



Filters for VHF band

| Model | Short description | Band, MHz |
|--|---|-----------|
| PF4-1V | Single Cavity, 4", 200 W, N-fem. | 140-174 |
| PF5-1V | Bandpass Single Cavity, 5", 200 W, N-fem., $Q(0,707)@il-1dB=500$ | 140-174 |
| PF5-2V | Bandpass Dual Cavity, 5", N-fem., 200 W, $1/4\lambda$ | 140-174 |
| PF5-3V | Bandpass Triple Cavity, 5", N-fem., 200 W | 140-174 |
| PF8-1V | Bandpass Single Cavity, 8", N-fem., 300 W, $1/4\lambda$, $Q(0,707)@il-1dB=700$ | 140-174 |
| PF8-2V | Bandpass Dual Cavity, 8", N-fem., 300 W, $1/4\lambda$ | 140-174 |
| PF8-3V | Bandpass Triple Cavity, 8", N-fem., 300 W, $1/4\lambda$ | 140-174 |
| PF10-1V | Bandpass Single Cavity, 10", N-fem., 300 W, $1/4\lambda$, $Q(0,707)@il-1dB=800$ | 140-174 |
| PF10-2V | Bandpass Dual Cavity, 10", N-fem., 300 W, $1/4\lambda$ | 140-174 |
| PF12-1V | Bandpass Single Cavity, 12", N-fem., 350 W, $1/4\lambda$, $Q(0,707)@il-1dB=950$ | 140-174 |
| PF12-2V | Bandpass Dual Cavity, 12", N-fem., 350 W, $1/4\lambda$ | 140-174 |
| RF5-1V | Bandreject Single Cavity, 5", N-fem., -20 dB @ Δf BP/BR=400 kHz | 140-174 |
| RF5-2V | Bandreject Dual Cavity, 5", N-fem., -50 dB @ Δf BP/BR=400 kHz | 140-174 |
| RF8-1V | Bandreject Single Cavity, 8", N-fem., -20 dB @ Δf BP/BR=300 kHz | 140-174 |
| RF8-2V | Bandreject Dual Cavity, 8", N-fem., -60 dB @ Δf BP/BR=300 kHz | 140-174 |
| PRF5-1V | Bandpass/bandreject Single Cavity, 5", N-fem., -35 dB @ Δf BP/BR=0,7 MHz | 140-174 |
| PRF5-2V | Bandpass/bandreject Dual Cavity, 5", N-fem., -75 dB @ Δf BP/BR=0,6 MHz | 140-174 |
| PRF8-1V | Bandpass/bandreject Single Cavity, 8", N-fem., -35 dB @ Δf BP/BR=0,6 MHz | 140-174 |
| PRF8-2V | Bandpass/bandreject Dual Cavity, 8", N-fem., -75 dB @ Δf BP/BR=0,5 MHz | 140-174 |
| PRF10-1V | Bandpass/bandreject Single Cavity, 10", N-fem., -35 dB @ Δf BP/BR=0,4 MHz | 140-174 |
| PRF10-2V | Bandpass/bandreject Dual Cavity, 10", N-fem., -75 dB @ Δf BP/BR=0,3 MHz | 140-174 |
| PF5-2HAM-200, PF5-3HAM-400 | Bandpass filters for EME, N-female, 5" | 144-146 |
| PF8-2HAM-100, PF8-2HAM-250, PF8-3HAM-300 | Bandpass filters for EME, N-female, 8" | 144-146 |
| PF10-2HAM-100 | Bandpass filters for EME, N-female, 10" | 144-146 |



140-174 MHz Bandpass filter PF4-1V



PF4-1V



PF4-2V



PF4-3V

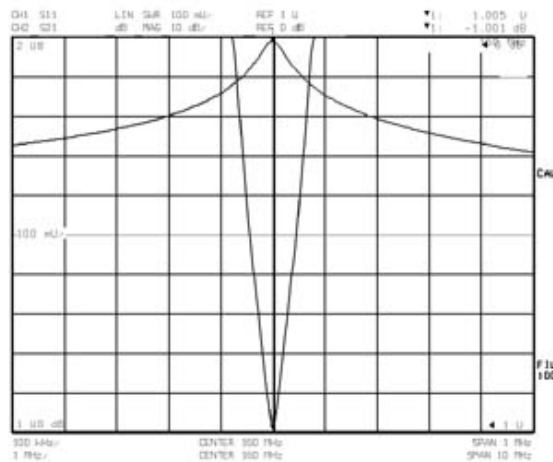
Electrical specifications

| | |
|---------------------------------|-----------------|
| Model | PF4-1V |
| Operating frequency band, MHz | 140-174 |
| Insertion loss (adjustable), dB | 0,5-3 |
| Impedance, Ohm | 50 |
| Attenuation | see fig. |
| VSWR, not more than | 1,2 |
| Input power, not more, W | 200 |
| Temperature range, °C | from -30 to +60 |
| Cavity electrical length | 1/4λ |

Mechanical specifications

| | |
|------------------------|-------------|
| Model | PF4-1V |
| Diameter, mm (ins.) | 105 (4") |
| Weight, kg | 2.6 |
| Connector | N-female |
| Mount to 19-inch rack | optional |
| Length/Width/Depth, mm | 800x105x105 |

Typical selectivity characteristic PF4-1V





140-174 MHz Bandpass filters PF5-1V, PF5-2V, PF5-3V

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Electrical specifications

| | PF5-1V | PF5-2V | PF5-3V |
|---------------------------------|--------|-------------------|--------|
| Model | PF5-1V | PF5-2V | PF5-3V |
| Operating frequency band, MHz | | 140-174 | |
| Insertion loss (adjustable), dB | 0,5-3 | 1-5 | 1,5-6 |
| Impedance, Ohm | | 50 | |
| Attenuation | | see fig. | |
| VSWR, not more than | | 1,2 | |
| Input power, not more, W | | not more than 300 | |
| Temperature range, °C | | from -30 to +60 | |
| Cavity electrical length | | 1/4λ | |

Mechanical specifications

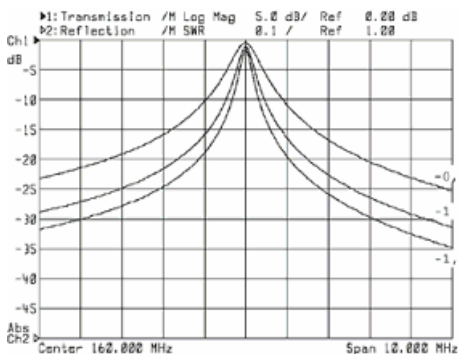
| | PF5-1V | PF5-2V | PF5-3V |
|------------------------|-------------|----------|-------------|
| Model | PF5-1V | PF5-2V | PF5-3V |
| Diameter, mm (ins.) | | 128 (5") | |
| Weight, kg | 1,85 | 4,4 | 6,25 |
| Connector | N-female | | |
| Mount to 19-inch rack | optional | | |
| Length/Width/Depth, mm | 800x128x128 | | 800x480x140 |

Using PF5-V filters in antenna section of radio stations and repeaters you will raise selectivity of their receivers, lower influence of out-of-band interference, escape effect of UHF blanking by nearby radio transmitters and desensitization, and eliminate intermodulation interference, also.

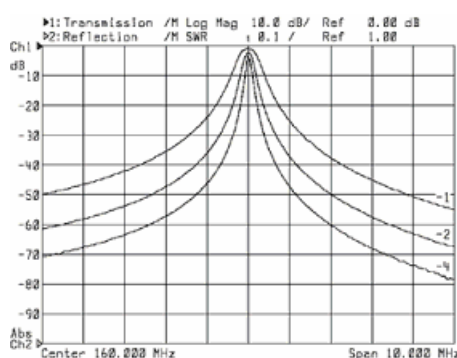
Filters, installed in transmitters circuit, lower stray emission level and prevent intermodulation products occurrence. Recommended to use if equipment is installed in locations with high density of transmitting devices.

PF5-2V and PF5-3V filter represents two and three PF5-1V filters connected in series and combined by metal brackets. They have higher characteristics at corresponding loss.

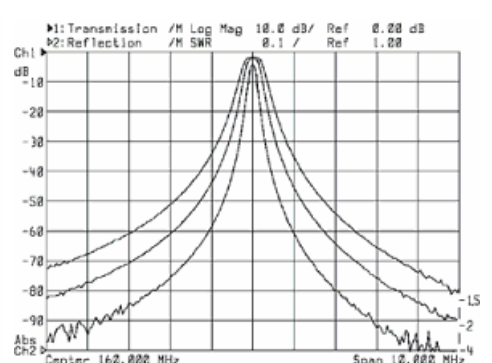
TYPICAL selectivity characteristics



PF5-1V



PF5-2V



PF5-3V



140-174 MHz Bandpass filters PF8-1V, PF8-2V, PF8-3V

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Electrical specifications

| Model | PF8-1V | PF8-2V | PF8-3V |
|---------------------------------|--------|-------------------|--------|
| Operating frequency band, MHz | | 140-174 | |
| Insertion loss (adjustable), dB | 0,5-3 | 0,1-5 | 0,1-7 |
| Impedance, Ohm | | 50 | |
| Attenuation | | see fig. | |
| VSWR, not more than | | 1,2 | |
| Input power, not more, W | | not more than 300 | |
| Temperature range °C | | from -30 to +60 | |
| Cavity electrical length | | 1/4λ | |

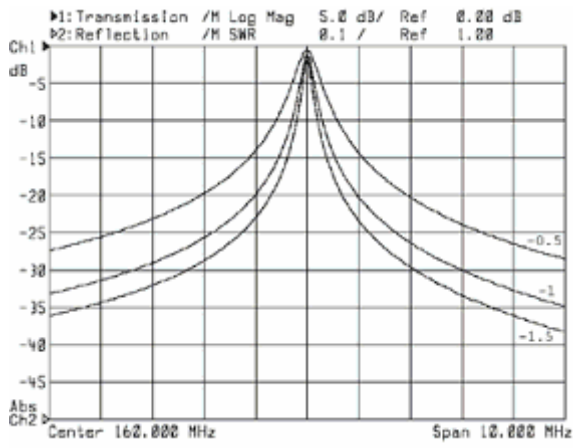
Mechanical specifications

| Model | PF8-1V | PF8-2V | PF8-3V |
|------------------------|-------------|-------------|-------------|
| Diameter, mm (ins.) | | 206 (8") | |
| Weight, kg | 3,25 | 7,2 | 10,5 |
| Connector | | N-female | |
| Mount to 19-inch rack | optional | | yes |
| Length/Width/Depth, mm | 800x206x206 | 800x480x210 | 800x480x420 |

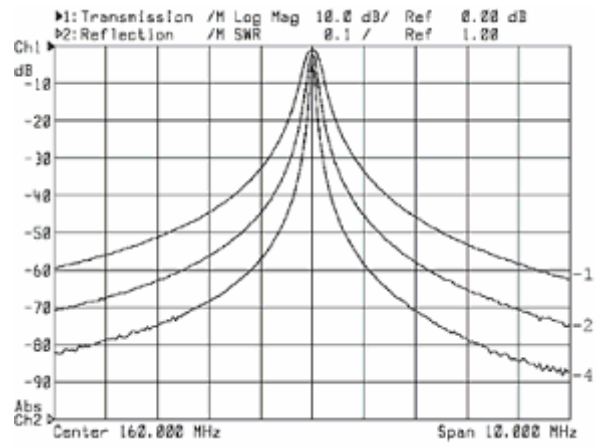
Using PF8-V series filters in antenna section of radio stations and repeaters you will raise selectivity of their receivers, lower influence of out-of-band interference, escape effect of UHF blanking by nearby radio transmitters and desensitization, and eliminate intermodulation interference, also. Recommended to use if equipment is installed in locations with high density of transmitting devices. Enlarged cavity diameter provides higher Q-factor comparing to five-inch filters

PF8-2V and PF8-3V filter represents two and three PF5-1V filters connected in series and combined by metal brackets. They have higher characteristics at corresponding loss.

Typical selectivity characteristics

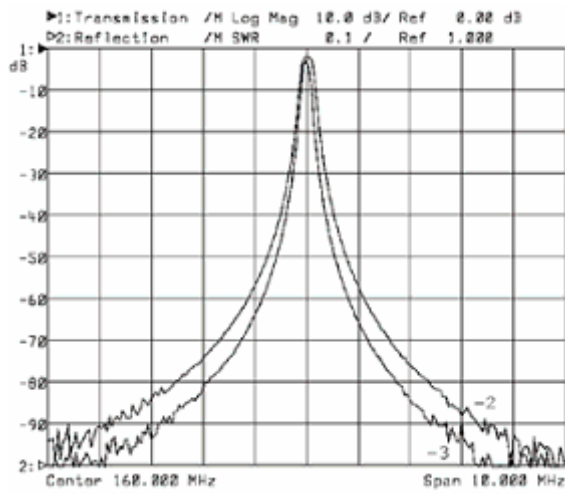


PF8-1V



PF8-2V

PF8-3V





140-174 MHz Bandpass filters PF10-1V, PF10-2V

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PF10-1V



PF10-2V



Electrical specifications

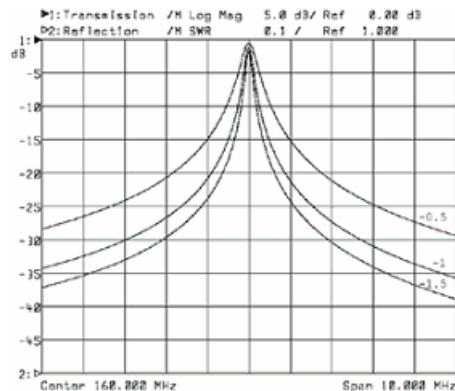
| Model | PF10-1V | PF10-2V |
|---------------------------------|---------|-------------------|
| Operating Frequency band, MHz | | 140-174 |
| Insertion loss (adjustable), dB | 0,5-3 | 1,3-3 |
| Impedance, Ohm | | 50 |
| Attenuation | | see fig. |
| VSWR, not more than | | 1,2 |
| Input power, not more, W | | not more than 300 |
| Temperature Range, °C | | from -30 to +60 |
| Cavity electrical length | | 1/4λ |

Mechanical specifications

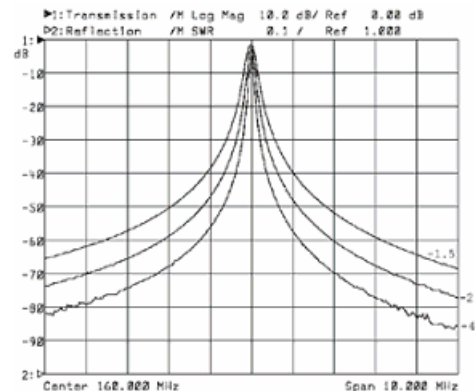
| Model | PF10-1V | PF10-2V |
|------------------------|-------------|-------------|
| Diameter, mm (ins.) | | 257 (10") |
| Weight, kg | 3,85 | 8,4 |
| Connector | | N-female |
| Mount to rack | optional | 24" |
| Length/Width/Depth, mm | 800x257x257 | 800x630x264 |

10" diameter cavity can be used as very high-Q filter (850 @ -1.0 dB) in various number of applications. It can be used in reception, as well as in transmission section consisting of filters PF10-1V and PF10-2V. This cavity acts as main component of low-loss transmitter combiners also.

Typical selectivity characteristics



PF10-1V



PF10-2V



140-174 MHz Bandpass filters PF12-1V, PF12-2V

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Electrical specifications

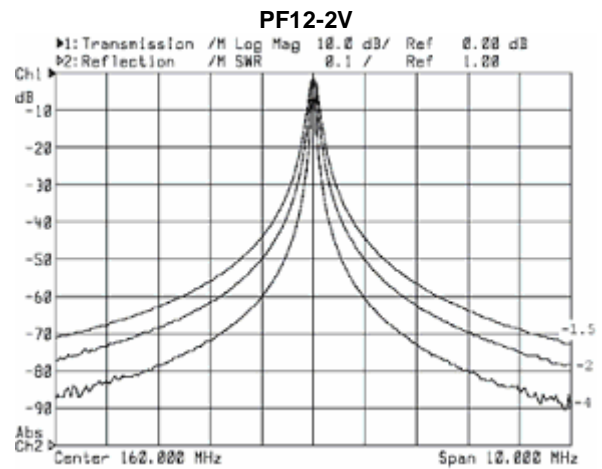
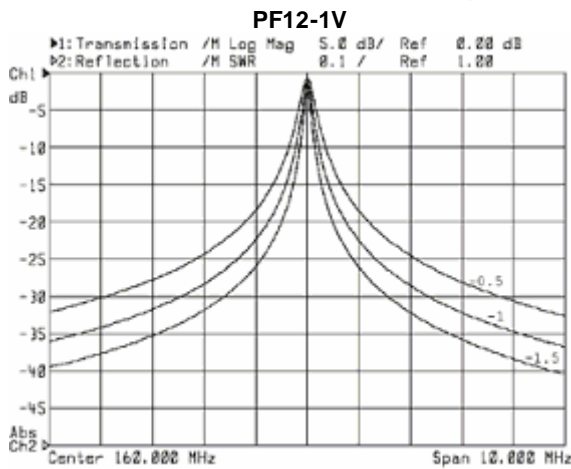
| Model | PF12-1V | PF12-2V |
|---------------------------------|---------|-------------------|
| Operating Frequency band, MHz | | 140-174 |
| Insertion loss (adjustable), dB | 0,5-3 | 1,3-5 |
| Impedance, Ohm | | 50 |
| Attenuation | | see fig. |
| VSWR, not more than | | 1,2 |
| Input power, not more, W | | not more than 350 |
| Temperature Range, °C | | from -30 to +60 |
| Cavity electrical length | | 1/4λ |

Mechanical specifications

| Model | PF12-1V | PF12-2V |
|------------------------|-------------|-------------------|
| Diameter, mm (ins.) | | 308x308 (12"x12") |
| Weight, kg | 8 | 16,2 |
| Connector | | N-female/ 7/16DIN |
| Length/Width/Depth, mm | 800x270x270 | 800x630x270 |

This is the most "cavity" resonator, manufactured by our company. Initially designed for aircraft range 118-136 MHz low-loss transmitter combiner, it has "settled down" in commercial range, also. It is successfully used for filtration of paging transmitters signals and receiving lowest loss during channel multiplexing of trunking repeaters with low frequency separation, due to its highest Q-factor (900 @ -1.0 dB).

Typical selectivity characteristics





140-174 MHz Bandreject filters RF5-1V, RF5-2V, RF8-1V, RF8-2V

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RF5-1V



RF5-2V



RF8-1V



RF8-2V



Electrical specifications

| Model | RF5-1V | RF5-2V | RF8-1V | RF8-2V |
|---|--------|--------|-------------------|--------|
| Operating Frequency band, MHz | | | 140-174 | |
| Insertion loss (adjustable), dB | 0,5-3 | 1-3 | 0,5-3 | 1-3 |
| Impedance, Ohm | | | 50 | |
| Attenuation (see fig.n) Δf BP/BR=400 kHz(RF5), dB | 23 | 50 | 18 | 40 |
| Δf BP/BR=200 kHz(RF8), dB | | | 1,5 | |
| VSWR, not more than | | | not more than 300 | |
| Input power, not more, W | | | from -30 to +60 | |
| Temperature Range, °C | | | 1/4 λ | |
| Cavity electrical length | | | | |

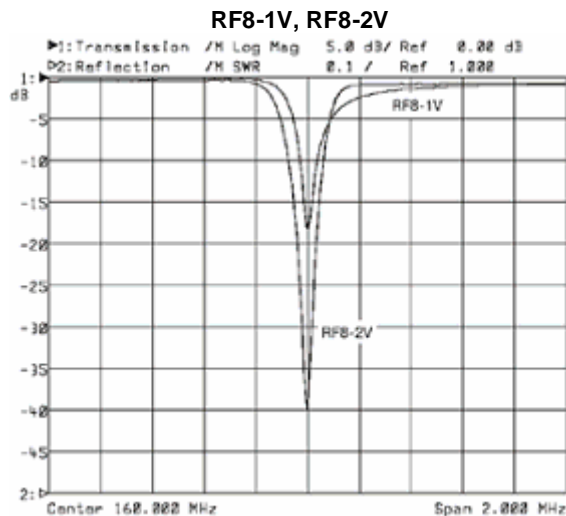
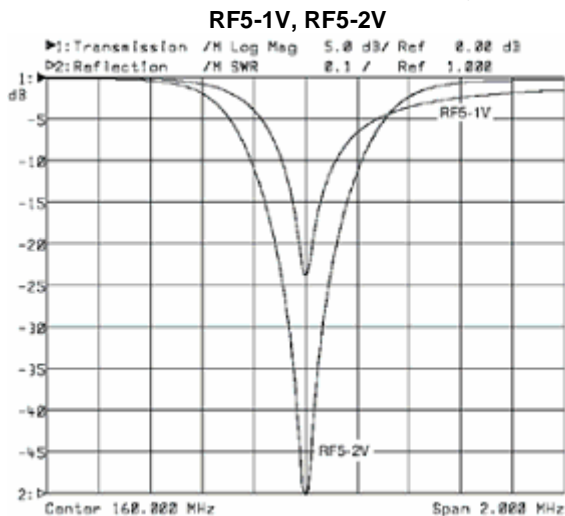
Mechanical specifications

| Model | RF5-1V | RF5-2V | RF8-1V | RF8-2V |
|------------------------|-------------|-------------|-------------|-------------|
| Diameter, mm (ins.) | | 128 (5") | | 206 (8") |
| Weight, kg | 1,8 | 4,2 | 3,3 | 7,3 |
| Connector | | | N-female | |
| Mount to 19-inch rack | optional | yes | optional | yes |
| Length/Width/Depth, mm | 800x128x128 | 800x480x140 | 800x206x206 | 800x480x210 |

Bandreject filters RF5-1V are recommended to use in radio stations and repeaters receiving section if nearby powerful transmitter, operating at known neighboring frequency, is present. These are signals of paging transmitters or repeater native transmitters,

usually. Bandreject filter enables to effectively eliminate interference at significantly lower frequency separation, unlike bandpass filter. Model RF5-2V is assembled from two single filters RF5-1V, connected by cables in series and fastened mechanically by metal brackets.

Typical selectivity characteristics

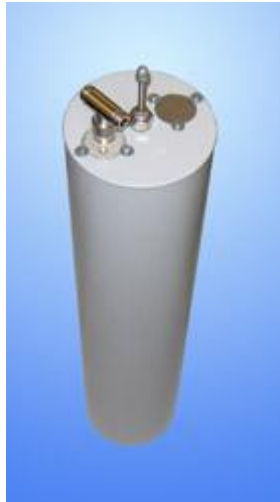




140 - 174 MHz
Bandpass/bandreject filters
PRF5-1V, PRF8-1V, PRF10-1V

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PRF5-1V



PRF5-2V



PRF8-1V



PRF8-2V



PRF10-1V



PRF10-2V



Electrical specifications

| Model | PRF5-1V | PRF5-2V | PRF8-1V | PRF8-2V | PRF10-1V | PRF10-2V |
|-------------------------------|---------|---------|---------|---------|----------|----------|
| Operating frequency band, MHz | | | | 140-174 | | |

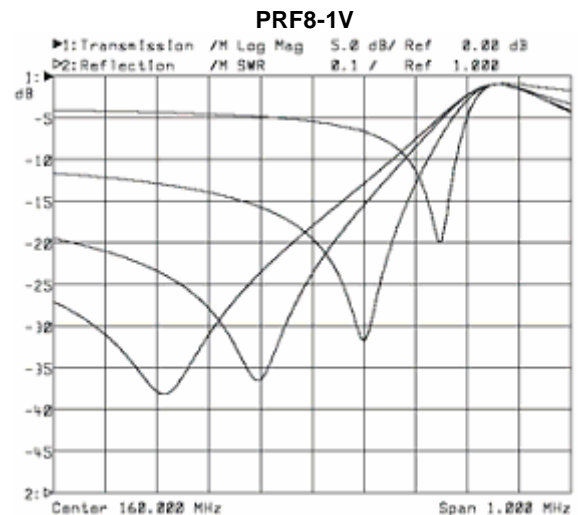
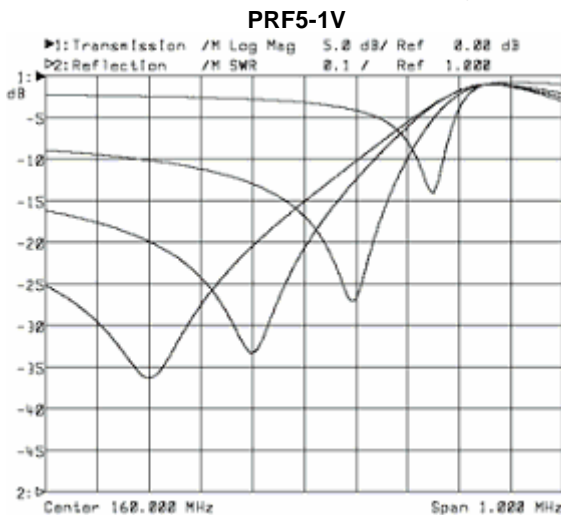
| | | | | | | |
|---|----------------|----------------|----------------|-------------------|----------------|----------------|
| Insertion loss (adjustable), dB | 0,5-3 | 1-3 | 0,5-3 | 1-3 | 0,5-3 | 1-3 |
| Impedance, Ohm | | | | 50 | | |
| Rejection level, ΔfBP/BR dB | -35dB @ 0,7MHz | -75dB @ 0,6MHz | -35dB @ 0,6MHz | -75dB @ 0,5MHz | -35dB @ 0,4MHz | -75dB @ 0,3MHz |
| VSWR, not more than | | | | 1,5 | | |
| Input power, not more, W | | | | not more than 300 | | |
| Temperature range with garanted stabilization, °C | | | | from -30 to +60 | | |
| Cavity electrical length | | | | 1/4λ | | |

Mechanical specifications

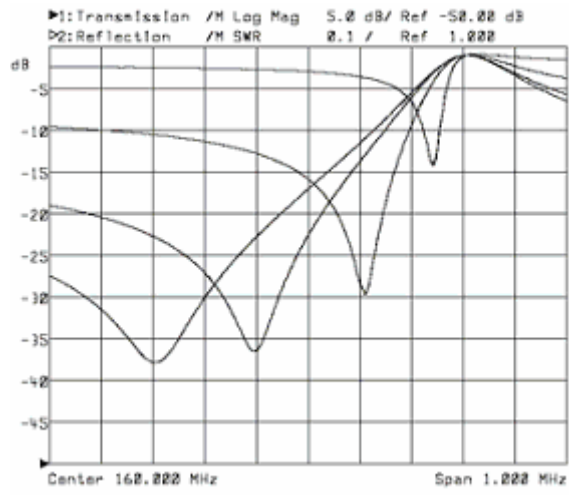
| Model | PRF5-1V | PRF5-2V | PRF8-1V | PRF8-2V | PRF10-1V | PRF10-2V |
|------------------------|--------------|----------|--------------|----------|--------------|----------------|
| Diameter, mm (ins.) | | 128 (5") | | 208 (8") | | 257 (10") |
| Weight, kg | 1,8 | 4,2 | 3,3 | 7,3 | 3,9 | 8,5 |
| Connector | | N-female | | N-female | | N-female |
| Mount to 19-inch rack | optional | yes | optional | yes | optional | yes (horizont) |
| Length/Width/Depth, sm | 80x12.8x12.8 | 80x48x14 | 80x20.8x20.8 | 80x48x21 | 80x25.7x25.7 | 80x63x26.4 |

Band pass-reject filter PRF5-1V is tuned to pass specific frequency and to reject another specific frequency simultaneously. Filter PRF5-1V with band pass-reject feature is essential if nearby interference is present. Install this filter in receiver antenna section and tune rejection in to interfering signal, and you will appreciably improve receiving conditions attenuating interference by 35 dB. Filter PRF5-2V has higher characteristics at corresponding loss. Unlike common bandreject filters, this filter has one very useful feature; it can be adjusted to passing with perfect VSWR without any difficulties, which can be only achieved by painstaking selection of tuning cable in bandreject filters.

Typical selectivity characteristics



PRF10-1V



2009



144-146 MHz Bandpass filters for EME PF5- 2HAM-200, PF5-3HAM-400

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PF5-2HAM-200



PF5-3HAM-400

Electrical specifications

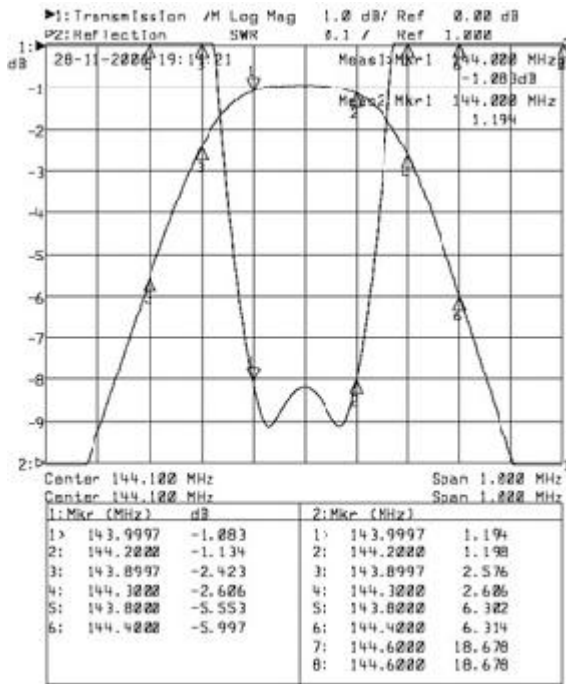
| Model | PF5-2HAM-200 | PF5-3HAM-400 |
|---------------------------------|-------------------|-------------------|
| Operating frequency band, MHz | 144-146 | 144-146 |
| Insertion loss (adjustable), dB | 1-5 | 1,5-6 |
| Max. frequency bandwidth, kHz | 200 | 400 |
| Impedance, Ohm | 50 | 50 |
| Attenuation | see fig. | see fig. |
| VSWR, not more than | 1,2 | 1,2 |
| Input power, not more, W | not more than 300 | not more than 300 |
| Temperature range, °C | from -30 to +60 | from -30 to +60 |
| Cavity electrical length | 1/4λ | 1/4λ |

Mechanical specifications

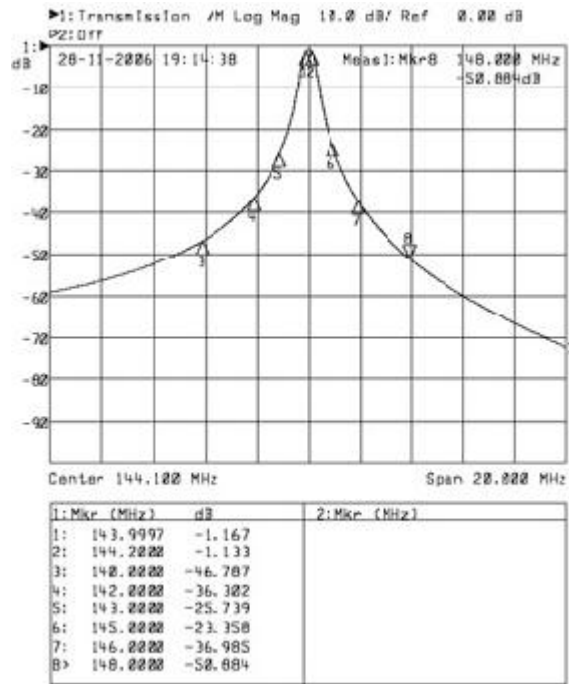
| Model | PF5-2HAM-200 | PF5-3HAM-400 |
|------------------------|--------------|--------------|
| Diameter, mm (ins.) | 128 (5") | 128 (5") |
| Weight, kg | 4.4 | 6.25 |
| Connector | N-female | N-female |
| Mount to 19-inch rack | | present |
| Length/Width/Depth, mm | 800x480x140 | 800x480x140 |

Usually in conditions of large megacities and even in rural territories if there are near established base station of land mobile radio noises level are very high. At communications with reflection from the Moon, when power of a signal are very weak a important aspect is a signal to noise ratio. This we can achieve only then if use high selective filters. These filters made by coaxial cavities. We bring to your attention filters, assembled from 5,8 and 10 inches cavities.

Typical selectivity characteristics PF5-2HAM-200

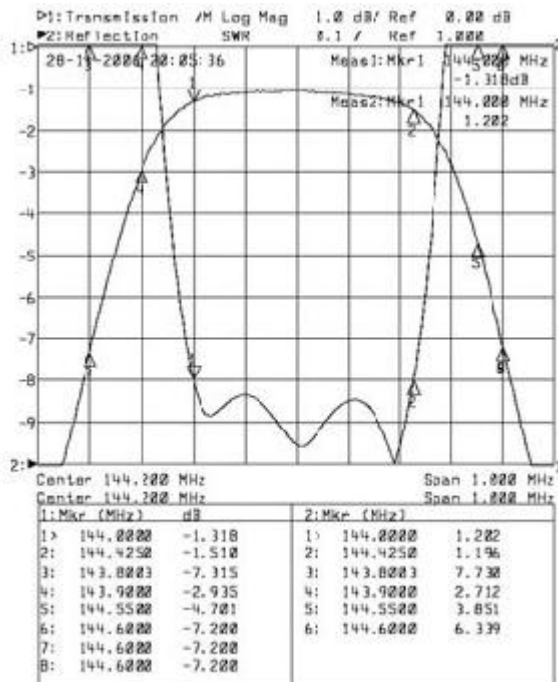


Span 1 MHz

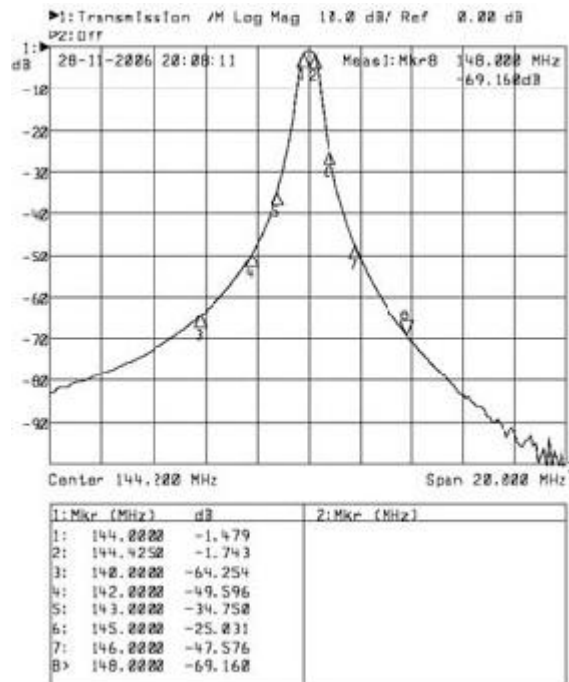


Span 20 MHz

Typical selectivity characteristics PF5-3HAM-400



Span 1 MHz



Span 20 MHz



144-146 MHz Bandpass filters for EME PF8- 2HAM-100, PF8-2HAM-250, PF8- 3HAM-300

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PF8-2HAM-100, PF8-2HAM-250



PF8-3HAM-300

Electrical specifications

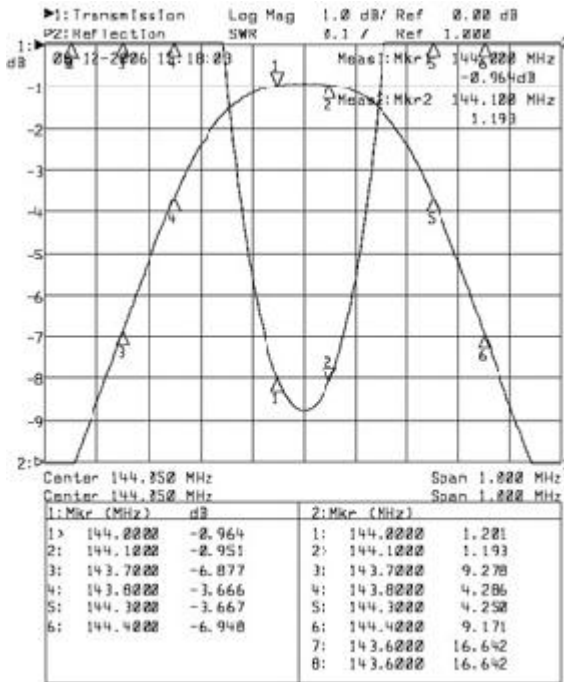
| Model | PF8-2HAM-100 | PF8-2HAM-250 | PF8-3HAM-300 |
|---------------------------------|--------------|-------------------|--------------|
| Operating frequency band, MHz | 144-146 | 144-146 | 144-146 |
| Insertion loss (adjustable), dB | 1-5 | 1-5 | 1,5-6 |
| Max. frequency bandwidth, kHz | 100 | 250 | 300 |
| Impedance, Ohm | 50 | 50 | 50 |
| Attenuation | see fig. | see fig. | see fig. |
| VSWR, not more than | 1,2 | 1,2 | 1,2 |
| Input power, not more, W | | not more than 300 | |
| Temperature range, °C | | from -30 to +60 | |
| Cavity electrical length | 1/4λ | 1/4λ | 1/4λ |

Mechanical specifications

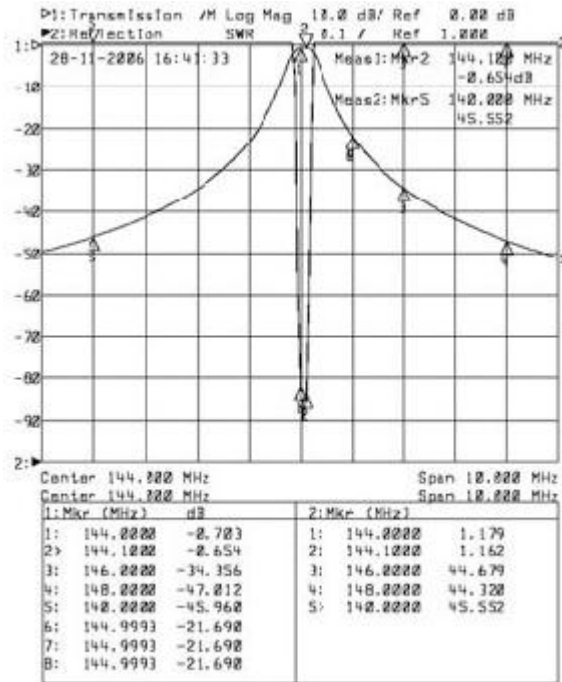
| Model | PF8-2HAM-100 | PF8-2HAM-250 | PF8-3HAM-300 |
|------------------------|--------------|--------------|--------------|
| Diameter, mm (ins.) | | 206 (8") | |
| Weight, kg | 7.2 | 7.2 | 10.5 |
| Connector | N-female | N-female | N-female |
| Mount to 19-inch rack | | present | |
| Length/Width/Depth, mm | 800x480x210 | 800x480x210 | 800x480x420 |

Usually in conditions of large megacities and even in rural territories if there are near established base station of land mobile radio noises level are very high. At communications with reflection from the Moon, when power of a signal are very weak a important aspect is a signal to noise ratio. This we can achieve only then if use high selective filters. These filters made by coaxial cavities. We bring to your attention filters, assembled from 5,8 and 10 inches cavities.

Typical selectivity characteristics PF8-2HAM-100

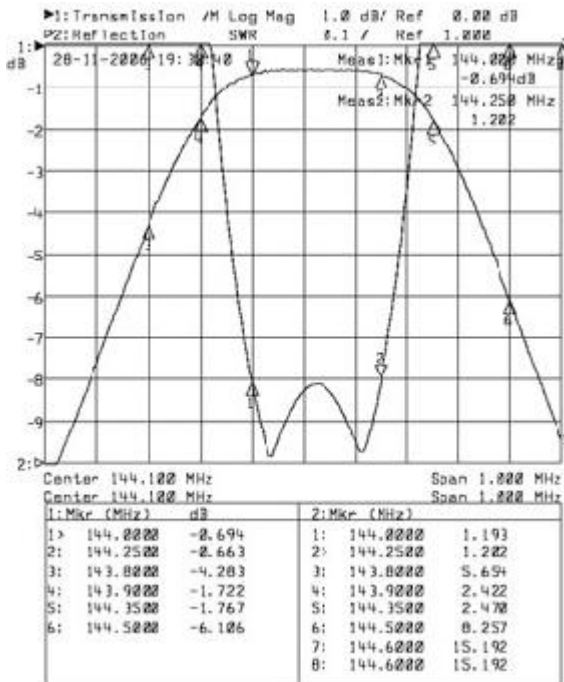


Span 1 MHz

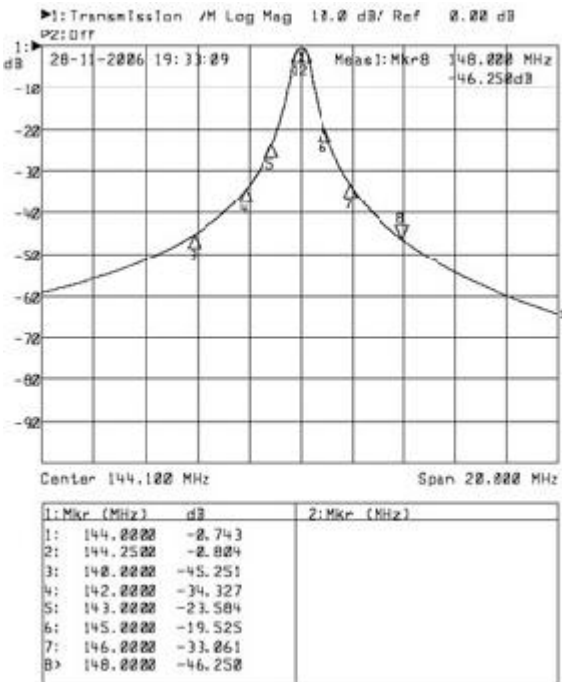


Span 10 MHz

Typical selectivity characteristics PF8-2HAM-250

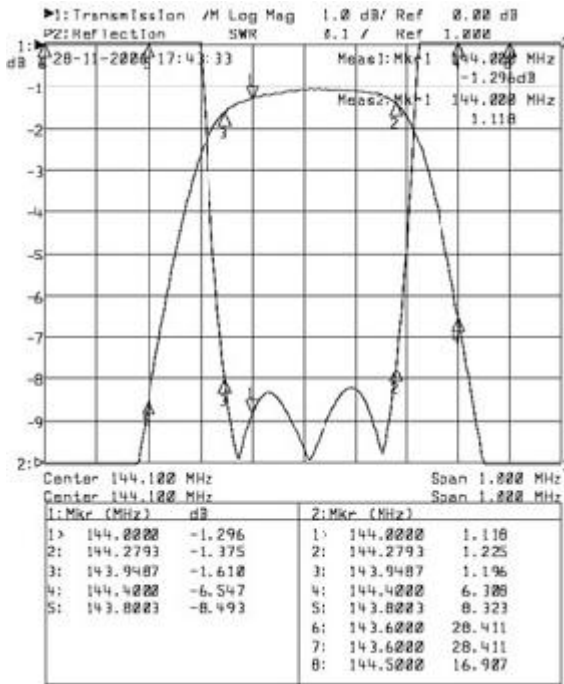


Span 1 MHz

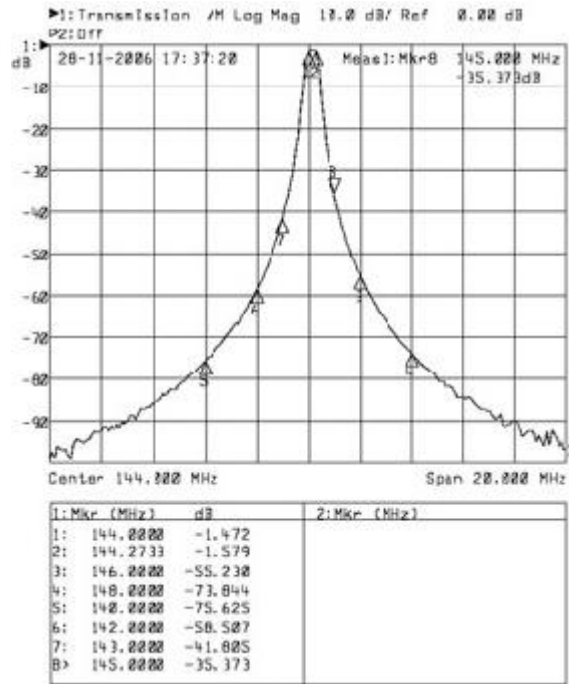


Span 20 MHz

Typical selectivity characteristics PF8-3HAM-300



Span 1 MHz



Span 20 MHz



144-146 MHz Bandpass filter for EME PF10- 2HAM-100

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19,462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

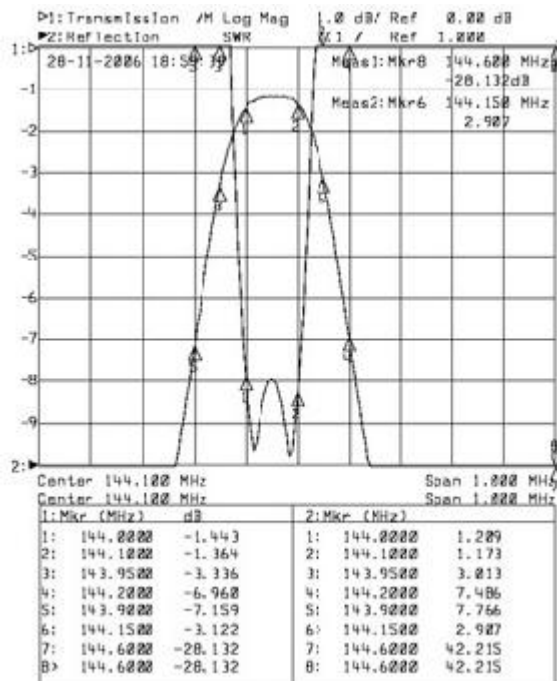
| | |
|---------------------------------|-------------------|
| Model | PF10-2HAM-100 |
| Operating frequency band, MHz | 144-146 |
| Insertion loss (adjustable), dB | 1-5 |
| Max. frequency bandwidth, kHz | 100 |
| Impedance, Ohm | 50 |
| Attenuation | see fig. |
| VSWR, not more than | 1,2 |
| Input power, not more, W | not more than 300 |
| Temperature range, °C | from -30 to +60 |
| Cavity electrical length | 1/4λ |

Mechanical specifications

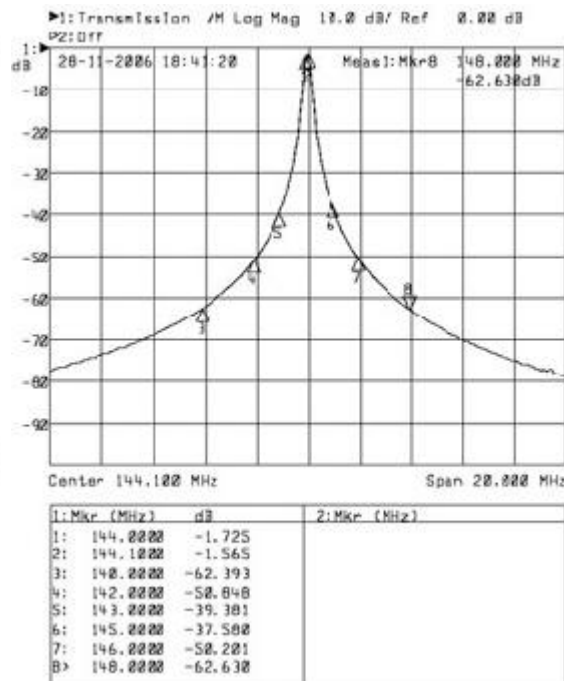
| | |
|------------------------|---------------|
| Model | PF10-2HAM-100 |
| Diameter, mm (ins.) | 257 (10") |
| Weight, kg | 8.4 |
| Connector | N-female |
| Mount to 19-inch rack | present |
| Length/Width/Depth, mm | 800x630x264 |

Usually in conditions of large megacities and even in rural territories if there are near established base station of land mobile radio noises level are very high. At communications with reflection from the Moon, when power of a signal are very weak a important aspect is a signal to noise ratio. This we can achieve only then if use high selective filters. These filters made by coaxial cavities. We bring to your attention filters, assembled from 5,8 and 10 inches cavities.

Typical selectivity characteristics PF10-2HAM-100



Span 1 MHz



Span 20 MHz