

dbSpectra  
Always a Better Value

# 2012 PRODUCT GUIDE

Antennas • Combiners • Filters • Duplexers • Multicouplers

# Omni Antennas

Antennas

Antennas

dbSpectra omni antenna construction and components provide trouble-free service in severe environments.

- **360° Horizontal Beamwidth**
- **7/16 DIN or N(F) Input Connector**
- **Corporate Fed Arrays**  
Excellent gain flatness across wide frequency ranges with 50 Ohms Impedance.
- **PIM Rated Designs**  
Designed and constructed for outstanding passive intermodulation performance.
- **Sturdy Construction**  
Heavy-wall (1/4 inch minimum) fiberglass radomes and 2.5 inch (6.4 cm) diameter masts provide minimal tip deflection.  
  
Within the fiberglass radome is a solid brass tubing back-bone for strength and excellent lightning protection (DC Ground).
  - Radiating elements are brass tubing with soldered connections.
  - Solid copper hard line internal feedlines.
  - Integral shock absorption system and bonding to strong aluminum alloy masts with support clamps provided.
- **Antenna Pattern Downtilt**  
Beam uptilt available for inverted mounting.
- **Moisture Resistant**  
Proven to withstand heavy rain and humid climates. Operational temperature range -30°C to +60°C.
- **High Power Rating**  
Standard single array models provide up to 500 Watts continuous average power or 1200 Watts continuous power.
- **Multiple Antennas**  
Get two or three antennas in a single radome; use one antenna slot on a tower for two or three antennas.

	Model Number	Frequency (MHz)	Bandwidth (MHz)	Type	Gain (dBd)	Vertical Beamwidth (degrees)	Beam Tilt (degrees)	Isolation min. (dB)	Flat Plate Area, ft <sup>2</sup> (m <sup>2</sup> )	Survival Wind Speed without ice, mph(kph)	Survival Wind Speed with 0.5" radial ice, mph(kph)	Length, ft(m)	Radome O.D., in(cm)	Net Weight w/o bracket, lb(kg)	Shipping Weight, lb(kg)	
VHF	DS1E03F36U-D	140-150	11	Single	3	30	0	N/A	2.5 (0.23)	120 (193)	100 (161)	14.9 (4.5)	3 (7.6)	43 (19.5)	73 (33.1)	
	DS1E06F36U-D	140-150	11	Single	6	16	0	N/A	4.58 (0.43)	75 (121)	52 (84)	22.9 (7)	3 (7.6)	65 (29.5)	95 (43.1)	
	DS1E03F36D-D	140-150	11	Dual	3	30	0	30	4.1 (0.38)	75 (121)	65 (105)	24.3 (7.4)	3 (7.6)	70 (31.8)	100 (45.4)	
	DS1F00F36U-D	150-164	15	Single	0	65	0	N/A	1.63 (0.15)	200 (322)	161 (260)	8.2 (2.5)	3 (7.6)	20 (9.1)	40 (18.1)	
	DS1F03F36U-D	150-164	15	Single	3	30	0	N/A	2.53 (0.24)	110 (177)	93 (150)	12.6 (3.8)	3 (7.6)	37 (16.8)	67 (30.4)	
	DS1F06F36U-D	150-164	15	Single	6	16	0	N/A	4.38 (0.41)	75 (121)	60 (97)	21.9 (6.7)	3 (7.6)	60 (27.2)	90 (40.8)	
	DS1F03F36D-D	150-164	15	Dual	3	30	0	30	4.5 (0.42)	75 (121)	65 (105)	22.3 (6.8)	3 (7.6)	63 (28.6)	93 (42.2)	
	DS1F06F36U3D	150-164	15	Beamtilt	6	16	3 Down	N/A	4.38 (0.41)	75 (121)	60 (97)	21.9 (6.7)	3 (7.6)	60 (27.2)	90 (40.8)	
	DS1G03F36U-D	160-174	15	Single	3	30	0	N/A	2.53 (0.24)	110 (177)	93 (150)	12.7 (3.9)	3 (7.6)	37 (16.8)	67 (30.4)	
	DS1G06F36U-D	160-174	15	Single	6	16	0	N/A	4.38 (0.41)	75 (121)	60 (97)	21.9 (6.7)	3 (7.6)	60 (27.2)	90 (40.8)	
	DS1G03F36D-D	160-174	15	Dual	3	30	0	30	4.5 (0.42)	75 (121)	65 (105)	22.3 (6.8)	3 (7.6)	63 (28.6)	93 (42.2)	
	DS2C00F36U-D	217-222	6	Single	0	60	0	N/A	1.9 (0.18)	222 (357)	193 (311)	7.7 (2.3)	3 (7.6)	19 (8.6)	39 (17.7)	
	DS2C03F36U-D	217-222	6	Single	3	30	0	N/A	1.9 (0.18)	172 (277)	150 (241)	9.9 (3)	3 (7.6)	26 (11.8)	56 (25.4)	
	DS2C06F36U-D	217-222	6	Single	6	16	0	N/A	2.58 (0.24)	110 (177)	96 (154)	18.1 (5.5)	3 (7.6)	47 (21.3)	77 (34.9)	
	DS2C00F36D-D	217-222	6	Dual	0	60	0	30	2.4 (0.22)	130 (209)	115 (185)	12.6 (3.8)	3 (7.6)	40 (18.1)	70 (31.8)	
	DS2C03F36D-D	217-222	6	Dual	3	30	0	30	4.1 (0.38)	75 (121)	65 (105)	18.6 (5.7)	3 (7.6)	70 (31.8)	100 (45.4)	
	UHF	DS4A00F36U-D	406-436	31	Single	0	60	0	N/A	0.38 (0.04)	350 (565)	260 (418)	2.8 (0.9)	2 (5.1)	5.5 (2.5)	9.6 (4.4)
		DS4A03F36U-D	406-436	31	Single	3	30	0	N/A	0.83 (0.08)			5 (1.5)	3 (7.6)	8 (3.6)	18 (8.2)
DS4A06F36U-D		406-436	31	Single	6	16	0	N/A	2.35 (0.22)	140 (225)	115 (185)	11.8 (3.6)	3 (7.6)	35 (15.9)	65 (29.5)	
DS4A08F36U-D		406-436	31	Single	8	10	0	N/A	3.65 (0.34)	90 (145)	65 (105)	18.3 (5.6)	3 (7.6)	47 (21.3)	77 (34.9)	
DS4A10F36U-D		406-436	31	Single	10	6	0	N/A	4 (0.37)	75 (121)	60 (97)	24 (7.2)	3 (7.6)	70 (31.8)	100 (45.4)	
DS4A03F36D-D		406-436	31	Dual	3	30	0	30	2 (0.19)	161 (259)	130 (209)	10.4 (3.2)	3 (7.6)	29 (13.2)	59 (26.8)	
DS4A06F36D-D		406-436	31	Dual	6	16	0	30	3.06 (0.28)	90 (145)	65 (105)	18.3 (5.6)	3 (7.6)	47 (21.3)	77 (34.9)	
DS4B00F36U-D		425-455	31	Single	0	60	0	N/A	0.34 (0.03)			2.9 (0.9)	3 (7.6)	5.5 (2.5)	15.5 (7)	
DS4B03F36U-D		425-455	31	Single	3	30	0	N/A	0.92 (0.09)			5.5 (1.7)	2 (5.1)	14 (6.4)	25 (11.3)	
DS4B06F36U-D		425-455	31	Single	6	16	0	N/A	2.35 (0.22)	140 (225)	115 (185)	11.8 (3.6)	3 (7.6)	35 (15.9)	65 (29.5)	
DS4B10F36U-D		425-455	31	Single	10	6	0	N/A	3.98 (0.37)	70 (113)	50 (80)	23.8 (7.3)	3 (7.6)	65 (29.5)	95 (43.1)	
DS4B03F36D-D		425-455	31	Dual	3	30	0	36	1.74 (0.16)	120 (193)	100 (161)	14 (4.3)	3 (7.6)	40 (18.1)	70 (31.8)	
DS4B06F36D-D		425-455	31	Dual	6	16	0	36	3.06 (0.28)	90 (145)	65 (105)	19.4 (5.9)	3 (7.6)	50 (22.7)	80 (36.3)	
DS4C00F36U-D		450-482	33	Single	0	60	0	N/A	0.38 (0.04)	350 (565)	260 (418)	2.8 (0.9)	2 (5.1)	5.5 (2.5)	9.6 (4.4)	
DS4C03F36U-D		450-482	33	Single	3	30	0	N/A	1.59 (0.15)	200 (322)	175 (282)	8 (2.4)	3 (7.6)	20 (9.1)	40 (18.1)	
DS4C06F36U-D		450-482	33	Single	6	16	0	N/A	2 (0.19)	161 (259)	130 (209)	10.3 (3.1)	3 (7.6)	29 (13.2)	59 (26.8)	
DS4C08F36U-D		450-482	33	Single	8	10	0	N/A	3.65 (0.34)	90 (145)	65 (105)	18.3 (5.6)	3 (7.6)	47 (21.3)	77 (34.9)	
DS4C10F36U-D		450-482	33	Single	10	6	0	N/A	4.78 (0.44)	70 (113)	50 (80)	23.8 (7.3)	3 (7.6)	65 (29.5)	95 (43.1)	
DS4C00F36D-D		450-482	33	Dual	0	60	0	36	1.24 (0.12)	177 (285)	145 (233)	7.4 (2.3)	3 (7.6)	19 (8.6)	39 (17.7)	
DS4C03F36D-D		450-482	33	Dual	3	30	0	36	2.79 (0.26)	120 (193)	100 (161)	14 (4.3)	3 (7.6)	40 (18.1)	70 (31.8)	
DS4C06F36U3D		450-482	33	Beamtilt	6	16	3 Down	N/A	1.93 (0.18)	170 (274)	150 (241)	9.7 (3)	3 (7.6)	25 (11.3)	55 (24.9)	
DS4C08F36U3D		450-482	33	Beamtilt	8	10	3 Down	N/A	3.65 (0.34)	95 (153)	65 (105)	18.3 (5.6)	3 (7.6)	47 (21.3)	77 (34.9)	
DS4D00F36U-D		480-512	33	Single	0	60	0	N/A	0.4 (0.04)	350 (565)	260 (418)	2.8 (0.9)	2 (5.1)	5.5 (2.5)	9.6 (4.4)	
DS4D03F36U-D		480-512	33	Single	3	30	0	N/A	1.28 (0.12)	250 (402)	225 (362)	6.4 (2)	3 (7.6)	16 (7.3)	26 (11.8)	
DS4D06F36U-D	480-512	33	Single	6	16	0	N/A	2 (0.19)	161 (259)	130 (209)	10.3 (3.1)	3 (7.6)	29 (13.2)	59 (26.8)		
DS4D08F36U-D	480-512	33	Single	8	10	0	N/A	3.65 (0.34)	90 (145)	65 (105)	18.3 (5.6)	3 (7.6)	47 (21.3)	77 (34.9)		
DS4D10F36U-D	480-512	33	Single	10	6	0	N/A	4.0 (0.37)	75 (121)	60 (97)	23.9 (7.3)	3 (7.6)	65 (29.5)	95 (43.1)		
DS4D03F36D-D	480-512	33	Dual	3	30	0	35	1.6 (0.15)	300 (322)	175 (282)	8 (2.4)	3 (7.6)	20 (9.1)	40 (18.1)		
DS4D06F36D-D	480-512	33	Dual	6	16	0	35	3.06 (0.28)	90 (145)	65 (105)	19.4 (5.9)	3 (7.6)	50 (22.7)	80 (36.3)		

# Omni Antennas



**Left:** Omni Antennas with two inch and three inch radomes.

**Below:** Dual Omni Antenna with two DIN connectors.



	Model Number	Frequency (MHz)	Bandwidth (MHz)	Type	Gain (dBd)	Vertical Beamwidth (degrees)		Beam Tilt (degrees)	Isolation min. (dB)	Flat Plate Area, ft <sup>2</sup> (m <sup>2</sup> )	Survival Wind Speed without ice, mph(kph)	Survival Wind Speed with 0.5" radial ice, mph(kph)	Length, ft(m)	Radome O.D., in(cm)	Net Weight w/o bracket, lb(kg)	Shipping Weight, lb(kg)
700 MHz	DS7D03F36U-D	746-806	61	Single	3	30		0	N/A	0.4 (0.04)	350 (565)	260 (418)	3.6 (1.1)	2 (5.1)	6.7 (3)	14 (6.4)
	DS7D06F36U-D	746-806	61	Single	6	16		0	N/A	1.53 (0.14)	215 (346)	190 (306)	7.6 (2.3)	3 (7.6)	19 (8.6)	39 (17.7)
	DS7D09F36U-D	746-806	61	Single	9	8		0	N/A	2.43 (0.23)	120 (193)	100 (161)	14.5 (4.4)	3 (7.6)	41 (18.6)	71 (32.2)
	DS7D10F36U-D	746-806	61	Single	10	6		0	N/A	2.88 (0.27)	120 (193)	100 (161)	14.4 (4.4)	3 (7.6)	41 (18.6)	71 (32.2)
700-800 MHz Broadband	DS7A06F36U-D	746-869	124	Single	6	6		0	N/A	1.53 (0.14)	215 (346)	190 (306)	7.6 (2.3)	3 (7.6)	19 (8.6)	39 (17.7)
	DS7A08F36U-D	746-869	124	Single	8	8		0	N/A	2.18 (0.2)	150 (241)	130 (209)	10.9 (3.3)	3 (7.6)	29 (13.2)	59 (26.8)
	DS7A06F36D-D	746-869	124	Dual	6	6		0	35	2.27 (0.21)	150 (241)	125 (201)	11.4 (3.5)	3 (7.6)	31 (14.1)	61 (27.7)
	DS7A06F36U6D	746-869	124	Beamtilt	6	6		3 Down	N/A	1.53 (0.14)	215 (346)	190 (306)	7.6 (2.3)	3 (7.6)	19 (8.6)	39 (17.7)
	DS7C09F36U-D	764-869	106	Single	9	8		0	N/A	2.88 (0.27)	120 (193)	100 (161)	14.4 (4.4)	3 (7.6)	41 (18.6)	71 (32.2)
	DS7C10F36U-D	764-869	106	Single	10	6		0	N/A	2.88 (0.27)	120 (193)	100 (161)	14.4 (4.4)	3 (7.6)	41 (18.6)	71 (32.2)
	DS7C10F36U3D	764-869	106	Beamtilt	10	6		3 Down	N/A	2.88 (0.27)	120 (193)	100 (161)	14.4 (4.4)	3 (7.6)	41 (18.6)	71 (32.2)
	DS7C10F36U6D	764-869	106	Beamtilt	10	6		6 Down	N/A	2.88 (0.27)	120 (193)	100 (161)	14.4 (4.4)	3 (7.6)	41 (18.6)	71 (32.2)
	DS7B12F36U-D	764-806	43	Single	12	3		0	N/A	4.77 (0.44)	75 (121)	60 (97)	24.0 (7.3)	3 (7.6)	70 (31.8)	100 (45.4)
	DS7E12F36U-D	794-824	31	Single	12	3		0	N/A	4.77 (0.44)	75 (121)	60 (97)	24.0 (7.3)	3 (7.6)	70 (31.8)	100 (45.4)
800 MHz	DS8A03F36U-D	806-869	64	Single	3	30		0	N/A	0.24 (0.02)			2.9 (0.9)	2 (5.1)	5.5 (2.5)	9.6 (4.4)
	DS8A06F36U-D	806-869	64	Single	6	16		0	N/A	1.53 (0.14)	215 (346)	190 (306)	7.6 (2.3)	3 (7.6)	19 (8.6)	39 (17.7)
	DS8A09F36U-D	806-869	64	Single	9	8		0	N/A	2.43 (0.23)	135 (217)	120 (193)	12.2 (3.7)	3 (7.6)	36 (16.3)	66 (29.9)
	DS8A10F36U-D	806-869	64	Single	10	6		0	N/A	2.88 (0.27)	120 (193)	100 (161)	14.5 (4.4)	3 (7.6)	41 (18.6)	71 (32.2)
	DS8A12F36U-D	806-869	64	Single	12	3		0	N/A	4.43 (0.41)	75 (121)	60 (97)	22.3 (6.8)	3 (7.6)	63 (28.6)	93 (42.2)
	DS8A06F36D-D	806-869	64	Dual	6	16		0	40	2.27 (0.21)	150 (241)	125 (201)	11.4 (3.5)	3 (7.6)	31 (14.1)	61 (27.7)
	DS8A09F36D-D	806-869	64	Dual	9	8		0	40	4.22 (0.39)	80 (129)	68 (109)	21.2 (6.5)	3 (7.6)	52 (23.6)	82 (37.2)
	DS8A06F36U3D	806-869	64	Beamtilt	6	16		3 Down	N/A	1.53 (0.14)	215 (346)	190 (306)	7.6 (2.3)	3 (7.6)	19 (8.6)	39 (17.7)
	DS8A09F36U3D	806-869	64	Beamtilt	9	8		3 Down	N/A	2.24 (0.21)	150 (241)	130 (209)	11.3 (3.4)	3 (7.6)	30 (13.6)	60 (27.2)
	DS8A09F36U6D	806-869	64	Beamtilt	9	8		6 Down	N/A	2.24 (0.21)	150 (241)	130 (209)	11.3 (3.4)	3 (7.6)	30 (13.6)	60 (27.2)
	DS8A10F36U3D	806-869	64	Beamtilt	10	6		3 Down	N/A	2.57 (0.24)	125 (201)	110 (177)	12.9 (3.9)	3 (7.6)	38 (17.2)	68 (30.8)
	DS8A10F36U6D	806-869	64	Beamtilt	10	6		6 Down	N/A	2.5 (0.23)	120 (193)	100 (161)	14.5 (4.4)	3 (7.6)	41 (18.6)	71 (32.2)
900 MHz	DS9A03F36U-D	890-960	71	Single	3	30		0	N/A	0.24 (0.02)			2.9 (0.9)	2 (5.1)	5.5 (2.5)	9.6 (4.4)
	DS9A06F36U-D	890-960	71	Single	6	16		0	N/A	1.28 (0.12)	250 (402)	225 (362)	6.7 (2)	3 (7.6)	18 (8.2)	28 (12.7)
	DS9A09F36U-D	890-960	71	Single	9	8		0	N/A	2.26 (0.21)	150 (241)	127 (204)	11.4 (3.5)	3 (7.6)	30 (13.6)	60 (27.2)
	DS9A10F36U-D	890-960	71	Single	10	6		0	N/A	3.25 (0.3)	105 (169)	88 (142)	16.3 (5)	3 (7.6)	45 (20.4)	75 (34)
	DS9A12F36U-D	890-960	71	Single	12	3		0	N/A	4.33 (0.4)	75 (121)	60 (97)	21.8 (6.6)	3 (7.6)	52 (23.6)	82 (37.2)
	DS9A03F36D-D	890-960	71	Dual	3	30		0	40	1.38 (0.13)			5.6 (1.7)	3 (7.6)	8.5 (3.9)	18.5 (8.4)
	DS9A06F36D-D	890-960	71	Dual	6	16		0	40	2.27 (0.21)	150 (241)	125 (201)	11.4 (3.5)	3 (7.6)	31 (14.1)	61 (27.7)
	DS9A09F36D-D	890-960	71	Dual	9	8		0	45	3.83 (0.36)	90 (145)	75 (121)	19.2 (5.9)	3 (7.6)	50 (22.7)	80 (36.3)
	DS9A06F36U3D	890-960	71	Beamtilt	6	16		3 Down	N/A	1.28 (0.12)	250 (402)	225 (362)	6.7 (2)	3 (7.6)	18 (8.2)	28 (12.7)
	DS9A06F36U6D	890-960	71	Beamtilt	6	16		6 Down	N/A	1.28 (0.12)	250 (402)	225 (362)	6.7 (2)	3 (7.6)	18 (8.2)	28 (12.7)
	DS9A09F36U3D	890-960	71	Beamtilt	9	8		3 Down	N/A	2.08 (0.19)	150 (241)	127 (204)	11.4 (3.5)	3 (7.6)	30 (13.6)	60 (27.2)
	DS9A09F36U6D	890-960	71	Beamtilt	9	8		6 Down	N/A	2.08 (0.19)	150 (241)	127 (204)	11.4 (3.5)	3 (7.6)	30 (13.6)	60 (27.2)
	DS9A10F36U3D	890-960	71	Beamtilt	10	6		3 Down	N/A	2.5 (0.23)	105 (169)	88 (142)	16.3 (5)	3 (7.6)	45 (20.4)	75 (34)
	DS9A10F36U6D	890-960	71	Beamtilt	10	6		6 Down	N/A	2.5 (0.23)	105 (169)	88 (142)	16.3 (5)	3 (7.6)	45 (20.4)	75 (34)

# Control Station Combiners

Combiners

Combiners



**HC000-08F Short Haul Control Station Combiner**

- Broadband operation.
- One antenna for TX and RX.
- TX and RX on each radio port.
- Combine control stations and enhance system isolation.
- Analog or digital radio compatible.



**HC000-16F Short Haul Control Station Combiner**

- Broadband operation.
- One antenna for TX and RX.
- TX & RX on each radio port.
- Combine control stations and enhance system isolation.
- Analog or digital radio compatible.



**VHF and UHF Control Station Combiner**

- Separate TX and RX antennas.
- Low profile building block modules.
- TX and RX on each radio port.
- Combine control stations and enhance system isolation.
- Amplifier for RX signals.
- Analog or digital radio compatible.



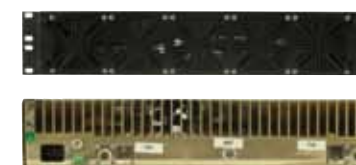
**700, 800 and 900 MHz Control Station Combiner**

- Separate TX and RX antennas.
- Low profile building block modules.
- TX and RX on each radio port.
- Combine control stations and enhance system isolation.
- Amplifier for RX signals.
- Analog or digital radio compatible.



**HC01100, HC01200 and HC01300 Cost Effective Control Station Combiner**

- Separate TX and RX antennas.
- Low profile building block modules.
- TX and RX on each radio port.
- Combine control stations and enhance system isolation.
- Analog or digital radio compatible.



**Hybrid TX Combiner**

- No TX frequency spacing limitation.
- Automatic thermal switch to regulate fans. Fans operate on either AC or DC power.
- No factory or field tuning required.

## ELECTRICAL SPECIFICATIONS

	HC000-08F	HC000-16F	VHF and UHF	700, 800 and 900 MHz	HC01100, HC01200 and HC01300	Hybrid TX
<b>Frequency Range</b>	100-960 MHz	100-960 MHz	118-512 MHz	746-960 MHz	746-960 MHz	150-960 MHz
<b>Frequency Separation</b>	No limitations	No limitations	No limitations	No limitations	No limitations	No limitations
<b># of Channels</b>	8	16	4, 8, 12 or 16	6, 8, 12, 16, 18, 24 or 32	8	2, 3 or 4
<b>TX to TX Isolation</b>	60 dB (min)	60 dB (min)	60 dB (min), 70 dB (max)	60 dB (min), 70 dB (max)	55 dB (min), 60 dB (max)	70 dB (min), 75 dB (max)
<b>TX to RX Isolation</b>	60 dB (min)	60 dB (min)	60 dB (min), 70 dB (max)	60 dB (min), 70 dB (max)	55 dB (min), 60 dB (max)	
<b>ANT to TX Isolation</b>	30 dB (min), 35 dB (max)	30 dB (min), 35 dB (max)	45 dB (min), 55 dB (max)	45 dB (min), 55 dB (max)	45 dB (min), 50 dB (max)	50 dB (min), 55 dB (max)
<b>RX to RX Isolation</b>	60 dB (min)	60 dB (min)	60 dB (min)	60 dB (min)	55 dB (min)	
<b>Insertion Loss</b>	33 dB (min), 35 dB (max)	39 dB (typ)			12 dB (typ)	-4.5 dB to 7.9 dB (typ)
<b>TX Loss*</b>			7.6 dB to 15 dB*	9.2 dB to 19.5 dB*		
<b>RX Loss*</b>			8 dB to 16 dB*	10.5 dB to 20 dB*	12.7 dB	
<b>RX Gain*</b>			+4 dB to -3.5 dB (typ)*	+1.5 dB to -8 dB*		
<b>TX Return Loss</b>	19 dB (min)	19 dB (min)	14 dB (min)	14 dB (min)	14 dB (min)	14 dB (min)
<b>RX Return Loss</b>	14 dB (min)	14 dB (min)	10 dB (min)	10 dB (min)	14 dB (min)	
<b>Power/Channel</b>			50 Watts	50 Watts		
<b>Power/Channel 100% Duty Cycle</b>	15 Watts	15 Watts			15 Watts	
<b>Power/Channel 40% Duty Cycle</b>	35 Watts	35 Watts			35 Watts	
<b>Power/Channel 20% Duty Cycle</b>	50 Watts	50 Watts			50 Watts	
<b>Power Source VAC</b>			110 to 240 VAC 50/60 Hz	110 to 240 VAC 50/60 Hz		110 to 240 VAC 50/60 Hz
<b>Power Source VDC</b>			12 VDC (nominal)	12 VDC (nominal)		12 VDC (nominal)
<b>Power Consumption</b>			AC 30 Watts, DC 18 Watts	AC 30 Watts, DC 18 Watts		AC 30 Watts, DC 18 Watts

## MECHANICAL SPECIFICATIONS

	HC000-08F	HC000-16F	VHF and UHF	700, 800 and 900 MHz	HC01100, HC01200 and HC01300	Hybrid TX
<b>Construction, Finish</b>	Aluminum, Gold	Aluminum, Gold	Aluminum, Black	Aluminum, Black	Aluminum, Gold	Aluminum, Black
<b>Input Connector</b>	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)
<b>Mounting</b>	EIA 19-inch Rack	EIA 19-inch Rack	EIA 19-inch Rack	EIA 19-inch Rack	EIA 19-inch Rack	EIA 19-inch Rack
<b>Temperature Range</b>	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C

## DIMENSIONS

	HC000-08F	HC000-16F	VHF and UHF	700, 800 and 900 MHz	HC01100, HC01200 and HC01300	Hybrid TX
<b>Width</b>	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)
<b>Height*</b>	1.75 in (44.5 mm) 1 RU	3.5 in (88.9 mm) 2 RU	1.75 in (44.5 mm) to 8.75 in (222.3 mm)* 1 RU to 5 RU*	1.75 in (44.5 mm) to 8.75 in (222.3 mm)* 1 RU to 5 RU*	1.75 in (44.5 mm) 1 RU	3.5 in (89 mm) 2 RU
<b>Depth</b>	8 in (203.2 mm)	8 in (203.2 mm)	17 in (431.8 mm)	17 in (431.8 mm)	8 in (203.2 mm)	12.5 in (317.5 mm)
<b>Net Weight*</b>	12 lb (5.4 kg)	25 lb (11.3 kg)	16 lb (7.3 kg) to 80 lb (36.6 kg)*	13 lb (5.9 kg) to 65 lb (29.5 kg)*	12 lb (5.4 kg)	34 lb (15.9 kg)
<b>Shipping Weight*</b>	22 lb (10 kg)	35 lb (15.9 kg)	26 lb (11.8 kg) to 90 lb (40.8 kg)*	23 lb (10.4 kg) to 75 lb (31 kg)*	22 lb (10 kg)	45 lb (20.5 kg)

\* Determined by # of channels. For detailed information please visit [www.dbspectra.com](http://www.dbspectra.com).

# Cavity Transmit Combiners

Cavity Combiners

Cavity Combiners



**DS4548D**  
8" and 5" Dual Cavity  
VHF Combiner

- Superior TX noise attenuation.
- Dual cavities per channel.



**DS4345D**  
5" Dual Cavity  
TX Combiner

- Compact packaging.
- Superior TX noise attenuation.
- Field proven cavity design.
- Excellent for congested VHF sites.



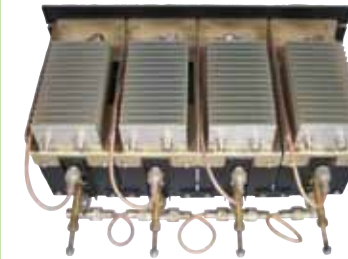
**DB4348**  
8" Single Cavity  
TX Combiner

- Maximum performance to size.
- Easy field tuning and expansion.
- Compact packaging.
- Space available for filtering or RXMC.



**DS4345**  
5" Single Cavity  
TX Combiner

- Compact packaging to minimize rack space.
- Field proven 5" cavity design.
- Field expandable.



**DS4364**  
Cavity TX Combiner

- Very compact packaging.
- Easy field tuning and expansion.
- Broadband performance.
- Maximum performance to size.



**DB4368**  
Cavity TX Combiner

- Low insertion loss.
- Solid copper cavities.
- Compact packaging.
- Dual junction isolators.
- Easy field tuning and expansion.



**DSCC**  
Cavity TX Combiner

- Low insertion loss.
- Dual junction isolator.
- 5" cavities with ceramic elements.
- Easy field tuning and expansion.
- Broadband performance.
- Compact packaging.

## ELECTRICAL SPECIFICATIONS

<b>Frequency Range (MHz)</b>	148-174 MHz	148-174 MHz	148-174 MHz	148-174 MHz	380-512 MHz	380-512 MHz	763-940 MHz
<b>Frequency Separation (kHz)</b>	75 kHz (50 kHz w/optional load kit)	150 kHz	75 kHz	150 kHz	250 kHz	100 kHz	150 kHz
<b># of Channels</b>	2 to 6	2 to 6	2 to 7	2 to 6	2 to 8	2 to 10	2 to 24
<b>TX to TX Isolation</b>	80 dB (min)	75 dB (min), 80 dB (max)	75 dB (min), 80 dB (max)	75 dB (min), 80 dB (max)	60 dB (min), 65 dB (max)	65 dB (min), 70 dB (max)	65 dB (min)
<b>TX to RX Isolation</b>					25 dB at 5 MHz	35 dB at 5 MHz	>45 dB at 30 MHz
<b>ANT to TX Isolation</b>	70 dB (min)	70 dB (min), 75 dB (max)	70 dB (min), 75 dB (max)	70 dB (min), 75 dB (max)	35 dB at 5 MHz	50 dB (min), 55 dB (max)	50 dB (min)
<b>Transmitter SBN at Receiver</b>	> 45 dB at 1.5 MHz		>40 dB at 5 MHz	35 dB at 5 MHz			
<b>Insertion Loss*</b>	2.9 dB to 5.1 dB (typ)*	3.4 dB to 5.4 dB (typ)*	2.7 dB to 5.3 dB (typ)*	2.8 dB to 4.4 dB (typ)*	3.0 dB to 5.4 dB (typ)*	2.3 dB to 9.6 dB (typ)*	1.9 dB to 4.6 dB (typ)*
<b>Transmitter Return Loss</b>	14 dB (min)	19 dB (min)	19 dB (min)	19 dB (min)	19 dB (min)	19 dB (min)	19 dB (min)
<b>Power/Channel</b>	125 Watts	125 Watts	125 Watts	100 Watts	100 Watts	150 Watts	110 Watts

## MECHANICAL SPECIFICATIONS

<b>Construction, Finish</b>	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Copper, Black	Copper, Black	Ceramic, Black
<b>Input Connector</b>	N(F) or 7/16 DIN	N(F) or 7/16 DIN	N(F)	N(F) or 7/16 DIN	N(F)	N(F)	N(F)
<b>Output Connector</b>							N(F) or 7/16 DIN(F)
<b>Mounting</b>	EIA 19" Rack	EIA 19" Rack	DBMOFR-22U (45" Rack) DBMOFR-43U (83" Rack) 2-post rack (86")	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack
<b>Temperature Range</b>	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	5° to +60° C	-10° to +60° C	-30° to +60° C

## DIMENSIONS

<b>Cavity Diameter</b>	8 in (203 mm)	5 in (127 mm)	8 in (203 mm)	5 in (127 mm)	4 in (101.6 mm)	9.25 in x 8.5 in x 9.25 in (235 mm x 215 mm x 235 mm)	5 in (127 mm)
<b>Width*</b>	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	2 to 4 channels - 19 in (482.6 mm)*	19 in (482.6 mm)	3 channel - 19 in (482.6 mm)
<b>Height*</b>	29 in (736.6 mm) 17 RU	26 in (660.4 mm) 15 RU	29 in (736.6 mm) 17 RU	26 in (660.4 mm) 15 RU	2 to 4 channels - 7 in (177.8 mm)* 4 RU*	4 channel - 21 in (533.4 mm)* 12 RU*	3 channel - 7 in (177.8 mm)* 4 RU*
<b>Depth*</b>	4 channel - 17 in (431.8 mm)*	4 channel - 12.5 in (318 mm)*	4 channel - 17 in (431.8 mm)*	3 channel - 6.75 in (171.45 mm)*	2 to 4 channels - 15 in (381 mm)*	12.5 in (318 mm)	3 channel - 12.5 in (317.5 mm)*
<b>Net Weight*</b>	12 lb (5.4 kg)	4 channel - 71 lb (32.3 kg)*	4 channel - 80 lb (36.4 kg)*	3 channel - 26 lb (11.8 kg)*	2 to 4 channels - 35 lb (15.88 kg)*	4 channel - 76 lb (34.5 kg)*	3 channel - 25 lb (11.3 kg)*
<b>Shipping Weight*</b>	22 lb (10 kg)	4 channel - 81 lb (36.8 kg)	4 channel - 90 lb (40.9 kg)*	3 channel - 36 lb (16.4 kg)*	2 to 4 channels - 45 lb (20.4 kg)*	4 channel - 86 lb (39.1 kg)*	3 channel - 35 lb (15.9 kg)*

\* Determined by # of channels. For detailed information please visit [www.dbspectra.com](http://www.dbspectra.com).

# Bandpass Reject Duplexers



**DB4059**  
4 Cavity Bandpass Reject Duplexer

- High quality, tunable capacitor in each cavity generates the reject frequency.
- An Invar rod, with nearly zero expansion, assures frequency stability over a wide temperature range.
- Factory tuned; retunable with appropriate measuring equipment.
- Can be horizontal or vertical on a flat surface or mounted in a standard EIA 19" rack.



**DB4059-A**  
4 Cavity Bandpass Reject Duplexer

- High quality, tunable capacitor in each cavity generates the reject frequency.
- An Invar rod, with nearly zero expansion, assures frequency stability over a wide temperature range.
- Factory tuned; retunable with appropriate measuring equipment.
- Can be horizontal or vertical on a flat surface or mounted in a standard EIA 19" rack.



**DB4060**  
4 Cavity Bandpass Reject Duplexer

- Uses 2 TX and 2 RX cavities.
- Couple 2 transmitters, 2 receivers or 2 simplex units into a common antenna with frequencies separated by 500 or 300 kHz or more.



**DB4062**  
6 Cavity Bandpass Reject Duplexer

- Uses 3 TX and 3 RX cavities.
- Can couple 2 transmitters, 2 receivers or 2 simplex units into a common antenna with frequencies separated by 500 or 300 kHz or more.



**DSD404**  
4 Cavity Integrated Bandpass Reject Duplexer

- Invar rod, with nearly zero expansion, assures frequency stability over wide temperature range.
- Retunable with appropriate measuring equipment.
- Input/output connectors are DC Grounded for lightning/static protection.



**DSD406**  
6 Cavity Integrated Bandpass Reject Duplexer

- Invar rod, with nearly zero expansion, assures frequency stability over wide temperature range.
- Retunable with appropriate measuring equipment.
- Input/output connectors are DC Grounded for lightning/static protection.
- Includes bandpass cavities on TX and RX side to provide protection at congested sites.



**DB4090X**  
2 Cavity Bandpass Reject Duplexer

- Compact size.
- Bandpass/band reject cavities.
- Field tunable.
- For single channel operation.

## ELECTRICAL SPECIFICATIONS

Frequency Range	148-174 MHz	138-150 MHz	138-174 MHz	138-174 MHz	370-512 MHz	370-512 MHz	806-869 MHz
Frequency Separation	750 kHz	750 kHz	500 kHz	300 kHz	3 kHz	3 kHz	45 kHz
# of Cavities	4	4	4	6	4	6	2
Isolation	70 dB	70 dB	80 dB	100 dB	>80 dB	>100 dB	65 dB
TX Insertion Loss	1.2 dB (typ)	1.4 dB (typ)	1.5 dB (typ)	2.2 dB (typ)	0.8 dB (typ)	1.5 dB (typ)	0.7 dB (typ)
RX Insertion Loss	1.2 dB (typ)	1.4 dB (typ)	1.5 dB (typ)	2.2 dB (typ)	0.8 dB (typ)	1.5 dB (typ)	0.7 dB (typ)
Return Loss	14 dB (min)	14 dB (min)	14 dB (typ)	14 dB (typ)	14 dB (typ)	14 dB (typ)	14 dB (typ)
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Power Rating	150 Watts	150 Watts	250 Watts	250 Watts	150 Watts	150 Watts	150 Watts

## MECHANICAL SPECIFICATIONS

Construction, Finish	Copper, Black	Copper, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Copper, Black
Input Connector	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)
Mounting	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack
Temperature Range	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C

## DIMENSIONS

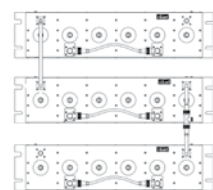
Cavity Size	4 in (102 mm)	4 in (102 mm)	8 in (203 mm)	8 in (203 mm)	4 in (102 mm)	2.8 in (71 mm)	4 in (102 mm)
Width	19 in (483 mm)	19 in (483 mm)	19.3 in (489 mm)	19.3 in (489 mm)	19 in (483 mm)	19 in (483 mm)	19 in (483 mm)
Height	5.25 in (133 mm) 3 RU	5.25 in (133 mm) 3 RU	34.5 in (876.3 mm) 20 RU	34.5 in (876.3 mm) 20 RU	5.3 in (133 mm) 3 RU	5.3 in (133 mm) 3 RU	5.3 in (133 mm) 3 RU
Depth	19 in (483 mm)	19 in (483 mm)	20.1 in (511 mm)	20.1 in (511 mm)	10.5 in (267 mm)	10.5 in (267 mm)	8.25 in (210 mm)
Net Weight	28 lb (12.7 kg)	28 lb (12.7 kg)	105 lb (48 kg)	105 lb (48 kg)	13 lb (5.9 kg)	15 lb (6.8 kg)	8 lb (3.6 kg)
Shipping Weight	38 lb (17.2 kg)	38 lb (17.2 kg)	115 lb (52 kg)	115 lb (52 kg)	23 lb (10.4 kg)	25 lb (11.3 kg)	18 lb (8.2 kg)

# Window Filter Duplexers



**DS3001-4DUP**  
VHF Window Filter Duplexer

- Compact design.
- Solid copper construction.
- For multi-channel VHF applications.



**DB3626DX**  
6 Cavity UHF Window Filter Duplexer

- For multi-channel applications, 450 MHz or 460 MHz bands (not both bands in same unit).
- Copper construction for better selectivity.
- Compact size.



**DP706869H**  
700 MHz Broadband Window Filter Duplexer

- High power duplexer with compact design.
- For multi-channel applications.
- Use with TX cavity combiner system.
- High isolation (high pass/low pass).



**DP806869H**  
800 MHz Broadband Window Filter Duplexer

- High-power duplexer with compact design.
- For multi-channel applications.
- High isolation (high pass/low pass).



**DP906869H**  
900 MHz Broadband Window Filter Duplexer

- High power duplexer with a compact design.
- For multi-channel applications.
- Use with TX cavity combiner system.
- High isolation (high pass/low pass).



**DSD706M**  
6 Cavity Multi-Channel Mobile Duplexer

- 4 to 6 MHz passband notch duplexer.
- Mobile applications for multi-frequency radios.



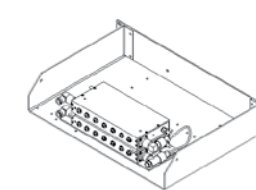
**DSD806M**  
6 Cavity Multi-Channel Mobile Duplexer

- 4 to 6 MHz passband notch duplexer.
- Mobile applications for multi-frequency radios.



**DSD906M**  
6 Cavity Multi-Channel Mobile Duplexer

- 4 to 6 MHz passband notch duplexer.
- Mobile applications for multi-frequency radios.



**DSD-HC113**  
800 MHz Control Station Combiner Duplexer

- Low insertion loss.
- Minimizes antennas for control station combiner applications.
- Broadband 800 MHz requirements.

## ELECTRICAL SPECIFICATIONS

Frequency Range	150-174 MHz	450-470 MHz	764-806 MHz	806-869 MHz	896-940 MHz	764-806 MHz	806-869 MHz	896-940 MHz	806-869 MHz
TX Frequency Range			764-776 MHz	851-869 MHz	935-940 MHz				851-869 MHz
RX Frequency Range			794-806 MHz	806-824 MHz	896-901 MHz				806-824 MHz
Bandwidth			12 MHz TX, 12 MHz RX	10 MHz TX, 18 MHz RX	5 MHz				18 MHz TX, 18 MHz RX
Pass Bandwidth	2 MHz	4 MHz				6 MHz	4 MHz	5 MHz	
Frequency Separation	2.5 kHz	1.5 kHz				30 kHz	45 kHz	34 kHz	
# of Cavities	8	6 or 12				6	6	6	
Isolation	75 dB		50 dB	65 dB RX, 100 dB TX	50 dB RX, 85 dB TX	60 dB	60 dB	60 dB	
RX Passband Isolation		80 dB							>90 dB
TX Passband Isolation		40 dB							>70 dB
TX Insertion Loss	1.2 dB (typ)	1.8 dB	1.0 dB	0.8 dB	1.5 dB	1.5 dB	1.5 dB	1.5 dB	1.5 dB ± 0.5 dB
RX Insertion Loss	1.2 dB (typ)	3.4 dB	1.0 dB	1.5 dB	1.5 dB	1.5 dB	1.5 dB	1.5 dB	1.5 dB ± 0.5 dB
Return Loss	14 dB (min)	14 dB (min)				14 dB (min)	14 dB (min)	14 dB (min)	14 dB (min)
TX Return Loss			19 dB (min)	19 dB (min)	19 dB (min)				
RX Return Loss			14 dB (min)	14 dB (min)	14 dB (min)				
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Power Rating	175 Watts	300 Watts	400 Watts	400 Watts	400 Watts	50 Watts	50 Watts	50 Watts	100 Watts

## MECHANICAL SPECIFICATIONS

Construction, Finish	Aluminum, Black	Copper, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black
Input Connector	N(F)	N(F)	N(F) or 7/16 DIN	N(F) or 7/16 DIN	N(F) or 7/16 DIN	N(F)	N(F)	N(F)	N(F)
Mounting	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	Surface mount	Surface mount	Surface mount	EIA 19" Rack; 2 RU tray
Temperature Range	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C

## DIMENSIONS

Cavity Size	4 in (102 mm)	2.8 in (71 mm)	2.8 in (71 mm)	1 in (25.4 mm)	2.8 in (71 mm)	1 in (25.4 mm)	1 in (25.4 mm)	1 in (25.4 mm)	
Width	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	7 in (177.8 mm)	7 in (177.8 mm)	7 in (177.8 mm)	19 in (482.6 mm)
Height	10.5 in (266 mm) 6 RU	15.75 in (400 mm) 9 RU	3.5 in (88.9 mm) 2 RU	3.5 in (88.9 mm) 2 RU	3.5 in (88.9 mm) 2 RU	1.3 in (31.8 mm)	1.3 in (31.8 mm)	1.3 in (31.8 mm)	3.5 in (88.9 mm)
Depth	19 in (482.6 mm)	10.5 in (267 mm)	12 in (304.8 mm)	12 in (304.8 mm)	12 in (304.8 mm)	8.3 in (211 mm)	8.3 in (211 mm)	8.3 in (211 mm)	12.5 in (317.5 mm)
Net Weight	56 lb (26 kg)	51 lb (23 kg)							
Shipping Weight	66 lb (29.9 kg)	61 lb (27.7 kg)							

# Bandpass/Window Filters



**DB4001N-1  
5-inch Cavity  
Bandpass Filter**

- Adjustable selectivity.
- Field proven construction and durability.
- Shipped factory tuned with ability to retune in the field.



**DB4001N-2  
5-inch Cavity  
Bandpass Filter**

- Adjustable selectivity.
- Field proven construction and durability.
- Shipped factory tuned with ability to retune in the field.



**DB4001N-3  
5-inch Cavity  
Bandpass Filter**

- Adjustable selectivity.
- Field proven construction and durability.
- Shipped factory tuned with ability to retune in the field.



**DSWF1004  
5-inch Cavity Bandpass  
Window Filter**

- Highly selective VHF window filter.
- Use as preselector between RX antenna and multicoupler.
- Factory tuned to specified frequencies.



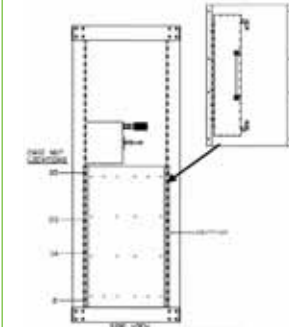
**DSWF1005  
5-inch Cavity Bandpass  
Window Filter**

- Highly selective VHF window filter.
- Use as preselector between RX antenna and multicoupler.
- Factory tuned to specified frequencies.



**DB3001-4 Series  
Bandpass/Bandreject  
Window Filter**

- Multiple channel applications.
- Copper construction.
- Temperature compensated.
- Standard rack mount, with rear support.



**DB3777  
Receive  
Window Filter**

- Frequency stable over a wide temperature range.
- Side mounting on side rack saves space.
- Excellent selectivity to protect receivers.
- 8 resonators/filters.



**DB3826  
UHF Dual Receive  
Window Filter**

- Frequency stable over a wide temperature range.
- Side mounting on side rack saves space.
- Excellent selectivity to protect receivers.
- 8 resonators/filters.

## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	150-174 MHz	148-174 MHz	148-174 MHz	148-174 MHz	148-174 MHz	150-165 MHz	370-512 MHz	450-512 MHz
<b>Pass Bandwidth</b>	variable	variable	variable	0.5 MHz	1.0 MHz	2 MHz	2 MHz to 4 MHz	2 MHz to 4 MHz
<b>Frequency Separation</b>						2.5 MHz		6 MHz (min) @ 450-470 MHz 3 MHz (min) @ 470-512 MHz
<b># of Cavities</b>	1	2	3	4	5	4		
<b># of Channels</b>	1	1	1			within bandwidth	within bandwidth	within bandwidth
<b>Isolation</b>				45 dB at ± 1 MHz	50 dB at ± 1 MHz	75 dB	>35 dB ± 1 MHz from band edges	>35 dB ± 1 MHz from band edges
<b>Insertion Loss</b>	0.5 dB to 2 dB	1.0 dB to 4 dB	1.9 dB to 6.4 dB	2.0 dB (max)	2.5 dB (max)	1.2 dB	3.5 dB	3.5 dB
<b>Return Loss</b>	14 dB	14 dB	14 dB	14 dB	14 dB	14 dB	14 dB	14 dB
<b>Impedance</b>	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms
<b>Power Rating</b>	275 Watts @ 0.5 dB Loss	150 Watts @ 1.0 dB Loss	100 Watts @ 2.0 dB Loss	150 Watts	150 Watts	175 Watts		

## MECHANICAL SPECIFICATIONS

<b>Construction, Finish</b>	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Aluminum, Black	Copper, Black	Copper, Black
<b>Input Connector</b>	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)
<b>Mounting</b>	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack
<b>Temperature Range</b>	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C

## DIMENSIONS

<b>Cavity Width</b>	5.5 in (135 mm)	5.5 in (135 mm)	5.5 in (135 mm)	5 in (127 mm)	5 in (127 mm)		2 in x 31 in (51 mm x 787 mm)	2 in x 31 in (51 mm x 787 mm)
<b>Width</b>	5.5 in (135 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)
<b>Height</b>	21 in (533.4 mm)	25 in (635 mm)	25 in (635 mm)	25 in (635 mm)	25 in (635 mm)	5.25 in (133.4 mm)	31.5 in (800.1 mm)	31.5 in (800.1 mm)
<b>Depth</b>	5.75 in (146.1 mm)	5.75 in (146.1 mm)	5.75 in (146.1 mm)	12.5 in (317.5 mm)	12.5 in (317.5 mm)	19 in (482.6 mm)	3.5 in (88.9 mm)	3.5 in (88.9 mm)
<b>Net Weight</b>	5 lb (2.3 kg)	13 lb (5.9 kg)	20 lb (9.07 kg)	25 lb (11.3 kg)	25 lb (11.3 kg)	28 lb (13 kg)	17 lb (7.7 kg)	34 lb (15.4 kg)
<b>Shipping Weight</b>	12 lb (5.4 kg)	21 lb (9.5 kg)	28 lb (12.7 kg)	35 lb (15.9 kg)	35 lb (15.9 kg)	38 lb (17.2 kg)	27 lb (12.24 kg)	44 lb (20 kg)

# Transmit/Receive Filters



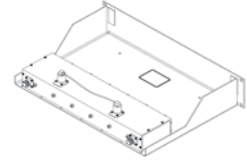
**DB3176  
TX or RX  
Window Filter**

- Flat passband with steep-sloped rejection characteristic to isolate undesired out-of-band frequencies.
- Copper construction.
- Frequency is stable at all power levels to 300 Watts.



**DS4FRWN04  
Single Window Filter**

- High selectivity for RX protection on crowded sites.
- Includes low noise amplifier on series filter models.
- Dual band models to fit all applications.
- Compact size.
- Directional coupler for easy testing.



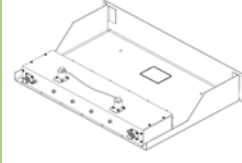
**DS7830  
RX Filter**

- Use between RXMC and antenna to protect receivers.
- Provides protection to 700 and 800 MHz RX systems.
- Low insertion loss and high isolation.



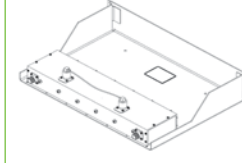
**DS7012  
Window Filter**

- Use between RXMC and antenna to prevent IM and RX interference.
- Provides protection to 700 MHz and 800 MHz RX systems.
- Low insertion loss and high isolation.



**DS7822  
RX Filter**

- Use between RXMC and antenna to protect receivers.
- Provides protection to 700 and 800 MHz RX systems.
- Low insertion loss and high isolation.



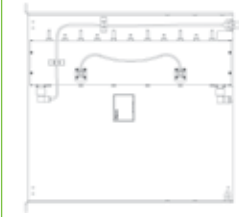
**DBS4258S10WT  
RX Filter**

- Low insertion loss and high isolation.



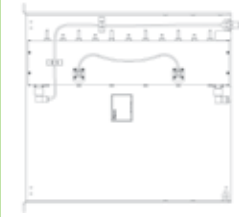
**DB4259S18RWT  
Trunked RX Filter**

- Essentially flat passband with steep-sloped rejection characteristic to isolate undesired out-of-band frequencies.
- Use between RXMC and antenna to protect receivers.
- Provides protection to RX systems from being over-driven by transmitters.



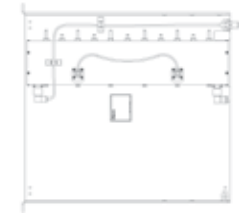
**DS8018TX-WT  
TX Filter**

- Essentially flat passband with steep-sloped rejection characteristic to isolate undesired out-of-band frequencies.
- Use between hybrid TX combiner and antenna.
- Provides transmitter sideband noise protection for RX system.



**DS906WT  
Trunked RX Filter**

- Essentially flat passband with steep-sloped rejection characteristic to isolate undesired out-of-band frequencies.
- Use between RXMC and antenna to protect receivers.
- Provides protection to RX systems from being over-driven by transmitters.



**DS9005-WT  
TX Filter**

- Essentially flat passband with steep-sloped rejection characteristic to isolate undesired out-of-band frequencies.
- Use between hybrid TX combiner and antenna.
- Provides transmitter sideband noise protection for RX system.

## ELECTRICAL SPECIFICATIONS

Frequency Range	370-512 MHz	450-470 MHz	793-824 MHz	794-806 MHz	794-816 MHz	806-816 MHz	806-824 MHz	851-869 MHz	896-901 MHz	935-940 MHz
Pass Bandwidth	3 MHz to 5 MHz	Single/4 MHz or Dual/4 MHz	31 MHz	12 MHz	22 MHz	10 MHz	18 MHz	18 MHz	5 MHz	5 MHz
Isolation	45 dB $\pm$ 2.5 MHz from band edges	Single >60 dB @ $\pm$ 1 MHz Dual >25 dB @ $\pm$ 0.5 MHz	80 dB @ 763-775 MHz 80 dB @ 851-869 MHz	80 dB @ 700-776 and 851-900 MHz	80 dB @ 763-775 MHz 90 dB @ 851-869 MHz	>42 dB @ 824 MHz >90 dB @ 851-869 MHz	>100 dB @ 851 MHz	>90 dB @ 824 MHz	85 dB @ 935 MHz	90 dB @ 901 MHz
Insertion Loss	1.5 dB	3.9 dB, 4.9 dB	1.0 dB	1.2 dB	0.8 dB	<1 dB	1.1 dB	1.9 dB	1.5 dB	2.8 dB
Return Loss	14 dB	>14 dB	14 dB	19 dB	14 dB	14 dB	14 dB	14 dB	14 dB	14 dB
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Power Rating	300 Watts	117 VAC 50/60 Hz or 12 VDC, <15 Watts	50 Watts	50 Watts	50 Watts			150 Watts		150 Watts

## MECHANICAL SPECIFICATIONS

Construction, Finish	Copper, Black	Black	Copper, Black		Copper, Black	Aluminum, Black	Copper, Black, Gold Alodine	Copper, Black, Gold Alodine	Copper, Black, Gold Alodine	Copper, Black, Gold Alodine
Input Connector	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)
Mounting	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack
Temperature Range	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C

## DIMENSIONS

Width	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)
Height	5.3 in (133.4 mm) 3 RU	7 in (177.8 mm) 4 RU	3.5 in (88.9 mm) 2 RU	3.5 in (88.9 mm) 2 RU	3.5 in (88.9 mm) 2 RU	3.5 in (88.9 mm) 2 RU	1.75 in (44.5 mm) 1 RU	1.75 in (44.5 mm) 1 RU	3.5 in (88.9 mm) 2 RU	3.5 in (88.9 mm) 2 RU
Depth	11 in (279.4 mm)	19 in (482.6 mm)	12 in (304.8 mm)	12 in (304.8 mm)	12 in (304.8 mm)	10 in (254 mm)	10 in (254 mm)	18.5 in (470 mm)	18.5 in (470 mm)	18.5 in (470 mm)
Net Weight	17 lb (7.7 kg)					20 lb (9.1 kg)	6 lb (2.72 kg)	6 lb (2.72 kg)	8 lb (3.6 kg)	8 lb (3.6 kg)
Shipping Weight	27 lb (12.2 kg)					30 lb (13.6 kg)	16 lb (7.3 kg)	16 lb (7.3 kg)	18 lb (8.2 kg)	18 lb (8.2 kg)

# Receiver Multicouplers



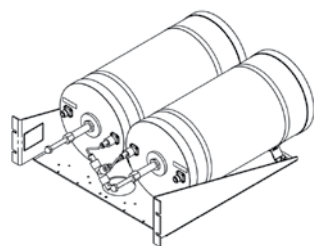
## DBSMC Series

- Use without Tower Top Amplifier.
- Quadrature coupled, low noise RF amplifiers (LNA).
- Includes coaxial limiter on VHF model for LNA protection (15 dB max).



## DBSMC1 Channelized Multicoupler

- Simplex system filtering, multicoupling and close spaced filtering.
- Models to suit number of filter legs required and multiple outputs for window filter legs.
- Quadrature coupled, low noise RF amplifiers (LNA).
- RF limiters on each LNA to prevent overloading.



## DBRX1X RX Channelized Cavity Multicoupler Combiner

- High selectivity for individual receivers.
- >25 dB isolation at 1 MHz away from center frequency.
- 8" diameter bandpass cavities.



## DBMORX LC RXMC

- Quadrature coupled, low noise RF amplifiers (LNA).
- Recommended for low-density RF sites.
- Flexible AC/DC power requirements.



## DBMORX LX RXMC

- Quadrature coupled, low noise RF amplifiers (LNA).
- Recommended for low-density RF sites.
- Flexible AC/DC power requirements.



## DBSMCP RXMC with PDU

- Use with Tower Top Amplifier.
- Quadrature coupled low noise RF amplifier (LNA).
- Alarm sensors monitor the amplifier current and power supply voltage.
- Front panel and remote monitoring of RXMC/PDU and TTA.



## NEW 2012 RXMC with PDU

- Test injection port for RX sensitivity testing, selectable with or without RX antenna.
- Front panel color LCD display and remote monitoring of RXMC/PDU and TTA.
- USB Interface for local PC Connection



## DBCNRX RXMC with PDU

- Use with Tower Top Amplifier.
- Quadrature coupled low noise amplifier (LNA).
- Secondary filter available, 6 MHz bandwidth.
- Manual bypass of TTA.
- Includes adjustable attenuator.

### ELECTRICAL SPECIFICATIONS

Frequency Range	118-960 MHz	148-174 MHz and 700-960 MHz	217-222 MHz	370-512 MHz	700-960 MHz	380-512 MHz or 700-960 MHz	793-824 MHz	794-824 MHz
Number of Channels	8, 16, 24 or 32	1, 2, 3, 4, 8 and 12	2 to 10	8 or 16	8 or 16	8 or 16	8 to 16, expandable to 32	8, 16, 24 or 32
Noise Figure*	8 dB to 12 dB (typ)*	3 dB (typ)*		4 dB (typ)*	1.5 dB (typ)*	4 dB (typ)*	4 dB (typ), attenuator set to zero.	4 dB (typ), no internal filter and attenuator set to zero.
Gain*	1.5 dB to 3 dB (typ)*	8 dB (typ)*		3 dB to 7 dB (typ)*	6 dB to 20 dB (typ)*	8 dB (8 ch), 4 dB (16 ch)*	8 dB (attenuator set to zero)	2.5 dB
LNA Noise Figure						< 2.4 dB @ 450 MHz < 1 dB @ 800 MHz	0.8 dB	< 1 dB
LNA Gain						31 dB	30 dB	31 dB
Amplifier IP3	40 dBm (typ)	40 dBm (typ)		40 dBm (typ)	40 dBm (typ)	40 dBm (typ)	40 dBm (typ)	40 dBm (typ)
RX to RX Isolation	20 dB			20 dB	20 dB	20 dB		20 dB
Return Loss	14 dB	14 dB	<9.5 dB	14 dB	14 dB	14 dB	14 dB	14 dB
Attenuator Range	0-15 dB in 1 dB increments	0 to 15 dB in 1 dB steps				0-15 dB in 1 dB increments	0-15 dB in 0.5 dB increments	0-15 dB in 1 dB increments
1 dB Compression Point	24 dBm (typ)	24 dBm (typ)	24 dBm (typ)	24 dBm (typ)	24 dBm (typ)	24 dBm (typ)		24 dBm (typ)
Power Source	90-240 VAC, 50/60 Hz 12 VDC (nominal)	90-240 VAC, 50/60 Hz 12 VDC (nominal)		90-240 VAC, 50/60 Hz 6 to 12 VDC (nominal)	90-240 VAC, 50/60 Hz 6 to 12 VDC (nominal)	90-240 VAC, 50/60 Hz 12 VDC (nominal)	± 36 to 70 VDC	90-240 VAC, 50/60 Hz 12 VDC (nominal)
Power Requirement	AC < 30 VA, DC < 15 Watts	AC < 30 VA, DC < 15 Watts		AC < 30 VA, DC < 15 Watts	AC < 30 VA, DC < 15 Watts	AC < 30 VA, DC < 15 Watts		

### MECHANICAL SPECIFICATIONS

Finish	Black, Gold Alodine	Black, Aluminum	Black, Gold alodine	Black	Black	Black, Gold alodine	Black	Black
Input Connector	N(F)	N(F)	N(F)	N(F)	N(F)	N(F)	N-Female	N(F)
Output Connector	BNC-Female	BNC		BNC-Female	BNC-Female	BNC-Female	BNC-Female	BNC-Female
Mounting	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack	EIA 19" Rack
Temperature Range	-30° to +60° C	-30° to +60° C	-30° to +60° C	-10° to +60° C	-10° to +60° C	-30° to +60° C	-30° to +60° C	-30° to +60° C

### DIMENSIONS

Width	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)	19 in (482.6 mm)
Height	1.75 in (44.5 mm) 1 RU	1.75 in (44.5 mm) 1 RU	8.75 in (222 mm) 5 RU per 2 channels	1.75 in (44.5 mm) 1 RU	1.75 in (44.5 mm) 1 RU	1.75 in (44.5 mm) 1 RU	1.75 in (44.5 mm) 1 RU	3.5 in (88.9 mm) 2 RU
Depth	10.3 in (260.4 mm)	12 in (304.8 mm)	21 in (533 mm)	6 in (152.4 mm)	6 in (152.4 mm)	10.3 in (260.4 mm)	17 in (431.8 mm)	15 in (381 mm)
Net Weight	4.5 lb (2 kg)	6 lb (2.7 kg)		6 lb (2.7 kg)	6 lb (2.7 kg)	4.5 lb (2 kg)		12 lb (5.4 kg)
Shipping Weight	14 lb (6.3 kg)	16 lb (7.3 kg)		16 lb (7.3 kg)	16 lb (7.3 kg)	14 lb (6.3 kg)		22 lb (9.9 kg)

\* Determined by # of channels. For detailed information please visit [www.dbspectra.com](http://www.dbspectra.com).

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