



Duplexers for UHF repeaters

Model	Short description	Frequency separation TX-RX, MHz	Band, MHz
DPR4-4U	Bandpass/bandreject 4 cavities diam. 4", -2 dB, -75 dB, 200 W	1,6	400-490
DPR8-4U	Bandpass/bandreject 4 cavities diam. 8", -1,5 dB, -75 dB, 200 W	1,5	400-490
DPRE4-4UL	Bandpass/bandreject, econom., 4 cavities diam. 4", -1,5 dB, -75 dB, 300 W	2	400-440
DPRE4-4UM	Bandpass/bandreject, econom., 4 cavities diam. 4", -1,5 dB, -75 dB, 300 W	2	430-470
DPRE4-4UH	Bandpass/bandreject, econom., 4 cavities diam. 4", -1,5 dB, -75 dB, 300 W	2	470-490
DPRE4-6UL	Bandpass/bandreject, econom., 6 cavities diam. 4", -2 dB, -90 dB, 300 W	1,6	400-440
DPRE4-6UM	Bandpass/bandreject, econom., 6 cavities diam. 4", -2 dB, -90 dB, 300 W	1,6	430-470
DPRE4-6UH	Bandpass/bandreject, econom., 6 cavities diam. 4", -2 dB, -90 dB, 300 W	1,6	470-490
DPF4-4U	Narrowband duplexer, 4 cavities diam. 4", -1 dB, -45 dB, 200 W	5	400-490
DPF4-6U	Narrowband duplexer, 6 cavities diam. 4", -1,5 dB, -60 dB, 200 W	5	400-490
DPS4-6U	Bandpass duplexer, 6 cavities, 4", BP=1MHz, 1.5 dB, -50 dB	5	400-490
MDF-6UL5/8	Mobile duplexer, 6 cavities, reject, -1,3 dB, -75 dB, 50 W	5-8	400-430
MDF-6UL8/13	Mobile duplexer, 6 cavities, reject, -1,3 dB, -75 dB, 50 W	8-13	400-430
MDF-6UM5/8	Mobile duplexer, 6 cavities, reject, -1,3 dB, -75 dB, 50 W	5-8	440-470
MDF-6UM8/13	Mobile duplexer, 6 cavities, reject, -1,3 dB, -75 dB, 50 W	8-13	440-470
MDF-6UH5/8	Mobile duplexer, 6 cavities, reject, -1,3 dB, -75 dB, 50 W	5-8	470-490
MDF1-6UH5/8	Mobile duplexer, 6 cavities, reject, -1,3 dB, -85 dB, 50 W	5-8	440-490



400-490 MHz Pass/reject duplexer DPR4-4U, DPR8-4U

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DPR4-4U



DPR8-4U



Electrical specifications

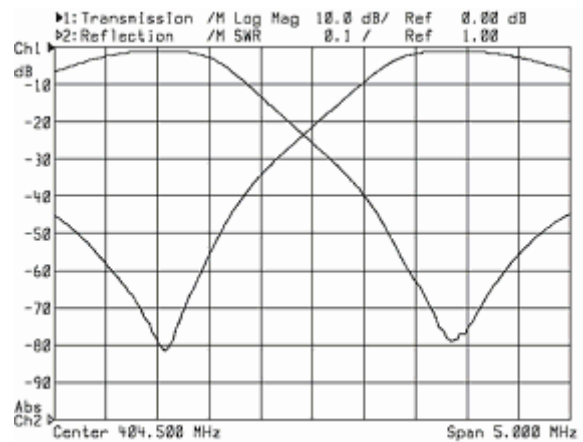
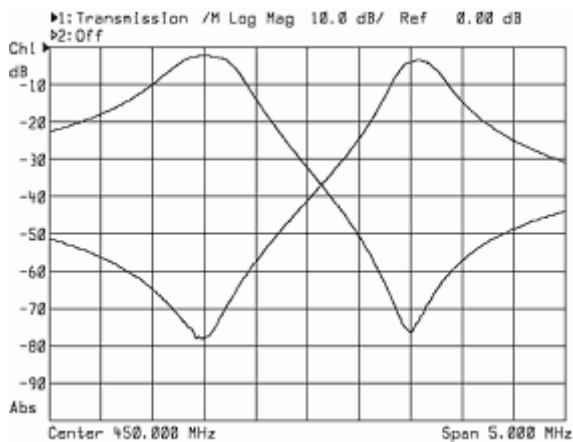
Model	DPR4-4U	DPR8-4U
Operating Frequency band, MHz		400-490
Insertion loss (adjustable) not more, dB		1,5
Frequency separation TX/RX (min), MHz	1,6	1,5
Impedance, Ohm		50
Isolation, not less, dB		75
VSWR, not more than		1,5
Input power, not more, W		not more than 200
Temperature range, °C		from -30 to +60
Cavity electrical length		1/4λ

Mechanical specifications

Model	DPR4-4U	DPR8-4U
Diameter, mm (ins.)	110 (4")	206 (8")
Weight, kg	6	8,3
Connector		N-female
Mount to 19-inch rack		yes
Length/Width/Depth, mm	360x480x150	360x480x420

DPR4-4U is a classical band pass-reject duplexer for manufacture of single-channel UHF, separation between receiving and transmission frequency here is 5-10 MHz, repeater. Duplexer narrowband characteristic provides higher selectivity of repeater receiving section and attenuates transmitter out-of-band radiation better, than in common mobile duplexer case.

Typical duplexers response curves





400-490 MHz
Economic pass/reject duplexers
DPRE4-4UL, DPRE4-4UM,
DPRE4-4UH
DPRE4-6UL, DPRE4-6UM,
DPRE4-6UH

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DPRE4-4U



DPRE4-6U



Electrical specifications

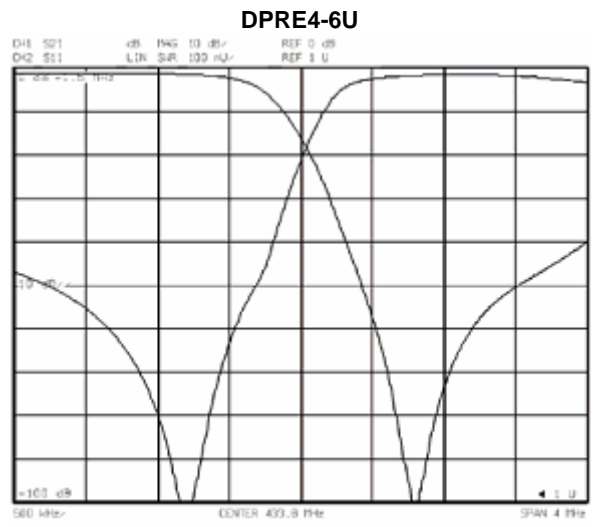
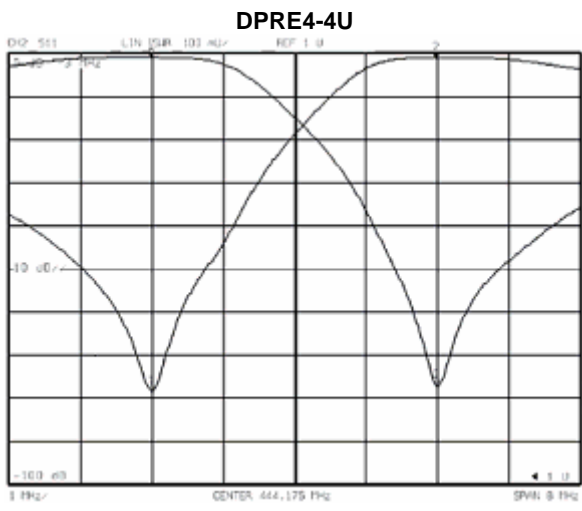
Model	DPRE4-4UL	DPRE4-4UM	DPRE4-4UH	DPRE4-6UL	DPRE4-6UM	DPRE4-6UH
Operating frequency band, MHz	400-440	430-470	470-490	400-440	430-470	470-490
Insertion loss (adjustable) not more, dB	1.5	1.5	1.5	2	2	2
Frequency separation TX/RX (min), MHz	2	2	2	1.6	1.6	1.6
Impedance, Ohm	50	50	50	50	50	50
Isolation, not less, dB	75	75	75	90	90	90
VSWR, not more than	1.5	1.5	1.5	1.5	1.5	1.5
Input power, not more, W	300	300	300	300	300	300
Temperature range, °C				from -30 to +60		
Cavity electrical length	1/4λ	1/4λ	1/4λ	1/4λ	1/4λ	

Mechanical specifications

Model	DPRE4-4UL	DPRE4-4UM	DPRE4-4UH	DPRE4-6UL	DPRE4-6UM	DPRE4-6UH
Diameter, mm (ins.)	116 (4")	116 (4")	116 (4")	116 (4")	116 (4")	116 (4")
Weight, kg	5.8	5.8	5.8	8.1	8.1	8.1
Connector				N-female		
Mount to 19-inch rack				present		
Length/Width/Depth, mm				800x480x265		

These new economic models distinguish from the traditional band reject duplexers as the coaxial tripling elements are changed by the whole-soldered nodes. The filter has a construction that ensures a high thermo-stability due to Invar alloy. A high quality-factor of each cavity is provided by means of application of the pure electro-technical copper and by the silvering of the contacting parts. An adjusting is being implemented on the modern network spectrum analyzers manufactured by Agilent Technologies and Rohde&Schwartz.

Typical duplexers response curves



2009



400-490 MHz Narrowband duplexers DPF4- 4U, DPF4-6U

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DPF4-4U



DPF4-6U



Electrical specifications

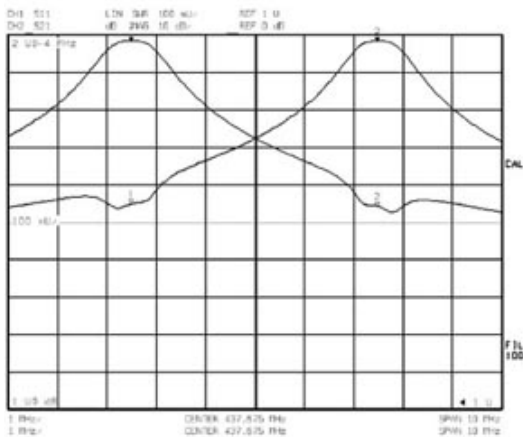
Model	DPF4-4U	DPF4-6U
Operating Frequency band, MHz		400-490
Insertion loss (adjustable) not more, dB	1	1,5
Frequency separation TX/RX (min), MHz		5
Impedance, Ohm		50
Isolation, not less, dB	45	60
VSWR, not more than		1,5
Input power, not more, W		not more than 200
Temperature range, °C		from -30 to +60
Cavity electrical length		1/4λ

Mechanical specifications

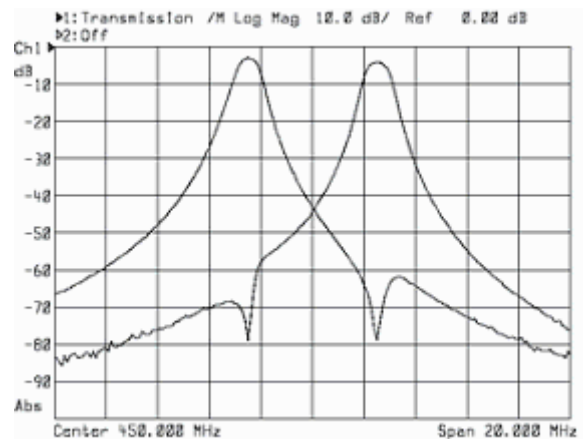
Model	DPF4-4U	DPF4-6U
Diameter, mm (ins.)		110 (4")
Weight, kg	5,8	8,4
Connector		N-female
Mount to 19-inch rack		yes
Length/Width/Depth, mm		360x480x225

Duplexer DPF4-4U will be quite effective in case your frequency plan assumes 10 MHz separation between receiving and transmission frequency, the number of channels is rather small, and they occupy not more than 1 MHz band. Channel bandwidth will rise up to 1.5 MHz after installation of six cavities; gain slope will be improved also.

Typical duplexers response curves



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DPF4-4U

DPF4-6U



400-490 MHz Band Pass Duplexer DPS4-6U

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Electrical specifications

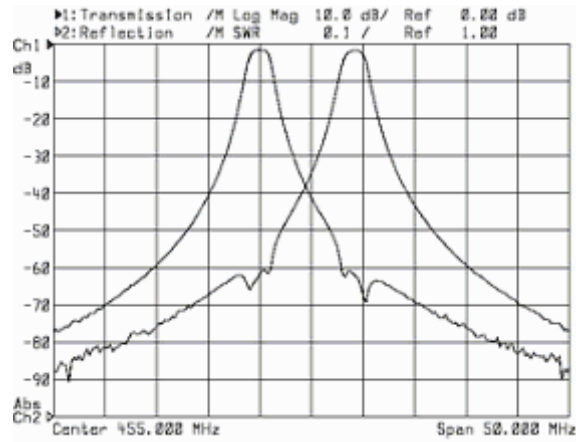
Model	DPS4-6U
Operating Frequency band, MHz	400-490
Insertion loss (adjustable) not more, dB	1,5
Frequency separation TX/RX (min), MHz	5
Band pass, MHz	1.0
Impedance, Ohm	50
Isolation, not less, dB	50
VSWR, not more than	1,5
Input power, not more, W	not more 200
Temperature Range, °C	from -30 to +60
Cavity electrical length	1/4λ

Mechanical specifications

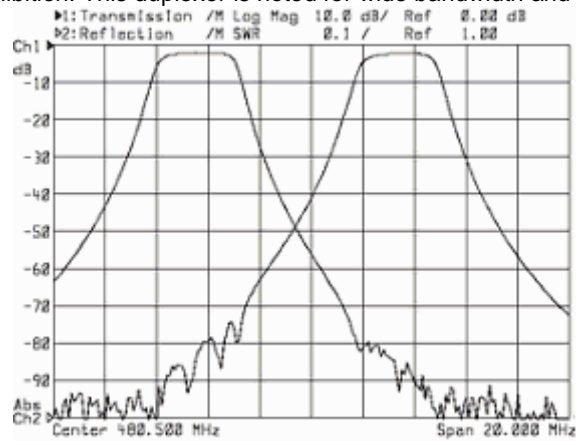
Model	DPS4-6U
Diameter, mm (ins.)	116 (4")
Weight, kg	8,4
Connector	N-female
Mount to 19-inch rack	present
Length/Width/Depth, mm	360x480x225

Bandpass duplexer DPS4-6U was designed specifically for multichannel repeaters with 10 MHz TX/RX frequency separation and such number of channels, that will fit in not more than 1.0 MHz wide band. Beside bandwidth increase, slope of response curve inclinations will become better, if you'll install six jars (DPS4-6U).

Typical duplexers response curves



Our engineers are ready to offer you customized equipment, to solve different problems, you are facing constructing antenna-feeder systems, in addition to serial product line. Response curve of DPS4-10U 10 duplexer, build on 10 four-inch cavities, is demonstrated here as an exhibition. This duplexer is noted for wide bandwidth and higher value of TX/RX isolation.





400-490 MHz Mobile duplexers MDF-6U



Electrical specifications

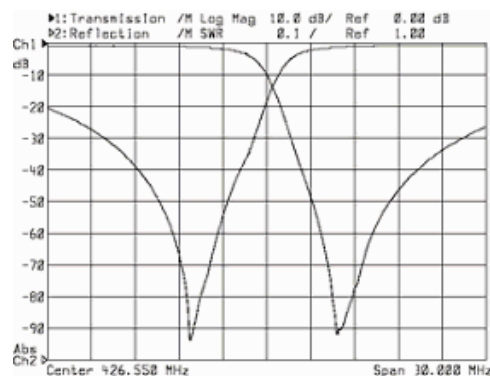
Model	MDF-6UL5/8	MDF-6UL8/13	MDF-6UM8/13
Operating Frequency band, MHz	400-430	400-430	440-470
Insertion loss (adjustable) not more, dB	1,3	1.3	1.3
Frequency separation TX/RX (min), MHz	5-8	8-13	8-13
Impedance, Ohm		50	
Isolation, not less, dB		75	
VSWR, not more than		1,5	
Input power, not more, W	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

