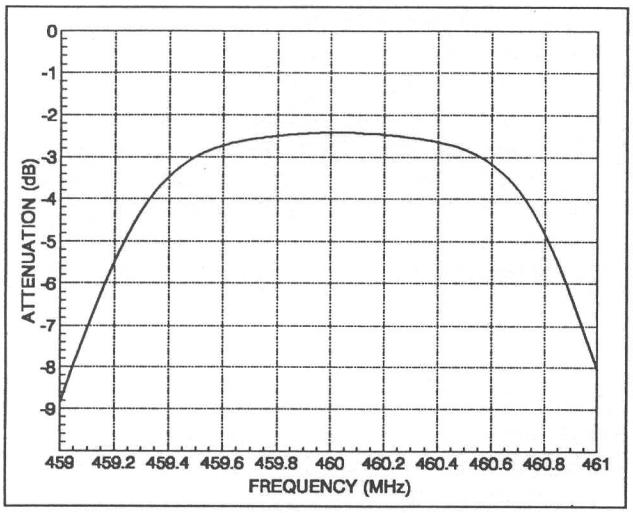
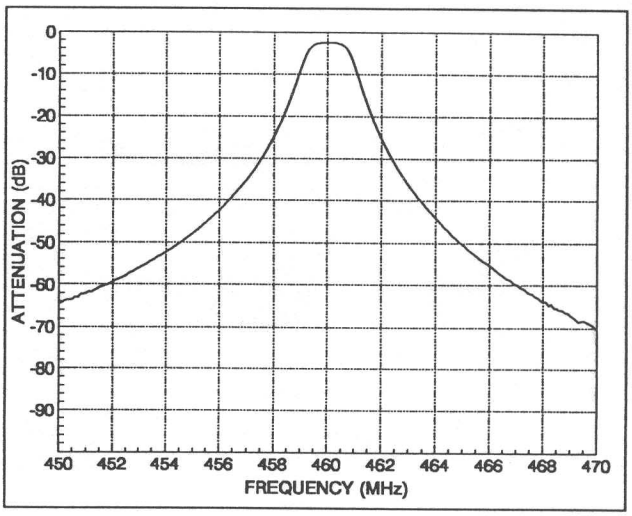
TELEPHONE 716-549-4700 FAX 716-549-4772 (24 HRS.)

Typical Frequency Response Curves

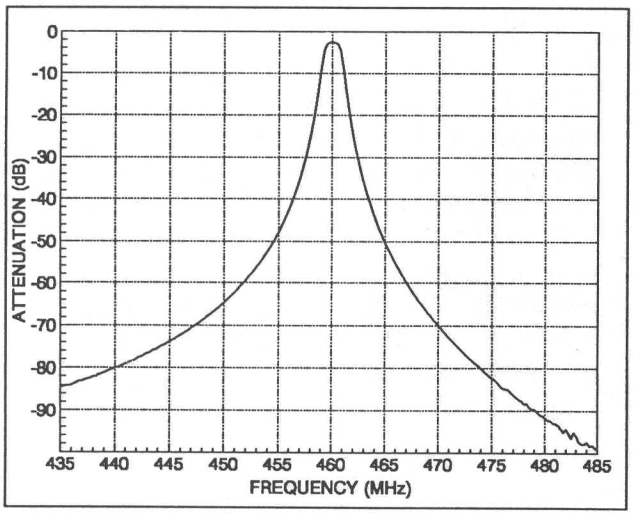
Model 89-70-2201K Expanded Passband



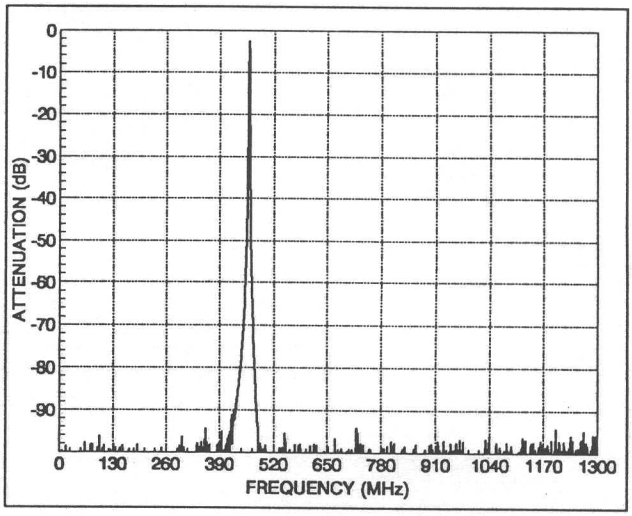
Model 89-70-2201K Response Over 20 MHz



Model 89-70-2201K Response Over 50 MHz



Model 89-70-2201K Response Over 1300 MHz



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