

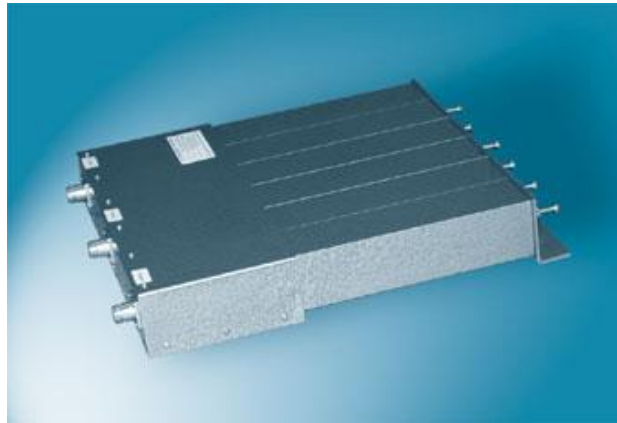


Mobile duplexers

Model	Short description	Band, MHz	Price, EUR
MDF-6LB(M)	6 cavities, sep. 3 MHz, -1,5 dB, -90 dB, 150 W	37-44	442
MDF-6LB(H)	6 cavities, sep. 3 MHz, -1,5 dB, -90 dB, 150 W	42,5-50	442
DPS2-6VM	6 cavities., 2", sep. 20 MHz, BP=1,5 MHz, -1,5 dB, -80/60 dB, 150 W	148/172	424
MDF-6VM	6 cavities, reject, sep. 24 MHz, -0,9 dB, -75 dB, 50 W	148/172	198
MDF-6VL4,5/6	6 cavities, reject, sep. 4,5-6 MHz, -1,3 dB, -90 dB, 50 W	140-156	198
MDF-6VL6/8	6 cavities, reject, sep. 6-8 MHz, -1,3 dB, -90 dB, 50 W	140-156	198
MDF-6VL8/10	6 cavities, reject, sep. 8-10 MHz, -1,3 dB, -90 dB, 50 W	140-156	198
MDF-6VH4,5/6	6 cavities, reject, sep. 4,5-6 MHz, -1,3 dB, -90 dB, 50 W	156-172	198
MDF-6VH6/8	6 cavities, reject, sep. 6-8 MHz, -1,3 dB, -90 dB, 50 W	156-172	198
MDF-6VH8/10	6 cavities, reject, sep. 8-10 MHz, -1,3 dB, -90 dB, 50 W	156-172	198
MDF-6VH-15	6 cavities, reject, sep. 10-15 MHz, -1,3 dB, -90 dB, 50 W	147-168	198
MDF2-6V	6 cavities 2", reject, sep. 2.5-4.5 MHz, -0.8 dB, -80 dB, 100 W	146-156	367
MDF-6A	6 cavities, reject, sep. 36 MHz, -1,3 dB, -75 dB, 50 W	300-305/336-342	198
MDF-6UL5/8	6 cavities, reject, sep. 5-8 MHz, -1,3 dB, -75 dB, 50 W	400-430	193
MDF-6UL8/13	6 cavities, reject, sep. 8-13 MHz, -1,3 dB, -75 dB, 50 W	440-470	193
MDF-6UM8/13	6 cavities, reject, sep. 8-13 MHz, -1,3 dB, -75 dB, 50 W	440-470	193
MDF1-6UH5/8	6 cavities, reject, sep. 5-8 MHz, -1,3 dB, -85 dB, 50 W	440-490	232
MDF1-6-75	6 cavities, reject, sep. 5-8 MHz, -1,3 dB, -85 dB, 50 W	440-490	232
DPS2-12U	12 cavities, pass-reject, 2", -2,5 dB, -75 dB, 700 W	453-457,5/463-467,5	847
DPS2-8G	8 cavities, pass, 2", -45 dB@ Δ TX/RX=20 MHz, -0,7 dB, 300 W	820-970	668



37-50 MHz Mobile duplexers MDF-6LB



Electrical specifications

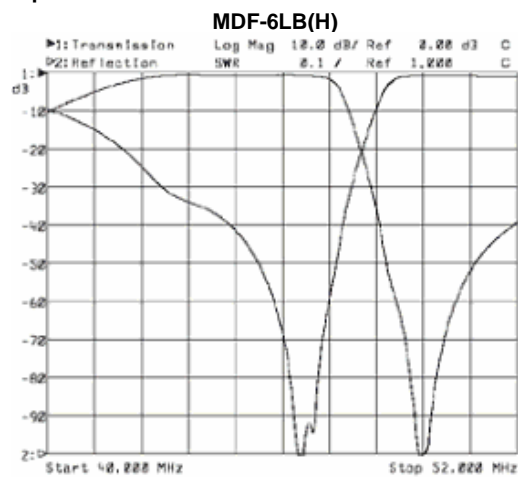
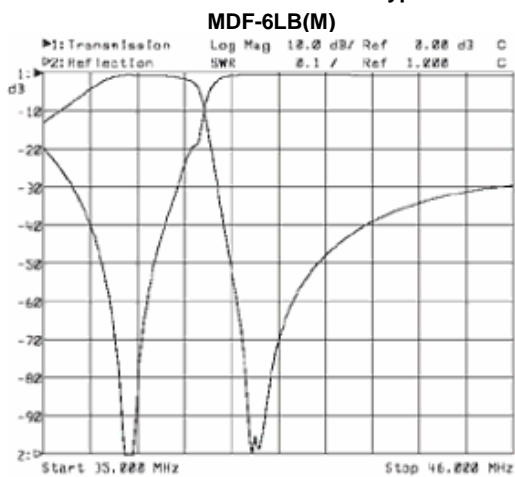
Model	MDF-6LB(M)	MDF-6LB(H)
Operating Frequency band, MHz	37-44	42.5-50
Insertion loss (adjustable) not more, dB		1.5
Frequency separation TX/RX (min), MHz		3
Impedance, Ohm		50
Isolation, not less, dB		90
VSWR, not more than		1.5
Input power, not more, W		not more than 150
Temperature Range, °C		from -30 to +50

Mechanical specifications

Model	MDF-6LB(M)	MDF-6LB(H)
Weight, kg	5.8	5.5
Connector		N-female
Length/Width/Depth, mm	415x315x60	385x315x60

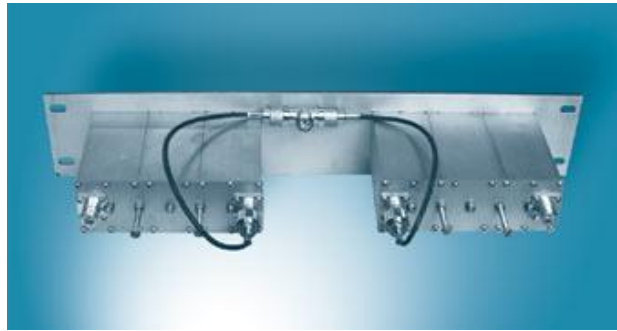
For the operation of repeaters in low-frequency range VHF we have developed and launched the manufacturing of a duplexer on the spiral resonators. Two model of duplexers are being produced: MDF-6LB(M) - for the range 37-44 MHz and MDF-6LB(H) - for the upper range 42.5-50 MHz. With the separation of 3-4-MHz they provide a fully-duplex mode of operation of mobile radio stations at minimum losses and standard output power 150 Wt. This construction is significantly less in sizes than the fully-sized duplexer made on the basis of of the volume resonators. The duplexer MDF-6LB is recommended to be used jointly with our new antenna GPW-1LB.

Typical MDF-6LB(M) duplexer response curves





148/172 MHz Mobile duplexer DPS2-6VM



Electrical specifications

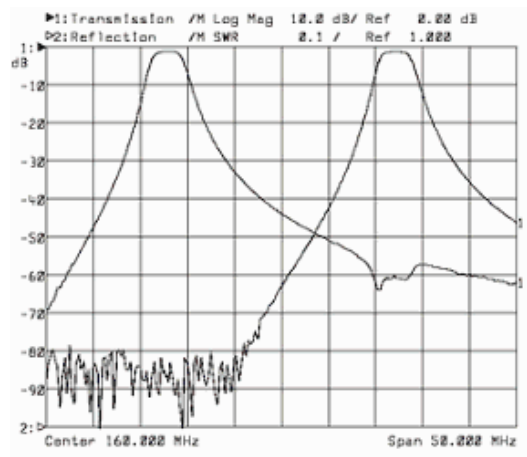
Model	DPS2-6VM
Operating Frequency band, MHz	148/172
Insertion loss (adjustable) not more, dB	1,5
Frequency separation TX/RX (min), MHz	20
Band pass, MHz	1,5
Impedance, Ohm	50
Isolation, not less, dB	80/60
VSWR, not more than	1,3
Input power, not more, W	150
Temperature Range, °C	from -30 to +50

Mechanical specifications

Model	DPS2-6VM
Weight, kg	2,5
Connector	N-female
Length/Width/Depth, mm	484x88x180
Mount to 19-inch rack	yes

This duplexer is based on two PS2-3V bandpass filters. Application range of these duplexers is very narrow. They can be used only for repeaters of multichannel sites with TX/RX frequency separation of 148/172 MHz. Passband of both arms of DPS2-6V duplexer amounts to 1.5 MHz, that's why it is advantageous to use them for complex construction of sophisticated antenna-feeder systems at governmental buildings, where telecommunications engineers in the old way install "forest" of antennas, creating interference for their own devices.

Typical DPS2-6VM duplexer response curves





140-156 MHz
Mobile duplexers MDF-6VM,
MDF-6VL4.5/6
MDF-6VL6/8, MDF-6VL8/10,

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Electrical specifications

Model	MDF-6VM	MDF-6VL4.5/6	MDF-6VL6/8	MDF-6VL8/10
Operating Frequency band, MHz	148-149/171-173	140-156	140-156	140-156
Insertion loss (adjustable) not more, dB	0,9	1,3	1.3	1.3
Frequency separation TX/RX (min), MHz	24	4,5-6	6-8	8-10
Impedance, Ohm	50	50	50	50
Isolation, not less, dB	75	80	80	80
Typical isolation, dB	80	90	90	90
VSWR, not more than	1.5	1.5	1.5	1.5
Input power, not more than, W	50	50	50	50
Temperature Range, °C	from -30 to +50	from -30 to +50	from -30 to +50	from -30 to +50

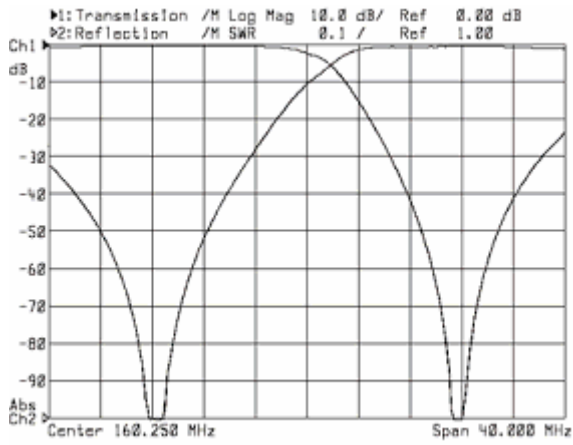
Mechanical specifications

Model	MDF-6VM	MDF-6VL4.5/6	MDF-6VL6/8	MDF-6VL8/10
Weight, kg	0,885	0,885	0,885	0,885
Connector	N-female	N-female	N-female	N-female
Length/Width/Depth, mm	210x156x32	210x156x32	210x156x32	210x156x32

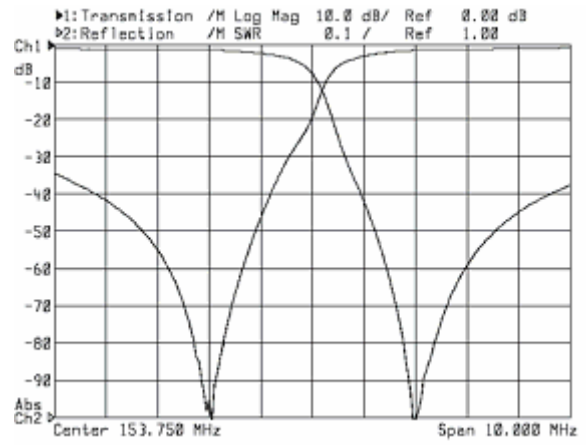
Availability of full duplex mobile radio stations on the market has initiated strong interest in duplex filters providing simultaneous operation of mobile station into common antenna. We are producing such devices now. These are mobile duplex filters MDF-6V and MDF-6VM for VHF range applicable to telecommunications networks operating in 148/172 MHz frequency range. Compact mobile duplexers are manufactured using six-section helical resonators by rejection design. At frequency separation of 4-6 MHz (MDF-6VL4.5/6), 6-8 MHz (MDF-6VL6/8), 8-10 MHz (MDF-6VL8/10) and 24 MHz (MDF-6VM) they provide full duplex operation mode of mobile radio stations at minimum loss and standard power output of 50 Watt. Dimensions of MDF-6V duplexer allow its mounting into the same case with radio station. However, one should notice, that such duplexers are ineffective, when implemented in base stations or at the sites with compromised electromagnetic compatibility.

Typical duplexers response curves

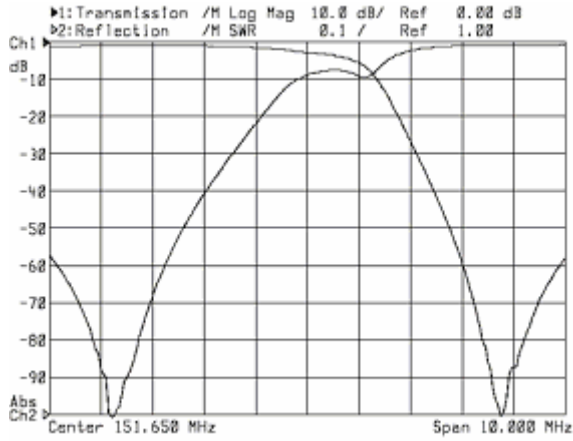
MDF-6VM



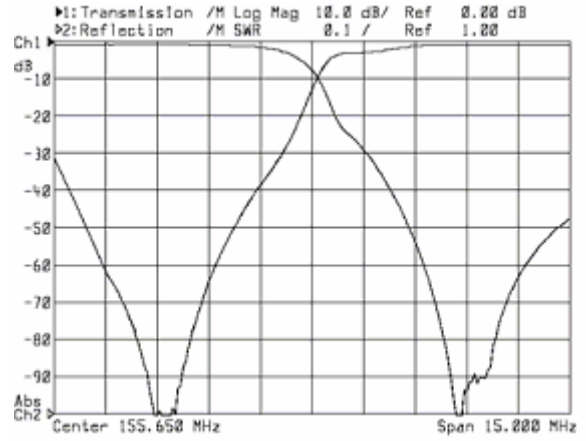
MDF-6VL4.5/6



MDF-6VL6/8



MDF-6VL8/10





156-172 MHz Mobile duplexers MDF- 6VH4.5/6, MDF-6VH6/8, MDF-6VH8/10, MDF-6VH-15

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Electrical specifications

Model	MDF-6VH4.5/6	MDF-6VH6/8	MDF-6VH8/10	MDF-6VH-15
Operating Frequency band, MHz	156-172	156-172	156-172	147-168
Insertion loss (adjustable) not more, dB	1.3	1.3	1.3	1.3
Frequency separation TX/RX (min), MHz	4.5-6	6-8	8-10	15
Impedance, Ohm	50	50	50	50
Isolation, not less, dB	80	80	80	80
Typical isolation, dB	90	90	90	90
VSWR, not more than	1.5	1.5	1.5	1.5
Input power, not more than, W	50	50	50	50
Temperature Range, °C	from -30 to +50	from -30 to +50	from -30 to +50	from -30 to +50

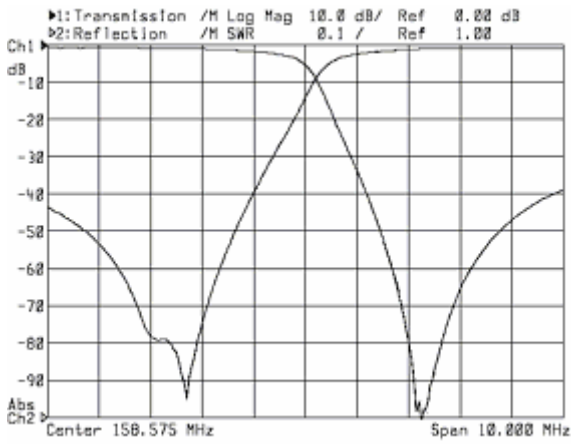
Mechanical specifications

Model	MDF-6VH4.5/6	MDF-6VH6/8	MDF-6VH8/10	MDF-6VH-15
Weight, kg	0,885	0,885	0,885	0,885
Connector	N-female	N-female	N-female	N-female
Length/Width/Depth, mm	210x156x32	210x156x32	210x156x32	210x156x32

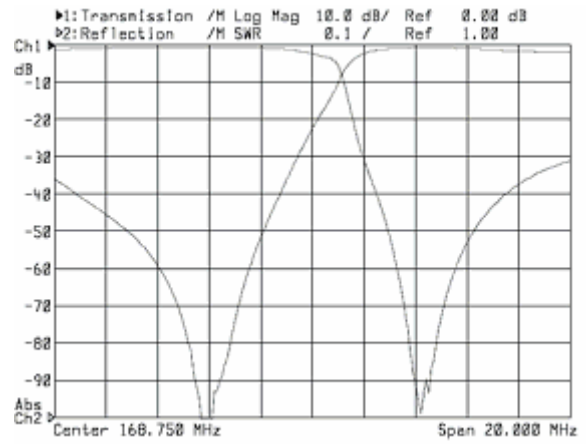
Availability of full duplex mobile radio stations on the market has initiated strong interest in duplex filters providing simultaneous operation of mobile station into common antenna. We are producing such devices now. These are mobile duplex filters MDF-6V and MDF-6VM for VHF range applicable to telecommunications networks operating in 148/172 MHz frequency range. Compact mobile duplexers are manufactured using six-section helical resonators by rejection design. At frequency separation of 4-6 MHz (MDF-6VH4.5/6), 6-8 MHz (MDF-6VH6/8), 8-10 MHz (MDF-6VH8/10) and 15 MHz (MDF-6VH-15) they provide full duplex operation mode of mobile radio stations at minimum loss and standard power output of 50 Watt. Dimensions of MDF-6V duplexer allow its mounting into the same case with radio station. However, one should notice, that such duplexers are ineffective, when implemented in base stations or at the sites with compromised electromagnetic compatibility.

Typical duplexers response curves

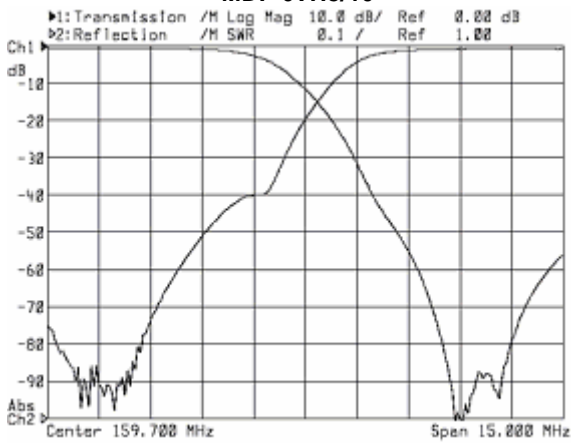
MDF-6VH4.5/6



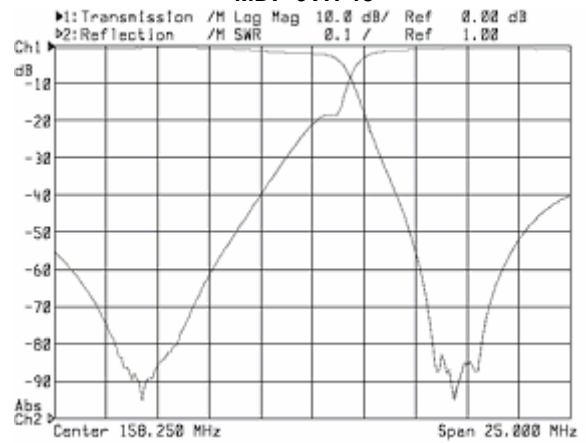
MDF-6VH6/8



MDF-6VH8/10



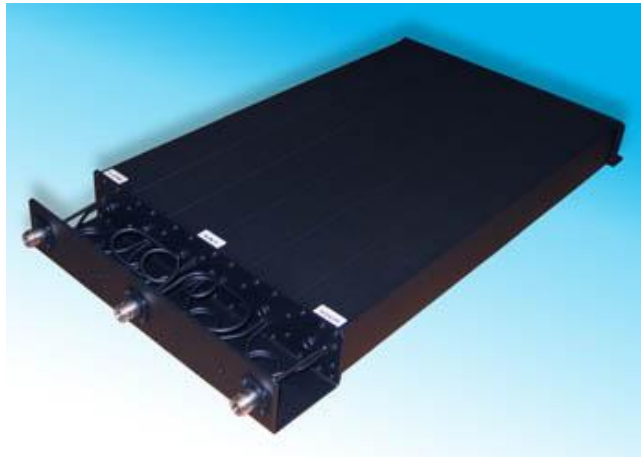
MDF-6VH-15





146-156 MHz Mobile duplexer MDF2-6V

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Electrical specifications

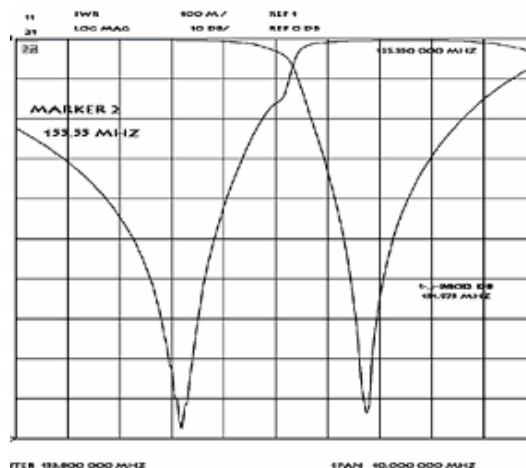
Model	MDF2-6V
Operating frequency band, MHz	146-156
Insertion loss (adjustable) not more, dB	1.3
Frequency separation TX/RX (min), MHz	2.5-4.5
Impedance, Ohm	50
Isolation, not less, dB	80
VSWR, not more than	1.5
Input power, not more, W	not more than 100
Temperature range, °C	from -30 to +50

Mechanical specifications

Model	MDF2-6V
Weight, kg	8.7
Connector	N-female
Dimensions (LxWxH), mm	310x53x610

A new model MDF2-6V is a prototype of MDF-6V, but is performed on the basis of the usual linear (not spiral) cavities in the cases of the 50 mm cross-section. As a result an enhanced quality-factor helps to decrease the separation TX/RX to the value of 2-3 MHz and to increase the filtering capabilities of the duplexer.

Typical duplexers response curves





400-490 MHz Mobile duplexers MDF-6U



Electrical specifications

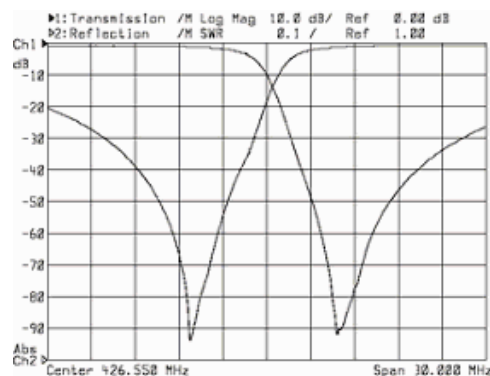
Model	MDF-6UL5/8	MDF-6UL8/13	MDF-6UM8/13
Operating Frequency band, MHz	400-430	400-430	440-470
Insertion loss (adjustable) not more, dB	1,3	1.3	1.3
Frequency separation TX/RX (min), MHz	5-8	8-13	8-13
Impedance, Ohm		50	
Isolation, not less, dB		75	
VSWR, not more than		1,5	
Input power, not more, W		not more than 50	
Temperature Range, °C		from -30 to +50	

Mechanical specifications

Model	MDF-6UL5/8	MDF-6UL8/13	MDF-6UM8/13
Weight, kg	0,62	0.62	0.62
Connector		N-female	
Length/Width/Depth, mm		170x160x40	

Strong interest in duplex filters, providing simultaneous operation of mobile station with one antenna, was initiated by availability of full-duplex mobile radio stations on domestic market. We have designed and begin to manufacture such devices: mobile duplex filter MDF-6V and MDF-6U, recently. Compact mobile duplexers are manufactured using six-section helical resonators and rejection circuit. Having frequency separation 5-8 MHz (MDF-6U5/8) and 8-13 MHz (MDF-6U8/13), they provide mobile radio stations full duplex operation mode at minimum loss and 50 watt standard power output. Duplexer MDF-6U dimensions enable to mount it in the same case with radio station. However, one should notice, that such duplexers are ineffective, when implemented in base stations or in locations with compromised electromagnetic compatibility.

Typical duplexers response curves



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440-470 MHz Mobile duplexer MDF1-6UH5/8



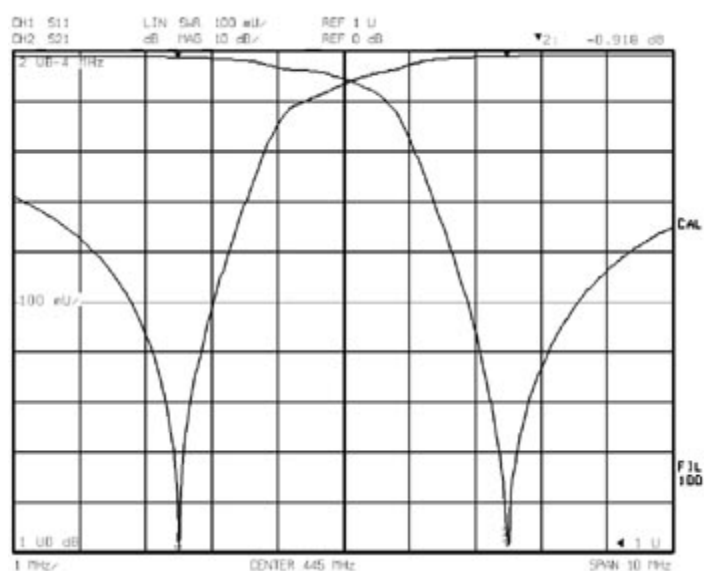
Electrical specifications

Model	MDF1-6UH5/8
Operating frequency band, MHz	440-470
Insertion loss (adjustable) not more, dB	1.3
Frequency separation TX/RX (min), MHz	5-8
Impedance, Ohm	50
Isolation, not less, dB	85
VSWR, not more than	1.5
Input power, not more, W	50
Temperature range, °C	from -30 to +50

Mechanical specifications

Model	MDF1-6UH5/8
Weight, kg	1.1
Connector	N-female
Dimensions (LxWxH), mm	156x32x278

Typical duplexers response curves MDF1-6UH5/8





68-87 MHz Mobile duplexer MDF1-6-75



Electrical specifications

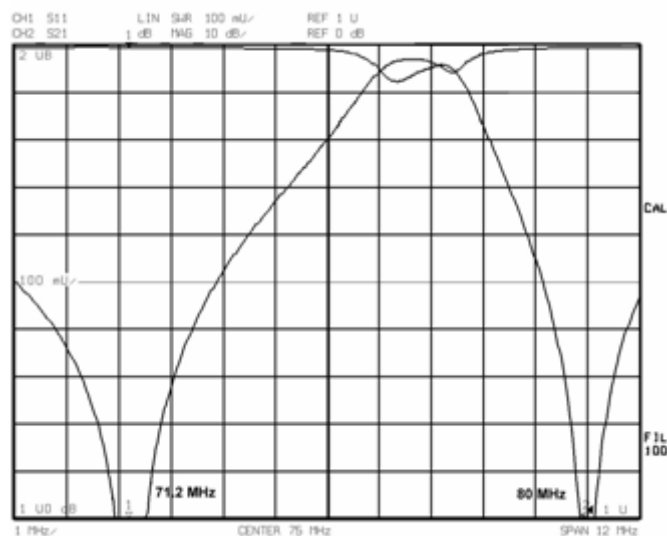
Model	MDF1-6-75
Operating frequency band, MHz	68-87
Insertion loss (adjustable) not more, dB	1.3
Frequency separation TX/RX (min), MHz	10
Impedance, Ohm	50
Isolation, not less, dB	80
VSWR, not more than	1.5
Input power, not more, W	50
Temperature range, °C	from -30 to +50

Mechanical specifications

Model	MDF1-6-75
Weight, kg	1.2
Connector	N-female
Dimensions (LxWxH), mm	210x156x32

Compact mobile duplexers are manufactured using six-section helical resonators by rejection design. Dimensions of MDF-6-75 duplexers allow their mounting into the same case with a radio station. However, one should notice that such duplexers are ineffective when implemented in base stations or at the sites with compromised electromagnetic compatibility.

Typical duplexer response curves





453-467.5 MHz Mobile duplexer DPS2-12U

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Electrical specifications

Model	DPS2-12U
Operating Frequency band, MHz	453-467.5
Insertion loss not more, dB	1.3
Max. frequency bandwidth, RX, MHz	453-457,5
Max. frequency bandwidth, TX, MHz	463-467,5
Impedance, Ohm	50
Isolation, not less, dB	45
VSWR, not more than	1.3
Input power, not more, W	700
Temperature Range, °C	0 to +40

Mechanical specifications

Model	DPS2-12U
Weight, kg	7.8
Connector	7/16 DIN
Length/Width/Depth, mm	360x260x130

The appearance of a new communication standard CDMA-450 in the mobile communication systems has demanded from the operators of NMT-450 to release a part of antenna-feeder channel for implementation new projects. The application of DPS2-12U in the base stands (RS 4000) of the standard NMT-450 makes it possible to empty 1 antenna-feeder channel. At the present moment the duplexer has a peak carrying capacity around 700 Wt what corresponds to the simultaneous operation of 8 channels of NMT-450. The next project - the modification of this product for providing larger carrying capacity.

Typical DPS2-12U duplexer response curves

