

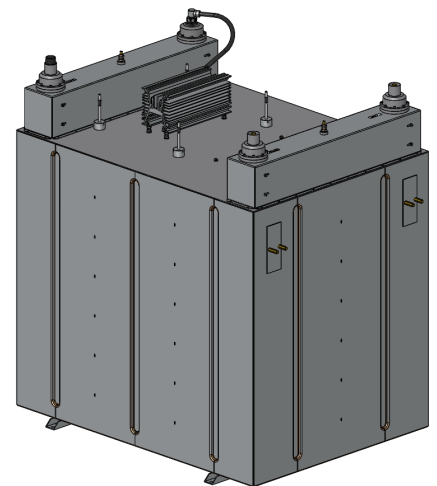


RFS offers a comprehensive range of FM combiners to suit all common FM combining applications. The balanced, or constant impedance, bandpass design provides the best possible frequency response and specifications, and is ideal for large multi-station channel combiners or when frequency spacings are very close.

A balanced module consists of a balanced pair of bandpass filters, two 3dB couplers and a balancing load. The narrowband input corresponds to the filter resonant frequency, whereas the wideband input can be any other frequency in the 87.5 - 108 MHz band. The wideband input signal loss is very low because it does not pass through the bandpass filters. Modules can therefore be cascaded to form a multichannel combiner. The modular design enables extra channels to be easily added at a future date.

FEATURES / BENEFITS

- Compact size with small footprint for design power rating
- Can be field retuned to any frequency in the 87.5 - 108MHz band
- Invar temperature compensation for stable operation
- Vertical entry and exit without additional elbows
- Natural convection cooling
- Group delay corrector modules are available for complex multichannel systems
- Integrated coupler and filter design for high reliability
- Custom options with U-Links, motorised coaxial switches, monitoring systems, etc. are available



Balanced FM Combiner with Integrated Couplers on 3 Pole 400mm Filters

Technical features

STRUCTURE

Product Line		Combiner Radio		
Product Type		Band II (VHF) FM Balanced Combiner		
Filter Type and Size		3 Pole, 400mm		

ELECTRICAL SPECIFICATIONS

Frequency Range	MHz	87.5 - 108		
Impedance	Ω	50		
Minimum Channel Spacing	MHz	0.8	0.6	0.4
Narrowband Input Power	kW	9 (Temp Rise: 30°C) 12 (Temp Rise: 40°C)	7 (Temp Rise: 30°C) 10 (Temp Rise: 40°C)	5.5 (Temp Rise: 30°C) 7.5 (Temp Rise: 40°C)
Narrowband Insertion Loss	dB	<0.3	<0.4	<0.48
Amplitude Variation	dB	< 0.1 to ±200 kHz	< 0.1 to ±150 kHz	< 0.1 to ±100 kHz
Group Delay	ns	< 28 to ±100 kHz	< 68 to ±100 kHz	< 390 to ±100 kHz
Wideband Input Insertion Loss	dB	≤0.1		
Return Loss	dB	>30		
Isolation - N/B to W/B	dB	>32		
Isolation - W/B to N/B	dB	>50		
Input Connector		3-1/8" EIA (unflanged female) (Note 1)		
Wideband Input Connector		3-1/8" EIA (unflanged female) (Note 1)		
Output Connector		3-1/8" EIA (unflanged female) (Note 1)		
Maximum Output Power	kW	50		

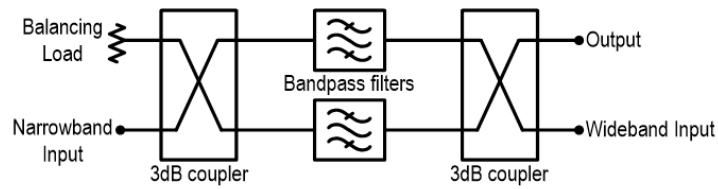


MECHANICAL SPECIFICATIONS

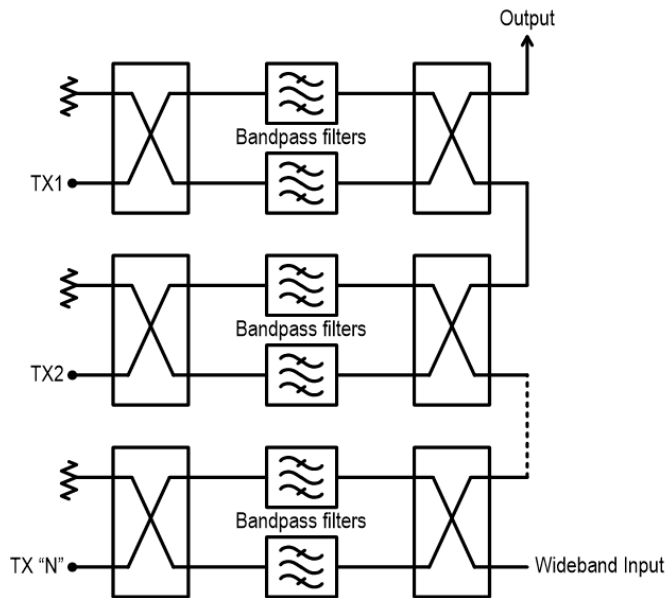
Weight	kg (lb)	145 (230)
Dimensions (Height or Length)	cm (in)	130 (51)
Dimensions (Width)	cm (in)	124 (49)
Dimensions (Depth)	cm (in)	91 (36)
Cooling		Natural convection

TEMPERATURE SPECIFICATIONS

Maximum Operating Temperature	°C (°F)	80 (176)
Ambient Temperature Range	°C (°F)	-5 to 55 (23 to 131)
Maximum Temperature Rise	°C (°F)	40 (104)
Humidity	%	95, non-condensing



Balanced combiner configuration



Multi-station combiner arrangement

External Document Links

Notes

- Note 1. Other connectors are available on request